Constructing Digital Risk Communities: A Comparative Analysis of Official Communication about the Covid-19 Pandemic on Chinese and UK Digital Platforms

Yumeng Guo

A thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy

The University of Sheffield
Department of Sociological Studies

Submission Date
May 2025

Declaration

I, Yumeng Guo, confirm that the Thesis is my own work. I am aware of the University's Guidance on the Use of Unfair Means (www.sheffield.ac.uk/ssid/unfair-means). This work has not been previously been presented for an award at this, or any other, university.

Acknowledgements

When I started my PhD journey, I never imagined I would feel such love and support from so many people in another country. I would like to express my deepest gratitude to my supervisors, Dr. Ros Williams and Dr. Stefania Vicari. It has been a privilege to be your student: things were tough when we started everything online during the pandemic in the first year, but I still remembered the first lessons learned from our first supervision meeting: Ros taught me 'things we read would never be wasted' and Stefania encouraged me to 'use my sociological imagination in the study'. Over the past three years and months, we have exchanged numerous shared documents and emails, always accompanied by your constructive comments and warm words. Your guidance and inspiration have not only shaped this thesis, but have also supported me growing in writing, teaching, and other academic development. Thanks for accompanying me throughout the years, you make me see what I would like to be in the future --- as role models in the academic journey. I would also like to thank my department for the invaluable support, by the PGR cohort, staff and others, for all the amazing trainings, seminars, teaching opportunities, and academic support over the past few years.

To my mom, Fengqin Guo, a strong and amazing woman who supported the family and encouraged me to pursue my PhD during tough moments, always believing her child could be a good researcher. You have always trusted me and cared for my well-being during the PhD beyond any academic achievements. The first year I spent at home with you was one of the most wonderful times of my life. I also extend my gratitude to other family members, who have always been proud of me across the years.

A special thanks to Zheyuan Chang. I would not have survived Covid and experienced joys and tears in Sheffield without your unwavering understanding, trust, and care. Since we started our undergraduate studies in Tongji, I have always believed in your extraordinary abilities as a chemist, driven by your hardwork, knowledge, and talent. I am also grateful to my other friends for our meals and wonderful conversations --- you all made my PhD life shining and unforgettable in the last few years.

I would like to thank myself for remaining strong and keeping going through all challenges, always believing that hard work pays off. I will always cherish the memories of my favorite 'desks' in front of which I spent countless months writing this thesis, from my first lovely space in the Elmfield building to my desks in the IC library as a 'digital nomad'. Whatever the future holds, my PhD journey and life in Covid-era Sheffield will be remembered with gratitude.

Finally, I dedicate this thesis to my beloved uncle, Yongcai Guo, a hardworking man who was the core of our family; who tragically lost his battle against life suddenly in September 2019 and did not have the opportunity to hear his niece achieve his wish for her to earn a PhD. I hope you can see that I made it now.

Abstract

During the Covid-19 pandemic, Weibo and Twitter played distinct roles in promoting pandemic management strategies in China and the UK, respectively. This digital sociology study focuses on Covid-related discourses from official accounts on Weibo and Twitter to understand the intersection of governments and digital platforms during a health emergency. To achieve this, this study asks: RQ1: How and to what extent did governmental communication in China and the UK mobilise a discourse of risk through Weibo and Twitter respectively? Conceptually, to what extent does the notion of 'risk' help us understand government social media communication during Covid? RQ2: Which actions and actors were portrayed as responsible for the pandemic's management? RQ3: How were nation-states and globalisation portrayed through discourses centred on vaccine research, development, and post-R&D distribution?

The study's theoretical framework synthesises literature from the sociology of risk and digital platform studies. It draws upon Ulrich Beck's conceptual development of 'risk society' and contemporary scholarship on risk, health, and society. Additionally, it incorporates concepts from platform studies, including 'platformisation', 'platform regionality', and 'platform affordance', which is supplemented by risk communication scholarship to understand audience perspectives. Methodologically, this study employs a qualitative and comparative design, applying thematic analysis on posts scraped from a dedicated list of official accounts, and supplementing approaches to examine non-verbal elements, particularly visuals.

Findings suggest that official discourses during Covid can be conceptualised as constructing 'digital risk communities', informed by key interventions including 'risk society', 'digital risk society', and 'imagined communities'. Digital risk communities are virtual collectives constructed through official discourses, where governments as structures for collective risk management, along with experts and citizens, are framed as key actors in establishing provisional certainty to mitigate uncertainty surrounding Covid. The construction of these communities was further shaped by the politics of Weibo and Twitter.

Table of Contents

Declaration *2*
Acknowledgements *3*
Abstract *5*
Table of Contents *6*
List of Tables *9*
List of Figures *10*
List of Weibo Examples *12*
List of Twitter Examples *13*
Chapter 1 Introduction *14*
1.1 Why this topic? **14**
1.2 Overall theoretical framework and methodology **16**
1.3 Findings and contributions **18**
1.4 Thesis structure **21**
Chapter 2 Literature Review *25*
2.1 Risk as a sociological concern **25**
2.1.1 The risk society perspective 26
2.1.2 Risk thinking in scholarship of risk, health, and society 29
2.1.3 Politics of defining risk 35
2.1.4 Responsibility in risk: defining and articulating roles 38
2.2 Risk as a global concern **44**
2.2.1 Reconsidering globalisation in risk societies 45
2.2.2 Understanding vaccination at the nexus of risk, nations, and globalisation 46
2.2.3 The need to extend the concept of risk society 50
2.3 Politics of digital platforms in contemporary societies **54**
2.3.1 From platforms to platformisation 56
2.3.2 Platform regionalisation and Chinese platform society 59
2.3.3 Platform affordances 62
2.3.4 Understanding risk and audience in risk communication scholarship 65
2.4 Conclusion: Theoretical framework of this study **67**
Chapter 3 Study Context *70*
3.1 Covid-19 pandemic in China and the UK **70**
3.1.1 China, the UK, and their media ecosystems 70
3.1.2 Covid timeline in China 76
3.1.3 Covid timeline in England 78
3.2 Media in public health emergency management **79**
3.2.1 Media and public health emergencies in WHO guidelines 80
3.2.2 Understanding media usage during crises in China and the UK 82
3.3 Comparability between Weibo and Twitter **85**
3.3.1 Twitter in the UK 86
3.3.2 Weibo in China 89
3.3.3 A Weibo and Twitter 'walkthrough' 92
3.3.4 Existing studies based on Weibo and Twitter related to Covid 103

3.4 Conclusion **106**

Chapter 4 Methodology ***107***

4.1 Research design **107**
4.1.1 Why a comparative design matters 107
4.1.2 Creating a sampling framework for the study 111
4.1.3 Confirming official accounts on Weibo and Twitter 112
4.1.4 Confirming keywords and time frames 116

4.2 Data collection **118**
4.2.1 Conducting web scraping and data cleaning 119
4.2.2 Data cleaning, sampling, and preparation 122
4.2.3 Ethical considerations 123

4.3 Data analysis **124**
4.3.1 Introducing coding and thematic analysis 125
4.3.2 Thematic analysis of textual data 126
4.3.3 Addressing visuals as framing devices 135

4.4 Conclusion **138**

Chapter 5 Risk, Uncertainty, and Digital Platforms ***140***

5.1 Uncertainty and scientific expertise at the outset of Covid **141**
5.1.1 Weibo: Biological uncertainty of Covid 142
5.1.2 Twitter: Geographical uncertainty of Covid 153
5.1.3 Discussion: Provisional uncertainty and scientific expertise 159

5.2 Understanding risk through numbers **161**
5.2.1 Weibo: Templated numerical data in Covid updates 161
5.2.2 Twitter: Comparative statistics in Covid updates 170
5.2.3 Discussion: Quantifying Covid risk 176

5.3 Visual presentation of pandemic updates **178**
5.3.1 Weibo: Templated visual frame of authority and expertise 179
5.3.2 Twitter: Generic infographics and dashboards 183
5.3.3 Discussion: Platform affordances in official pandemic updates 189

5.4 Conclusion: From risk society to digital risk societies **191**

Chapter 6 Responsibility and Civic Duties ***194***

6.1 Responsibility and supportive government **195**
6.1.1 Weibo: Responsibility through acting for pandemic prevention and control 196
6.1.2 Twitter: Responsibility through financial support 201
6.1.3 Discussion: Governments as structures of collective risk management 206

6.2 Heroic individuals **208**
6.2.1 Weibo: Storytelling of ordinary people 208
6.2.2 Twitter: Occupational duties 216
6.2.3 Discussion: Affective frames of risk-taking for a good cause 222

6.3 Citizenship and individual duties **223**
6.3.1 Weibo: Proactive engagement 224
6.3.2 Twitter: Considerate citizenship 230
6.3.3 Discussion: Risk, citizenship, and neoliberal governance 235

6.4 Conclusion: Responsibility as networked and affective **237**

Chapter 7 Vaccine-mediated Nationalism ***240***

7.1 Domestic vaccine R&D **241**
7.1.1 Weibo: Emerging global player in vaccine R&D 241
7.1.2 Twitter: National pride in vaccine R&D 249
7.1.3 Discussion: Vaccines as risk-mitigation technologies with national characters 253

7.2 Domestic vaccine distribution 255
7.2.1 Weibo: Vaccination and civic responsibility in China 256
7.2.2 Twitter: Vaccination and civic responsibility in the UK 263
7.2.3 Discussion: Responsible citizenship in accessing risk-mitigation technologies 269

7.3 Global vaccine distribution 271
7.3.1 Weibo: Regional solidarity with developing countries 272
7.3.2 Twitter: Historical solidarity in the Commonwealth 278
7.3.3 Discussion: Vaccine diplomacy in the act of 'giving' 283

7.4 Conclusion: Understanding nationalist rhetoric through vaccine-mediated nationalism 284

Chapter 8 Discussion and Conclusion 288

8.1 Revisiting the three research questions 288
8.1.1 Establishing provisional certainty (RQ1) 290
8.1.2 Responsibility as networked and affective (RQ2) 295
8.1.3 National rhetoric in vaccination campaigns (RQ3) 299

8.2 Theoretical reflections on risk, digital platforms, and societies 302
8.2.1 Mobilising risk society as a foundation 303
8.2.2 Transitioning from risk society to digital risk societies 306
8.2.3 The role of digital platforms in digital risk societies 308
8.2.4 Understanding official communication as constructions of digital risk communities 312

8.3 Further evaluation 317
8.3.1 Methodological contributions 317
8.3.2 Limitations and future research 318

8.4 Conclusion: Reimagining digital risk communities during Covid 320

Reference List 324

Appendix A: List of official accounts on Weibo and Twitter for data collection 343

Appendix B: Final codebook for data analysis 348

List of Tables

Table 1: Key elements of risk thinking 32
Table 2: Methodology and relevant tools/techniques 110
Table 3: Four categories of accounts and examples 115
Table 4: Search terms and time frames for data collection 117
Table 5: List of code origins 128
Table 6: Top 10 word frequency of pandemic updates in ministry and city-level accounts on Weibo 163
Table 7: Translation of Weibo 7 and Weibo 8 166
Table 8: Image wall of update posts by @Health China 169
Table 9: Top 10 word frequency of numerical pandemic updates in four accounts on Twitter 171
Table 10: Top 10 N-Grams words in pandemic updates in four Twitter accounts 172
Table 11: Textual analysis of 158 posts featuring government-support-based responsibility on Weibo 197
Table 12: Textual analysis of 102 tweets featuring government-support-based responsibility on Twitter 202
Table 13: Textual analysis of 247 posts featuring responsibility in relation to non-state efforts on Weibo 209
Table 14: Textual analysis of 86 tweets featuring responsibility in relation to non-state efforts on Twitter 217
Table 15: Textual analysis of 148 posts featuring individual responsibility and citizenship on Weibo 225
Table 16: Textual analysis of 194 Tweets featuring individual responsibility and citizenship on Twitter 231
Table 17: Image wall of vaccination updates by @GOVCN 257
Table 18: Image wall of vaccination updates by @DHSCgovuk 264
Table 19: Image wall of storytelling narratives by @NHSEngland 268
Table 20: Three types of national rhetoric in Chapter 7 285
Table 21: Comparison between risk society and digital risk communities 313

List of Figures

Figure 1: Visualisation of theoretical framework 68
Figure 2: Weibo front page before log-in 94
Figure 3: Weibo front page after log-in 94
Figure 4: Twitter front page before log-in (retrieved via the Wayback Machine on 30 March 2021) 95
Figure 5: Twitter front page after log-in 95
Figure 6: Post of @Health China on Weibo 96
Figure 7: Post of @DHSCgovuk on Twitter 97
Figure 8: User homepage of @Health China on Weibo 98
Figure 9: User homepage of @DHSCgovuk on Twitter 98
Figure 10: Local function of 'headline article' on Weibo 99
Figure 11: Hyperlink to the external webpage on Twitter 99
Figure 12: Threads on Twitter 101
Figure 13: Institutional verification of @DHSCgovuk on X (grey symbol) 102
Figure 14: Institutional verification of @Health China on Weibo (blue 'V') 103
Figure 15: Sampling process (relevant chapter section in brackets) 112
Figure 16: Process for generating the overarching sample of social media accounts 113
Figure 17: Screenshot of Houyi Collector output from @Health China 121
Figure 18: Screenshot of WDRA output from @DHSCgovuk 121
Figure 19: Coding process in this thesis 127
Figure 20: Screenshot of NVivo analysis interface 130
Figure 21: Screenshot of NVivo file classification 130
Figure 22: Screenshot of word frequency on AntConc 133
Figure 23: Screenshot of cluster on AntConc 134
Figure 24: Screenshot of collocate on AntConc 135
Figure 25: Proportion of posts providing numerical pandemic updates on Weibo (proportion higher than 10% only) 162
Figure 26: Screenshot of @Health China update posts with 'latest situation' 164
Figure 27: Screenshot of @Shanghai NHC update posts with 'newly increased cases' 164
Figure 28: Proportion of posts providing numerical pandemic updates on Twitter (proportion higher than 10% only) 171
Figure 29: Landscape images from @Health China between 20 January 2020 and 31 March 2022 (reproduced in ImageSorter in chronological order) 179
Figure 30: Landscape images from @Health China between 20 January 2020 and 31 March 2022 (reproduced in ImageSorter by colours) 180

Figure 31: Landscape images from @ONS between 1 January 2020 and 31 March 2022 (reproduced in ImageSorter in chronological order) 184
Figure 32: Images from @ONS between 1 January 2020 and 31 March 2022 (reproduced in ImageSorter by colours) 185
Figure 33: Landscape Images from @UKHSA between 1 January 2020 and 31 March 2022 (reproduced in ImageSorter in chronological order) 186
Figure 34: Images from @UKHSA between 1 January 2020 and 31 March 2022 (reproduced in ImageSorter by colours) 186

List of Weibo Examples

Weibo 1 142
Weibo 2 143
Weibo 3 145
Weibo 4 147
Weibo 5 148
Weibo 6 151
Weibo 7 (left) and Weibo 8 (right) 165
Weibo 9 (left) and Weibo 10 (right) 182
Weibo 11 198
Weibo 12 200
Weibo 13 211
Weibo 14 213
Weibo 15 215
Weibo 16 228
Weibo 17 242
Weibo 18 243
Weibo 19 246
Weibo 20 247
Weibo 21 257
Weibo 22 258
Weibo 23 259
Weibo 24 261
Weibo 25 262
Weibo 26 273
Weibo 27 275
Weibo 28 276
Weibo 29 277

List of Twitter Examples

Tweet 1 153
Tweet 2 154
Tweet 3 155
Tweet 4 156
Tweet 5 157
Tweet 6 158
Tweet 7 173
Tweet 8 175
Tweet 9 188
Tweet 10 203
Tweet 11 205
Tweet 12 206
Tweet 13 218
Tweet 14 219
Tweet 15 220
Tweet 16 (left) and Tweet 17 (right) 233
Tweet 18 234
Tweet 19 249
Tweet 20 250
Tweet 21 (left) and Tweet 22 (right) 251
Tweet 23 253
Tweet 24 264
Tweet 25 265
Tweet 26 266
Tweet 27 267
Tweet 28 279
Tweet 29 280
Tweet 30 281
Tweet 31 282

Chapter 1 Introduction

1.1 Why this topic?

During the lockdown policies that came into effect in the early months of 2020, the silence on the streets sounded like cities holding their breath. A new, highly contagious virus, yet to be named Covid-19, prompted governments around the world to enforce obligatory 'lockdown', keeping people inside their homes. Digital platforms, in contrast to the empty streets, experienced significantly increased traffic as people flocked to them, seeking any available information during an unknown situation. People could scrutinise every message on their social media feeds carefully, being able to check the opening times of the nearest hospitals and stock availability at the closest grocery shops. Perhaps more intriguing was that the people around the world could follow the situation in other countries: a resident in Wuhan could click through Weibo posts to learn the number of confirmed cases in England; simultaneously, thousands of miles across the world, residents in London might scroll through images on Twitter of new hospitals being constructed in Wuhan. One can imagine how the global population, remaining physically separate, could have a sense of belonging to certain digital collectives and access the imaginary of other collectives through online information.

While the experiences of managing the pandemic and the pandemic's timelines certainly varied between countries, governments around the world used social media platforms extensively. In both China and the UK, the state governments actively engaged with social media and other online channels to disseminate information, such as live streaming media briefings and sharing official statements. Many individuals' days were filled with struggles to 'survive' from recent outbreaks and with decisions to minimise risk (Fuchs, 2020): many started their days by checking the numbers of newly confirmed cases and adjusting their travel plans based on information about new variants and other restrictive policies learned from official social media channels. In this context, government use of social media became a crucial source that individuals drew on to evaluate and manage risk, as well as navigate their everyday responsibilities at home – which for Fuchs (2020) functions as an assemblage of public and private spheres, as family members had to juggle their roles as citizens, parents, and other identities simultaneously.

For many of us, social media became the driving factor of several behavioural changes during Covid. As checking government updates on social media became a daily ritual in 2020, people frequently heard professional terminology used in government communication. For example, people got accustomed to reading the lines and comparisons on graphs within pandemic updates, such as the use of 'R', an epidemiological term to calculate virus reproduction ratios. Consistent exposure to

pandemic-related knowledge perhaps gave rise to new form of 'Covid literacy', which referred to an increasing ability to 'read, understand, and use information to make informed decisions and follow instructions' with the purpose of surviving Covid (Brown, Haun and Peterson, 2014, p.267). Furthermore, the faces of medical professionals talking about Covid-related knowledge and preventive measures became familiar to social media users, such as Dr Zhong Nanshan in China, and Professor Chris Whitty in the UK. People also got the opportunity to learn differences between vaccination programmes, including the inactivated Sinovac vaccines and the mRNA-based Moderna vaccines, from social media channels (Cascini *et al*., 2022). For many of us, consuming this information daily also became connected to our desire to be responsible citizens, embracing preventive practices such as staying at home to mitigate the spread, and conducting voluntary isolation when developing specific symptoms.

For many, a significant amount of the knowledge mentioned above was likely acquired from browsing Weibo posts or tweets, especially official government accounts. Such accounts did not function simply as central repositories of recent policies about the pandemic. Their narratives were important reflections of how societies were expected to navigate the storms of this life-changing health crisis, and how societal resilience could be re-established in its aftermath. However, compared to extensive scholarship on general user activities on social media (e.g., topics, sentiments), government activities on social media during Covid remain relatively under-researched. Though government communication has been considered a key mechanism affecting public perception of government efficiency and the adoption of preventive measures during Covid (see the analysis in China by Jiang and Tang, 2023; and in the UK by Newton, 2020), limited social scientific attention has been given to the specifics of what was shared through their social media channels and how this sharing varied across socio-cultural contexts.

To address the importance of this study context and the research gap, this thesis interrogates the use of Weibo and Twitter by government agencies in China and the UK during the Covid crisis, two countries with distinctive political systems, experiences of the pandemic, and social media platform contexts. Notwithstanding these differences, the comparability between these two nations is underscored by their significant roles in the global economy and their active participation in international collaboration during the pandemic. Furthermore, both Weibo and Twitter[1] function as real-time microblogging service providers, and operate as commercial, private-owned entities active in China and the UK respectively. Their substantial user bases in these two nations make them both

[1] Since the empirical research underpinning this thesis was undertaken, Twitter has been renamed X. The original name will be used throughout the thesis.

officially acknowledged as governmental communication channels, marked by the establishment of official government institutional accounts. From a platform economy perspective, Weibo and Twitter are considered to have developed through two nuanced models: state capitalism and corporate capitalism (Fuchs, 2016). While their similar platform structures yield two comparable datasets for further analysis, their geographical focuses and platform interfaces contribute to the value of juxtaposing them in a comparison.

Therefore, researching government accounts on Weibo and Twitter provides a valuable empirical foundation for exploring how political and socio-cultural contexts shaped representations of Covid. It also allows for an examination of how these representations were adapted to meet the diverse expectations of platform users.

1.2 Overall theoretical framework and methodology

After elaborating on the reasons for examining official communication during the pandemic, this section briefly introduces the theoretical framework of this thesis, as well as its methodology.

This thesis employs an interdisciplinary theoretical framework, drawing upon the sociology of risk and platform studies. It uses Ulrich Beck's (1992) work on risk society and Anthony Giddens's work on reflexivity (1990) as a foundation to reconsider the concept of risk and its traditional consideration of uncertainty, definitional authority, and reflexivity. After reviewing contemporary discussions on risk, health, and society, this framework proposes that post-Beck risk thinking scholarship is characterised by discursive works in classification, value judgement, probability, temporality, and socio-cultural discussions (e.g., Douglas, 2002; Heyman, 2010; Brown, 2020). These discursive works on risk definitions and value judgement are further examined through the concept of responsibility, a term central to both risk thinking and new public health scholarship (e.g., Petersen and Lupton, 1996). Additionally, globalisation in risk thinking is further examined through the case of vaccination as a risk-mitigation technology (Cohen, 2009), which is researched, produced, and distributed with national attributes. In other words, studying vaccination as a modality for risk management helps us understand the dynamics of global collaboration and national interests in the face of a global health crisis (Beck, 2016).

However, much of the risk literature treats media as a homogeneous, neutral entity mirroring the representation of risk, and lacks systematic discussion about how media with distinct political economies shape their narratives of risk (Bakir, 2010). To extend these simplified considerations of media in traditional risk literature, this framework draws on the literature on what has come to be

known as platform studies (e.g., van Dijck, Poell and de Waal, 2018) to propose a transition from 'risk society' to 'digital risk societies' (Lupton, 2016). This aims to highlight how the politics of digital platforms, such as their regionalities and affordances, affect the digital representations of risk. Importantly, the experimental comparative design of this study, bringing in China and Weibo, aims to incorporate an often-neglected focus beyond Western countries in risk thinking. The comparative design also aims to de-Westernise platform studies to transcend the predominantly US-based platform focus, which has been the dominant focus of much of the platform studies literature to date (e.g., Davis and Xiao, 2021). Overall, this theoretical framework seeks to mobilise risk thinking and extend the consideration of risk within the contexts of digital platforms and multicultural environments. This extension also contextually addresses the global nature of Covid and the proliferation of official discourses on social media during the pandemic.

This thesis employs a qualitative research method with a comparative design. It draws on data from official, verified Weibo and Twitter accounts of actors presenting at national Covid press conferences in China and the UK. After scraping relevant social media data, thematic analysis was applied to identify prominent themes from the posts. Ultimately, three themes came to frame the empirical portion of this thesis, making up its three ostensible findings chapters. In addition to applying thematic analysis to textual content, this thesis also takes platform affordances into consideration, particularly supplementing approaches to analyse visuals: the objective is to explore how textual information is consumed together with other non-verbal elements, such as character limits, within the digital interface. Informed by frame theory (e.g., Entman, 1993), when reporting the findings, this thesis distinguishes the government representation of Covid from the pandemic as 'real facts' by using 'frames' frequently as a shorthand to mention how Covid was packaged by government discourses to communicate to the public (Gamson and Lasch, 1983). Frame theory also informs this study by specifically considering the 'signifying elements' through which people made sense of Covid as 'framing devices' (Pan and Kosicki, 1993), highlighting the roles of social media elements in constructing the meanings of Covid.

The thesis situates itself within the field of digital sociology, both in its research focus and methodology. Contextually, it examines official risk narratives on Weibo and Twitter, focusing on the 'doing' of government digital practices — engaging with digital technologies, digital spaces, and platform-generated digital data as its 'object of enquiry' (Marres, 2017). The thesis approaches official communication during Covid it as a societal actor's engagement with contemporary digital technologies, during a global public health emergency. Therefore, researching this phenomenon offers critical insights into how digital platforms shape social institutions and structures (Lupton, 2015) and how pre-digital theories remain relevant in digital societies (Selwyn, 2019, p.11).

While it draws on the sociology of risk, the thesis moves beyond traditional sociological risk perspectives by specifically examining how digital platforms shape risk communication — such as how platform affordances shape the construction of Covid management scenarios. Similarly, while the thesis engages with platform studies, it extends beyond their scope by situating platform-mediated risk communication within broader sociology discussions — analysing how Weibo and Twitter function as socio-technical spaces where official accounts construct risk narratives and manage public trust.

Methodologically, this thesis employs digital methods to identify the research data and integrates qualitative approaches to analyse these digital datasets. This aligns with another interpretation of digital sociology as 'a deliberate and proactive digital approach toward all aspects of sociology work', recognising that official narratives on Weibo and Twitter are inherently digital in both form and nature (Selwyn, 2019, p.11). Taken together, these perspectives establish this thesis as fundamentally situated within digital sociology.

1.3 Findings and contributions

Having introduced the theoretical framework and methodology, this section proceeds to summarise the key findings of the thesis. This study specifically focuses on how government accounts on Weibo and Twitter framed Covid as a recent global health crisis. It finds that the risk management of Covid was framed and delivered with a tone of certainty and clear value orientations, seeking to establish the authority and credibility of official accounts as information sources and calling for collective actions. The activities of government accounts on Weibo and Twitter were observed to prioritise information provision to enhance public awareness during the health crisis rather than serving direct interactive purposes with audiences (see Weibo in Medaglia and Zhu, 2017; and Twitter in McInnes and Hornmoen, 2018).

Conceptually, the thesis proposes the concept of 'digital risk communities' to synthesise the findings of comparing official risk communication on Weibo and Twitter. The three empirical chapters respectively illustrate the construction of these communities through three scenarios: how official accounts sought to establish certainty in Covid through references to scientists' discourses, numerical data, and visuals as framing devices; how responsibility as an organic network comprising governments, heroic individuals, and citizens was communicated in official discourses in affective ways; and how vaccine-related activities communicated through official accounts ultimately served as a dissemination of various nationalist rhetoric. In general, the concept of digital risk communities suggests that in official communication, individuals are framed as being *situated* within multiple communities, ranging from families to workspaces, cities to regions, and nation-states to international

networks. Conceptualising the 'situating' as 'risk communities' rather than adhering to the well-researched term 'risk society' aims to emphasise the *proactive* actions that individuals are framed to adopt in official communication, rather than portraying individuals as passive recipients of risk. Adding 'digital' as a precondition for 'risk communities' aims to highlight that the narratives of these risk communities are further shaped by the politics of digital platforms.

Having discussed what digital risk communities are in general, this section proceeds to unpack how this study contributes to an understanding of the three sub-concepts: risk, communities, and digital.

The term 'risk' in this concept aims to highlight that the nature of constructing communities is driven by risk thinking. In the sociology of risk, risk is conceptualised to reflexively flag the side effects produced by modernisation, and its features of uncertainty might make some existing perceptual approaches invalid (Beck, 1992). Thus, the intensification of insecurity and heightened risk consciousness necessitate new strategies for governments as structures of collective risk management to anticipate risk and protect populations (Mythen, 2004). In the case of Covid, the omnipresence of virus transmission and global interconnectedness exposed existing and newly formed communities, (re)bonding them through the shared goal of surviving the pandemic. Given the international impacts of the pandemic, the narratives of digital risk communities on official accounts should be understood as a communication strategy to consolidate national and global resources both physically and emotionally in the face of uncertainties.

Communities, in the context of digital risk communities, refer to imagined networks' sharing goals of survival in risk – individuals, communities, or nation-states are situated in one or more communities to navigate risk. These imagined communities, despite being constructed through official communication, may retain the identities and structural obligations inherent in pre-existing communities. For example, these imagined communities can overlap with those such as families, nations, and races, often bound by biological ties of blood, birth, and death (Nash, 2005). This genetic kinship can extend to strangers forming imagined communities based on (imagined) biological ethnic closeness, leading to actions such as ethnic minorities supporting others through participation in health issues (Williams, 2021). Additionally, imagined communities can transform from those in close geographical proximity, such as nations historically serving as shelters in health crises (Anderson, 1991). Imagined communities can also be emotionally or culturally tied, where actors, despite being geographically distant or ethnically dissimilar, may form 'affective publics' through digital technologies to exchange sentiments through collective expressions (Papacharissi, 2015). Beyond racial ties, geographical proximity, and emotional bonds, official communication also mentions other communities formed around consensus on risk, including knowledge exchange networks and institutional initiatives (e.g., Covid-19 Vaccines Global Access as COVAX).

The term ‘digital’ in the concept of digital risk communities seeks to grasp how the politics of digital platforms complicate the construction and circulation of images of risk communities. Dissemination in this context means digital platforms amplify the sense of *simultaneity* of what is happening within the perceived communities on a new public scale (Baym and boyd, 2012), thereby facilitating the synchronisation of risk definitions in these communities. During the process of dissemination, digital platforms add their own platform logics, facilitating or constraining the constructions of communities. For instance, both Weibo and Twitter impose limits on the numbers of words users can write in each post and follow different structures to display the words (full texts being folded in the ‘read more’ button on Weibo, or available through ‘threads’ on Twitter). In essence, adopting the concept of digital risk communities is not only concerned with the discourses of official accounts, but also the techno-commercial spaces that shape the scale and visibility of these official discourses (boyd, 2010) – both the content and the format are crucial in this conceptualisation.

Given the discussions around ‘risk’, ‘communities’, and ‘digital’ above, this study acknowledges that the application of the ‘digital risk communities’ concept necessitates several *contextualising* efforts: this concept is interested in the types of risk that digital risk communities are constructed *for*, the entities providing these frames, and the digital platforms where these frames are disseminated. This is because different types of risk may require emphasising various shared interests among actors, fostering different senses of belonging or community identities (e.g., regional pandemic with a national-based solution, or a global pandemic in need of an international approach). Similarly, the politics of the digital platforms shape the ways in which these frames can or cannot ‘go digital’ and how official definitions are adapted to be ‘platform-ready’ (e.g., the capacity to convey stories in 2,000 characters on Weibo or 280 characters on Twitter – at the time of data collection).

After introducing the key concepts this thesis proposes, this section moves on to review the contributions of this study, both theoretically and methodologically.

Theoretically, this thesis contributes by bringing risk studies and platform studies together into a single piece of media-risk research, and by introducing cross-cultural perspectives to counter the Western-centric focus prevalent in both areas of scholarship. Informed by risk society (Beck, 1992), platform society (van Dijck, Poell and de Waal, 2018), digital risk society (Lupton, 2016), and imagined communities (Anderson, 1991), the conceptualisation of ‘digital risk communities’ seeks to understand the communication strategies of official social media accounts, which place emphasis on constructing proactive strategies employed by actors (e.g., individuals, governments) in global health crisis beyond passive recipients of risk. Focusing on the digital translations of risk definitions, this study also illustrates how institutional experiences that emerged offline during the health crisis were

documented and visualised through digital platforms. Therefore, the constructions of communities are also intertwined with cultures and political motivations, leading to diverse narratives of pandemics and communities.

Methodologically, this study contributes by introducing an inventive approach to generating the conditions of empirical comparability between two different sets of research contexts: China and the UK; Weibo and Twitter. From sample selection to data scraping, careful considerations have enabled a rich cross-country comparison. Compared to a single-case study, a comparison between two cases enhances the comprehensiveness of the conclusions, which address similarities and differences across two sets of practices with valuable insights into the roles of *contexts* (political, digital). Furthermore, this study innovatively applies thematic analysis to the data scraped from social media platforms. Compared to traditional treatments of interview transcripts, researching social media posts qualitatively is complicated by the nature of the platforms, where texts are consumed alongside other elements (e.g., visuals) within specific interactive interfaces. This necessitates further analytical attention to non-verbal elements in the same posts beyond merely examining the text on its own. Overall, the comparison paradigm of this thesis serves as an experimental example of how empirical comparisons can be operated and interpreted effectively across two sets of distinct cases. Consequently, this thesis contributes to existing literature by introducing a transferable methodology that might guide similar examinations of social media usage in other national or regional contexts during Covid.

1.4 Thesis structure

Having offered a general overview of this thesis's findings and contributions, this final part of the introduction chapter provides a brief overview of the thesis structure.

Chapter 2 provides the literature review that informs the analysis, proposing a theoretical framework comprising a range of critical scholarship. The review starts with some of the canonical sociological discussions on risk; the global feature of risk, and its manifestation, particularly through the important risk-mitigation technology of vaccination. To extend limited discussions of digital platforms in media-risk scholarship, key concepts in platform studies are incorporated into the framework to interpret the politics of digital platforms, including platformisation, platform regionalisation, and platform affordances. In summary, the review of literature on risk and digital platforms indicates a relative scarcity of media-risk scholarships unpacking risk within non-Western contexts and on non-US-based social media platforms. The end of the literature review prompts a set of research questions driven by

an interest in examining how governments and digital platforms intersected in China and the UK during Covid. To achieve this aim, this study asks:

> RQ1: How and to what extent did governmental communication in China and the UK mobilise a discourse of risk through Weibo and Twitter respectively? Conceptually, to what extent does the notion of 'risk' help us understand government social media communication during Covid?
>
> RQ2: Which actions and actors were portrayed as responsible for the pandemic's management?
>
> RQ3: How were nation-states and globalisation portrayed through discourses centred on vaccine research and development (vaccine R&D) and post-R&D distribution?

It is important to note that the broad empirical field of the study spans very distinctive political systems and social media platforms. In turn, the study centres on the context of a public health emergency that was – like all such emergencies – the domain of policymakers, legislators, and public health practitioners. Covid itself, which this thesis was written during, will eventually be a thing of the past, and readers who come to the thesis in years to come may have little knowledge of what took place. With all of this in mind, the thesis presumes limited prior knowledge.

As such, Chapter 3 moves forward to articulate the study context of this thesis, aiming to help readers understand the terms and contexts involved in the data analysis chapters. It starts with a general introduction of China and the UK, with specific emphasis on their media systems and timelines of experiencing Covid. It then discusses the roles of media within national strategies of public health management, where Weibo and Twitter are embraced as official communication channels in both China and the UK. Following the contextual introduction of the political economy of Weibo and Twitter, a platform walkthrough is also presented in the chapter to demonstrate the technical comparability of two platforms. The chapter ends with a specific review of Covid-related studies on social media, revealing a relatively limited number of empirical studies focused on government narratives using a comparative design.

Chapter 4 introduces the study's methodology. It provides the reasons for designing a comparative study, drawing on the theoretical and empirical considerations presented in Chapters 2 and 3. It then outlines the sampling framework through which the final dataset was achieved. This framework includes decisions involved in the identification of social media accounts (i.e., the eventual data sources), the selection of keywords and time frames for the sample, and the choices of web scraping

tools. The sampling framework also considers how the original data was obtained and then further subsampled into appropriate sizes and ethical formats for data analysis. Finally, this chapter discusses the data analysis strategy of this thesis, which combines traditional text-oriented thematic analysis with insights from other frame devices, such as visuals.

The three chapters following the methodology are the main analytical chapters of this study, and each chapter explores a theme prominent in the results of thematic analysis introduced in Chapter 4.

Centring on the theme of risk and uncertainty, Chapter 5 explores how the definition of risk becomes digitised on Weibo and Twitter, where the discourse of medical scientists, the presentation of numerical data, practices of visualisation techniques, and their reiterations into 'templated' or 'generic' formats serve as key framing devices in pandemic updates. Importantly, this chapter suggests that the core of risk communication by official accounts seeks to establish provisional certainty to mitigate the uncertainty of Covid and highlight the actions undertaken by governments as institutions dedicated to collective risk management. Through the frames around key characteristics of risk, namely classification, value judgement, probability, temporality, and socio-cultural comparison, the official communication in the two cases demonstrates two distinct 'digital risk societies'.

Focusing on the theme of responsibility as an empirical reflection of role allocation during risk, Chapter 6 discusses how the concept of responsibility is shaped into an ecosystem of collaborative efforts by governments, 'heroic' individuals, and citizens. Through an analysis of posts featuring responsibility among these three actors, Chapter 6 challenges the presumption of organised irresponsibility in risk society, positing instead that responsibility is both networked and affective in official communication. Within this network, governments are framed to play the supportive role of leading society through risk, while individuals are encouraged to show consideration for the well-being of their imagined communities. The latter aspect, where citizens are reminded of fulfilling their civic duties, is narrated in an affective manner to emphasise the emotional connection and sense of belonging that bind members of imagined communities together.

Shifting the focus to the global dimension of Covid, Chapter 7 focuses on vaccination-related activities because vaccines, as risk-mitigation technologies, offer important insights at the nexus of risk, health, responsibility, and globalisation. The chapter seeks to understand various forms of national rhetoric emerging in the communication of vaccine R&D and post-R&D activities. The findings suggest that vaccine R&D reflects different national power in science development and national characters in the global biomedical infrastructure. The distribution of vaccines within domestic populations is framed as manifestations of national solidarity among citizens, while the international 'giving' of vaccines, as cross-national transfer of risk management capabilities, reflects

national commitments to fulfilling responsibility as major vaccine-production nations to support developing and African countries. To grasp these forms of national rhetoric attached to the communication of vaccination, Chapter 7 proposes the extended concept of 'vaccine-mediated nationalism' beyond 'vaccine nationalism' which primarily focuses on national vaccine stockpiling.

As the concluding chapter, Chapter 8 revisits all three research questions, and identifies this thesis's theoretical, empirical, and methodological contributions. It also considers the limitations of this research and offers suggestions for future research. Specifically, Chapter 8 reassesses the role of risk society and risk thinking within this study as a conceptual toolkit. The scholarship on risk informs this study's theoretical framework, enabling an understanding of health, society, responsibility, and globalisation in a connective way, with risk as the key site. It also informs the framework for incorporating additional scholarship from media studies, particularly digital platform studies. From the exploration of risk society to digital risk society, and digital risk communities, this study empirically unpacks how the presence of official accounts on social media platforms transforms the process of risk definition and how the communication of 'digitising risk' is further complicated by the politics of platforms.

Chapter 2 Literature Review

This chapter presents the thesis's theoretical framework, which is built upon concepts and theories drawn from the sociology of risk and platform studies. This review aims to outline how the key contexts in this study (Covid and social media) are conceptualised and studied within existing theories and scholarship, where this digital sociology research contributes by proposing a socially constructive perspective of risk shaped by platform politics. The theoretical framework drawn from the review also identifies research gaps to help refine the research questions and to provide analytical discussions in the findings chapters with a conceptual foundation.

This chapter begins with Section 2.1 exploring the conceptual development of the idea of 'risk' in sociology. Drawing on the work of key theorists like Ulrich Beck and Anthony Giddens, the section highlights risk as a philosophy of reflexive modernity, which is characterised by uncertainty and accompanied by a proliferation of risk definitions. Section 2.2 then unpacks the scholarship of risk that centralises the role of the 'nation-state' in relation to risk, drawing in important contemporary contours of 'vaccine nationalism'. The end of this section also explains the need to extend the current sociology of risk to reflect the complexity of multicultural contexts and contemporary media practices. Finally, Section 3.3 focuses specifically on the politics of digital platforms. By engaging with the key concepts of 'platformisation', 'platform regionality', and 'platform affordances' that have come to characterise platform studies, this section underscores the need to contextualise the roles of platforms with sensitivity to their political economies, regional and cultural backgrounds. Overall, this chapter aims to demonstrate the need for conducting comparative studies across Western and non-Western contexts in both the sociology of risk and platform studies. The research questions for this thesis are repeated at the end of this chapter.

2.1 Risk as a sociological concern

In the opening of his highly cited work *Risk Society: Towards a New Modernity*, German sociologist Ulrich Beck (1992) writes: 'in advanced modernity the social production of wealth is systematically accompanied by the social production of risks' (p.19). In essence, Beck suggests that modernity, driven by techno-scientific progress, can be understood through the lens of risk. For what has since come to be described as the sociology of risk, Beck's works provided valuable intellectual foundations for a scholarship of risk that would aim to characterise the relationship between risks, individuals, and nations.

This section aims to outline Beck's development of the risk society. Section 2.1.1 closely reviews Beck's original work to explain how the concept of risk offers valuable threads to critically understand the impact of modernisation, and how risk is painted with prominent characteristics of uncertainty. Section 2.1.2 considers how scholarship has used risk to consider health and society after the 2000s and developed Beck's portrayal of risk into systematic risk thinking. Section 2.1.3 discusses how the nature of uncertainty makes risk open to various definitions, generating further debates on the authority of defining risk issues. Finally, considering the identification of responsible actors as a way of defining risk, Section 2.1.4 continues to discuss how the analysis of responsibility helps to understand the relationship between states and individuals in a health crisis.

2.1.1 The risk society perspective

In 1992, Beck identified the various changes in modernisation that led to what he termed 'risk society'. Initially, Beck developed the framework of 'risk society' to make sense of the emergence of 'manufactured uncertainties' as the new risks accompanying the process of modernity from the early 1970s in West Germany (1992, p.20; 2008, p.5). For instance, for Beck, as scientific and technological developments are initially intended to offer solutions, these developments also bring new unintended issues such as environmental problems (Beck, 1992). To conceptualise this emergence of side effects within global modernisation practices, Beck introduced his influential definition of risk society:

> The concept of risk is directly bound to the concept of reflexive modernization. Risk may be defined as a *systematic way of dealing with hazards and insecurities induced and introduced by modernization itself*. Risks, as opposed to older dangers, are consequences which relate to the threatening force of modernization and to its globalization of doubt. They are *politically reflexive* (1992, p.21, original emphasis).

Beck's description of the risk society relies on reflexivity and modernisation as two key premises. To fully understand the historical context of the time when Beck offered this definition in 1992 (p.52), it is valuable to first consider the definition of reflexivity provided by British sociologist Anthony Giddens in 1990. For Giddens, human practices are characterised by reflexivity, where people scrutinise the actions they have taken and transform these past things into knowledge (1990). He summarised reflexivity of human actions as 'social practices [that] are constantly examined and reformed in the light of incoming information about those very practices, thus constitutively altering their character' (Giddens, 1990, p.38). In short, Giddens understood reflexivity as a cognitive process in which people continuously scrutinise and learn from what they have done and then adjust their subsequent practices based on previous experiences (1990, p.50).

Moving from Giddens' interpretation of reflexivity to Beck's definition, the risk society can be viewed as a *reflexive* framework that prompts a reconsideration of the impacts of modernisation. To articulate this idea, Beck's work closely engaged with examples in his era, such as nuclear power issues and environmental problems in the Chernobyl disaster. While this nuclear accident in the Soviet Union immediately killed 30 people through radioactive release, many territories within the Union and some areas in Europe were contaminated indirectly, which resulted in the relocation of 116,000 people from surrounding areas in 1986, and an additional 220,000 people after 1986 (World Nuclear Association, no date). Furthermore, Beck considered several impacts posed by industrial progress on the environment: while people benefit from increased grain productivity from larger agriculture fields and the invention of pesticides, these also introduce new international concerns, including global pollutants, declining soil fertility due to intense toxic chemicals, and health issues such as obesity (1992).

Following the cases of nuclear disasters and environmental problems, impacts of risk, according to Beck, are not limited to the immediate space and time in which they occurred, but could potentially endanger all species regardless of borders (1992). This offers the basis for Beck's identifying *uncertainty* as the key characteristic of the risk society, which originates from the three explicit attributes of risk: *delocalisation*, *non-compensability*, and *incalculability* (2008). Both nuclear issues and the environmental problems mentioned earlier exemplify these characteristics in practice: they are delocalised as they do not affect certain geographical locations but endanger global populations. The loss of nuclear leakage and environmental pollution are also non-compensable as they probably cause harm for generations. Their incalculability arises from the challenges of measuring their influences accurately, such as the spread of radioactivity and pollution disseminated through the air, water, and food, which are sometimes beyond human measuring abilities (Beck, 2008).

So far, this section has mentioned several examples in Beck's works, ranging from nuclear and chemical pollution to contaminated foodstuffs and environmental problems. According to Beck (1992), these represent 'newer' risks because they challenge publics' direct capacity to measure them. Central to this challenge, the risk society witnesses the shift of both *centralising* and *de-monopolising* scientific rationality. Centralisation implies that risks beyond individual perception capacities necessitate the knowledge of scientific experts. Experts are seen as authoritative sources capable of materialising invisible hazards using 'sensory organs of science theories, experiments, measuring instruments' (Beck, 1992, p.27). However, Beck adds that since risk is not always scientifically measurable or perceptible to scientific senses; risk could be perceived through multiple learning approaches mixed with scientific rationality, lived experiences, and other sources of knowledge, such as imagination, suspicion, fiction, and fear (2008, p.6). For example, people might find themselves

admitting their ‘ignorance’ towards risk or imagining the worst futures without solid evidence but instead being driven by suspicion (Beck, 2008, p.6).

While uncertainty allows for risk to be flexibly defined by actors across different contexts, humans still attempt to maximise their knowledge, control, and security against the approaching risk. Beck refers to this inclination as ‘the not-yet event as stimulus to action’ (2008, p.6), highlighting humans’ instinct to evaluate a given event before its actual occurrence. These evaluations may result in specific preventative measures, such as interventions to mitigate the worst effects of climate change, ethical considerations in human genetics, and measures for weapon control before terrorist attacks (Beck, 2008, p.6). Therefore, risk management in Beck’s risk society can be understood as anticipation and preparation for future uncertainties that are assessed as having a chance of occurrence and deemed threatening (1992, p.33). The inherent elements of *futurity-oriented anticipation* and *probability* in risk management further strengthen the uncertainty when actors attempt and sometimes fail to precisely predict, define, and control their future (Mythen, 2004, p.14).

So far, this section has mapped out the contours of Beck’s perspectives on the risk society, placing particular emphasis on reflexive modernisation, uncertainty, and future-oriented anticipation. However, for risk sociologist Jens O. Zinn (2006), risk society perspectives are also limited because of a narrow focus on risk associated with technical and environmental risks. Regarding this limitation, Australian sociologist and media and culture researcher Deborah Lupton (2022) underscores the historical contexts of Beck’s work: the risk society perspective, originally published in the 1990s, was stimulated by nuclear disasters in Chernobyl and other technological and industrial disasters of that generation, with limited attention to infectious diseases. Lupton further notes that infectious diseases, such as Covid, do share common characteristics with Beck’s depictions of technological disasters, and some even pose more serious challenges to globalisation and scientific rationality (Lupton, 2022). Similarly, health sociologist Merryn Ekberg (2007) argues that some natural disasters, such as pandemics, deserve equal attention due to their profound impacts on people’s properties and well-being.

Additionally, Abeysinghe and White (2011) argue that Beck’s scholarship treats natural hazards and social-constructed risk as two separate categories. However, American historian of medicine Charles E. Rosenberg (1989) suggests that diseases or pandemics do not inherently become social phenomena until publics collectively acknowledge their impacts and reach certain agreement in proposing explanatory schemes to manage them. These acknowledgements render diseases as both biomedical and social (Rosenberg, 1989). Thus, Abeysinghe and White (2011) advocate for a critical examination of the Beck-style dichotomy between natural hazards and socially constructed risks in the context of

infectious diseases, aiming to highlight the social constructions in both narratives of disease threats as well as the responses to these threats.

In summary, risk society's limited contextual discussions around infectious diseases and the controversial Beck-style dichotomy in risk classification inform this study in applying a more comprehensive lens to capture both the natural and socially constructed elements of infectious diseases, using Covid as an example. Therefore, to broaden Beck's risk society perspective to address contemporary infectious diseases, this study initially asks:

> RQ1: How and to what extent did governmental communication in China and the UK mobilise a discourse of risk through Weibo and Twitter respectively? Conceptually, to what extent does the notion of 'risk' help us understand government social media communication during Covid?

In summary, though the concept of risk for Beck did not centre around health as its major concern, his interpretations of contemporary technology-based incidents in the 1990s, such as environmental problems, foodstuffs, and nuclear disasters, imply that health and body are key sites of post-modernity risks. This has led to lively scholarly debates seeking to bridge the sociologies of risk and of health and illness, to understand the relationships between risk, body, and health in contemporary societies. Hence, the next section moves to the discussion on public health risk after Beck's and Giddens's work, to outline how scholarship engaged – and continues to engage – with the original concept of risk in the post-1990s.

2.1.2 Risk thinking in scholarship of risk, health, and society

This section explores how active discussions on risk, particularly at the intersection of health and risk in the 2000s, shed light on additional facets of the notion of risk society. It aims to explore how health becomes a specific site of interest for thinking about risk, and how contemporary scholarship at the intersection of health and risk continues to resonate the key features of risk from risk society perspectives. To achieve this, this section reviews six interventions from social science scholars spanning different areas, including cultural studies, Health, Risk & Society, Science and Technology Studies (STS), and geography. While there is an extensive body of research at the intersection of health and risk, these six interventions are chosen for their representative attempts to explain how risk is understood within their contextual reflections of risk thinking, addressing one or more features of risk illustrated in risk society in Section 2.1.1.

The expansion of Beck's risk society to health risk lies in the evolution of the reflexivity base mobilised when people define their risks. In simpler terms, this prompts the question: what evidence or sources do actors draw upon when deciding something is risky or not? For instance, British anthropologist Mary Douglas considers public decisions on health risk as cultural theories of body and infection (2002). In the context of homosexual individuals rejecting doctors' suggestions on mitigating AIDS, Douglas suggests that this should not be perceived as a 'weakness of understanding' but as a personal 'preference' to live a certain life (2002). She considers that individual decisions regarding risk-taking or risk-aversion can be attributed to personal preferences, where 'cultural theory shows the citizens reinforcing their theories of the body and infection in face of a severe crisis' (Douglas, 2002, p.103).

In addition to Douglas's cultural consideration of health risk as actors' preferences, there are also many health researchers interested in risk, resulting in a wealth of scholarship across different disciplines that intersect the concepts of risk and health. The significance of this interdisciplinary area is underscored by the establishment of the journal *Health, Risk & Society*, focusing on how health sectors understand and navigate risk and uncertainty. In addition to the works by Gabe Mythen and Deborah Lupton reviewed in Section 2.1.1, some of the works discussed in this chapter were written by health and risk scholars on this journal's editorial board, suggesting an active intellectual community interested in the interface between health and risk thinking.

Outlined by Andy Alaszewski (2005), the founding editor of *Health, Risk & Society* and a researcher in health science, the role of scientific experts in the era of risk is to assist the public in identifying risk and making it accessible through risk communication. In contrast with Douglas's (2002) perspective on culture and personal preferences, Alaszewski (2005) considers that public adherence to health experts' suggestions is complicated by the nature of risk knowledge, such as scientific rationality, which is inherently disputed and in competition with other information sources that people mobilise when attempting to assess, measure, and manage risk. The quote below illustrates how he interprets the uncertainty of risk assessment and the limitations of scientific research for individuals:

> Risk knowledge cannot actually be used directly by patients to inform their decision-making. Scientific research as in epidemiology generates knowledge about the probability of harmful events occurring within *populations*. Individual patients need information on their own *personal* risks. Expert assessments of risk tend to focus on the knowable and measurable components of risk, that is, the extent to which future events are the same as, and predictable by, the knowledge of past events. Such assessments by definition exclude uncertainty—those aspects that cannot be assessed and measured (Alaszewski, 2005, p.103, original emphasis).

This quote, through focusing on health and risk, aligns with the key characteristics of risk mentioned in Section 2.1.1: uncertainty attached to futurity-oriented anticipation and probability. It views health sciences as domains where risk is verifiable by past experiences. Thus, this quote considers that the instability of science partly stems from its inability to always provide definitive answers to uncertain risks relying on the probabilistic and predictive knowledge (Alaszewski, 2005).

In addition, according to Alaszewski (2005), scientific research and the knowledge of health experts primarily draw upon *collective* experiences, which may not apply universally to explain individual risks. This gap may lead to the public not solely relying on scientists' knowledge but supplementing it with alternative sources in the process of risk evaluation (e.g., personal experience). The divide between collective and individual experiences in risk is further manifested in the contextual definition of responsibility. As Section 2.1.4 will shortly elaborate, assuming responsible actions for collective interests during times of risk as a societal 'norm' might also disregard individual circumstances for those who might behave 'irresponsibly' against this norm. Thus, Alaszewski's interpretations (2005) are characterised by addressing probability and individuals' socio-cultural contexts as the core of defining risk.

Following Alaszewski's view on predicting future crises with current knowledge, Jose A. Cañada (2019), sociologist in STS, articulates how strategies for managing pandemic emergencies often draw reflective lessons from historical crises. In the analysis of global health emergency policies, Cañada notes that the core of preparing for pandemic emergencies involves constructing scenarios of '*virtual biological threats*' and formulating corresponding protocols to address these scenarios (2019). These virtual scenarios are often constructed based on historical risks, such as the references to SARS in the development of new bio-preparedness policies (Cañada, 2019, p.96). For instance, the experiences gained from the H1N1 pandemic informed national governments and pharmaceutical corporations to sign 'standby agreements' to both secure an adequate supply of medicine and minimise medical resource waste during the 'next' infectious disease outbreaks (Cañada, 2019, p.100). Cultural-political geographer Ben Anderson (2010) conceptualises this practice of constructing virtual threats to guide pandemic preparedness as '*anticipation*', through which decision-makers seek to build the connection between present actions and future consequences. Essentially, planning the preparedness strategies guided by anticipation is to evaluate 'how the future is related to contemporary anticipatory action' (Anderson, 2010, p.780). In brief, the premise of anticipating and preparing for a new global pandemic lies in believing 'the existence of the threat before acting on it', with a focus on 'what/how to prepare' in a reflexive way based on past crises, rather than hesitating about 'whether to prepare' (Cañada, 2019, p.96).

The scholars mentioned above each focus on one or more aspects of risk, such as cultural elements for Douglas (2002), probability and population knowledge for Alaszewski (2005), historical experiences for Cañada (2019), and future-oriented anticipation for Anderson (2010). These perspectives are further synthesised by Bob Heyman, another editorial board member of *Health, Risk & Society* and a researcher in healthcare risk management. His work (Heyman, 2010) proposes a comprehensive framework to conceptualise how discourses interpret the existence of certain risk around health and society. He views risk as 'the projection of uncertain expectation, viewed in terms of randomness, about the occurrence of a negatively valued outcome category within a selected time frame' (2010, p.19). Central to his work, Heyman emphasises four key elements that contribute to the construction of risk, including 'categorisation of events', 'value judgement about their negativity', 'expectations about their occurrence', and 'location in a temporal framework' (2010, p.21).

In the context of Covid, Heyman's four elements of risk definitions are further confirmed by Patrick Brown, the editor of *Health, Risk & Society*, although Brown uses slightly differently language compared to Heyman, including categorisation, (de)valuing and (de)legitimation, probabilistic knowledge, and time-framing (2020). Elsewhere, Brown's work with sociologist Maria Grazia Galantino (2020) further examines differences in global handling of Covid, where the comparative constructions of the above four elements become prominent in national discourses. For instance, for Brown and Galantino (2020), various outcomes of displaying mortality rates across countries can be viewed as cultural assemblages of risk definitions. These assemblages, such as numbers across time frames during Covid, involve classification of affected populations and their probability of being affected within given temporality, which ultimately promotes certain value judgements (Brown and Galantino, 2020).

Up to this point, this section has reviewed various interventions around risk, health, and society, which employ a Beck- and Giddens-style reflexive lens to understand how stakeholders mobilise their knowledge to manage risk. These interventions build upon Beck's work on risk uncertainty and provide more contextual considerations of how risk is defined in relation to health and society. To clarify these discussions so far, Table 1 offers a summary of what this section considers as a list of characteristics of 'risk thinking' and what risk thinking can manifest through the context of Covid.

Table 1: Key elements of risk thinking

Characteristic	**Explanation**	**References**	**Examples in Covid**
Classification	Categorise outcomes before they can become a	Heyman, 2010; Brown, 2020; Brown and Galantino, 2020	The 'young' and 'old' populations as 'vulnerable' to Covid.

Characteristic	Explanation	References	Examples in Covid
	selected focus of risk analysis.		
Probability	Develop expectations about the likelihood of an adverse outcome occurring, using the past as a guide to the future.	Alaszewski, 2005; Heyman, 2010; Anderson, 2010; Cañada, 2019; Brown, 2020; Brown and Galantino, 2020	The use of numbers, such as mortality rates, rates of infection, and their comparisons with other cases including seasonal flu.
Temporality	Place temporal boundaries around a risk before any kind of risk calculation can be undertaken.	Heyman, 2010; Brown, 2020; Brown and Galantino, 2020	Time frames of Covid (long- or short-term risk) and imaginaries of the future.
Value judgement	Make value judgements, positive and negative, about the multiple consequences seen to arise from taking a risk.	Heyman, 2010; Brown, 2020; Brown and Galantino, 2020	Decide what matters as concerns (Covid being spread to 'home') or assurance (Covid familiarity with other flu).
Socio-cultural contexts	Place risk analysis within culturally sensitive contexts to understand culturally standardised responses to risk.	Alaszewski, 2005; Douglas, 2002	Covid being framed and managed across countries and cultures.

Table 1 seeks to encapsulate key characteristics of risk thinking actively discussed within the scholarship of health, risk, and society, as illustrated in this section. Actors providing risk definitions play a primary role in establishing clarity through providing 'solid' answers to the above five dimensions. In other words, to understand the politics of defining risk, scholars are suggested to explore risk discourses through actors' discussions of classification, probability, and value judgement within specific temporal and socio-cultural contexts. While the last characteristic – socio-cultural contexts – is not independently considered a characteristic in the literature, the other four features are frequently addressed in a comparative view, especially in light of Covid as a global crisis differently handled by individual countries (Brown and Galantino, 2020). Practically, acknowledging these elements of risk thinking helps us comprehend how the definition of risk is developed and where the variance of definitions lies in the following analytical chapters.

Empirically, numbers become a key entry point for publics to understand these five characteristics of risk thinking. In Canadian philosopher Ian Hacking's *The Taming of Chance* (1990), statistics play a role in shaping people's perceptions of a given issue by facilitating particular formats of classification

and value judgement. Important to Hacking, the representation of statistical evidence provides the public with 'a fundamentally *quantitative feel* for nature, how it is, and how it ought to be' (1990, p.3, my emphasis). For instance, communicating a pandemic often involves presenting statistics of local cases and daily infection rates, making data-based journalism an important resource for publics understanding the pandemic and planning their responses (Dahl and Ytre-Arne, 2023). Through interviews with people who regularly monitored these metrics, the numbers in news products also affected how Covid was emotionally coped with, such as feelings of control, fear and anxiety (Dahl and Ytre-Arne, 2023)

Taking Douglas's perspectives of cultural contexts (2002) into consideration, comparing numbers makes the public question why 'we' handle health events similarly to or differently from 'others'. Extensive attempts in data collection and methods of communicating these outputs during the initial outbreak of Covid were demonstrative of how the statistical presentation of a pandemic might influence public understanding of risk. Employing a comparative approach to consider the role of statistics in addressing risk and uncertainty associated with Covid, Brown's research (2020) notes that the power of numbers comes from the justification for 'our' strategies over 'others', such as using low mortality rates in younger age groups to describe Covid as 'flu-like' in seriousness. Methodologically, Brown (2020) suggests that analysing numbers in a comparative framework allows researchers to observe how similar types of numerical data (e.g., mortality and infection rates) can be interpreted flexibly across different actors. Importantly, variances in numbers demonstrate how the socio-cultural context is closely related to the other four aspects in Table 1, where risk definitions embedded in numbers are repeatedly (de)valued and (re)visited to describe Covid in certain ways. This sheds light on the value of building comparative research to see how different actors justify their narratives within similar risk contexts.

In summary, this section discussed how the perspectives of risk society in the 1990s laid a crucial foundation for scholarship in risk, health, and society after the 2000s. The risk concept in health discussions, therefore, still serves as a connection bridging the past, present, and future in line with Giddens's idea of reflexivity. In this sense, when actors draw upon different evidence reflexively to legitimise their risk definitions, they are constructing narratives around five key features of risk thinking: classification, probability, temporality, value judgement, and socio-cultural contexts. Acknowledging these five features helps us understand how health risk is defined and justified within stakeholders' mechanisms of reflexive thinking.

2.1.3 Politics of defining risk

Having outlined how scholarship at the intersection of risk, health, and society has developed Beck's ideas about risk, this section moves on to examine how risk has been defined. As discussed earlier, the risk society perspective is reflexive, uncertain, and future-oriented, and these characteristics provoke controversies over public definitions of risks.

As a risk theorist building on Beck's work, Gabe Mythen notes that the contingency of defining risk, and actors' disagreements on the meaning and effects of risk make risk a fascinating topic for academic exploration (2004, p.2). As discussed in Section 2.1.1, the proliferation of risk definition partly comes from the uncertain nature of risk (Beck, 1992, p.26), given that communities can be differently influenced by the same risk. For instance, drawing on the ethnography of chemical pollution management, geographer Thom Davies (2022) notes that pollutants with visible impacts (e.g., skin irritations, headaches) on on-site residents may not be directly perceptible for chemical companies and environmental governments situated at a distance from the chemical plants. Similar to Beck's idea of delocalised risk, Davies argues that health risks such as chemical pollution might not disappear for everyone but become invisible for some stakeholders (2022). Instead of assuming that pollution is universally out of sight for everyone, we are better to acknowledge its contingency by asking *for whom* pollution is out of sight (Davies, 2022).

In Davies's example above, an imbalance in power distribution can be sensed between different stakeholders, including people directly affected by the health risk, those indirectly affected, non-affected ones, and those in charge of classifying the former three groups. Ben Anderson considers this process of defining value judgements:

> Any type of anticipatory action will only provide relief, or promise to provide relief, to a valued life, not necessarily all of life. Certain lives may have to be abandoned, damaged or destroyed in order to protect, save or care for life (Anderson, 2010, p.780).

In this definition, actors who define what is risky have to (re)legitimate whose lives should be saved and whose abandoned (Anderson, 2010, p.788). In this sense, argues Beck, the relationship between decision-makers and objects classified as risky is ultimately a reflection of risk and power:

> Risk presumes a decision, therefore a decision-maker, and produces a radical asymmetry between those who take, define the risks and profit from them, and those who are assigned to them, who have to suffer the 'unforeseen side effects' of the decisions of others, perhaps even

> pay for them with their lives, without having had the chance to be involved in the decision-making process (Beck, 2008, p.7).

As definitions transform into judgements, actors providing the definitions are 'empowered' to allocate the roles within their understandings, designating entities in the roles of risk-producers, benefit owners, responsible actors, or knowledgeable experts (Beck, 2008, p.8). Focusing on infectious diseases specifically, Sarah Dry and Melissa Leach underscore that constructing diseases also means to 'construct people and populations, labelling and making moral judgements about them', which can be done in numerous ways (2010, p.5). For researchers comparing different disease interpretations, they might discern how narratives 'justify and shape different pathways of response' (Dry and Leach, 2010, pp.5-6). Therefore, it is crucial to remember that not all definitions are equally treated. While there are no inherent 'wrong' definitions, some knowledge can become 'prominent' in acting as 'best solutions' (e.g., viewing a disease as eliminable within epidemiology), which potentially marginalises alternative definitions (e.g., viewing it as non-eliminable given historical and geographical factors) (Dry and Leach, 2010).

Among the actors providing definitions of risk, governments and their welfare systems can be seen as 'risk institutions'. For Mythen (2004), the establishment of these political institutions is committed to fulfilling citizens' requirements for safety and security, collectively sheltering people through the provisions of 'health and welfare, the economy, law, and insurance' (p.21). Thus, when researching risk definitions promoted by nation-states, their political commitments further complicate the prominent role of science expertise, introduced in Section 2.1.1. For instance, sociologist Joost van Loon (2014) suggests that the scientific interpretation of risks can be *politicised* within nation-states, where science and other risk assessment approaches are referenced together.

> Science (with a capital S') and science (without) both matter, but whereas the first cannot extend beyond the narrative forms of epistemic politics, the second can … What seems more difficult for science (as science) is determining the *significance* of what it means in political terms … Science (with a capital 'S') provides *one* discursive formation for the signification of a risk, but this operates alongside other discursive formations (such as risk assessments in terms of insurance, security, reputation, market value, liability, strategic potential). Assessing risk is never merely a question of validity but also of significance (symbolic, political) as well as value (financial strategic) (van Loon, 2014, p.450, emphasis in original).

This definition reminds people that unpacking definitions of risk involves acknowledging value judgements coming from multiple evidence beyond scientific thinking alone (Beck, 1992, p.55), or as the quote puts it, based on multiple 'discursive formations' (van Loon, 2014, p.450). To understand

scientific expertise and other knowledge intertwining in risk definitions, this section proposes the mechanism of '*Science + X*'. Aligning with van Loon's quote above, Science (with a capital S) represents rigorous scientific knowledge as an epistemic approach, and X represents other discursive formations involved in risk definitions, such as political and financial evaluations of risk. This combination, such as 'Science + political significance', aims to help scholars explore how certain risks are approached from scientific and political aspects.

Other scholars also provide examples of X. Sociologist Thomasina Borkman considers 'experiential knowledge' as a crucial element of X in risk management (1976). For instance, within health self-help groups, members could draw on their personal experiences to support others facing similar health risks. This reflects the prioritisation of first-hand experiential knowledge in risk definitions over the 'professional knowledge' gained through formal training (e.g., education) (Borkman, 1976). In addition to experiential knowledge, Jens O. Zinn (2006) also notes that risk can be subjectively and contingently defined. For him, X could be personal emotions, social values, and cultural traditions used together with scientific probabilistic knowledge in specific situations (Zinn, 2006, p.276).

Acknowledging the interaction between scientific knowledge and other forms of knowledge within 'Science + X' also prompts further academic inquiry into how different evidence beyond Science is supplemented to interpret the significance and value of particular issues. For instance, STS researcher Robert Evans (2008) interprets this diversity of knowledge bases using an example where farmworkers using herbicides and chemists conducting laboratory tests of the chemicals struggle to reach a consensus on chemist safety. This disagreement can reflect the power dynamics between different types of knowledge and their roles in shaping distinct risk definitions (Evans, 2008). Therefore, exploring the politics of defining risk involves both unravelling the power dynamics among actors competing to provide definitions, and the targets being defined within the risk discourses. This highlights the importance for researchers of being sensitive to the combination of different types of evidence (traditional scientific evidence and other forms of evidence, such as politics, financial value, experiential knowledge) aimed at strengthening the proposed definitions.

In summary, this section noted that the proliferation of risk definitions resulted from the inherent uncertainty in risk, as detailed in Sections 2.1.1 and 2.1.2. It then discussed how the politics of defining risk is characterised by value judgements and power dynamics, further complicated by the mobilisation of multiple sources of evidence as 'Science + X' drawn on to construct the definitions. The next section extends this discussion on the politics of defining risk and specifically explores 'responsibility' as a manifestation of risk definitions.

2.1.4 Responsibility in risk: defining and articulating roles

After Section 2.1.3 discussed the general politics of defining risk, this section narrows focus to explore how the roles surrounding risk are distributed among stakeholders. Importantly, when different actors get involved in managing risk, they have to decide who is accountable for responding to particular aspects of risk. In the face of limited knowledge and an uncertain future, these decisions might also be temporal with constant adjustments, as new facets of risk come into play, together with new, reflexive knowledge drawn from them. For example, in research on the perceptions of the H1N1 pandemic among French-speaking Switzerland residents, social psychologists found that the interviewees allocated three roles to the actors involved in managing H1N1: heroes, villains, and victims (Wagner-Egger *et al*., 2011). While participants held mixed feelings towards political and international authorities by labelling them both as heroes and villains, they firmly classified pharmaceutical companies as profit-driven 'villains' and physicians as trusted 'heroes' (Wagner-Egger *et al*., 2011). Therefore, classifying actions or actors as 'responsible' can be seen as a manifestation of defining risk contingent on public judgements.

To continue the discussions of value judgement and power in risk definitions from Section 2.1.3, this section specifically unpacks 'responsibility' as a manifestation of defining risk. Beginning with the discussion of the meaning of responsibility, this section then notes two key actors, governments and individuals, and the tension between the two within the discourse of risk and health.

The word 'responsibility' has multiple registers: when considered as *duty*, it means 'something that it is your job or duty to deal with' (Cambridge Dictionary, 2024). Additionally, it carries an arguably more affective orientation, equating to *blame*, with an emphasis on 'blame for something that has happened' (Cambridge Dictionary, 2024). It might also gesture towards the adverse term *good judgement*, meaning 'good judgement and the ability to act correctly and make decisions on your own' (Cambridge Dictionary, 2024).

A more relevant explanation of responsibility within the context of risk can be found in Giddens's essay *Risk and Responsibility* (1999), where he provides three interpretations of responsibility:

> In one sense, someone who is responsible for an event can be said to be the author of that event. This is the original sense of 'responsible', which links it with causality or agency. Another meaning of responsibility is where we speak of someone being responsible if he or she acts in an ethical or accountable manner. Responsibility also however means obligation, or liability, and this is the most interesting sense to counterpose with risk. The relation between risk and responsibility can be easily stated, at least on an abstract level. Risks only exist when

> there are decisions to be taken, for reasons given earlier. The idea of responsibility also presumes decisions. What brings into play the notion of responsibility is that someone takes a decision having discernable consequences (Giddens, 1999, p.8).

Giddens's interpretation of responsibility further aligns with the three dimensions addressed by the Cambridge Dictionary. For Giddens (1999), responsibility can first be comprehended as the *causality* and *authorship* of the occurrence of issues, which may be related to blame. Its second meaning involves providing good judgement, considering people's *ethical* and *accountable behaviours* as manifestations of being responsible. Its third meaning, *obligation*, for Giddens, arises against risk when people are aware of the potential consequences of being in charge of something but still deciding to take action.

How does Giddens' explanation of responsibility speak to the concept of risk? For Beck, responsibility, like the definition of risk, is constructed reflexively, drawing on multiple evidence.

> In modernization risks, then, things which are substantively-objectively, spatially and temporally disparate are drawn together causally and thus brought into a social and legal context of responsibility. As we have known at least since Hume, however, presumptions of causality escape our perception. They must always be imagined, implied to be true, believed. (Beck, 1992, p.28).

Beck's interpretation of responsibility emphasises identifying exact causality of the occurrence of risk, which is similar to attributing authorship of certain issues in Giddens's quotes. Additionally, compared to Giddens's focus on explaining three manifestations of responsibility, Beck emphasises the process of determining responsibility as *constructed* and *justified*. This construction is similar to the process of defining risk mentioned in Section 2.1.3, which also draws on multiple pieces of evidence to prove things to be threatening.

As Section 2.1.2 elaborated, the complexity of risk means it can be challenging to attribute the responsibility for containing or controlling risk to particular actors (or in Giddens's words, to identify causality). Thus, this study decides not to focus on the dimensions of causality within responsibility, such as the identification of a specific actor as the cause of a specific risk and the narratives of blame. Instead, synthesising Giddens's and Beck's views on responsibility, this study understands responsibility as *obligations* that actors are supposed to complete, or as *ethical* and *accountable* behaviours. In short, this study focuses on exploring how actors describe themselves as fulfilling respective obligations and/or demonstrating ethical or accountable characteristics.

In the literature on public health, two actors are seen as especially prominent in constructing and fulfilling responsibility at the intersection of risk and health: nation-states and individuals. For example, the establishment of nation-states and welfare systems, for Beck, Mythen, and Giddens, is associated with the collective needs of securing safety and managing challenges from external risks.

> But the welfare state is more correctly seen as a form of collective risk management … The welfare state is tied into the basic suppositions of modernity - that security comes from the ever more effective control by human beings of their material and social environments … It is more illuminating to see the crisis of the welfare state as a crisis of risk management. The welfare state was built up on the presumption of external or passive risk. If you become unemployed, fall ill, become disabled or lose your home, the welfare state will step in to protect you (Giddens, 1999, p.10).

> Beck contends that the gradual development of welfare systems within nation states was based upon two common goals. First, welfare systems acted as an antidote to the inevitable problems produced by rapid technological, economic and social change. Second, the formal welfare state provided citizens with a vehicle for processing various safety and security needs. In response to citizenship demands, organised systems were developed in health and welfare, the economy, law and insurance. The legitimacy of government thus became dependent upon the ability of the state to fulfil security pledges … Beck instead maps out the welfare functions of structures of risk management (Mythen, 2004, p.21).

These two quotes respectively conceptualise welfare systems as 'a form of collective risk management' and 'structures of risk management' to describe the roles of nation-states' in fulfilling their commitments to provide security and address the risk-avoidance needs of their populations. To encapsulate the significant role of welfare states in light of risk, this thesis integrates these two into the notion of *structures of collective risk management*. For example, national commitments to safeguard population well-being are further exemplified by ongoing efforts to develop and update policies addressing public health emergencies, which will be discussed in Chapter 3.

While nations have long been considered political mechanisms responsible for individual well-being, scholarship in the sociology of health emphasises another key aspect of managing health risks: individual responsibilities. In the 18th century, the rise of the middle class and medical advancements in American and European countries popularised the fashion for considering personal health an individual responsibility (Crawford, 1994). In the 19th century, maintaining personal health was gradually considered a reflection of personal virtues, such as self-discipline (Crawford, 1994).

In this historical context, sociologists Alan Petersen and Deborah Lupton (1996) raised the concept of 'new public health' to reflect individuals' initiatives in dealing with health risk. Vitally for Petersen and Lupton, the concept of 'good citizenship' in new public health interprets personal health within a larger picture of national labour and productivity – publics are encouraged to maintain their health to contribute to their families and nations (1996). Given the healthy body is regarded as a societal 'norm' away from 'diseased', 'unhygienic', and other health risks, to achieve responsible citizenship, individuals are encouraged to actively engage with 'good' practices of monitoring personal health, staying alert to potential risks, and avoiding harmful habits (Crawford, 1994). The occurrence of poor health, in the sense of responsible citizenship, implies persons also fail to properly manage the risks bodily and must pay for their 'risk portfolio' (Crawford, 1994, p.1357).

As mentioned above, previous scholarship on public health has considered management of health risk as shared duties of government discipline and individual efforts. This points to a tension of responsibility attribution between the state and individuals. The core of this tension is contingent perceptions of individuals' capacities for handling risks. On one hand, handling environmental hazards such as pollution, chemicals, and global warming might be far beyond individuals' abilities, which necessitates national or cross-national interventions (Petersen and Lupton, 1996, p.72). On the other hand, individuals are expected to pay for health risks because of their 'lifestyle choices' (e.g., the link between cancer and diet, smoking, and alcohol use) (Petersen and Lupton, 1996, p.115). This perspective also includes respect for others' lifestyles, such as passive smoking, and HIV dissemination. However, Petersen and Lupton further argue that states are still the dominant actors in regulating public health, although individuals' roles are also acknowledged:

> While the overt rhetoric of the new public health is directed towards appeals to the notion of the 'civil citizen' in its emphasis on self-regulation and self-control, there remains a notion that the state should sometimes step in to guide or even control its citizens … The state still takes a largely paternalistic approach to the task of monitoring and regulating its citizens' health, albeit cloaked in the discourse of individual and community 'voluntary participation' (Petersen and Lupton, 1996, p.71).

This conceptualisation of responsibilities closely aligns with the concept of neoliberalism, which shares a common thread in shifting roles between individuals and governments. As David Harvey defines in his influential work *A Brief History of Neoliberalism*, neoliberalism primarily discusses state involvement in economic development and social provisions, which also varies globally (2005):

> Neoliberalism is in the first instance a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and

> skills within an institutional framework characterised by strong private property rights, free markets, and free trade. The role of the state is to create and preserve an institutional framework appropriate to such practices. The state has to guarantee, for example, the quality and integrity of money … state interventions in markets (once created) must be kept to a bare minimum… (Harvey, 2005, p.2).

Harvey's definition, with its focus on market and labour, promotes individual initiative within a regulated 'free' market, encouraging self-management while the state 'steps back' and intervenes only to maintain the market's basic functioning. This definition illustrates a foundational (Western-based) understanding of neoliberalism scholarship, which has since expanded into other contexts, such as public health. For example, expanding beyond Harvey's economic focus, Lupton (2012) interprets neoliberalism within a context of health and well-being, as a shift from managing populations passively through 'coercion and punishment' to employing softer strategies that encourage individuals to take on personal obligations voluntarily.

> From this perspective, it is argued that in place of older-style measures of government, in which coercion and punishment rendered citizens docile and governable, under neoliberal government citizens are expected to take responsibility for their own actions and welfare. It is in the state's interest that its citizens are productive and self-regulated, but this is generally not achieved in a coercive manner. Rather, citizens are encouraged via incentives to voluntarily position themselves as responsible for themselves, to monitor, regulate, and discipline their own bodies in their own interest (Lupton, 2012, p.335).

Synthesising Harvey's (2005) and Lupton's (2012) works, a neoliberal government limits its direct interventions in promoting public health. Instead, it engages indirectly in public health management through creating 'incentives' to enhance individual initiatives in practising self-management and staying in good health, such as through education and media communication (Lupton, 2012, p.335). Hence, official information disseminated through social media can be viewed as 'incentives' to prompt individuals to fulfil their duties as autonomous members of society (Zinn, 2006, p.279). While this thesis does not focus on the roles of market and individual labour in neoliberalism, as Harvey's work does (2005), it draws on neoliberalism as a 'technique of administration' and a 'metaphor' (Ong, 2007, p.5) to interpret official narratives of self-management and responsibility allocation.

Harvey notes that neoliberalism has also taken shape in China, particularly through opening-up policies in international trade since the 1980s. However, neoliberalism in China has evolved in ways distinct from Western contexts, such as the US (Harvey, 2005, p.151). Drawing on Harvey's conceptualisation of a typical neoliberal state — characterised by both neoliberal institutions and

liberal democracy — Anthropologist Aihwa Ong (2006, p.3; 2007, p.4) argues that China's unique combination of neoliberal policies and state authoritarianism marks a key distinction, as seen in other East and Southeast Asian countries as well.

Similar to Western counterparts, neoliberal thinking at the individual level in China and other Asian cultures emphasises self-management and individual capabilities for making calculative, 'educative' decisions (Ong, 2007, pp.5-6). The novelty of Chinese neoliberalism comes from how self-management and productivity are directed toward supporting both economic development and social stability, allowing self-reliance to co-exist with state-centric governance. Cultural anthropologist Lisa M. Hoffman (2006) illustrates this through the end of direct state job assignments for graduates in China, where young professionals are encouraged to use self-managed approaches, such as job fairs, to compete for employment and decide their professional paths, thereby contributing as self-developed talents to social progress.

In addition to cultural variations in neoliberalism cultures, even within similar cultures, assuming everyone has equal capacities for staying 'healthy' partly fails to address systematic inequality in society. In Bunton, Nettleton and Burrows's *The Sociology of Health Promotion* (1995), they argue that health campaigns are not fully universally applicable because of the socio-economic divergences within populations. Structural limitations include various conditions of the underprivileged, such as poverty, homelessness, and poor working environments (Bunton, Nettleton and Burrows, 1995, p.42). While vulnerable groups are aware of the causes of particular risks, they may not be able to change the physical settings of the environment because of the high cost of setting up new preventions, barriers from individual power deficiency, and their socio-economic status (Williams and Fullagar, 2019).

More recent literature demonstrates the recurrence of this dilemma between government and individuals' roles in managing public health during Covid. For instance, the state's appeal to responsible citizenship might not be a consensus for everyone. As governments suggested individuals work from home and self-isolate when sick, people might have encountered structural barriers that were difficult to change immediately (such as limited Internet access, no isolated rooms). Some had to travel 'irresponsibly' against lockdown policies despite showing symptoms, as risk of infection was assessed to be less egregious than the consequences of losing jobs (Labour Behind the Label, 2020). Thus, it would be risky to assume 'responsibility' as a homogenous standard across global populations without seeing the different capacities of fulfilling duties across communities and countries during Covid (Ballo *et al*., 2022).

Overall, building upon the discussion of risk definition in Section 2.1.3, this section suggested that actions determining responsibility can be viewed as manifestations of defining risk, with a similar

emphasis on value judgements and power. To articulate the concept of responsibility, this section defined the meaning of 'responsibility' in this study, centred on actors' ethical efforts to fulfil their obligations and how these efforts are constructed. In this sense, nation-states can be perceived as institutions of 'collective risk management', established and reinforced on the fundamental presumption of external risks.

Having outlined the meaning of responsibility, this section discussed how national interventions and individual citizenship intertwine in managing public health risk. It emphasised that state responsibility and responsible citizenship are contingent on broader socio-cultural contexts and that they may evolve across time and populations. This contingency necessitates a critical assessment of responsibility attribution in specific health crises within specific populations. Therefore, locating the responsibility discussions within the context of Covid in China and the UK, this study asks:

> RQ2: Which actions and actors were portrayed as responsible for the pandemic's management?

2.2 Risk as a global concern

According to Beck (1992), the risk society perspective not only brings new challenges and opportunities to different publics, but also connects nation-states through the delocalisation of risks. Furthermore, due to the exponential growth of new cases in multiple countries, Covid was labelled as a 'pandemic' instead of an 'epidemic' or 'endemic', with the latter two being used for diseases that remain within a specific region or population. Thus, both the main theoretical concept (risk) and the contextual research context of this study (the Covid-19 pandemic) indicate the importance of discussing risk and health at the global level.

To address the global nature of risk, this section seeks to explore how risk becomes an important vector in thinking through national identities and relationships between nations. Drawing on debates on globalisation, Section 2.2.1 articulates how risk reshapes relations between countries. To deepen the understanding of the interrelated roles of individuals, governments, and nations, Section 2.2.2 focuses on vaccination as a 'risk-mitigation technology' for managing multiple threats on both biological and societal levels. Finally, following the discussions on risk and its interactions with key concepts including health, responsibility, and globalisation, Section 2.2.3 critically reviews the limitations of solely relying on the risk society perspective to construct the theoretical framework of this study. Essentially, acknowledging these limitations necessitates the incorporation of the politics of

digital platforms and cross-cultural contexts into the theoretical framework, which will be addressed in Section 3.3 and Chapter 4, respectively.

2.2.1 Reconsidering globalisation in risk societies

Central to Beck's theory, the risk society introduces a paradoxical debate between international collaboration and intense nationalism during crises. He argues that hierarchies, formed during class society based on distributions of wealth, are partly *challenged* by risk, because all humans sometimes face inescapable threats, such as pollutants in drinking water, foodstuffs, and air (Beck, 1992, p.36; Mythen, 2004, pp.24-27). Giddens conceptualises this omnipresence of threats as an 'environment of risk' to understand how risks, such as ecological disasters, can go beyond individual responses and make the security and risk mitigation shared aims among many people (1990, p.36). This brings new equality among more and less wealthy countries, as wealth may not necessarily equate to the ability to mitigate risk when crises become omnipresent.

However, Beck adds that the risk society does not abandon but *strengthens* the class society given 'a systematic attraction between extreme poverty and extreme risks' (1992, p.41). Countries at the top of the wealth pyramid may 'purchase' safety, thereby decreasing risk compared to those at the risk-intensified bottom (Beck, 1992, p.35). Beck illustrates this point using the example of crop pesticides: in some countries with lower incomes, individuals have to endure pesticide poisoning in agriculture industries because not using pesticides may result in crop failure and potentially trigger a national famine crisis (1992, p.42). In Beck's view, the use of chemicals can be seen as a temporary relief, where food dependence on imports is 'evaluated' to outweigh the costs of poisoning (1992). This example sheds light on the unequal resilience in risk society due to the different strata formed in class society (e.g., education, occupation). In this way, countries privileged in education, information resources, and social power may have higher possibilities of avoiding risk.

Additionally, the paradoxical dynamics within the risk society recur at the global level. According to Beck (1992), the interplay between risk and wealth simultaneously introduces new equality among countries while also reflecting existing gaps in national resources. On one hand, the delocalisation of risk emphasises the importance of international cooperation (Beck, 1992, p.40). In the face of global challenges such as climate change, single-state institutions may not efficiently address these risks (Beck, 2016, p.261). However, this global collaboration is also characterised as 'cosmopolitan realpolitik', as major global players may not be interested in engaging with issues perceived as 'less risky' for them (Beck, 2008, p.12). In other words, the globalisation of risk necessitates a 'political paradigm shift', which relies on compromises from the wealthiest nations in mediating global risk (e.g., the US's role in managing carbon emissions).

This paradox of 'blurring and strengthening borders' in the context of globalisation is exemplified in an empirical study by sociologists Abeysinghe and White, which analyses Australian newspapers' discourses on managing global avian flu (2011). For example, countries are allocated different roles, such as being blamed as contagion sources, (in)active in managing diseases, or responsible for protecting their citizens (Abeysinghe and White, 2011). Although Beck's original work (1992) does not explicitly conceptualise infectious diseases as prominent modernity risk, this study still echoes Beck's view on globalisation as paradoxical: during the global spread of infectious diseases, actors acknowledge the blurring of national borders, while concurrently strengthening them by mobilising the narratives that distinguish between 'normal/healthy/good body' and 'deviant/diseased body of the other' (Abeysinghe and White, 2011, p.321).

Thus, the gap between a growing need to address emerging cross-national risks and the scarcity of agencies for mediating global disputes becomes a key concern in risk society (Beck, 1992, p.48). Ideally, there are a few cross-national institutions, such as the United Nations, with a relatively independent stance on distributing responsibilities. However, international negotiation is often complicated by global capitalism and politics. In some instances, these efforts turn out to be inefficient when confronted with overwhelming risks such as global poverty, the food crisis, and the financial crisis (Beck, 2016, p.262). Beck conceptualises this dilemma as 'organised irresponsibility', indicating that responsibility becomes a 'hot potato' that stakeholders are reluctant to take on (1992, p.33). Here 'organised' means escaping or minimising responsibility as a tacit option in the global system, where 'one can do something and continue doing it without having to take personal responsibility for it' (Beck, 1992, p.33).

To understand how responsibility is ideally painted and practically defined, and to situate and clarify the context of this thesis's focus on a human communicable disease pandemic, it is particularly helpful to focus on the social science literature that draws these considerations of risk and nation into conversations with the issue of vaccination. The next section focuses on vaccination, to articulate how it becomes an important 'risk-mitigation technology' aimed at minimising impacts from specific public health risks.

2.2.2 Understanding vaccination at the nexus of risk, nations, and globalisation

As outlined in Section 2.2.1, the scholarship conceptualising risk shows how risk becomes an important mediator in understanding relationships between nations. This necessitates contextual exploration by interrogating how countries navigate the appeal for global collaboration and their national interests during crises. Given the specific focus of this thesis on Covid, it is appropriate to

explore these themes in relation to vaccination, which brings into relief the complex coexistence of global solidarity and nationalism in the context of health risk.

Vaccination, in terms of its medical mechanism, is described as a process of 'defensive training' by the World Health Organisation (WHO), which helps the human body generate antibodies by fighting against a controllable amount of injected disease sources (WHO, 2020a). Gender and sexuality scholar Ed Cohen uses the term 'immunity-as-defence' to capture this biomedicine function, which combines the juridical term 'immunity' (as 'exemption') and the political notion of 'self-defence' (as 'natural rights') (2009, p.3). According to Cohen (2009), vaccination decisions are based on publics' acceptance of the vaccine's promises, which claim to strengthen people's immunity and defend against the intrusion of foreign agents (p.2). Similarly, in the view of anthropologist Emily Martin, immunity functions as a 'boundary' between the internal self/body and external non-self/enemies, helping the body to identify and eradicate 'intruders' (1990, p.414). In brief, vaccination biologically functions as a *risk-mitigation technology* that is designed to strengthen immunity to safeguard the human body from external risk. The use of this technology, originally designed *for* minimising the probabilities of risk, also entails a certain risk *of* vaccination side effects.

At the population level, widespread vaccination may induce shared protection against the virus, a phenomenon known as 'herd immunity'. According to geneticists Randolph and Barreiro (2020), this implies that unvaccinated groups can be indirectly protected when the proportion of vaccinated individuals reaches a certain level to establish population immunity. This is considered crucial in extensive vaccination programmes to safeguard individuals ineligible to be vaccinated, such as young age groups and those with compromised immune systems (Randolph and Barreiro, 2020). While humans can also generate antibodies through natural infection, the WHO (2020a) officially encourages vaccine-based herd immunity to minimise unexpected cases and deaths.

In this context, personal decisions about vaccination, for epidemiologists Fine and colleagues (2011), are more complicated than other medical treatments, because personal choices might affect the national level of immunity. In other words, vaccination might be understood not only as a medical action, but also as a social and moral decision related to shared interests. Thus, vaccination should be viewed as both an epidemiological and a social act intertwined with the collective management of risk. The complexity of personal vaccination decisions arises from varying public perceptions balancing the risk *of* taking vaccines against the risk of infection, as well as the broader impacts on public health (Berezin and Eads, 2016). This makes the narratives of vaccination a relevant empirical base to explore the interplay between health, risk, responsibility, and society.

Having discussed the significance of vaccination for both individual health and society, this section moves on to consider vaccination at the international level. As discussed in Section 2.2.1, nation-states are not always equally capable of managing health risk. During Covid, several mechanisms were initiated to respond to the global demand for vaccine optimisation. For instance, the operation of Covid-19 Vaccines Global Access (COVAX) from April 2020 to December 2023 aimed to support the research and production of Covid vaccine products, seeking to further address the unequal access to vaccines among nation-states (WHO, no date-c).

However, as mentioned in Section 2.2.1, the effectiveness of cross-national collaboration is largely contingent upon compromises made by wealthier nations. For instance, medicine researchers consider that competing vaccine procurements by high-resource countries have reinforced the 'my-country-first' acquiescence, which prioritises domestic vaccination as primary duties of nation-states (Katz *et al*., 2021). Although during Covid there were vaccine equality schemes such as COVAX to support the reallocation of vaccines, delayed donations after the initial outbreak, the affordability of vaccine prices set by pharmaceutical companies, and unseen trade-offs were substantial obstacles affecting the efficiency of these collaborative efforts (Rutschman, 2020).

This phenomenon can be conceptualised as *vaccine nationalism*. It originally referred to vaccine access being concentrated in well-resourced countries as commercial products, prioritising domestic vaccine supplies over the needs of other countries (Riaz *et al*., 2021). This is often done through advance contracts (e.g., pre-production agreements) between state governments and the pharmaceutical industries (Zhou, 2022). By stockpiling most vaccines in a few countries, vaccine nationalism is considered to potentially exaggerate the resource gaps between those with the most and least purchase capacities (Halabi and Rutschman, 2022, p.10). While prioritising resources for domestic populations aligns with nation-oriented risk management strategies, this practice may conflict with the character of vaccines as a public good aimed at establishing global immunity against public health risks. This empirically manifests the paradox described by Beck (2008) in Section 2.2.1, suggesting that international cooperation might be contingent on the involvement of major global players.

While national vaccination programmes have biological implications for the spread of viruses domestically and globally (or distribution of risk theoretically), vaccines also serve as rhetorical devices with other meanings that extend beyond their initial biological purposes. For example, vaccines – functioning as biological technologies for managing health risk – are also regarded as symbols or vehicles of *national power*. In Gareth Millward's book about the UK's history of vaccination programmes, the development and maintenance of vaccination programmes signifies the local or national power of 'advancements and ability to solve complex problems' (2019, p.12), which

explains the extensive advertising efforts encouraging vaccination uptake in the UK. Therefore, portraying vaccine nationalism simply as a vaccine supply issue might fail to consider the politics behind the vaccines in light of risk. This informs medical researchers of the rhetorical implications of vaccine nationalism:

> Vaccine nationalism is most often associated with national control and ownership of vaccines. However, there is a secondary symbolic meaning by attaching a national '*character*' to vaccines, often expressed through nationalist metaphors of winning and achievement (Vanderslott *et al*., 2021, p.3, my emphasis).

This definition suggests a need for further attention to be paid to specific characteristics of nations, or 'national characters', as expressed through the narratives of nation-initiated vaccination programmes (e.g., leadership in technology). The concept of national characters, as defined by psychologists McCrae and Terracciano (2006), refers to 'the shared perception of personality characteristics typical of citizens of a particular nation' (p.156). Narratives of national characters share some similarities with national stereotypes, such as the historical binary construction of 'North/South, strong/weak, and central/peripheral' (Leerssen, 2000). In essence, national characters relate to the *perceived* and *constructed* (not accurately pre-existing) personality characteristics of typical citizens of a nation or the nation itself, which distinguishes them from other cultures (Leerssen, 2000). Therefore, this study extends the view of vaccination as products with competing ownership, which seeks to understand national traits and values associated with the particular nation that develops a vaccine.

In summary, this section has explored three dimensions of vaccination closely associated with previously mentioned concepts, including risk, health, responsibility, and globalisation: bodily, vaccines operate as 'risk-mitigation technologies' to minimise the probability of illness (or reduce risk) through strengthening bodily 'immunity'. This mechanism conceptually aligns with the discussion of health, body, and risk in Section 2.1.2. At the population level, personal vaccination choices must be understood in relationship with their effects upon 'herd immunity'. This adds moral significance into individual choices that may affect national well-being, aligning with the concept of individual responsibility in the face of collective risk, as outlined in Section 2.1.4. Finally, this section discussed how nation-based vaccination activities regarding vaccination exemplify the paradox of international collaboration versus national interests in risk, as noted in Section 2.2.1.

Therefore, to incorporate these rhetorical meanings of vaccines at the national level, this thesis does not merely follow the concept of 'vaccine nationalism' as a practice of stockpiling vaccines for domestic use. Instead, this study is interested in rhetorical meanings regarding nationhood conveyed through discourses of vaccination practices (e.g., vaccine uptake, stockpiling, or support for their

research and development). It specifically examines nationalist rhetoric including particular constructions of national characters, such as how actors frame their efforts to enhance vaccine accessibility for the global common good. To understand these *extended* interpretations of vaccine nationalism, and to better explore the dynamics between nations and the reshaping of globalisation through the case of vaccination, this study poses the following research question:

> RQ3: How were nation-states and globalisation portrayed through discourses centred on vaccine research and development (R&D) and post-R&D distribution?

2.2.3 The need to extend the concept of risk society

The previous sections have reviewed key concepts within the risk society perspective, including risk, body and health, responsibility, and globalisation. While Beck has had considerable influence over the past three decades, it is instructive to critically revisit the contemporary relevance of risk society after discussing these key sites. Thus, this section seeks to reconsider the limitations of 'risk society' framing within the global context, as well as its compatibility with the increasing ubiquity of digital platform technologies.

In 1992, Beck highlighted that risk is open to contested definitions, making it challenging to distribute responsibilities among stakeholders. In this context, the proper use of media and expertise of public relations teams become crucial in strengthening the organisation's capacities for 'convincing' people (Beck, 1992, p.32). However, according to John C. Tulloch and Jens O. Zinn (2011), sociologists who also serve on the editorial board of *Health, Risk & Society*, 'media' is conceptualised as a homogenous unit in Beck's work, which potentially dilutes the internal dynamics of media (e.g., changing journalism production mechanisms) and external divergences across media types (e.g., newspapers and social media). In terms of the differences between media, *Understanding Social Media Logic* by platform studies scholars José van Dijck and Thomas Poell (2013) demonstrates that social media platforms reshape mass media logics by bringing their own logic in terms of programmability, popularity, connectivity, and datafication. In other words, questions, such as what media content is, what is trending, who are the audiences, and which data are available within the media, can be answered differently within mass media and social media contexts. Following this, the previous discussions on 'what is risky' and 'who defines it as risky' might need to clarify the contexts where the discourses take place.

To address this limitation, Vian Bakir, a researcher in political communication and journalism, proposes a dual focus for media-risk scholarship: researchers are encouraged to examine 'the uncertainty and value judgements inherent in risk issues, and the diverging interpretations these

generate', as well as to track how these risk narratives are further reshaped across 'various media forms and genres and with different audiences' (2010, p.13). This informs a pivotal shift in this study's theoretical framework from the sociology of risk to the *intersection* of risk, health, and digital platform scholarships. This shift allows this thesis to distinguish (1) nuances between media narratives of risk and risk in reality, and (2) risk representations being further shaped by social media functionalities.

To address point (1), Section 2.3.4 will integrate sociological perspectives on risk with insights from risk communication scholarship, allowing for an analysis of official narratives through the lens of audience reception and engagement with risk. Section 4.3.3 in Chapter 4 will mobilise the terms 'frame' and 'framing devices' informed by frame theory to highlight how risk narratives are constructed in nature. To address point (2), Section 3.3 will engage with platform studies to incorporate discussions on the politics of digital platforms into the theoretical framework of this study. These extensions seek to highlight how this study, as media-risk scholarship, can benefit from comparative study design to incorporate different digital platform genres and respective manners of framing.

Having discussed the limited attention to different textures of media in the risk society perspective, this section moves on to consider another dimension of risk: socio-cultural context. As detailed in Section 2.2.1, Beck (1992) considers the variance of nation-state capacities for managing risk, as national levels of risk resilience might vary according to economic conditions, levels of science production, and knowledge. However, Beck says little about how the risk society should be contextualised as *plural* forms to include different cultures, particularly in non-Western scenarios beyond European and American perspectives (Lupton, 2006).

Mary Douglas's works are considered fundamental for developing cultural and symbolic perspectives of risk (Lupton, 2006; Mythen, 2008; Zinn, 2008). Although her well-known anthropological work *Purity and Danger* (1966) was not written with the intention of focusing specifically on risk, she notes that risk is associated with symbolic boundaries within and between communities. For Douglas, transgressing these forbidden boundaries can harm social rules and moral values of a specific community, which indicates the cultural contingency of risk definitions (1966). Douglas's cultural perspectives of risk are further displayed in another work, *Risk and Blame* (2002), wherein she emphasises the importance of acknowledging pre-established cultural factors in the construction of risk. In this work, she advocates for a shift from locating risk discussions in 'a politically neutral analysis of culture-free individuals' to contextualising risk perceptions by asking, 'how safe is safe enough for this particular culture' (Douglas, 2002, p.44). In her example illustrating the impact of education on individuals' risk perceptions, Douglas discusses how early education in Japan (e.g.,

mathematics learning) may encourage children to form probabilistic thinking from an early age compared to other cultural pedagogical approaches, given probability is central to the evaluation of risk (2002, p.52).

Building on Douglas's emphasis on cultural sensitivity in the sociology of risk, applying concepts of risks — primarily developed in Western contexts — to Chinese contexts requires careful consideration of its unique socio-political characteristics. This section, therefore, turns to discuss the applicability of two concepts, modernisation and individualisation, in China. Importantly, it suggests that risk, conceptualised as a reflexive mechanism for assessing the impacts of modernity, should be analysed through local characteristics of modernity rather than presumed Western norms. Given the distinct pathways to modernity in China and Western Europe, this section also highlights how differences in modernisation processes have led to divergent expressions of individualisation.

In contrast to the gradual and progressive nature of European modernisation — where individualisation unfolded over centuries — Asian Sociologists characterise East Asian modernity as a form of *compressed modernity*. This concept refers to a civilisational process in which (1) multiple societal transformations, such as industrialisation, economic development, and urbanisation, (co)occur in a condensed time-space framework (Han and Shim, 2010; Kyung-Sup, 2022), and (2) local traditions and socio-cultural characteristics are preserved throughout this modernisation process (Kyung-Sup, 2010, pp.446-447). This fusion of rapid economic progress and cultural continuity in East Asia produces a distinct form of modernity compared to its Western counterparts (Kyung-Sup, 2022). However, it also introduces unique risks as a byproduct of accelerated modernisation, where the concentrated allocation of resources to drive economic growth leades to issues such as food and water contamination (Han and Shim, 2010, p.471).

Responding to critiques regarding the lack of non-Western experiences, when Beck revisited the ideas of risk in non-Western contexts in his later work (2016), he acknowledged that the uniqueness of East-Asia-based modernity does not deny the validity of approaching global risks from the experiences of Western modernity. He instead highlights the value of revisiting risk society to incorporate experiences arising from non-Western contexts (Beck, 2016, p.266). In this sense, since the manifestations of risk and risk perceptions are both intertwined with cultures and national histories of modernisation, adopting a comparative design in this study can help us understand non-Western risk phenomena (Douglas, 2002).

Several empirical studies have addressed the gap between the unintended risks generated by compressed modernity and the limited capacity of current risk management systems, with health risks in Chinese contexts as a primary focus. Media researcher Qian Gong (2018) examines how

advertisements for children's products, such as milk powder, shape parental risk perceptions, with a prominent emphasis on the need to establish 'scientific' everyday protection for children against the cultural, regionally perceived risks of environmental pollution and malnutrition. Another study, by sociologist and risk researcher Joy Y. Zhang (2018), explores solidarity in the campaign of the 'Good Food Movement' by three social organisations in China, which aims to bring agricultural experts, local food producers, and good consumers together to enhance regional food safety. Zhang's study (2018) offers a contextual explanation of how actors can voluntarily form collaborative communities with a shared commitment of managing local or regional food risks. These two studies provide important empirical evidence illustrating how socio-economic and cultural factors can influence publics' perceptions of risk and their strategies for managing local or regional risks. This highlights the importance for risk researchers in specifying the socio-cultural contexts in which their explorations and conceptualisation of risk take place. It also sheds light on the necessity of broadening theoretical discussions beyond the Western-based experiences where the risk society perspective was initially formulated.

Building on the concept of compressed modernity and its associated risks, this section moves to examine how these dynamics shape public experiences in East Asia. Specifically, it reviews the implications of China's risk society through the lens of individualisation, enriching earlier discussions on the interplay between individual and state responsibilities within Western-based new public health scholarship in Section 2.1.4.

Individualisation has emerged as a global trend in China and the UK, where individuals are encouraged to rely less on state-sponsored institutions and instead pursue personal goals for fulfilment and happiness independently (Yan, 2010b, pp.506-507), reflecting a disembedding from traditional social constraints (Yan, 2010a, p.4). Beck and Beck-Gernsheim (2010) suggest that the distinct pathways of individualisation in China and Europe result from different sequences of modernisation and individualisation: while they co-evolved in Europe, China's neoliberal economic and labour market reforms preceded the constitutional recognition of individualisation (see also Beck and Grande, 2010, p.421), fostering individualisation primarily through a market-driven, pragmatic model. In short, the key difference lies in whether individualisation is pursued as a *means* to modernisation, or as its *outcome* (Yan, 2010b).

Contextually, between 1949 and 1976, China's early development of individualisation was closely tied to the material demands of economic development, primarily addressing poverty and prioritising national survival through individual contributions (Yan, 2010b, p.507). This phase, termed 'state-sponsored individualisation', highlights how individual pursuits remained embedded within state authority (Yan, 2010b, p.505). This contrasts with Western individualisation, which developed within

institutional frameworks of individual rights in relatively affluent societies. The 1978 economic reform marked a turning point in Chinese individualisation, where individual desires were facilitated within a market-oriented framework (Yan, 2010b, p.509). For example, from the 1990s, this form of individualisation manifested in 'ad hoc collective actions' to protect personal interests, such as public efforts to demand better service quality (Yan, 2010b, p.500). Thus, Chinese individualisation was initially driven by neoliberal, market-based initiatives, where personal advancement was centrally framed as contributing to collective benefits, such as family and nation (Beck and Beck-Gernsheim, 2010; Yan, 2010a).

Overall, the development of individualisation in Asia reflects its context of 'compressed modernity', contrasting with the extended period of modernisation that unfolded over centuries in Europe. Culturally, the evolving role of individuals in supporting, first, state survival and, later, social stability is deeply intertwined with Chinese traditions of collectivism and Confucianism, which emphasise ethical decisions between the 'small self' and the 'greater self' (e.g., self-nation, self-ancestors, and self-family; see Yan, 2010b). This cultural factor, unpacked further in Chapter 3, highlights nuanced patterns of balancing self and collective benefits in non-European contexts. Such comparisons contribute to diverse interpretations of modernity and individualisation, reducing over-theoretical development (Beck and Beck-Gernsheim, 2010).

In summary, transitioning from Beck-centred risk discussions to contemporary media practices and socio-cultural contexts in risk, this section critically proposed extending the risk society framework to better accommodate media- and culture-specific dynamics in contemporary societies. To address this, the thesis integrates the politics of platforms and risk communication scholarship in Section 2.3, and considerations of discursive practices in Section 4.3.3. It also includes cultural reflections relevant to Chinese contexts (e.g., compressed modernity and individualisation) in this section, with additional cultural discussions of collectivism and Confucianism in Section 3.1.1. Methodologically, this study addresses the heterogeneity of cultures in risk through its comparative research design, to be elaborated on in Chapter 4. Overall, these two extensions, in media and culture, aim to strengthen the study design to facilitate a more comprehensive understanding of the framing of risk across Western and non-Western cultures and digital platforms.

2.3 Politics of digital platforms in contemporary societies

As Section 2.2.3 discussed, Beck's idea of risk society needs to be extended with particular attention to the heterogeneity within media categories, where digital platforms play a significant role. In other words, exploring the representation of risk in social media requires an adapted conceptual orientation

to understand the impacts posed by contemporary digital platform societies. That is where the concept of 'digital risk society' comes in, as suggested by Deborah Lupton (2016). She recommends that traditional risk sociology can be rethought from the perspectives of communication studies and digital sociology (Lupton, 2016, p.2). To do so, she suggests the concept of 'digital risk society' as follows:

> In digital society, where technological change is so rapid and digital data are themselves vital, moving and dynamic, the combination of risk and digital technologies configures the possibilities of even livelier forms of risk. The concept of digital risk assemblage encapsulates these properties of risk, recognising the multiple and constantly in flux intersections of technical and human hybrids (Lupton, 2016, p.3).

Important to Lupton, the proliferation of digital platform technologies further complicates the processes of communicating risk (or 'digitising risk' in Lupton's words) (2016, p.5). Digital technologies can also become the origin of risk, such as in debates around user privacy and security on digital platforms (Lupton, 2016, p.6). This informs this study to elaborate on the concept of digitising risk, focusing on the representations of risk accommodated by digital technologies, or more specifically, enabled by social media platforms.

How is digitising risk different from the traditional representation of risk illustrated earlier in this chapter? According to media scholars Baym and boyd (2012, p.321), the novelty brought by social media in the narratives of risk is not just in the impact of publicness, but rather the 'scale' of publicness that arises from ubiquitous social media appliances daily. Considering this in Lupton's view (2016), digitising risk seeks to highlight public construction of risk in a 'multi-sourced' pattern: the definition of risk, which according to Beck (1992) is the discourse of a specific set of powerful actors (e.g., governments), becomes 'crowdsourcing' work by different actors (e.g., experts, citizens, and bots as non-human actors). By considering risk as digitising, scholars are encouraged to consider how social media spaces bring different actors and unstable dynamics together (e.g., public debates, misinformation) into the process of defining risk (Lupton, 2016, p.5). This also prompts further scholarship to explore how to conceptually and methodologically examine risk presentations on digital platforms, taking both politics of risk thinking and platform cultures into consideration.

In summary, the risk society perspective needs to be extended with additional attention to the heterogeneity of media agencies, where digital platforms play a significant role. To achieve this, theoretically connecting risk and digital platforms – two key theoretical concepts in this study – within Lupton's 'digital risk society' will not only contribute to ongoing theorising on the important issue of risk, but also investigate the role of digital platforms in reassembling risk. However, Lupton's original interpretation of digital risk society considers the spaces of digital technologies as 'flux intersections

of technical and human hybrids' (2016, p.3), which dilutes the complex politics of platforms both externally (e.g., cultural backgrounds of platform usages) and internally (e.g., technical architectures). Since this thesis relies on the interdisciplinary framework of media-risk sociology, it will benefit from incorporating more 'media-based' scholarship in contemporary digital platform societies, after Sections 3.1 and 3.2 put the main emphasis on the traditional sociology of risk.

To achieve this, the review turns to focus on the literature on platform studies. Section 2.3.1 articulates the need to consider platforms within a dynamic process of 'platformisation' and their societal impacts, rather than viewing them as isolated and immobile technical artefacts. Section 2.3.2 discusses the concept of 'platform regionalisation' to understand how comparative platform studies contribute to the understanding of digital risk societies by bringing Western and non-Western contexts together. Finally, Section 3.3.3 articulates the concept of platform affordances to understand the logics of social media. Articulating these three dimensions of platform politics aims to remind readers that risk communication is shaped by both governments as 'narrators' and social media as 'spaces' for publicising their narratives.

2.3.1 From platforms to platformisation

Before revising academic discussions regarding platformisation, it is necessary to discuss how the scholarship on 'platformisation' helps with understanding platforms' impacts on society as a process (Poell, Nieborg and van Dijck, 2019).

Several scholars have engaged with the concept of 'platforms', seeking to give clear definitions of them, while their interpretations reflect their research professions and backgrounds. Communication studies researcher Tarleton Gillespie (2010) introduces his understanding of 'platform' from a rhetorical perspective: the word 'platform', he argues, is a *rhetorical device* flexibly used to communicate strategically to clients, advertisers, and policymakers, aiming to maximise platform profits and minimise responsibilities (p.348). Gillespie illustrates this point using YouTube as an example, which labels itself as an 'intermediary' and 'passage' rather than 'content producer' or 'patron' (2010). By doing so, YouTube attracts users by advocating for freedom of expression and opinion diversities, while Gillespie considers this to lead to limited liabilities for users' engagement with improper activities or dissemination of controversial content (2010, pp.356-358). This fluid definition of platforms leads to Viacom referring to YouTube as a 'distributor' rather than a platform in court documents to avoid the neutral implication (Gillespie, 2010, p.357). Thus, researching platforms should not be understood as researching a 'neutral' assemblage, but as a process of researching the values embedded in the technical architectures.

While Gillespie considers the term ‘platform’ as a rhetorical device with value orientations, some scholars use it with another emphasis. According to media and digital culture researcher Anne Helmond (2015), the development of a platform can be viewed as the simultaneous web expansion and *platform-ready* datafication of the web materials: internally, platforms attract other software to build on by offering a ‘programmable’ base operated through platform-native mechanisms (e.g., Application Programming Interfaces, API). These programmable devices within platforms contribute to their external market expansion and enable them to collect and reprocess more ‘data pours’ outside the platforms, providing a continuous flow of data feeding back to the platforms (Helmond, 2015, p.8). This perspective also highlights the value of platform development: being attractive for both software to design ‘plug-in’ devices and users to share their data ownership.

This interplay involving platform owners, external actors, and data is further described as *multi-sided markets* by digital economy researcher Nick Srnicek (2017). In this perspective, platforms serve as places connecting stakeholders to ‘monopolise, extract, analyse, and use’ data (Srnicek, 2017, p.24). Within the stakeholders, platform owners hold a ‘privileged’ position with relatively direct access to data generated by user activities on their platforms (Srnicek, 2017, p.25). This perspective indicates the values of platforms from the capitalist aspect, highlighting their roles in facilitating data commercialisation with a particular emphasis on data control from platform owners.

Synthesising three perspectives above, the well-known book *The Platform Society: Public Values in a Connective World* (van Dijck, Poell and de Waal, 2018) considers platforms as combinations of three mechanisms: *datafication*, *commodification*, and *selection*. The first two mechanisms, datafication and commodification, are similar to Srnicek’s (2017) because they both consider platforms’ capacities of recording and quantifying user activities into data for diverse commercial purposes (e.g., attention, further data, users, and funding) (van Dijck, Poell and de Waal, 2018, pp.37-40). The other mechanism, selection, considers how platforms influence content accessibility through their own standards of ‘selection’ and ‘curation’ (van Dijck, Poell and de Waal, 2018, p.40). This involves various practices of adjusting content (in)visibilities for different audiences, thereby reshaping users’ experiences with features such as ‘personalised’ and ‘trending’, alongside the stances of moderation (van Dijck, Poell and de Waal, 2018). In another work, Poell, Nieborg and van Dijck propose a definition of platforms, which nicely summarise the three mechanisms mentioned above:

> We define platforms as (re-)programmable digital infrastructures that facilitate and shape personalised interactions among end-users and complementors, organised through the systematic collection, algorithmic processing, monetisation, and circulation of data (2019, p.3).

This section has so far articulated four perspectives on the concept of 'platform': as a rhetorical device, a material-technical foundation to be built on, and a multi-sided market, all of which operate through the mechanisms of datafication, commodification, and selection. Importantly, all four perspectives demonstrate the political economy of platforms in shaping the data and actors involved. Therefore, it would be misleading to perceive platforms at their 'neutral' face-value without seeing their complexities in platform economies.

While the four perspectives above primarily consider a platform as an independent entity, it is also crucial to understand a platform through its external interactions *with* others. For example, van Dijck (2021) proposes a 'platformisation tree' to visualise the interdependence between platforms in media ecosystems: platforms located at the 'roots' function as the foundations of the general platform ecosystem, and 'branches' represent platforms operating within particular domains (van Dijck, Poell and de Waal, 2018, p.13). Crucially, the growth of giant platforms, such as the Big Five in Western countries (Google, Amazon, Facebook, Apple, and Microsoft), is explained by their positions as 'trunk platforms' bridging 'roots' and 'branches' of the trees. The rapid expansions of trunk platforms toward the roots and branches enable these giant actors to 'monopolise' the whole platform ecosystem (van Dijck, 2021, p.8). Section 3.3.2 will revisit this discussion of the Big Five to introduce their counterparts in China.

To capture the socio-technical values promoted by digital platforms and the interactions between them, it is reasonable to consider a platform as a dynamic process with societal implications, rather than stable technological functionalities. For instance, platform studies scholars propose the concept of 'platformisation' as a comprehensive combination of datafication, multi-sided markets, and governance:

> Platformisation is defined as the penetration of infrastructures, economic processes and governmental frameworks of digital platforms in different economic sectors and spheres of life, as well as the reorganisation of cultural practices and imaginations around these platforms (Poell, Nieborg and van Dijck, 2019, p.1).

Therefore, this definition of platformisation encourages platform scholars to move beyond the data-oriented, technical architectures of platforms to see platforms' interactions with other sectors in society, such as the economy and cultures. As will be introduced in Chapter 3, in the context of government communication, the proliferation of official accounts and publishing content also reflects the 'penetration' of platformisation into political areas, where the choice of which platforms to open official accounts on is partly affected by the existing user bases on them.

To understand the ubiquity of giant platforms with significant users embedded in everyday life, media and communication researcher Jean-Christophe Plantin and colleagues conceptualise this issue into 'infrastructuralisation of platforms' (2018, p.306): platforms co-exist with or replace traditional service providers as societal infrastructure. For example, they consider the omnipresence of Google-based devices (including email, maps, search engines) as a manifestation of infrastructure, where user choices are constrained in a 'self-defined and self-serving walled garden' (Plantin *et al*., 2018, p.303). When giant platforms become highly infrastructuralised, the users are so 'locked-in' that they might find it challenging to abandon platform ecosystems (Plantin *et al*., 2018, p.304). Therefore, when users are already entrenched within the closed ecosystems of specific infrastructuralised platforms, governments might find it easier to utilise these existing platforms to reach their target audience, rather than creating new platforms that risk not attracting users. This phenomenon of super platforms becoming infrastructural also sheds light on the reliance on specific platforms for communicating and disseminating information about public health policies during Covid.

While governments are historically considered to be accountable for platform governance, their roles as platform users are also worth further attention. Sometimes governments, as social service providers, have to use the Big Five facilities because they are highly infrastructuralised in daily life (van Dijck, Poell and de Waal, 2018, p.159). The dual roles of governments as *governors* and *users* make their presences interesting to explore: governments may collaborate with platforms to implement 'datavelliance' – recording user behaviours of using platforms – to identify risk (Lupton, 2016, p.4). In addition to navigating and moderating the misinformation and disinformation on platforms, governments can also get involved in communication through dedicated accounts on these infrastructuralised platforms.

In summary, instead of defining platforms within a stable standard by asking 'what kind of platforms are they?', scholars are suggested to take a flexible, contextual approach by exploring 'how do platforms work in specific contexts?' (van Dijck, Poell and de Waal, 2018, p.19). Similarly, it may be risky to equate governments with regulators without seeing their roles as platform users and collaborators. Therefore, this study aims to consider how governments and digital platforms intersected during Covid.

2.3.2 Platform regionalisation and Chinese platform society

While Section 2.3.1 has introduced the politics of platforms without specifying their cultural origins, geographical contexts do play a crucial role in determining the characteristics of platforms. Film studies researchers Marc Steinberg and Jingying Li illustrate this point by introducing the notion of 'platform regionalisation':

> Along with platforms comes a form of regionalization, a localization to a particular milieu, country, or region, through a deliberate exclusion of other countries and regions, as well as through more benign forms of circumscription by users and platform managers. Platforms are regional entities, and it behooves us to pay attention to how platforms construct regions and, indeed, often presume regions (2017, p.174).

Here platform regionalisation can refer to a country (e.g., US-based platforms) or a general geographical concept consisting of multiple nations (e.g., Asia-based platforms) (Steinberg and Li, 2017, p.175). Given the diverse geopolitical and geo-cultural contexts of platforms, it would be risky to simply generalise Western-platform-based experiences (e.g., Twitter, Facebook) as universally applicable on non-Western platforms (Steinberg and Li, 2017, p.178). This gives rise to a separate categorisation of US- and China-based platform ecosystems, or in van Dijck, Poell and de Waal's words, American and Chinese 'platform societies' (2018, p.27), while different interactions between governments, citizens, private companies, and civil society actors in Europe distinguish it as another platform society apart from these previous two.

Though much of the platform discussion so far in this chapter has been highly Western-based, there is also lively and growing debate about the Chinese platform ecosystem. Importantly, scholarship on China-based platforms primarily seeks to outline the different interplay between market values and government control compared to US- and Europe-based scholarship. For example, media researchers Wilfred Yang Wang and Ramon Lobato note that commercialisation and governmental censorship in China co-exist in an unstable relationship (2019, p.361). Specifically, the Chinese platform society emphasises government intervention and regulated censorship in promoting public values digitally, while governments and platforms might also collaborate for mutual benefits in economic profits and societal surveillance (van Dijck, Poell and de Waal, 2018, p.26, 164). This collaboration is further interpreted by media studies researcher Jeroen de Kloet and colleagues, noting that the rapid growth of Chinese platforms ultimately satisfies the state goal of rapid technological progress (2019, p.251). In other words, state governance goes much beyond surveillance but ultimately accelerates the platform infrastructrualisation positively (de Kloet *et al*., 2019, p.252). In this sense, Chinese platforms are allowed to expand market shares as long as they 'compromise socio-political stability and remain aligned with the techno-nationalist pursuit of cyber-sovereignty' (Plantin and de Seta, 2019, p.268).

There are a few similarities in the interactions between platforms and nations in US and Chinese platform societies. Mentioned in Section 2.3.1, the three technological companies with dominant market shares in China similar to the prominence of the US-based Big Five, Baidu, Alibaba, and Tencent (often shortened in the literature to BAT) are instructive here. According to Wang and Lobato

(2019, pp.361-362), the leaders of BAT also hold memberships in political institutions (e.g., the National People's Congress), contributing to infrastructure construction such as investing in state-owned telecommunication operator China Unicom. While BAT are supported by official privileges such as tax incentives, they are also closely monitored by the authorities in case of any irregularities (Wang and Lobato, 2019). Similarly, Western platform societies also face possibilities of state moderation: in 2013, former employee of the National Security Agency (NSA) and whistle-blower Edward Snowden's disclosure of the NSA's top-secret documents demonstrated US surveillance on citizens' digital devices, such as phones and Internet usage (Greenwald, MacAskill and Poitras, 2013). These two examples illustrate that political interventions within commercial platform operations exist in both apparently distinctive platform societies.

Globally, one of the major characteristics of Chinese platform society is the 'Great Firewall', which shelters the growth of domestic platforms by blocking foreign competitors (Plantin and de Seta, 2019, p.263). Some Chinese platforms owned by BAT such as WeChat are also infrastructuralised by providing 'one-for all' daily necessities within one platform (Plantin and de Seta, 2019), speaking to the notion of 'infrastructuralisation of platforms' mentioned in Section 2.3.1 (Plantin *et al*., 2018). Given similar profit-oriented business models across Chinese and Western platform societies, communication and media researcher Christian Fuchs labels these modes of commercialisation as Chinese 'state capitalism' and Western 'corporate capitalism' (2016). Fuchs also indicates that the scale of local-based capitalism in China is much smaller than the profits of globe-based Western capitalism (2016, p.34). However, this conclusion might need to be updated based on recent data: in 2024 Weibo had approximately 583 million monthly active users (Thomala, 2024), compared to around 388 million on Twitter (Iqbal, 2025).

Overall, this section began with the introduction of 'platform regionality' (Steinberg and Li, 2017) to consider the parallels and distinctions across Chinese and Western platform societies (van Dijck, Poell and de Waal, 2018). It suggested there were biases in assuming pure Internet freedom without any censorship in Western platform societies, and total state censorship without commercial interests in the Chinese context. Commonalities between the two ecosystems then shed light on the value of de-Westernising platform studies, as the complex relationships between Chinese authorities and platforms may contribute different socio-technical understandings to platform studies. Essentially, this section emphasised that comparing Western and Chinese platform societies is far more complex than researching them separately, given that they are neither purely different nor the same. This complexity, however, also highlights the value of their comparison in the same study. To reflect these similarities and differences, this study seeks to understand the cases of Weibo and Twitter with 'a historically grounded and geographically situated understanding of Internet culture', which does not

aim to overstate the Chinese platform ecosystem as an exception to Western models, or propose an entirely new framework for analysing China-based platforms (Wang and Lobato, 2019, p.360).

2.3.3 Platform affordances

After Section 2.3.2 discussed the external environments of platforms within the concept of platform regionality and platform society, this section moves on to discuss another concept 'platform affordance' to facilitate understanding of the specific functionalities of digital platforms.

The word 'affordance' was originally introduced by American psychologist James J. Gibson to demonstrate the ecological relationship between animals and their environments (1979; 2014). In his work, Gibson provides one of the most frequently cited definitions within the literature on platform affordance: 'the affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill' (1979, p.127). For instance, the existence of a surface offers certain support to animals, being 'walk-on-able' and 'run-over-able' depending on the weight of the animals (Gibson, 1979). Since animals choose to take advantage of the available offerings from their surroundings differently (e.g., feeding and shelter options), Gibson preliminarily points out that animals may perceive the affordances of nature diversely (1979). This example initially pointed out two features of affordances for Gibson: affordances are extended from *physical* properties, which are *relational* to enable different actions from different animals (Gibson, 1979).

However, one of the limitations of Gibson's definition is considering affordances as stable, which necessitates further attention to the users' subjectivities in interpreting affordances. In another well-cited book in platform affordance scholarship, *The Design of Everyday Things*, American researcher and designer Donald Norman provides his definition of affordances with an emphasis on objects' practicality: 'the perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be' (1998, p.9). This definition, compared to Gibson's, begins to acknowledge the role of users' perception, while still considering users as a homogenous collective.

The diversity among users is further identified by design researcher William Gaver, who defines affordances as 'clues' implying how the objects can be 'acted upon' culturally (1991, p.81). In other words, from the design aspect, Gaver considers affordances as an 'inter-referentiality' between perception and possible actions (1991, p.80). Important for Gaver, the concept of affordances should also consider the extent of 'being *culturally* perceivable':

> It [affordance] implies that the physical attributes of the thing to be acted upon are compatible with those of the actor, that information about those attributes is available in a form compatible with a perceptual system, and (implicitly) that these attributes and the action they make possible are relevant to a culture and a perceiver (Gaver, 1991, p.81).

According to this definition, the way individuals engage with a particular affordance is contingent on their cultures and experiences. This opens an avenue for exploring how functions are designed to be culturally perceivable for intended audiences, such as an onscreen button displayed with a protruding look to indicate its clickability (1991, p.81). Like Gaver, media studies scholar Wendy Willems (2021) raises the term 'relational affordances' to suggest a transition away from platform-centred and global-universal definitions of affordances. She suggests further attention be paid to examining the impacts from different socio-cultural contexts, such as acknowledging empirical experiences coming from the Global South beyond the well-researched North American and European cultures (Willems, 2021).

So far, this section has explored four early definitions of the term 'affordance', tracing the conceptualisation from focusing on what the properties provide, to understanding how people perceive the provision culturally. This drives sociologist Ian Hutchby to consider researching affordances as a converged area between human perceptions and the constraints of artefacts (2001). He suggests that researching affordances should be a balancing act between radical constructivist positions (merely considering technologies as social matters) and technological determinism (flatly examining roles of technologies) (Hutchby, 2001, p.453).

Extending Hutchby's interpretation of affordance between social constructivism and technological determinism, scholarship of affordances also seeks to illustrate user activities *deviating* from designers' predictions. For instance, social media anthropologist Elisabetta Costa extends affordances into 'affordance-in-practice' to accommodate situations where functions are applied innovatively beyond the original intentions of social media designers (2018). Similar to Costa's idea, communication scholars Peter Nagy and Gina Neff propose the concept of 'imagined affordances' to include properties of technologies that are 'imagined' by users, such as their fears and expectations of the property (2015, p.4). This imagination from users is further conceptualised into 'vernacular affordances' by McVeigh-Schultz and Baym (2015), to understand users' creative philosophies of making sense of the same material technologies within their own purposes and contexts. Essentially, the gap between user practices and designers' intentions is not a design failure, but user-initiated adjustments of functionalities based on their own socio-cultural expectations of particular artefacts (Nagy and Neff, 2015, p.6).

Therefore, exploring affordances is beyond the scope of any particular functionality but also 'the new dynamics or types of communicative practices and social interactions' enabled by the functionality (Bucher and Helmond, 2018, p.239). This conceptually informs the comparative analysis framework of this thesis. When researching governmental performances on two platforms, this study is neither comparing nations nor comparing platform functions; it is comparing the national communication being *mediated* through platform socio-technical conditions.

Then what are we looking for when researching social media affordances? In the literature review by Taina Bucher and Anne Helmond (2018), social media affordances are classified into abstract *high-level affordances* and feature-oriented *low-level ones*. For them, researching high-level affordances is to examine 'dynamics and conditions' arising within user interactions with technical artefacts, while low-level affordances focus on 'the materiality of the medium in specific features', such as a particular button (Bucher and Helmond, 2018, pp.239-240). Methodologically, scholars may treat high-level and low-level affordances as a unity, projecting the function-oriented discussions (low-level affordances) into the larger context of user behaviours and social impacts (high-level ones) (Bucher and Helmond, 2018). For example, starting with TikTok's hashtag #grief as a technical practice, digital social researcher Eriksson Krutrök notes that this hashtag technology socially constructs a virtual 'algorithmic closeness' for users in grief, sharing emotions and forming mourning communities (2021, p.9).

Thus far, this section has reviewed the origins of the word 'affordance', stemming from two foundational works by Gibson (1979; 2014) and Norman (1998), which inform subsequent scholarship to interpret the meaning of affordances variously. As outlined by Bucher and Helmond (2018, p.240), these different interpretations of affordance stem from their consideration of both the places and timing in which affordances manifest (e.g., through specific features), and the intended purposes for which affordances are designed (e.g., facilitating or constraining specific communication cultures). Based on this interpretation and taking Hutchby's idea of 'relational view' (2001) into consideration, the literature review by Ronzhyn, Cardenal and Batlle Rubio (2023) does a comprehensive job of packaging the above critical considerations. Importantly, they define social media affordance as 'the perceived actual or imagined properties of social media, emerging through the relation of technological, social, and contextual, that enable and constrain specific uses of the platforms' (Ronzhyn, Cardenal and Batlle Rubio, 2023, p.14).

In summary, this section aimed to extend the discussion of media within the sociology of risk, and to contextualise the previous three research questions within social media contexts. To accomplish this, this section illustrated three key concepts in the politics of social media, including 'platformisation' (Section 2.3.1), 'platform regionalisation' (Section 2.3.2), and 'platform affordances' (Section 2.3.3).

Ultimately, this section added elements of social media thinking into risk thinking, with a particular focus on the roles played by Weibo and Twitter as manifestations of Chinese and UK platform societies.

2.3.4 Understanding risk and audience in risk communication scholarship

While the concept of digital risk society discussed in Section 2.3 helps us understand risk narratives on social media (Lupton, 2016), it does not fully account for how audiences interpret and respond to these messages. This section draws on risk communication research to supplementarily explore the mobilisation of official communication strategies from the perspectives of audience and reception.

According to risk communication scholars Vincent T. Covello and colleagues (1986), the goal of risk communication is to foster agreement among stakeholders on the significance of risk and its management, with government risk communication being a key research focus, particularly in the context of official public health campaigns (McComas, 2006). Specifically, risk communication scholarship addresses governments as communicators following a 'rule or process-bound' approach to risk decisions and messaging, incorporating laws, regulations, and other administrative procedures (Zimmerman, 1987). This contrasts with 'lay publics', whose risk perceptions are characterised by their non-process-bound nature (Zimmerman, 1987).

Similar to Rae Zimmerman's categorisations of governments and lay publics, crisis communication scholar Eva-Karin Olsson (2014) advocates for a differentiated approach to studying government communication compared to market-driven private organisations. To better analyse official risk discourses, Olsson (2014) proposes two key dimensions: operational (information provision) versus strategic (long-term organisational survival and positive public image); reputation-oriented (managing the sender's reputation) versus resilience-oriented (emphasising receivers' self-sufficiency). For example, Olsson identifies operational communication in official portrayals of collective identity, exemplified by narratives such as 'we are all in this together'.

Risk communication scholarship informs the thesis by highlighting how governments, as messengers and risk constructors, (re)build information transparency and trust in specific socio-cultural contexts (Balog-Way, McComas, and Besley, 2020). While risk communication is often associated with market-drive corporate communication, some research offers conceptualisations relevant to governmental settings as well. For example, crisis communication researcher Timothy Coombs' (2007) Situational Crisis Communication Theory (SCCT) conceptualises a crisis as a threat to an actor's reputational capital and proposes response strategies based on different scenarios. Although SCCT primarily focuses on corporate reputation management, its insights on reputation-protective

communication have implications for government studies. It informs the thesis by framing meaning-making in official narratives, such as discussions of responsibility, through the lens of reputation management and public perception.

A key transferable concept between the sociology of risk and risk communication scholarship is anticipated uncertainty, with uncertainty management serving as a shared goal of both risk society perspectives and risk communication practices. According to risk communication scholar Baruch Fischhoff (2013), one of the key purposes of risk communication is to inform publics, enabling informed decision-making and minimising disagreements by promoting a shared commitment to facts and values (p.14033). In the context of government risk communication, governments are regarded as primarily responsible for raising public awareness of risk and promoting preparedness, aligning with ideals of responsible governance, integrity, and transparency (Markon, Crowe, and Lemyre, 2013, p.326). Official risk communication is designed to bridge the gap between what people 'should' learn and what they actually learn, with messengers identifying the 'relevant science knowledge needed' and while also addressing 'what people already know' before delivering information (Fischhoff, 2013). Thus, effective risk communication is expected to empower audiences by providing them with sufficient time and space to make their own decisions, thereby enhancing the perceived credibility and trustworthiness of information sources (Markon, Crowe, and Lemyre, 2013, p.328). However, as risk analyst Roger Kasperson (2014) explains, actors may be reluctant to fully disclose uncertainty due to concerns that social distrust could outweigh the benefits of public risk understanding (p.1236).

To manage uncertainty effectively, actors may adopt certain discursive practices, or framing — a process of presenting information in a way that directs public attention towards specific aspects that are deemed advantageous or normatively desirable (Nisbet, 2014, p.218). For instance, corporations may highlight their involvement in welfare issues, such as sustainable agriculture and fair trade, to enhance their image of social responsibility. As a result, studying risk narratives often involves analysing the politics of framing, rather than merely disclosing every uncertainty associated with risk. This perspective of framing, particularly its operation through framing devices, will be revisited in Section 4.3.3.

To strengthen their framing, risk communication may engage with quotes from technical experts or highly credible individuals. For instance, the Crisis and Emergency Risk Communication (CERC) model by Barbara Reynolds and Matthew W. Seeger (2005) suggests that to enhance discourse credibility, messengers should include 'consensual recommendations by experts and first responders' during the pre-crisis stage and use narratives from agency spokespersons and official sources during the initial risk stage. Covello and colleagues (2001, p.396) interpret these strategies through the

principles of ‘trust transference’, where actors, particularly those with low-trust profiles, rely on the established credibility of trusted sources, such as health professionals and scientists.

In summary, by cross-referencing risk communication literature alongside works in the sociology of risk and platform studies, the thesis contextualises official communication within broader concerns of maintaining public trust and credibility while minimising potential panic in uncertainty management. On one hand, sociological literature on risk provides a critical perspective on how risk is socially constructed, extending beyond an existing quantifiable issue to be communicated. The concept of digital risk society reviewed in Section 2.3 sheds light on the social implications of how risk is (re)constructed and (in)visualised within digital platforms structures. On the other hand, the thesis *supplements* audience and reception perspectives from risk communication scholarship to offer a more comprehensive analysis in the findings chapters — exploring the institutional motivations behind specific communication strategies and how they are designed to align with public expectations while maintaining institutional credibility.

2.4 Conclusion: Theoretical framework of this study

This chapter aimed to present the theoretical framework of this study, synthesising insights from the literature in the sociology of risk and platform studies..

This chapter began with Section 2.1 reviewing the discussions around risk, particularly Beck’s and Gidden’s influential works in the 1990s as a foundation for the contemporary sociology of risk. To trace the lively discussion around risk since the 2000s, this section then explored the scholarship at the intersection of risk, health, and society. While the contours of risk are similarly characterised by reflexive portrayals of uncertainty, the area of risk, health, and society develops them into risk thinking, with characteristics of classification, value judgement, probability, temporality, and socio-cultural considerations. After Section 2.1.3 explaining the association with uncertainty, reflexivity, and the proliferation of risk definitions, Section 2.1.4 reviewed how to understand responsibility as a manifestation of defining risk. In addition to a closer examination of risk definitions, Section 2.2.1 then moved on to consider how globalisation and national relationships are reshaped by risk, employing vaccination as a case study in Section 2.2.2. Section 2.2.3 then reviewed how the thesis extended the sociology of risk by incorporating non-Western cultural discussions and platform studies.

Furthermore, Section 2.3 aimed to explain the mediation of Weibo and Twitter toward the risk discussions above. To achieve this, the framework incorporates the discussions of platform politics, such as platformisation (Section 2.3.1), platform regionalities in different platform societies (Section

2.3.2), and platform affordances (Section 2.3.3). Section 2.3.4 supplemented risk communication scholarship to enrich the audience-based insights in the findings chapters.

Figure 1 outlines how the study contexts are conceptualised in the thesis. To clarify the interplay between risk, governments, and digital platforms, Figure 1 outlines their relationship below, which seeks to summarise the aim of the thesis (i.e., how governments and digital platforms intersected in China and the UK during Covid).

Figure 1: Visualisation of theoretical framework

The background of Figure 1 highlights that the thesis positions 'risk' as its primary conceptual focus, particularly through the lens of risk society, to examine its inherent uncertainty. The thesis's primary subject, governments, is conceptualised in sociology of risk research as structures for collective risk management (Section 2.1.4). The comparative approach further considers the political and socio-cultural differences between China and the UK, such as variations in modernisation and individualisation in China (Section 2.2.3). The second key focus, Weibo and Twitter, represent broader platform societies, each shaped by distinct platform economies, regional politics, and affordances (Section 2.3). These platform-specific dynamics, in turn, influence public engagement with risk communication (Section 2.3.4).

The thesis specifically examines official risk narratives at the *intersection* of governments and platforms, exploring how Covid imaginaries were co-constructed through their interactions. Official

risk narratives can be understood as risk-defining discourses targeting imagined audiences on Weibo and Twitter (Section 2.1.3). The comparative approach provides insights into different national forms of risk thinking, such as frames of classification and temporality (Section 2.1.2), all of which are shaped by the underlying politics of digital platforms.

In summary, this thesis seeks to investigate the contemporary relationship between state, platform, and publics at times of global crisis (i.e., the Covid-19 pandemic) in a digital sociology way. The framework of this thesis is informed by two areas of literature interdisciplinarily at the intersection of the sociology of risk and platform studies. It integrates risk society perspectives with scholarship on health, risk, and society to explore risk-defining discourses, while also considering cultural reflections, regional contexts, and the affordances of digital platforms. This interdisciplinary framework aims to facilitate understanding how risk is portrayed through contemporary social media platforms, as well as the dual roles of governments as risk constructors and platform users.

In brief, the study aim is to explore how governments and digital platforms intersected in China and the UK during Covid. To narrow down this general aim, this thesis addresses the following research questions:

> RQ1: How and to what extent did governmental communication in China and the UK mobilise a discourse of risk through Weibo and Twitter respectively? Conceptually, to what extent does the notion of 'risk' help us understand government social media communication during Covid?
>
> RQ2: Which actions and actors were portrayed as responsible for the pandemic's management?
>
> RQ3: How were nation-states and globalisation portrayed through discourses centred on vaccine research and development (R&D) and post-R&D distribution?

Following the presentation of the theoretical framework and research questions in this chapter, the next chapter provides the study context for this thesis. It introduces the key actors involved in this study, including China and the UK, the Covid-19 pandemic, and Weibo and Twitter.

Chapter 3 Study Context

This chapter provides contextual information for the thesis, facilitating an understanding of the theoretical concepts in Chapter 2 and the empirical analysis chapters that follow. This chapter begins with Section 3.1 outlining the general background of China and the UK, and their timelines for managing Covid. Section 3.2 discusses the importance of media in managing public health emergencies in China and the UK. To narrow down the discussion of media, the thesis focuses on social media usage during Covid in China and the UK. Thus, Section 3.3 introduces state guidelines on official social media use that centralised Weibo's and Twitter's roles within their national media ecosystems. It also displays the interfaces of Weibo and Twitter, followed by a review of Covid-related scholarship in the past four years.

3.1 Covid-19 pandemic in China and the UK

Before discussing the two nations' presence on social media during the Covid crisis, it is vital to understand the basic political mechanisms of the nations and the impacts of Covid upon them. To do so, Section 3.1.1 offers a brief introduction of China and the UK, and their respective media ecosystems. Then, Sections 3.1.2 and 3.1.3 present the national timelines for managing the Covid crisis between January 2020 and March 2022. These timelines are intended to help understand the sampling framework that will be discussed in Chapter 4.

3.1.1 China, the UK, and their media ecosystems

Founded in October 1949, the People's Republic of China (herein, China), is a one-party communist state, led by the Chinese Communist Party (CCP) (Joseph, 2019, p.15). According to the Gross Domestic Product (GDP) as a measurement of the commercial value of domestic goods and services, by 2023, China had the second-largest with 13.4 trillion, with first place belonging to the United States (20.49 trillion USD) (World Population Review, no date). This positions China as an emerging global economic player. More specifically, the World Bank Group classifies China as an upper-middle-income state, alongside Brazil, South Africa, and other South Asian countries (including Indonesia, Malaysia, and Thailand) (The World Bank, no date).

As a developing country in South Asia, China actively engages with global networks established by developing countries. For example, regional solidarity between China and other South Asian countries can be traced back to the Association of Southeast Asian Nations (ASEAN). ASEAN is a regional collaboration framework including ten members (e.g., Philippines, Singapore, Vietnam, and Laos).

China – along with Japan and the Republic of Korea, as three economically powerful players in Asia – has actively engaged with ASEAN member states through the ASEAN Plus Three (APT) cooperation mechanism since 1997 (Asean Plus Three, no date). For instance, the free trade area established by China and ASEAN is not only the largest free trade area among developing countries but also covers the largest population globally.

In addition to regional solidarity with other Asian nations, China has developed close connections with African countries because of similar historical contexts: Africa's economy was marginalised in the wave of globalisation after its constituent countries' independence from colonial governance, and China also experienced post-colonial independence from capitalism (Edoho, 2011). This created the foundation of 'South-South' collaboration based on mutual benefits, although China has since grown to be one of the most powerful international economic players. For instance, South Africa and China are both members of BRICS, an acronym that emerged in the early-2000s that draws them together with Brazil, Russia, and India (Edoho, 2011, p.18).

Importantly, the close relationship with African and Asian countries is further strengthened by the Belt and Road Initiative (BRI), a Chinese foreign policy initiative established in 2013 to build the 'Silk Road Economic Belt'. The BRI aims to improve global infrastructure (including road and rail transportation), and to remove policy barriers for international collaboration (Ruta, 2018). Geographically, the BRI seeks to enhance the connection between Central Asia and Western countries, echoing the historical 'Silk Road' trade routes dedicated to trading Chinese silk since 2,700 BCE. By June 2023, 150 countries were involved in BRI, including 44 from Sub-Saharan Africa, 34 from Europe and Central Asia, and 25 from East Asia and the Pacific (Nedopil, 2023). Overall, as we will come to see in the empirical findings from Chapter 5, developing countries in Asia and Africa, particularly those involved in APT and BRI, are crucial actors in Chinese governmental communication.

The UK – the United Kingdom of Great Britain and Northern Ireland – is a parliamentary democratic nation, with electorates responsible for changing the government (Edgerton, 2018). It operates within a multi-party-political system, where the Conservative and Labour parties function as dominant parties (Edgerton, 2018). Normally every five years the party that wins most parliamentary seats will be named the 'majority' party, and the other the 'minority' party. From the 1900s, the UK served as a free trade region to other states as well as being the largest importer and exporter globally; today it still ranks as the sixth-largest economy with 2.83 trillion USD GDP (Edgerton, 2018). Over the 20th century, the four countries of the UK (England, Scotland, Wales, and Northern Ireland) all developed their own identities rooted in their geographical and historical basis, which was reflected in the development of their individual Covid guidelines. To facilitate the discussions on the Covid timeline

and policies, this thesis mainly focuses on governmental communication within England's political systems to simplify the policy differences.

The UK – which once oversaw the British Empire, the largest global empire in history, covering some 25% of the world's land area – is a founding member of the Commonwealth of Nations. It was established in 1949 as an outcome of the decolonisation process of the previous British Empire, where the historically colonised areas were re-acknowledged as 'free and equal members of the Commonwealth of Nations'. This structural reform was initiated in eight countries, including the UK, growing to 55 countries by 2022. Despite its historical connection with the British Empire, the Commonwealth now welcomes any country to join as it now operates as an intergovernmental organisation with the purpose of 'prosperity, democracy and peace' (The Commonwealth, no date-a; no date-b). While this thesis does not focus on the UK's historically central role in colonialism, its ongoing position in this (post)colonial configuration is evident in UK government communication, as the empirical chapters discuss.

This chapter has so far briefly introduced how China and the UK, as two key international economic players, operate within different political systems and share different international relations. These features are also reflected in their media ecologies, specifically in how the media operate, which is influenced by their political systems and global positions.

Winfield and Peng (2005) suggest that the Chinese media ecosystem is a mixture of media commercialisation and authorisation: being profitable to advertisers and audiences while following governmental leadership. They classify Chinese media agencies into three types: the first is official mainstream media owned and operated by the government, such as *Xinhua News Agency*, *The People's Daily* and state-run *Chinese Central Television* (CCTV) (Winfield and Peng, 2005). Since *Xinhua*, the national official news agency, has established several branches both locally and internationally, it is common to see other media sources relying on *Xinhua*'s news as information sources, including *The People's Daily* (*China: Media System*, no date). The second type is also managed indirectly by governmental agencies but is not labelled as official state media, such as *Nanfang Weekend* (Winfield and Peng, 2005). Other non-state-owned media are considered fringe media (e.g., *Caijing*, Internet portals), which possess relatively high independence both financially and managerially from the previous two types (Winfield and Peng, 2005, p.261).

Importantly, three types of media discussed above all engage with political missions and commercial activities but to a different extent (Winfield and Peng, 2005). This is further conceptualised into a 'state-media-convergence' model, meaning 'the collaboration between the party-state and the market for the interpenetration of political and financial interests' (Winfield and Peng, 2005, p.268). Colin

Sparks also notes the trend of market orientation in Chinese media ecosystems, where state-owned players gradually profit through advertising rather than governmental funding (2010, p.557). Thus, researching Chinese media practices needs to consider the roles of states and markets in ownership, funding, and regulation, which might not be experienced similarly compared to Western countries.

The British media system is also characterised by a mixture of public and private media agencies, which demonstrate a nuanced business model compared to the Chinese counterparts. The *British Broadcasting Corporation* (BBC) is the oldest national public-owned media, which relies on the annual television licence fee paid by UK households as its operating income (BBC, no date). The British commercial media, however, are funded by advertising and operate relatively independently from government and party management. One prominent feature is the blend of partisanship and British media practices. For instance, newspapers label themselves as having left or right leanings to attract readers with similar political preferences (Firmstone, no date). This stands in contrast with the claimed 'neutrality and diversity reporting' by public broadcasting services such as the BBC, although the BBC is sometimes perceived as 'being biassed towards both sides of the political spectrum' (Firmstone, no date). By November 2020, BBC Breaking News was the UK-based Twitter account with the most followers (over 47 million), followed by the account of British celebrity Harry Styles (@Harry_Styles) (Strugar, 2024). This strengthens the BBC's distinctiveness compared to other media outlets with political leanings both due to its claimed 'objectivity' and international popularity.

Additionally, these media practices should be approached with cultural sensitivity. For instance, Chinese media practices are deeply rooted in values of collectivism and Confucianism — key elements often vaguely brushed over under the broad term 'cultural factors' in comparative studies. These principles, advocating interconnectedness, social harmony, and individual responsibility to larger communities (e.g., family, nation), align with non-Western conceptualisations of modernity and individualisation, as discussed in Section 2.2.3. Accordingly, this section moves to briefly introduce collectivism and Confucianism to help situate the findings in Chapters 5, 6, and 7 within appropriate cultural insights.

Collectivism-individualism is a paired concept initially conceptualised by social psychologist Geert Hofstede's widely cited book *Culture's Consequences* in 1980. Hofstede's work (2001) innovatively proposes five dimensions to interpret cultural differences including collectivism/individualism. Scholars understand individualism as a situation where individuals are independent of one another, with rights over duties and individual autonomy, while collectivism assumes group-binding and mutually obligate individuals where common values are prioritised (Oyserman, Coon, and Kemmelmeier, 2002).

Importantly, Hofstede (2001) suggests that Chinese (and broader Asian) culture is deeply influenced by collectivism, which prioritises collective attitudes and shared interests over individual preferences. This stands in contrast to individualistic cultures, such as those in the US and Western Europe. The collectivism-individualism divide is frequently employed to interpret cultural dynamics and their implications. For instance, a comparison between Chinese and US employers (Earley, 1989) demonstrates that Chinese collectivism prioritises group goals over personal interests. The strong commitment to shared objectives may foster individual expectations of mutual contribution within the group, further reinforcing group cohesion and long-term sustainability. Similarly, this collectivism-individualism framework has been applied to the study of Covid-19 vaccine uptake in China (Wang, 2022), where collectivism was found to be positively associated with group benefits in China. This includes common attitudes such as viewing vaccines as essential for herd immunity and demonstrating a high tolerance for inconvenience and discomfort in pursuit of collective well-being (Wang, 2022, p.7).

However, scholars argue an increasing trend of individualisation to encourage individuals to prioritise their own happiness and life satisfaction since 2001, because of China's rapid transformation in economic and social policies with more balanced attention to economic growth and development in well-being and social harmony (Steele and Lynch, 2013). Another analysis of the Chinese General Social Survey 2015 enriches this point of increasing individualism: while state media mainly promote collectivism as an official ideology to achieve personal happiness, such as television's promotion of nationalism and patriotism, both state-media (collectivism-oriented) and internet and new media content (individualism-oriented) can contribute to the public perception of happiness in China (Su et al., 2021).

Wang and Liu (2010) further argue that collectivism/individualism is not mutually exclusive in Chinese contexts. They suggest that Chinese individuals can behave in both collectivism and individualism, as the personal definition of group interest largely depends on how individuals define their reciprocal relationship with 'otherness' perceived in the same group. In contrast, individualism in China is re-conceptualised as 'selfism' in contrast with 'group-contributing' positive annotations given to collectivist behaviours, reflecting different cultures from Western individualism (Wang and Liu, 2010, p.47). This demonstrates the need to use empirical evidence to explore specific contexts of collectivist cultures, such as during Covid.

The deep entwinement of collectivism with Confucianism in China reflects a 'religious or philosophic tradition' that dates to the Xia Dynasty around 2205 BCE and possibly legendary ages earlier (Yao, 2000, p.3). Confucianism embodies a system of thoughts and values that emphasise moral characters of ren (individuals) (e.g., loyalty, respect, filial piety, altruism, humility) and social relationships (e.g.,

interpersonal networks, societal orders) (Chang and Lee, 2013; Liu and Stening, 2016). Historical Confucianism relationships originate from family-oriented ethics, including father-son, husband-wife, elder-younger brothers, and the duty of children to care for elderly parents, extending further to family and broader social relations (Winfield, Mizuno, and Beaudoin, 2000, p.330; Bell, 2008, p.10). This foundational structure explains the frequent use of familial metaphors in national discourses, particularly in the construction of 'affective states'.

Overall, Confucianism emphasises individuals adhering to ideological values and fulfilling their responsibilities within relationships, positing foundational impacts on both personal ethics and broader societal governance in China (Yao, 2000; Chang and Lee, 2013). Interestingly, Chinese studies scholar Anne Wedell-Wedellsborg (2010) uses the metaphor of 'a way of the wolf' in Chinese literature to describe this individual-group philosophy in contemporary society. In this perspective, the ideal responsible citizen is likened to a wolf — both 'self-reliant and proactive', capable of external competition yet aware of their roles within the collective wolf pack (Wedell-Wedellsborg, 2010). Such individuals are 'beholden to authority' while demonstrating a willingness to support the group when needed, thereby embodying a balance between personal initiative and collective responsibility (Yan, 2010b, p.23).

Collectivism and Confucianism also shape media practices in China. State-level media management is seen as reinforcing values of group cohesion and social harmony (Winfield, Mizuno, and Beaudoin, 2000, p.346). While Confucianism does not explicitly address freedom of expression, it emphasises collective truth and freedom, positioning the media as a tool for helping public trust-seeking (Winfield, Mizuno, and Beaudoin, 2000, p.334). This influence extends to other Asian countries, such as Japan, due to the shared regional foundations of Confucianism (Winfield, Mizuno, and Beaudoin, 2000, p.346). One example of Confucianism's reflection in official communication is the Spring Festival Gala (Wang, 2010), which promotes a digital-mediated Confucianism 'Great Oneness' (i.e., great harmony and integration) through family gatherings and national celebrations that emphasise social harmony and unity (p.395).

Overall, this section has provided the general background of China and the UK for the comparative analysis. The justification for comparing the two comes from two perspectives: China and the UK both have prominent influence in the global economy, reflected in their roles as two permanent members of the United Nations Security Council, an international initiative aimed at 'the maintenance of international peace and security' (United Nations Security Council, no date). In addition, this section noted that their media systems are similarly a blend of public and private media outlets, where official accounts on Weibo and Twitter are officially employed and regulated to promote information transparency effectively and ethically. This section finally highlighted the cultural influences of

collectivism and Confucianism in Chinese society, which informs the following analytical chapters — such as the respect for state authority in Chapter 5; an understanding of responsibility as personal contributions to group welfare in Chapter 6; a focus on promoting nationalism and contributions to the global community through vaccination breakthroughs in Chapter 7.

3.1.2 Covid timeline in China

Having given an overview of the national contexts in Section 3.1.1, the following two sections aim to discuss the Covid crisis, as well as China's and the UK's (mainly England's) management of this global infectious disease in chronological order. As a cluster of infectious respiratory illnesses, the Coronavirus pandemic (Covid-19) first emerged in Wuhan City, China in December 2019. It was then proven to be transmissible among humans and spread rapidly from Wuhan to other cities. By 26 May 2024, Covid had caused cumulatively 775,552,205 confirmed cases and 7,050,201 deaths (WHO, 2024).

To build a tidy timeline for each nation and to facilitate understanding of the time frames chosen in the data collection (see Chapter 4), this section introduces the key timings of Covid in China and the UK. China's timeline mainly refers to the official White Paper, *Fighting Covid-19: China in Action* (抗击新冠肺炎疫情的中国行动) issued by the Chinese State Council in June 2020 (Xinhua, 2020). According to this White Paper, the initial outbreak in Wuhan dated back to 27 December 2019, when the Hubei Provincial Hospital of Integrated Traditional Chinese and Western Medicine reported cases of pneumonia, with unknown cases later identified as viral pneumonia. In the following days, additional cases of pneumonia of unknown cause emerged in Wuhan. On 30 December 2019, the Wuhan Municipal Health Commission issued 'urgent notices' to city hospitals about cases of atypical pneumonia linked to the city's Huanan Seafood Wholesale Market, which was officially closed on 1 January 2020 (Juan, 2020). On 11 January China shared the genetic sequences with the WHO and the public, and the first case outside China was reported in Thailand two days later (WHO, no date-a).

20 January 2020 marked a turning point in Chinese Covid management when Dr Zhong Nanshan, the influential Chinese respiratory disease expert who discovered the SARS virus in China in 2003, announced the virus was transmissible between humans in a news conference held by the State Council Information Office (CGTN, 2020b). Following this, the national Zero-Covid policy was implemented to control the pandemic, which aimed to eliminate any virus spread within the nation. This strategy remained in place until the end of 2022, after which it was adapted to the 'dynamic zero-

Covid' policy from February 2022 to promptly identify and control local infection clusters (China Daily, 2022).

According to the White Paper (Xinhua, 2020), measures in the first wave included launching the first national press conference on 22 January 2020 and announcing the local lockdown in Wuhan to start on 23 January 2020. After a month's efforts to control the virus' transmission, local restrictions were gradually removed on 21 February and China claimed a provisional victory in the battle against Covid on 10 March 2020 (Xinhua, 2020). The end of this initial wave was marked by the lifting of the Wuhan local lockdown in April 2020.

At the same time, global cases started to grow rapidly outside China, and the seriousness of Covid was confirmed by the WHO's declaration of Covid as a Public Health Emergency of International Concern (PHEIC) on 30 January 2020. PHEIC was a designation used only five times before Covid, when cases brought serious public health risks globally and required a rapid international collaborative response. On 11 February 2020, the WHO officially named this new infectious disease as 'Covid-19' and defined this outbreak as a pandemic on 11 March 2020 (WHO, no date-b).

After the first wave, between May 2020 and March 2022, there were several local outbreaks in China followed by regional control measures. For instance, Fengtai district in Beijing implemented local control measures to the Xinfadi wholesale market outbreak due to confirmed cases found in June 2020 (CGTN, 2020a). However, their impact was not equivalent to that of the first wave, partly due to community immunity from vaccination efforts. To promptly tackle local outbreaks, the policy of '*Four-Party Responsibility*' (四方责任) as a comprehensive social attribution system was introduced to attribute the responsibility of pandemic management to four stakeholders: local governments, line departments, employers, and individuals. This aimed to enable relevant actors to respond rapidly when they found a local outbreak (Lan, no date).

In addition to local outbreaks, there were also challenges posed by new variants. For instance, in late 2021 and early 2022, China and the UK both experienced the rapid spread of the new Omicron variant, which was first confirmed in South Africa on 24 November 2021. While the thesis only collects posts shared before April 2022, at the end of 2022, China gradually reopened its borders and removed its three-year zero-Covid policy. On 4 May 2023, the declaration of Covid as PHEIC was eventually removed by the WHO (WHO, 2023).

3.1.3 Covid timeline in England

To establish a comparison in the UK, this section introduces the timeline of Covid management in the UK, with an emphasis on England. The UK timeline is summarised based on the UK charity and think-tank Health Foundation's Covid-19 policy tracker (Dunn *et al*., no date; Institute for Government Analysis, no date). As the sampling framework in Chapter 4 only focuses on the government accounts in England, this section mainly reviews relevant policies in England to avoid confusion given the distinct policies applied in Scotland, Wales, and Northern Ireland.

The first wave in China started to get public attention in the UK on 20 January 2020, when Public Health England adjusted the Covid risk level from 'very low' to 'low' (Public Health England and Department of Health and Social Care, 2020). On 31 January 2020, the first known cases of Covid were confirmed in England, followed by the Foreign and Commonwealth Office advising the UK nationals to leave China on 7 February 2020 (Public Health England and Department of Health and Social Care, 2020). It is important to note the time difference of the initial domestic outbreak in China and the UK, as Covid in England was perceived as gradually transforming from a remote pandemic taking place in China and elsewhere, to a global pandemic with cases being reported within the UK's constituent countries.

In contrast with the localised transmission centred on Wuhan in January, February 2020 saw the international spread of Covid, as marked by the WHO's re-assessment of Covid risk to 'very high at a global level' (WHO, 2020b). On 5 March 2020, Chris Whitty, the UK's Chief Medical Officer, announced the first death in the UK due to Covid (Department of Health and Social Care, 2020a). This was followed by a series of measures implemented in England, such as the new social distancing policy applied on 16 March and school closures on 18 March 2020.

Importantly, on 23 March 2020, then Prime Minister Boris Johnson announced the national lockdown to the public. This was accompanied by a national ban on gatherings of more than two people, warning people that not complying would lead to police fines (Stewart, Mason and Dodd, 2020). The UK national spirit in facing the challenges of Covid collectively was also highlighted by the late Queen's special televised broadcast themed 'we will meet again' (Davies, 2020). The turning point of the first outbreak in the UK was characterised by the gradual lifting of the national lockdown in May and June 2020, such as allowing outdoor gatherings of six on 28 May (Prime Minister's Office, 10 Downing Street and The Rt Hon Boris Johnson, 2020). This state-level lockdown was then replaced by regional ones, such as the first local lockdown applied in Leicester on 29 June 2020.

In addition to the first national lockdown, the UK experienced subsequent waves of the Covid outbreak, including the second wave in September 2020 and a third in January 2021. This led to further national lockdowns taking effect on 5 November 2020 and 4 January 2021 to mitigate the rapid spread of infections and release pressures on hospital staff, while the lockdown easing began gradually in March 2021 (Institute for Government Analysis, no date). Following these lockdown policies, the government initiated their vaccine campaigns to encourage public uptake of vaccines, such as 'every vaccination gives us hope' in April 2021 (Department of Health and Social Care, 2021). While the focus was shifting from pandemic control to mass vaccination, in February 2022, the state government decided to remove legal restrictions related to the pandemic and followed the decision that 'the UK will have to live alongside Covid-19' (Cabinet Office, 2022).

In summary, this section has provided an overview of the pandemic timeline in England from 2020 to early 2022, which was characterised by a combination of applying national lockdowns and lifting restrictions based on risk evaluations. This timeline and its counterpart in China in Section 3.1.2 – marked by intense policies of controlling its initial wave centred on Wuhan between January and April 2020, as well as subsequent regional outbreak afterwards – are crucial for understanding the sampling approach introduced in Chapter 4.

3.2 Media in public health emergency management

Having introduced the overall context of this thesis in Section 3.1, this chapter now moves on to discuss why it is important to research governments' use of media channels (particularly social media) within the context of infectious diseases. To do this, Sections 3.2.1 and 3.2.2 review the continuing policy efforts to integrate media use during public health emergencies, including pandemics, undertaken by the WHO and the Chinese and UK governments, respectively. These efforts all started in the mid-2000s, drawing the on experiences of the severe acute respiratory syndrome (SARS) outbreak in 2003.

Since the mid-2000s, the media have been recognised as necessary components of pandemic management, which Christopher Nelson and colleagues from public policy conceptualise as 'public health emergency preparedness' (PHEP) (2007). PHEP means 'the capability of the public health and healthcare systems, communities, and individuals, to prevent, protect against, quickly respond to, and recover from health emergencies' (Nelson *et al*., 2007). In particular, Nelson and colleagues highlight 'public information and communication' as one of the key elements of PHEP, which should not only facilitate pandemic response but also be rehearsed and reviewed to ensure their efficacy in a culturally appropriate and timely manner (2007). This point was later addressed by public administration

scholars' interpretations of crisis communication during Covid, which flagged new demands for media communication within the increasing national interconnectedness amid infectious disease outbreaks in the 2020s:

> Communication creates shared meaning among actors with different roles. It is the means used to inform partner agencies in the global community as well as the public in different nations about the potential risk and rationale for evidence-based mitigation measures and the need for collective response (Comfort *et al*., 2020, p.617).

From this definition, media in the context of Covid are regarded as 'sites 'for consensus sharing and sense-making across global audiences. Thus, to reflect this increasingly global nature of infectious diseases and to track the 'culturally appropriate' communication channels in the two case countries of this thesis (China and the UK), the following two sections elaborate on how the significance of public communication has been addressed by public health policies produced by the WHO (Section 3.2.1), and by the Chinese and UK governments respectively (Section 3.2.2).

3.2.1 Media and public health emergencies in WHO guidelines

This section starts with three primary guidelines published by the WHO in the 2000s after the SARS outbreak, which presented initial policy attempts to incorporate media in the response to public health management.

The outbreak of SARS in 2003 marked the initiation of a global effort to document the importance of media and communication during the pandemic. In 2005, the WHO published a report named *Outbreak Communication: Best Practices for Communicating with the Public during an Outbreak*, offering suggestions to nations about risk communication during a pandemic (WHO, 2005). However, this report described the media as relatively independent from governments, suggesting that governments should 'build a good relationship' with the media before a disease outbreak (WHO, 2005, p.43). At this early stage, this primary guideline emphasised government interaction *with* media externally rather than as internal media users.

In addition, media in the early-2000s were also regarded as indicators of global pandemic response. In the *International Health Regulations* (IHR), published in 2005, one of the WHO's criteria for confirming serious public health emergencies as PHEIC was whether the case 'caused requests for more information by foreign officials or international media' (World Health Assembly, 2006). Thus, the two documents mentioned above, drafted by WHO right after the SARS 2003 outbreak, outlined

two key trajectories for regulating media communication practices in subsequent years: media as government communication coordinators and as global pandemic management agencies.

While the two documents treated the media as a stakeholder independent from governments, further attempts to involve governments in media communication can be found in the late-2000s. According to another WHO guidance published in 2009, *Pandemic Influenza Preparedness and Response*, efficient media communication for national authorities was further defined as 'being interactive' as shared hub to accommodate information exchange between stakeholders. In this publication, the WHO defined national communication that only focused on 'disseminating outbreak information and recommendations' during certain pandemics as insufficient (2009, p.29). Efficient communication on a global scale, according to the WHO (2009, p.29), should be developed as full-prepared, systematic capacities *before* any influenza pandemic, and which would ideally be 'frequent, transparent, and proactive' to support national or international information exchange and facilitate further coordination.

So far, this section has introduced three WHO-based guidelines published in the mid-2000s, which urged increasing attention be given to communication as an essential element in planning for and managing pandemics. However, at that time, the WHO mainly noted media and communication as a general approach to disseminating information but did not provide pragmatic guidelines on how to select and operate specific forms of media.

The absence of instructions on media operation was later supplemented by further guidelines published after the 2010s, which regarded social media as supplementary options alongside traditional media. For example, in the WHO's publication *Communicating Risk in Public Health Emergencies*, released in 2018, social media were individually listed as alternative media for conducting government communication. In particular, this publication strongly recommended government agencies mobilise the proper integration of social media and traditional media, together with other relevant communication channels, to 'achieve convergence of verified, accurate information' (WHO, 2018, p.28). In the subsequent *WHO Outbreak Communication Guidelines* (WHO, 2020c), 'best practices' of public communication during the pandemic were defined as early and transparent responses with the primary aim of maintaining public trust. However, this document only considered mass media as a unified entity without offering specific instructions for social media (WHO, 2020c).

In summary, in the early-2000s, WHO guidelines began treating the media as external stakeholders for governments to engage with, which was later defined as contextual practices adapted to the local cultures of the audiences. Starting in the 2010s, the WHO's guidelines began to focus on media-specific instructions to suggest proper ways of communication. The next section discusses how media communication gradually received official attention after the SARS outbreak in China and the UK.

3.2.2 Understanding media usage during crises in China and the UK

Like the WHO's gradual attention to social media, the last decade has also witnessed China's increasing efforts to integrate media and communication into national public health legislation.

Chinese legislation has described the application of media during pandemics as one of the responsibilities of governments, particularly for educational purposes. In 2005, China established the '*Overall State Contingency Plans for Public Emergencies*' (国家突发公共事件总体应急预案), which first officially attributed information release as a government responsibility during public emergencies (www.gov.cn, no date-a). This plan also provided examples of government-led information release options, including authorising information releases, disseminating news articles, organising news reporting, accepting journalists' interviews, and holding press conferences. In this 2005 publication, the Internet was listed alongside other media channels, such as newspapers and television, as suggested avenues for carrying out government communication (www.gov.cn, no date-a). However, the main purpose of engaging the media was to enhance public awareness of potential dangers and increase populations' self-help and mutual assistance capabilities, rather than using them for communication purposes (www.gov.cn, no date-a). Employing the Internet for educational purposes during public emergencies was further echoed by the '*Emergency Response Law*' (突发事件应对法) in 2007, which encouraged news media outlets to voluntarily promote knowledge about emergency prevention, responses, self-help, and mutual assistance for the public good (www.gov.cn, 2007b).

These attempts to emphasise ethical media use during public emergencies in the early-2000s aligned with the broader national campaign to build an 'Open Government', which sought to improve information transparency within government institutions. In 2007, the '*Open Government Information Regulation of the People's Republic of China*' (政府信息公开条例) particularly highlighted 'emergency plans, warning information and response to public emergencies' and 'supervision and inspection of public health' as two key areas requiring extra information transparency (www.gov.cn, 2007a). In 2019, these two special notes about public emergency and public health were retained in the revised version of the *Open Government* regulation. This initiative of *Open Government* also laid the foundation for improving government performance on social media use (e.g., Weibo and WeChat) in China in the 2010s, discussed later in Section 3.3.2. Overall, in the mid-2000s, the national legislation in China mainly noted communication as a government duty, and the Internet in these early years was included primarily for educational purposes.

After outlining the growing recognition of the importance of media communication during public emergencies in the WHO's and China's documents, this section continues to review how media communication has been gradually incorporated into pandemic management mechanisms in the UK. Drawing on experiences from the H1N1 influenza in 2009, the '*UK Influenza Pandemic Preparedness Strategy*' was issued by the Department of Health in 2011, which suggested the UK government and administrations actively engage with 'a wide range of media' during the pandemic (DH Pandemic Influenza Preparedness Team, 2011, p.47). This document specifically mentioned social media as one of the three communication options (alongside regular press briefings and key websites) 'to reach a wider audience and to encourage responsible, informed reporting' (DH Pandemic Influenza Preparedness Team, 2011, p.47). Similarly, this document also encouraged the use of 'social networking and digital technology' to approach 'specific sections of the public' (DH Pandemic Influenza Preparedness Team, 2011, p.47). These descriptions reflected that social media and social networking channels were initially regarded as approaches to enhance information accessibility during the pandemic.

This appeal of 'using a wide range of channels including social media' would resurface in subsequent documents, such as NHS England's '*Operating Framework for Managing the Response to Pandemic Influenza*', updated in 2017 (Sellwood, 2017). In this framework, social media were listed as an additional option besides 'traditional' print or broadcast media to cater to various audiences and content types (Sellwood, 2017). Then, in March 2020, BBC Media Action published '*A Guide for the Media on Communicating in Public Health Emergencies*', which similarly listed social media as suggested options given their interactivity, such as encouraging hosting question and answer sessions with experts on Facebook (Hutchinson and Fray, 2020).

Over the last two decades, both China and the UK have started to integrate the Internet and social media, respectively, into their overall official media channels. They similarly justified this integration given social media's supplementary characteristics to traditional media, which were understood as being able to enhance the efficiency of information releases during public health emergencies. For instance, this combination allowed information about how to access available assistance during crises to reach different types of audiences, which may further maintain public trust in the national health systems.

This section has so far reviewed policy developments in China and the UK to incorporate media communication within PHEP, characterised by a gradual recognition of the importance of social media use by national authorities. Synthesising this section with Section 3.2.1, identifying the unique contributions of social media is in line with the WHO's recommendations to explore the interactive potential of social media in addition to traditional media. However, how people consume information

during a pandemic may well have changed in the decade since the SARS outbreak, particularly given the impacts of social media platforms. The proliferation and disappearance of communication channels invite new scholarship that explores how governments select, combine, or introduce new 'appropriate' approaches to reach their target audiences. This explains why studying government performance on media communication matters, particularly on social media during the Covid-19 pandemic.

For instance, during Covid, social media partly facilitated government listening and public conversations, especially during periods of enforced social distancing and lockdowns. The standard of determining 'good' official communication on social media is further complicated by issues such as misinformation, disinformation, conspiracy theories, and social media bots (automatic non-human accounts imitating users posting content) (Brownson *et al*., 2020). These aspects are labelled with the term 'infodemic' by the WHO that advises publics to remain vigilant against 'false or misleading information during a disease outbreak', particularly those rapidly disseminated through social media and the Internet (WHO, no date-d). Thus, the conflict between massive traffic and contested information credibility on social media places much responsibility on the governmental presence on these platforms as governing actors and information sources.

Furthermore, the policies and guidelines above do not address much on how 'media' and 'social media' function beyond 'neutral' sites for information exchange, which were discussed theoretically through 'platformisation' in Chapter 2. Instead, public health researchers argue that the media's inherent political economies and cultural origins should not be ignored when they reprocess their narratives to interpret policy initiatives (Henderson and Hilton, 2018). They appeal for further attention to unpack how the media present evidence to construct and justify their own narratives of events, with the potential for influencing the political climate, public opinions, and generating their own income as media businesses (Henderson and Hilton, 2018). As highlighted in Chapter 2, researching digital platforms goes beyond looking at a neutral set of technological functions. It involves understanding the socio-technical 'politics of social media, such as datafication, commodification, and selection facilitated by digital platforms (van Dijck, Poell and de Waal, 2018). In essence, digital platforms as mediation agencies also shapes the narratives of risk represented through them.

In addition, social media are suggested to be considered as a series of heterogeneous platforms rather than a unity, given their differences in platform regionality (Steinberg and Li, 2017) and affordances affected by regional cultures (e.g., Ronzhyn, Cardenal and Batlle Rubio, 2023), illustrated in Chapter 2. For example, one comparative study across 10 countries in Europe, North America, and South Asia demonstrated that participants' perceptions of Covid significantly varied according to cultural contexts

(Dryhurst *et al*., 2020). This echoes the appeal of avoiding 'one-fits-all' communication strategies for different demographic groups (DH Pandemic Influenza Preparedness Team, 2011, p.47). In summary, differences between digital platforms and their practices open space to interdisciplinary scholarships across critical public health and social media studies by asking 'who is setting the agenda', 'within what types of media', and 'for what benefits' (Henderson and Hilton, 2018, p.374).

In summary, this section has suggested a growing emphasis within national policies in China and the UK on incorporating the Internet and social media into official communication channels, while the differences among social media platforms call for further platform-based research to unpack their individual politics. Since this thesis compares the combination of two national governments *and* their respective discourses on two specific platforms, the next section specifically discusses how Weibo and Twitter, have been embraced in broader national campaigns aimed at incorporating the Internet and social media into government communication.

3.3 Comparability between Weibo and Twitter

After Section 3.2 articulated the increasing attention paid to media communication during public health emergencies, this section specifically introduces Weibo and Twitter, along with their practices in China and the UK. It aims to provide background knowledge for this study, with an emphasis on the comparability between Weibo and Twitter. Importantly, since the initial research design and data collection presented in this thesis, Twitter has undergone significant transformations, including changes in ownership, branding, and even name (it underwent a renaming process as X in June 2023). To preserve its characteristics as it was during the data collection period, this thesis uses the platform's historical name: Twitter.

Since Twitter was established prior to Weibo, Section 3.3.1 first introduces Twitter within its national contexts, followed by an introduction to Weibo in Section 3.3.2. Then Section 3.3.3 presents the relative platform interfaces to illustrate several basic platform functionalities, including log-in, post pages, user profiles, and verification mechanisms. Finally, after outlining the historical evolutions and technical architectures of two platforms, Section 3.3.4 reviews Covid-related studies based on the two platforms, which demonstrates the relatively sparse scholarship in comparative analysis based on governmental communication during Covid.

3.3.1 Twitter in the UK

In July 2006, Twttr, the precursor to Twitter, was established by the podcasting company Odeo in San Francisco, which originally aimed to provide short messaging and status update services among colleagues within Odeo (History.com Editors, 2019). Since Twitter was originally designed as a Short Message Service (SMS) platform, it initially limited its posts to 140 characters (MacArthur, 2024). This was based on the common practices among other SMS services, which usually limited a single message to 160 characters, with 20 characters reserved for commands and usernames. The 140-character limit also became a key feature of Twitter's branding as it grew, while in 2017, the trend of smartphone usage increased this limit to 280 characters (MacArthur, 2024).

Six months after Twttr's launch, it changed its name to Twitter and managed to attract several dispersed publics, including minority communities (e.g., non-white cultural discussions, subcultures), media institutions, and mainstream celebrities, which formed its original user base (Burgess and Baym, 2020). Since users were able to follow someone (e.g., celebrities, political figures) beyond their close friendships, Twitter was characterised as 'interactive multicasting', where ordinary users were able to (re)create and (re)broadcast something to unknown audiences (Murthy, 2013, p.7). This design of communicating with 'strangers' also distinguished Twitter from the reciprocal 'friending' mechanism on other platforms at that time.

After 2009, Twitter tried to transform its role from a social networking space to a serious news source, transitioning from what Burgess and Baym described as 'me-centred, personal and intimate Twitter' to a 'world-centred, public and newsy' channel (2020, p.13). In this process, Twitter maintained its uniqueness 'between the mundane and the spectacular', which enabled users to see trivial updates from friends and world-breaking news on the same page (Burgess and Baym, 2020, p.15). This juxtaposition of personal everyday life and global news, according to Dhiraj Murthy (2012), is sociologically important since it promotes a novel criterion for what can be an 'event' on Twitter: mundane expressions drawn on everyday experiences and newspaper articles from professional media outlets can both trend as media content through Twitter, blurring the boundaries between public and private narratives (p.1064). When individuals become the producers of media content, they are able to tailor Twitter's functions in their preferred ways, which may explain the rise of platform-specific participatory cultures, such as the trends and memes prevalent on Twitter (Weller *et al*., 2014). In essence, this shift from interpersonal networking to global news media allowed Twitter to stand out in the increasingly intense competition with new platforms (such as the introduction of Instagram in 2010) (Burgess and Baym, 2020, p.22).

In terms of commercial interests, to seek financial independence from initial venture capital investors, in 2010 Twitter sought to create new income sources by introducing several paid functions, including 'promoted tweets (or sponsored tweets)' to present advertisements within search results, 'promoted trends' to display contents within trending rankings, and 'promoted accounts' to display accounts in suggested following account lists. In 2013, Twitter as a private corporation was open for public funding and raised $1.8 billion in its public offering (IPO), which was considered to have a bright future at that time (Vanian, 2022).

However, in 2016 Twitter was also criticised for being the megaphone of several prominent users such as former US President Donald Trump, whose account was banned permanently by Twitter in January 2021 due to 'the risk of further incitement of violence' (X, 2021). In 2022, Twitter was in fully private management with Elon Musk's ownership, under which several immediate transformations were introduced, including the renaming of Twitter as 'X', and replacement of the blue bird icon with a black X logo in August 2023 (MacArthur, 2024). Musk's management of Twitter has also drawn further controversy because of the rise of hate speech since the time of Trump's controversy and the proliferation of bots due to decreasing content moderation (Hickey *et al*., 2024).

Having introduced Twitter's global development in 2016, this section moves on to discuss the attitudes of the British government toward Twitter specifically. After Twitter's establishment in 2006, government institutions started to consider incorporating Twitter into their overall communication strategy. In 2009, Neil Williams, then head of corporate digital channels at the Department for Business, Innovation and Skills (BIS) wrote a blog titled '*Template Twitter Strategy for Government Departments*' to encourage Twitter use within BIS and in other government departments (PA News, 2009). This blog, while no longer available on government websites now, presented the initial ideas of helping government accounts adapt to the overall Twitter culture, such as encouraging hashtag usage, setting up separate accounts for campaigns, and following other organisations but not individuals (*Template Twitter Strategy for Government*, no date). This proposal of evaluating Twitter's compatibility also aligned with general national attempts to update government communication channels, among which the project '*Government Digital Service*' (GDS) was initiated in 2010 as part of the Cabinet Office's aim to 'make digital government simpler, clever and faster for everyone' (Government Digital Service and Cabinet Office, no date).

After the hesitancy in using Twitter immediately after its establishment, the early-2010s marked the efforts to explore Twitter's potential in facilitating government communication. According to a legislative study of the early use of Twitter by Members of Parliament (MPs), by 2011, 7.9% of MPs had joined Twitter due to the need to introduce their work (Jackson and Lilleker, 2011). One of the potential benefits was taking the initiative to justify their contributions instead of being passively

reported on by the media (Jackson and Lilleker, 2011). In addition to legislators' trials of Twitter, in 2013 the button 'sharing this page through Twitter' was officially added below the department and policy sections on GOV.UK as an external request received by the GDS (Williams, 2013).

In the late 2010s, increasing attention to regulating social media use was paid by the British government, while the policies were published on a ministry basis rather than applied to the general government system. The guidelines, which remain in place, consistently emphasised governmental social media use for information dissemination purposes rather than interaction. For instance, *Cabinet Office Twitter Policy* published in 2018 defined Twitter as an open space for providing governmental news stories, announcements, and events, emphasising that its following 'does not imply endorsement of any kind' (Cabinet Office, 2018). Though public mentioning messages (i.e., @username) would be reviewed daily, this policy officially clarified that the Cabinet account would not reply to any @ messages because 'the limitations of Twitter's format mean that we would not be able to give you a full and useful reply' (Cabinet Office, 2018). Similarly, HM Revenue and Customs presented its corporate Twitter account (@HMRCgovuk) only for updating departmental information, campaigns, and announcements, which would merely signpost users to further guidance rather than directly answer inquiries (HM Revenue & Customs, no date). The interaction work was allocated to another account (@HMRCcustomers) dedicated to dealing with general queries and 'signposting' users to relevant resources.

Therefore, the primary aim of official Twitter use in the UK is *information provision*, while the policies above consistently emphasise 'signposting' users to relevant guidance rather than directly engaging with user inquiries. This approach was empirically examined by a Twitter study based on Norwegian and British health authorities' performances during an Ebola outbreak (McInnes and Hornmoen, 2018). This study noted that the health departments, including British accounts, tended to use Twitter for 'monitoring' rather than fully exploring its 'dialogical nature' (McInnes and Hornmoen, 2018). It also noted several systematic barriers limiting British accounts' participation in Twitter conversations, such as questions beyond the pre-approved contents for delegated operation teams, and the challenges of answering questions within 140-character limits (McInnes and Hornmoen, 2018, p.41).

Furthermore, regarding the controversies of misinformation on Twitter mentioned earlier, the British government also directed efforts into maintaining public trust in their official accounts. For example, in 2018, GDS as the operator of @GOVUK on Twitter published the *Social Media Playbook* to regulate government social media performance, with the latest update in 2023 (Government Digital Service, 2023). Specific to Twitter, this playbook suggests various approaches to maintaining users' trust, among which the priority is to get accounts verified to present authenticity (Government Digital

Service, 2023). Instead of using short links, users of tweets are also suggested to display full hyperlinks with a description of the attached pages to let users know where they are being taken. In addition, the playbook also suggests government communication in tune with the overall Twitter culture, such as shortening tweets' lengths, considering user preferences for mobile devices, and editing videos within 140 seconds to enable autoplay in Twitter's newsfeed (Government Digital Service, 2023).

In addition to guidance on general institutional accounts, documents also pay attention to regulating personal social media use. For example, according to the social media guide by the Ministry of Defence, personnel are advised to consider their personal social media in 'professional' and 'sponsored' contexts, and their personal speaking and interaction needs to be representative of the ministry's interests (Ministry of Defence, 2012).

Overall, this section outlined the history of Twitter since 2006, and the government's attitudes towards it through gradually developing guidelines in the UK. The next section introduces the development of Weibo and how the Chinese government has incorporated it into its official communication strategy.

3.3.2 Weibo in China

In July 2009, the Chinese technology company Sina established its microblogging platform, Sina Weibo – Weibo for short – which in Chinese is equivalent to a microblog. Weibo's emergence partly aimed to attract users after Twitter was blocked in China, which was described as the 'rising of a star' by Communication Studies researchers Lianrui Jia and Xiaofei Han (2020, p.308). It also shared similar functions with Twitter (e.g., following others, sharing posts, re-posting, browsing trending posts), which will be demonstrated in Section 3.3.3 with screenshots. During Weibo's early expansion before 2011, the public perceived Weibo as an efficient vehicle for reflecting social injustice and accommodating social listening (Jia and Han, 2020), which Communication scholar Eileen Le Han notes as grassroots empowerment in 'reversing the power hierarchy and social control' (2018, p.101).

Simultaneously, Weibo's early democratic atmosphere and lack of moderation systems led to fragmented opinions and serious debates on politics (Jia and Han, 2020, pp.104-106), which resulted in tighter state moderation from 2012. From this point, for the platform's survival, Weibo attempted to reduce its presence as a political opinion curator to 'benefit the existing social order by promoting consensus rather than negative views' (Han, 2018, p.109). For instance, in 2012, Weibo introduced compulsory real-name verification, which means Weibo's functions were no longer accessible for those not registered with a real national ID (Han, 2018, p.311).

Furthermore, to seek financial sustainability, after 2014 Weibo attempted to extend its revenue sources through digital marketing. For instance, by introducing 'hot searching list' functions to exhibit real-time trending topics, Weibo attempted to depoliticise itself towards marketing, entertainment, and celebrity affairs, which fed Weibo with significant income from advertising and fan economies (Jia and Han, 2020, pp.318-320). For instance, Weibo developed its special function 'super topic' beyond Twitter-style hashtag communities. This enabled users to gather as hashtag-oriented communities in a more self-organising way, such as in digital fandom communities, where some users can become 'hosts' responsible for moderating their topics and keeping the community alive (*Understanding Weibo's 'Super Topics'*, 2019).

Although Weibo's shift to marketing and entertainment might be considered a 'decline' for its early loyal users attracted by its initial publicness and connectivity (Han, 2018, p.106), scholars argue that Weibo still contributes to new forms of empowerment, to offer somewhere to exchange public opinions around politics, economics, and cultures within state-censored contexts (Shi and Yang, 2016, pp.74-75), or as 'non-confrontational activism' (Wang, 2019). For instance, Weibo has accommodated new forms of citizen-journalism activism (e.g., appealing for blood donations after the Wenzhou train collision) and digital publicness (e.g., finding parents of kidnapped children by posting photos) (Jiang, 2016, pp.32-37). To summarise Weibo's strategy, modern China Studies scholar Marina Svensson describes discourses on Weibo as a *limited* form of empowerment for civil engagement (2016, p.70), which 'have walked a fine line balancing Internet growth and its attendant political consequences' (Jiang, 2016, p.30).

In summary, Weibo has experienced three phases of change since its establishment in 2009: from a public sphere for opinion sharing, to a de-politicised and market-oriented platform, to an entertainment-dominated marketing curator (Jia and Han, 2020). While the earlier version of Weibo might be considered a 'copycat' of Twitter, it has adapted to its local audience and regional cultures in China (Sun, 2013, p.29).

After introducing the development of Weibo from the platform aspect, this section moves on to discuss Weibo use within government contexts in China. As introduced in Section 3.2.2, in 2013 the national initiative of 'Open Government' in China marked the start of including new media within government communication. To implement this policy, in 2013 the State Council published a new guideline on enhancing government credibility through information disclosure, which officially started encouraging all regional governments and departments to set up new media accounts (www.gov.cn, 2013). This is the first time that microblogging – or as it is officially known, 'government affairs microblogs' – as listed as a suggested communication channel in China. Later in 2015, this proposal of enhancing government performance through new media was evaluated by calculating the numbers of

government agencies' accounts, including microblog platforms such as Sina Weibo and Tencent Microblog (Xinhua, 2015).

Weibo's significance was officially confirmed in December 2018, when the State Council promoted the national campaign named '*two wei one duan*' (两微一端), with two '*wei*' meaning WeChat and Weibo, and '*duan*' meaning government-developed applications (China Daily, 2019). This campaign aimed to encourage government-run new media outlets to actively engage with these three media platforms. This campaign also set out a plan for building 'punctual information disclosure, policy responses and services for the public' by 2022:

> According to the guidelines, by 2022, a coordinated and responsive new media system led by the official website of China's central government, gov.cn, will be built, which will consist of accounts and applications on Weibo, WeChat and other third-party platforms, and mobile clients developed by administrative organs at different levels (english.gov.cn, 2018).

While Weibo has gradually been embraced as a strategic communication channel since 2013, it is simultaneously moderated for its contributions to, or conflicts with, public interests. For example, in January 2018, Weibo's hot ranking (platform-provided trending list) was suspended for one week to address the spread of illegal content, which highlights the importance of maintaining public good in commercial operations (China Daily, 2018). For example, narratives of positive energy have been mobilised as a production strategy to enhance content visibility on Weibo (e.g., Chen and Wang, 2019), which are also resonated by other digital platforms such as Douyin (Chen, Valdovinos Kaye and Zeng, 2021).

In addition to studies based on online observation, there have been several qualitative studies involving interviews with the operation team of Weibo. For instance, Lei Zheng, a scholar in digital and mobile governance, interviewed the Weibo account management team (2013). Lei's study noted the challenges faced by the operation team when they navigated dual roles as the platform governor and users of a third-party, commercial platform (2013). Since Weibo was not originally designed for political communication, Lei described the existence of government Weibo accounts as a *deviance* from typical Weibo cultures, because they operated within 'a vertical, centralised and closed model' in contrast to Weibo's 'horizontal, decentralised and open network' (2013, p.375). Lei's ideas around 'deviance' are in line with another recent study by the interdisciplinary media scholar Sheng Zou, who interviewed the digital platform teams of three state-run media outlets (2023) including their operation on Weibo. Sheng noted that this deviance might result from the gap between 'ideological and emotional governance' in politics and emotion-laden logics in social media (2023, p.208). This clarification of different information flows within political systems and the commercial platform

Weibo also explained the practical challenges mentioned by Lei's interviewees, such as Weibo posts undergoing a traditional newspaper editing process, and concerns regarding government information security on social media (Lei, 2013).

Conceptually, to capture the complicated entanglement between Weibo and governments, Guobin Yang, an interdisciplinary scholar in communication and sociology, proposed the concept of 'state-sponsored platformisation' to distinguish it from its Western counterparts' 'market-dominated platformisation' (2021). In particular, Yang (2021) noted that the role of governments in state-sponsored platformisation extends beyond pure censorship with more creative strategies, such as 'occupying the web' through opening Weibo official accounts, or 'civilising the web' through adopting a positive-energy-oriented communication strategy, as discussed earlier.

Sections 3.3.1 and 3.3.2 have respectively introduced the historical development of Twitter and Weibo, followed by a discussion of their respective political practices. The political contexts and public expectations towards government presence on social media inform this study of the contextual distinctions between analysing personal and government-operated accounts. While official accounts claim to function more than an information notice board, the cultures of government-operated accounts still set themselves apart from the general platform culture, such as being less dialogical (see Weibo in Medaglia and Zhu, 2017; Twitter in McInnes and Hornmoen, 2018). This necessitates treating government platform accounts as special cases, because they neither precisely mirror the general platform cultures nor represent government discourses on other media in the same way. Instead, these accounts illustrate their own cultures at the intersection of political contexts and digital platform environments.

Up to this point, this chapter has reviewed two elements involved in the comparison, with Section 3.1 focusing on nations and this section on platforms. Differences in political systems, practices of social media engagement, and the affordances of Weibo and Twitter all require this study to make strategic decisions in constructing the comparison, with a clear acknowledgement of potential losses. These decisions are critical to ensuring the comparison in this study is purposeful to answer the research questions in Chapter 2 and remains feasible in terms of methodology. Chapter 4 will revisit these decisions shortly and introduce the sampling framework used to identify government accounts and time frames in light of these contextual differences.

3.3.3 A Weibo and Twitter 'walkthrough'

Since this thesis builds its comparison on two platforms, this section aims to show what Weibo and Twitter visually looked like at the time data analysis took place. To demonstrate the technical

comparability across Weibo and Twitter, this section adopts the 'walkthrough method' to present platform screenshots (Light, Burgess and Duguay, 2018).

The walkthrough method, initially introduced by digital platform scholars, provides a comprehensive ethnographic approach for critically analysing a given app. Practically, researchers stimulate platform users to 'walk through' the technological functions of a particular platform, which generate the observational data, such as screenshots and notes, to understand user experiences within the app (Light, Burgess and Duguay, 2018):

> The core of this [walkthrough] method involves the 'step-by-step observation and documentation of an app's screens, features and flows of activity - slowing down the mundane actions and interactions that form part of normal app use in order to make them salient and therefore available for critical analysis (Light, Burgess and Duguay, 2018, p.882).

This section presents a series of screenshots with instructions as walkthrough data. Considering Weibo uses Chinese as the default language, all Weibo screenshots in this section are annotated with translations. While both Weibo and Twitter provide numerous functions to different audiences and purposes, this section only introduces functions relevant to understanding the analysis results in the following chapters.

Weibo does not require users to log in to browse posts, while logging in is (now) compulsory to access Twitter. To demonstrate the difference with and without logging in, Figures 2 and 3 below are the front pages of Weibo. Without logging in (Figure 2), users can search for keywords or click on different types of trending lists, but they are not able to post things. In the middle and left side of Figure 2, Weibo provides several options for non-logged-in users to find their interests, such as posts within the same city, celebrities, and funny posts.

Figure 2: Weibo front page before log-in

After logging in (Figure 3), users are able to write posts in the central-top place. They can also add emojis, images, videos, hashtags, and use the headline article function. In addition, for registered users, Weibo provides more customised content. For instance, they can choose to only browse posts from specific user groups, such as from friendship groups (where users classify accounts as 'close friends'). As seen in the lower right corner of Figure 3, Weibo also promotes some accounts that users might be interested in.

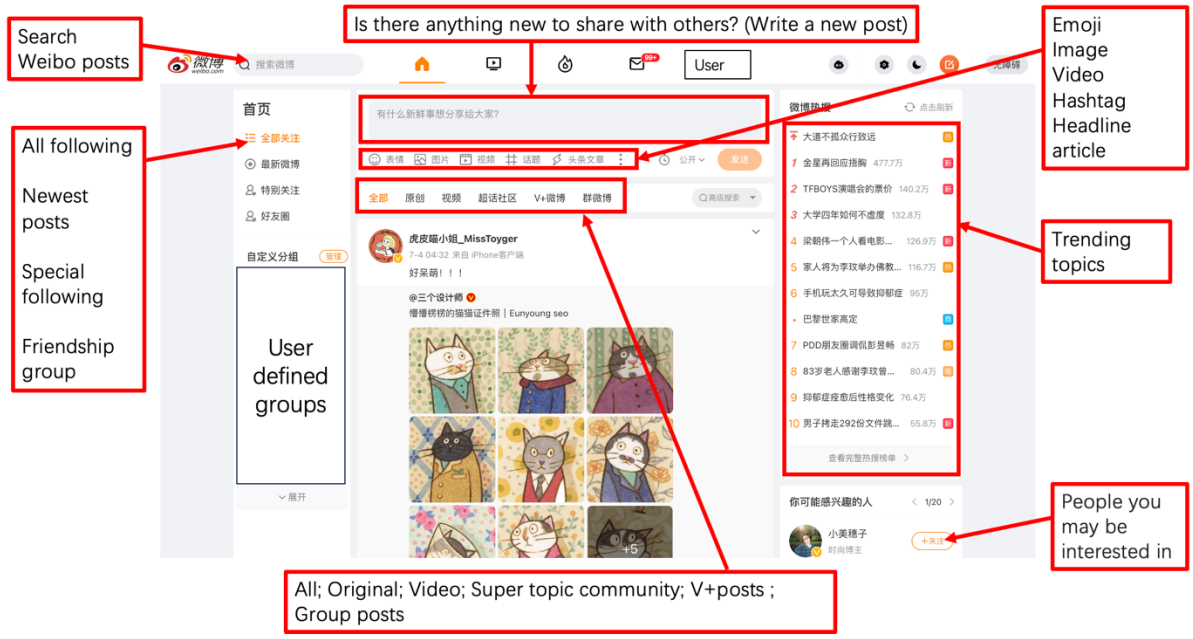


Figure 3: Weibo front page after log-in

As mentioned earlier, non-logged-in Twitter users cannot access Twitter front pages (Figure 4). To capture the same version of Twitter in use during this study's sample period, the Wayback Machine (Internet Archive, no date), a free online tool retrieving historical pages of websites, was used to create Figure 4 below. This is different from the contemporary layout of X, but for the sake of clarity, this screenshot helps to demonstrate Twitter's look when the data collection was carried out.

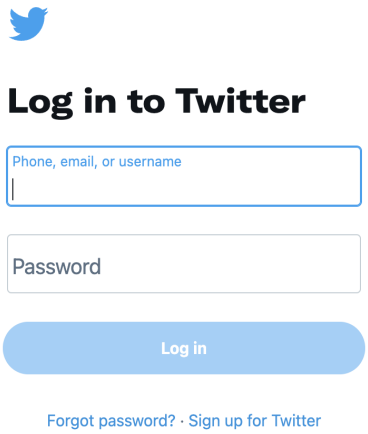


Figure 4: Twitter front page before log-in (retrieved via the Wayback Machine on 30 March 2021)

Compared to Weibo's front pages, users must register first to browse content on Twitter (Figure 5). Weibo and Twitter similarly adopt three-column structures on their website versions, while the places to draft tweets are slightly different. Within the three columns, both Weibo and Twitter place their posts in the central column, with trending topics on the right and more detailed functions on the left.

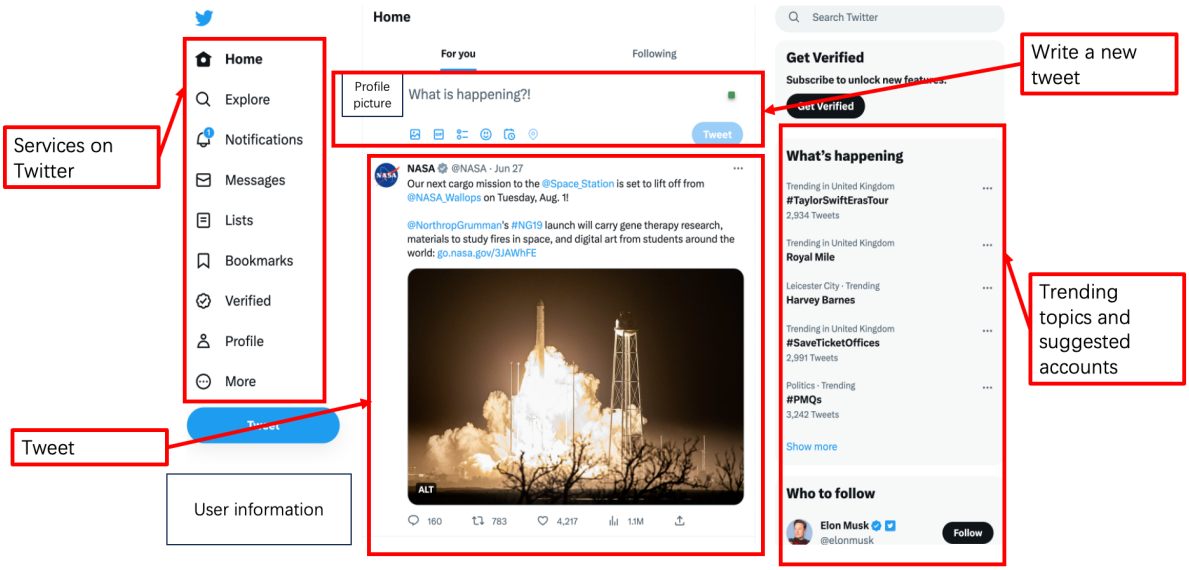


Figure 5: Twitter front page after log-in

To facilitate understanding the contexts of displayed accounts in the findings chapters, this section presents screenshots from two most frequently featured accounts in the collected datasets: the Weibo account of the National Health Commission of the People's Republic of China (@Health China) in Figure 6, and the Twitter account of the Department of Health and Social Care in the UK (@DHSCgovuk) in Figure 7.

Figure 6: Post of @Health China on Weibo

Figure 7: Post of @DHSCgovuk on Twitter

Both Weibo and Twitter present posts and engagement in top-down structures, as shown in Figures 5 and 6. Users can add their comments below the original posts and interact with other users' comments. Users can also forward the original posts using the function 'repost' or 'retweet'.

Furthermore, the special elements on both platforms, such as hashtags and videos, are highlighted in different colours to convey their interactive nature (red on Weibo, blue on Twitter). But the hashtag on Weibo needs to be written with symbols on both sides as '#hashtag#', because the Chinese written language does not have spaces between characters as English does. As mentioned in Section 3.3.2, hashtags on Weibo also accommodate extended functions such as 'super topics', where users may create their own communities around specific topics such as celebrities. Managed by selected topic hosts, super topics are operated by users and create sustained communities like fan clubs (*Understanding Weibo's 'Super Topics'*, 2019).

Having introduced the elements within the posts, this section proceeds to discuss how user profiles are presented on Weibo (Figure 8) and Twitter (Figure 9). Both platforms provide introductions of the account, including user backgrounds, engagement, and verification. Users can also pin their posts to hold them at the top of their post lists.

Figure 8: User homepage of @Health China on Weibo

Figure 9: User homepage of @DHSCgovuk on Twitter

One difference between the two platforms is the classification of a user's posts. The category on Twitter includes 'tweets', 'replies', 'media' and 'likes' (see middle of Figure 9), while Weibo classifies contents by 'selected posts', 'Weibo posts', 'videos', 'album', and 'articles' (see middle of Figure 8).

In addition, Weibo's function of 'headline article' (头条文章) allows users to write longer posts in an article format without travelling outside Weibo (Figure 10). Within the article, users can upload texts and multimedia materials such as images and videos or edit the content after its release.

Figure 10: Local function of 'headline article' on Weibo

By clicking on the image within the original post (left in Figure 10), users are redirected to its article page but stay on Weibo. Twitter, in comparison, does not have an internal article function, though users may also insert a hyperlink within the post (see Figure 11), and direct users to the external websites by clicking it.

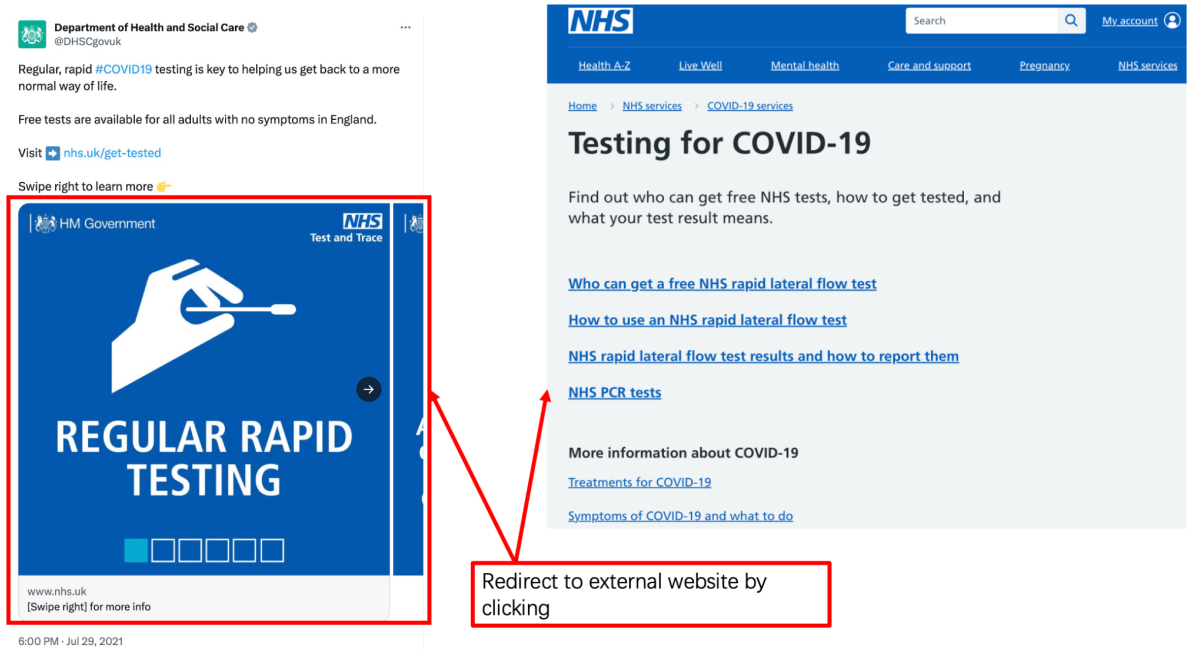


Figure 11: Hyperlink to the external webpage on Twitter

The ability to refer to other media also points to another key difference in the character limits: Weibo initially limited 140 characters but later allowed 2,000 characters per post to remove the limitation on user expression from 2017. Texts longer than 140 characters are truncated and available when users click the 'see more' (展开) button. The report and comments still need to be within 140 characters, while users are officially suggested to consider writing headline articles if their posts exceed the limit (Weibo, 2018).

However, at the time of data collection, Twitter allowed for 280 characters maximum per tweet instead of 140 characters as earlier, which was explained officially as being 'still short and brief, but enabling more expression' (X Developer Platform, no date-a). Additionally, Twitter's character limits were more complicated than Weibo given its international user base. For instance, according to Twitter's official report, only 9% of all English tweets reached the 140-character limit, while this number fell to 0.4% in Japanese-written tweets (Rosen and Ihara, 2017).

Twitter's character limits also lead to discussions about whether users may compact their stories within one tweet or simply send more tweets. The latter strategy is facilitated by the Twitter 'thread' function. It allows users to post a series of related tweets connected by a 'line' on the left (Figure 12). to record the development of one theme for users. Platform character limits and relevant solutions to extend the meanings beyond a single post (e.g., Weibo's headline articles, and Twitter's threads) proved to be important elements in governmental communication, as discussed in the following chapters.

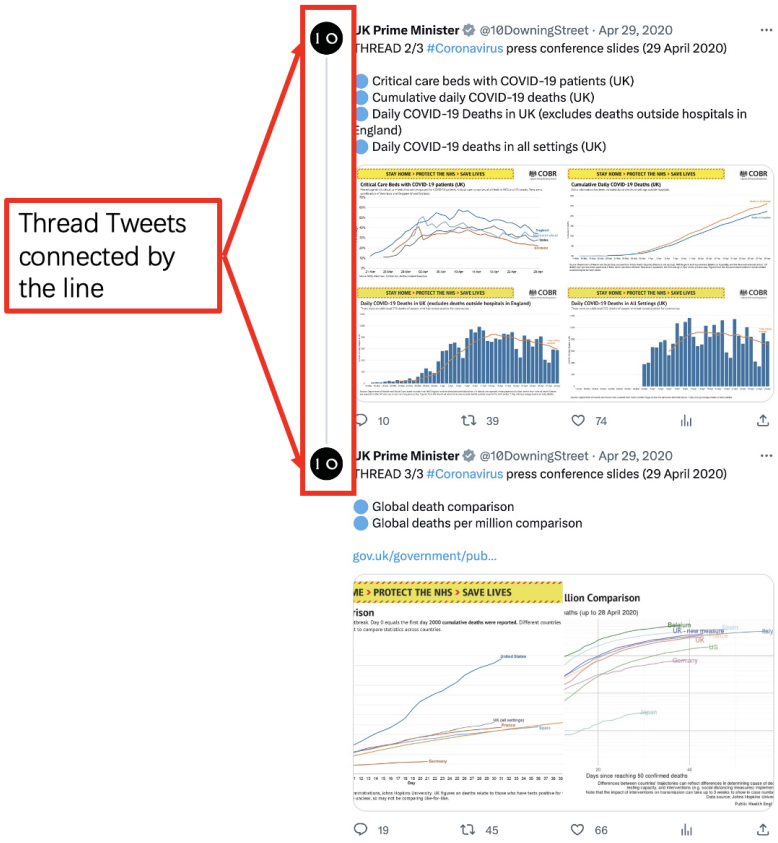


Figure 12: Threads on Twitter

So far, this section has presented a walkthrough of Weibo and Twitter, where most of the posts include visuals to supplement the meanings of texts, as illustrated in the figures above. Methodologically, this necessitates the research design to take visuals seriously in the broader thematic analysis. This will be further unpacked in Chapter 4. In addition, there are several technical designs operating in different practices, such as hashtags, hyperlinks (or headline articles on Weibo), and character limits, which offer empirical evidence to explore the platform affordances across different contexts. These affordances will also be mentioned and further examined in the subsequent empirical chapters.

After introducing the user interfaces of Weibo and Twitter, this chapter now briefly discusses their verification systems. By March 2021, the end of the sample's time frame, verification on Twitter was processed on a request basis following its standard of being 'authentic, notable, and active' (X Help Center, no date-c). Accounts eligible for verification had to be from particular public sectors, such as government figures and institutions, entertainers, news institutions, and journalists (X Help Center, no date-c). For instance, applicants from government office accounts had to include links to official government pages in their profiles and were referred to by other verified organisations as authentic accounts multiple times (X Help Center, no date-c). Twitter would also withdraw accounts'

verifications when they conflicted with platform policies, such as sharing hateful comments (X Help Center, no date-c).

However, this legacy verification process underwent major revisions on 1 April 2023: account holders now need to pay $8/month as subscriptions to X membership (X Premium) to keep their blue checkmark (X Help Center, no date-a), and the blue checkmark only serves as the identifier of X Premium subscriptions (X Help Center, no date-b). This change also caused disputes after the *New York Times* and other organisations refused to pay for X verification (Davies, 2023). This change also raised concerns about the risk of impersonators without official verification of account status (Davies, 2023).

In addition to the blue checkmarks for paid users, X also adds grey checkmarks for the government or multilateral organisations – this criterion also includes government individuals such as prime ministers (X Help Center, no date-a). As shown in Figure 13, @DHSCgovuk is verified as an institution and now holds the grey check mark symbol.

Figure 13: Institutional verification of @DHSCgovuk on X (grey symbol)

In terms of Weibo verification, the Weibo badge system is operated through three types of 'V'. Individual accounts can apply for red or yellow Vs, while only accounts with more than 10 million monthly reading volumes are eligible for red ones. Additionally, Weibo blue Vs are only open to institutional actors, such as governments, companies, universities, and media outlets (Figure 14). Government applicants for blue Vs need to present institutional permission letters to set up Weibo accounts, and successful applicants should ensure their icons represent the government authorities or use representative images of government regions (Weibo, no date-a). According to Zeng and Li's report (2020), Weibo V verification has been actively adopted by China's Centre for Disease Control and Prevention (CDC). Among 134 Chinese CDC institutions with Weibo accounts, 88.1% (118 accounts) have gained blue Vs, and 15 out of 16 accounts without blue Vs have fewer than 500

followers. Methodologically, the platform verification systems on Weibo and Twitter helped this study to identify the official accounts to include in the sampling framework. Further details about this are provided in Chapter 4.

Figure 14: Institutional verification of @Health China on Weibo (blue 'V')

In summary, this section 'walked through' Weibo and Twitter to illustrate their basic functions relevant to this thesis. The following empirical analysis chapters return to some functions shown here to contextualise their impacts on shaping governmental discourses, such as character limits. Ultimately, this section has demonstrated that Weibo and Twitter were originally similarly designed as microblogging service providers, which possess some comparable functions enabling this empirical juxtaposition. But their nuanced technical designs and governments' attitudes toward them cannot reduce Weibo to 'the Chinese Twitter', as this would ignore the multiple differences between the two.

3.3.4 Existing studies based on Weibo and Twitter related to Covid

This chapter has so far introduced the Covid pandemic, as well as discussed important contextual information about China and the UK, and Weibo and Twitter, to provide a foundation for the comparative work to follow. This section reviews current empirical research about Covid. In particular, it aims to highlight the scarcity of research adopting a comparative approach to study governmental communication during Covid.

There have been several quantitative studies exploring users' discussions and sentiments around Covid on Weibo and Twitter. Despite applying different data collection methods (e.g., keyword searching, hashtag searching), most studies are interested in examining how the topics of user discussions changed with the progression of the pandemic, while they mostly focus on either Twitter (e.g., Abd-Alrazaq *et al*., 2020; Lwin *et al*., 2020; Xue *et al*., 2020a; Xue *et al*., 2020b) or Weibo alone (e.g., Wang *et al*., 2020) rather than a comparative design. Some studies also focus on particular aspects of Covid within social media contexts, such as conspiracy theories (e.g., Erokhin, Yosipof and

Komendantova, 2022) and user emotions (e.g., Yi, Gina Qu and Zhang, 2022; Zheng, Adams and Wang, 2024).

While most studies focus on discussions generated by individual users, a few have investigated the accounts of public health authorities and their narratives in managing the pandemic. For instance, in the context of Twitter, information systems and cyber security scholars Rao and colleagues (2020) collected pandemic-related tweets from 80 accounts of US government agencies and influential news media to compare how governments posted alarming information and reassurance compared to non-government actors. Also, within the context of the US, urban and regional planning scholars Wang, Hao and Platt (2021) analysed the communication patterns of 67 federal and state-level institutions and stakeholders in the US between 1 January and 27 April 2020. The results note the paradox within government narratives of preventive actions, which makes the audience hesitant about whether to follow national policies or not (Wang, Hao and Platt, 2021).

Additionally, focusing on the Chinese health communication context, journalism and new media scholars Qiang Chen and colleagues (2020) investigated the narratives of @Health China with an emphasis on factors influencing user interactions with authoritative accounts. Another Weibo-based study by Lijuan Luo and colleagues (2021) focused on the Weibo account of *People's Daily* to examine the factors influencing engagement numbers, such as expressions of emotional support and social mobilisation. While some studies locate their results within theoretical frameworks (e.g., situational crisis communication theory in organisation studies by Li, Chandra and Fan, 2022), most studies descriptively report the prominent themes identified through topic modelling or machine learning. These studies often focus on selected sets of official accounts on Weibo or Twitter alone, rather than employing a comparative approach.

Conceptually, compared to user-generated content, researching government-related accounts provides insights into how authority and expertise were (re)defined through official discourses during the pandemic outbreak. Sociologist Sheldon Ungar echoed this point by highlighting the impacts of official releases and experts' narratives on addressing the uncertainty raised by the new pandemic (2008, p.493). Given limited past knowledge and immediate fact-checking capabilities amid an outbreak, he noted that the media might quote 'official' information as 'shortcuts' without timely verification (Ungar, 2008). For instance, in a study tracking leaders' personal Twitter accounts in UN member states, political scientist Haman (2020) noted a significant rise in follower numbers after February 2020, when the majority of leaders tweeted frequently about Covid. Haman's study observed that then British Prime Minister Boris Johnson's personal account experienced around a 15% weekly increase in follower numbers in late March 2020 (2020). This was likely because when national leaders tweeted more during Covid, the public may have regarded them as credible information

sources and decided to follow them to receive real-time updates. This close dependence on official discourses, according to Staniland and Smith's review of 15 studies on the H1N1 outbreak (2013), may also be attributed to the reproducibility of communication materials from the news (re)production perspective.

As noted in Sections 3.2 and 3.3, there have been increasing policy efforts to improve official communication efficiency within PHEP in China and the UK, particularly with an emphasis on improving the use of Weibo and Twitter. This necessitates more empirical research examining the actual effects of these appeals. Therefore, researching governmental accounts also means studying how governmental communication attempt to meet public expectations of being trustworthy, scientific, and authoritative information sources.

In addition to paying further attention to governmental communication, as Section 3.2 indicated, PHEP encourages stakeholders to select 'culturally appropriate' channels to conduct national communication, which necessitates a comparative lens to study how communication choices are justified as 'suitable' to their corresponding audiences. At the context level, the research report published in January 2021 by the '*Comparative Covid Response*' project led by STS scholars served as a notable qualitative policy analysis example (*CompCoRe – Comparative COVID Response*, no date). It featured the national policies and politics for Covid management within a comparison of 16 countries, including China and the UK. Another relevant comparative study by Lan Li and colleagues (2021) focused on identifying the topics of official tweets published by public health authorities from seven nations, including the UK. However, the data covered a relatively smaller time frame, from 15 to 29 March 2020, and offered limited in-depth interpretations beyond reporting the prominent themes (Li *et al*., 2021).

From a platform perspective, as Section 3.3 argued, Weibo and Twitter are not 'clone creatures' but have developed certain comparability in their business models and technical architectures. More specifically, according to Yang and Vicari's comparative study within the Covid context (2021), Weibo served as a powerful 'government propaganda tool', while Twitter acted as a 'messy public square' in discussing Covid and different national situations at the global level. Thus, the fact that Weibo and Twitter accommodated different participatory dynamics in Covid-related discussions calls for further comparative studies to empirically reflect on various forms of 'risk society' (Beck, 1992) and 'platform society' (van Dijck, Poell and de Waal, 2018), articulated in Chapter 2.

Therefore, conducting comparative studies within British and Chinese contexts may give researchers a deeper understanding of how health risks are shaped into different scenarios by platform characteristics and socio-cultural contexts (Hantrais, 1995). This echoes the literature review in

Chapter 2, which highlighted how comparative studies (both cross-national and cross-platform) can conceptually contribute to the sociology of risk and platform studies. The methodology in Chapter 4 will elaborate further on the reasons and strategies for building this comparative research.

3.4 Conclusion

This chapter started by discussing the background of China, the UK, and their timelines during the Covid pandemic. After elaborating on these general research contexts, it then turned to the growing focus on the policies of the WHO, China, and the UK on incorporating media communication into public health management. It then demonstrated the comparability between Weibo and Twitter, both contextually in their political economies and their platform technical architectures. Finally, this chapter reviewed existing literature studying the use of Weibo and Twitter during Covid. It suggested further attention to studying governmental communication within comparative designs and situating results into theoretical discussions beyond only descriptively reporting the prominent themes of online communication.

Overall, this chapter has offered the basic contextual information necessary to understand the background of this thesis, which would also facilitate readers' understanding of the analysis in the following chapters. The next chapter introduces the methodology, elaborating on how the key actors and contexts introduced in this chapter, with differences and certain comparability, can be processed into data sources.

Chapter 4 Methodology

This chapter introduces the research design for this thesis. As mentioned in Chapter 2, this study examines how governments and digital platforms intersected during Covid. This necessitates a dual methodological consideration of the discourses of governments and the politics of digital platforms.

To capture these two elements, this thesis developed a sampling framework to process the texts and other metadata in Covid-related posts at the intersection of governments, platforms, and the pandemic. The framework consists of multiple steps to transform original posts into analysable data: confirming relevant social media accounts; confirming keywords and time frames for search queries; conducting data collection; and sampling to generate datasets feasible for further comparative analysis. This study applies thematic analysis primarily, supplemented by strategies to reflect different platform affordances, particularly the practices of visuals. These methodological decisions attempt to resonate with the theoretical framework outlined in Chapter 2, which aims to explore narratives of risk with sensitivity to the politics of digital platforms.

To articulate this, Section 4.1 explains the reasons for building a comparative study. This is followed by an introduction to the sampling framework used to identify data from relevant accounts with maximised capabilities of comparison. Section 4.2 then introduces web scraping as the data collection strategy, followed by the sampling strategy and considerations in research ethics. Finally, Section 4.3 discusses the data analysis strategy, which involves thematic analysis combined with other practices designed to accommodate platform affordances.

4.1 Research design

This section elaborates on the general research design that was developed to undertake this comparative work: building upon previous discussions in Chapters 2 and 3, Section 4.1.1 summarises the reasons for constructing comparisons across Weibo and Twitter. Then Section 4.1.2 introduces how relevant social media accounts were confirmed considering the political differences noted in Chapter 3. Section 4.1.3 lists the search queries used on Weibo or Twitter (i.e., keywords and time frames) in the data collection.

4.1.1 Why a comparative design matters

The previous two chapters discussed the advantages of building a comparative study over a single-case study, both theoretically and practically. In short, a comparative approach aims to resonate with

the calls for de-Westernising and comparative scholarship from the sociology of risk and platform studies, and to take advantage of the comparability between Weibo and Twitter.

The cultural differences in the extent of defining, managing, and communicating risk through regional media call for more comparative research between Western and non-Western contexts. As discussed in Chapter 2, Ulrich Beck proposed the notion of 'risk society' (1992) in the context of nuclear disasters and environmental problems in Germany in the 1990s, which provided a key foundation for the sociology of risk and the sociology of health and illness to understand the intersection of risk, body, and health. However, the discussion of risk society in non-Western contexts remains limited compared to Western contexts, prompting a critical evaluation of this concept's universal applicability (Zhang, 2018). For instance, Mary Douglas (2002) suggests increased consideration of socio-cultural contexts where the discussions of risk take place, rather than interpreting risk as completely detached from political and cultural backgrounds. In addition, while Beck's risk society (1992; 2008; 2011) noted the critical role of media in promoting risk discourses, the term 'media' was mainly treated as a homogeneous system with limited attention to the variances across media genres (understandably, Beck's original intervention did not discuss contemporary digital platforms). The complexity of media nods to the second aspect, where platform studies scholarship benefits from comparisons.

From the platform aspect, Chapter 2 introduced distinct landscapes of platformisation in China and the UK, while contemporary platform studies scholarship mainly focuses on experiences drawing on US-origin platforms, with limited consideration of their compatibility with non-Western-based platforms. Theoretically, creating conversations across Weibo and Twitter contributes to underscoring how cultural and regional origins affect the platforms (Davis and Xiao, 2021), a process known as 'platform regionalisation' (Steinberg and Li, 2017). Practically, Chapter 3 demonstrated comparability across Weibo and Twitter in terms of platform development and technical interfaces. While before the 2010s, Weibo and Twitter shared consonances in their designs, gradual adaptations to local cultures marked further divergences between the two, such as business models and extending functionalities. In addition, as noted in Chapter 3, Weibo's and Twitter's significant user bases in China and the UK make them both key components within their respective national media ecosystems, and their popularities have led to them being included in governmental communication strategies during public health emergencies such as Covid.

Having summarised the reasons for employing a comparative research design, this chapter now moves on to discuss what this thesis expects to learn from this comparison. In her comparative study across Weibo and Facebook, Gillian Bolsover, a British researcher in globalisation and new media, argued that comparative study based on Chinese cases and other Western counterparts is done neither to 'test'

to what extent the China-based evidence fits Western-originated theories nor to 'invent' an entirely new conceptual framework altogether:

> It is likely to lead to spurious conclusions if existing theories are applied uncritically without an interrogation of whether they are appropriate in contexts very different from that of their generation. But equally, in a globalized world interacting via the Internet, national and regional populations will not be so entirely different from their oft-studied Western counterparts as to justify throwing out existing theories to build new ones from the ground up. Empirically based comparative research is, thus, a necessary part of the effort to de-westernize communications scholarship in that it can establish in what ways Internet users in non-Western contexts differ from previously studied populations. Knowledge of these differences and similarities can then be used to inform the application and modification of existing theories (Bolsover, 2017, p.116).

For instance, Bolsover's own study indicates that Weibo users comment mainly to express their opinions rather than interact with those of others, while comments on Facebook tend to foster personal arguments with a shared goal of reaching a consensus or resolution (2017). Through this analysis, she argues that applying the concept of the 'public sphere' by German philosopher Jürgen Habermas partly fails to address the features of Asian styles of communication (Bolsover, 2017). Therefore, cross-cultural comparisons expose scholars to different socio-political contexts embedded in platform cultures. Compared to single-case studies, cross-platform studies equip researchers with richer empirical evidence to explore whether the results are unique to particular platforms or echoed and linked to other platforms (Mayr and Weller, 2017).

Additionally, are platform users on Weibo and Twitter entirely 'different'? Aligning with Bolsover's idea of 'non-entirely different Internet users' (2017, p.116), a comparative study on media usage across China, US, and five European countries observed a trend of 'converging' in user media engagement (Ørmen, Helles and Bruhn Jensen, 2021). It noted that national and regional cultures might not lead to fundamental differences in information consumption (Ørmen, Helles and Bruhn Jensen, 2021). In particular, this study noted that users aged between 18-34 are more likely to be 'virtually indistinguishable' by presenting their everyday lives frequently through multiple comparable platforms (Ørmen, Helles and Bruhn Jensen, 2021, p.1768). Therefore, it is possible that the styles of risk communication across two cases are not entirely different.

Conceptually, in their influential work *Comparing Media Systems: Three Models of Media and Politics* (2004), communication researchers Dan Hallin and media sociologist Paolo Mancinia suggested that comparison-based design exposes 'blind spots' that scholars might take for granted in

single-case settings. This provides opportunities for scholars to rethink media concepts' applicability and limits within global contexts. When conducting comparisons based on existing empirical findings or theories, scholars also need to be aware of applying media scholarships in a top-down manner, such as acknowledging risks of simply *testing* media literature conceptualised in more developed bodies of media scholarship (e.g., the US or UK) to less developed ones (Hallin and Mancini, 2004, p.2). In this way, existing concepts or theories might have limited utility in interpreting interesting new stories emerging in different socio-cultural settings, which necessitate 'reconceptualisation' work (Hallin and Mancini, 2012). For instance, people might ask what a concept means beyond the context in which it was first proposed (Hallin and Mancini, 2012, p.6). Thus, comparing Weibo and Twitter instead of analysing either in isolation can help enhance the validity of this thesis's conclusions by accommodating two socio-technical platforms and two governments' discourses with their own linguistic, cultural, and societal characteristics.

Building on the previous discussion of the rationale for establishing comparisons, Table 2 summarises the tools and techniques employed in this thesis to facilitate these comparisons. A more detailed discussion of their widespread use in digital media studies, as well as practices for verifying the credibility of their outputs, will be presented later in this chapter.

Table 2: Methodology and relevant tools/techniques

Process	Tools/Techniques	Function
Sampling	Manual sampling	/
Data collection	Houyi Collector on Weibo	To collect data and metadata with outputs in comparable spreadsheets (i.e., web scraping).
	Web Data Research Assistant on Twitter	
Thematic analysis of textual data	NVivo	To organise data and develop codes to identify themes.
	AntConc (Weibo data pre-segmented by SegmentAnt)	To support thematic analysis results using prominent words and terms via functions of 'word frequency', 'word clusters', and 'collocate'.
Complementary close reading of non-textual elements	ImageSorter; Tabulating images into 'image walls' that allow readers to see multiple visuals simultaneously	To build 'image walls' that illustrate dis/continuities across a set of visual data

In summary, this section began with reviewing how building a comparative framework stands to enable the de-Westernising of both the sociology of risk and platform studies. It then discussed the nature of comparison, acknowledging that the cases of Weibo and Twitter are neither the same nor entirely different. In this way, the essence of contrasting Weibo and Twitter is to establish a 'common ground' between two seemingly non-comparable populations with their local social media cultures (Mayr and Weller, 2017). This section concluded with a summary of all tools and techniques used in the thesis to facilitate the comparative analysis. Essentially, the major task of this methodology chapter is to explain how that 'common ground' was arrived at practically. This also enhances the reproducibility of this study if other scholars consider applying this framework to other platforms and/or national contexts.

4.1.2 Creating a sampling framework for the study

The aim of this study is to explore how governments and digital platforms intersected in China and the UK during the Covid-19 pandemic. In other words, it focuses on government discourses rather than individual narratives of personal accounts. As Chapter 3 introduced, both China and the UK have established several national policies integrating Weibo and Twitter into their official communication channels, which involved creating verified official accounts on these platforms and regularly updating information through them. Thus, official government accounts provide a useful source of data for achieving this study aim. Since this study focuses on the role of government-initiated communication instead of public discussions, user comments on platforms are not included in data collection. Also, given Twitter is a globally public platform rather than a regional one like Weibo, collecting posts based on accounts helps to accurately identify discourses from the UK but no other geographical areas.

Once this study decided to *only* use government social media posts as empirical data, further work was needed to clarify criteria for including particular sources of social media posts in the final sample among numerous government accounts and transforming them into available forms for analysis. To achieve this, a sampling framework was developed to outline the data sampling strategies adopted by this study (reproduced in Figure 15). It aimed to help this study identify 'who' and 'which' components of their social media posts, published within which bounds of time, were relevant to achieving the research aim.

Figure 15: Sampling process (relevant chapter section in brackets)

This chapter now introduces each component of this sampling framework, which includes confirming social media accounts (Section 4.1.3) and selecting keywords and time frames (Section 4.1.4). The strategies adopted after data collection are articulated in Section 4.2, including data collection tools (Section 4.2.1) and sampling strategies (Section 4.2.2).

4.1.3 Confirming official accounts on Weibo and Twitter

The first step, as illustrated in Figure 15, was to confirm which government accounts to include in the sample of accounts for data collection. As Chapter 3 noted, following the national appeal of active engagement with Weibo and Twitter, there are a considerable number of government-run accounts on both platforms. While many may have published a large amount of content about Covid, others may not. Furthermore, to try and arrive at a sample with relevance to a wider national discourse (with some inclusion of important regional actors such as Wuhan in China), some work needed to be done to arrive at a list of government-run accounts that could help to answer the research questions while generating a manageable sample from which to create sub-samples for qualitative analysis.

The requirements above were addressed using the attendee lists of national press conferences as a starting point for data collection, based on which some revisions were made to remove and supplement certain accounts to maximise comparability. But there were still systematic political differences that were challenging to overcome, discussed below. Figure 16 lists the steps for producing the final account list.

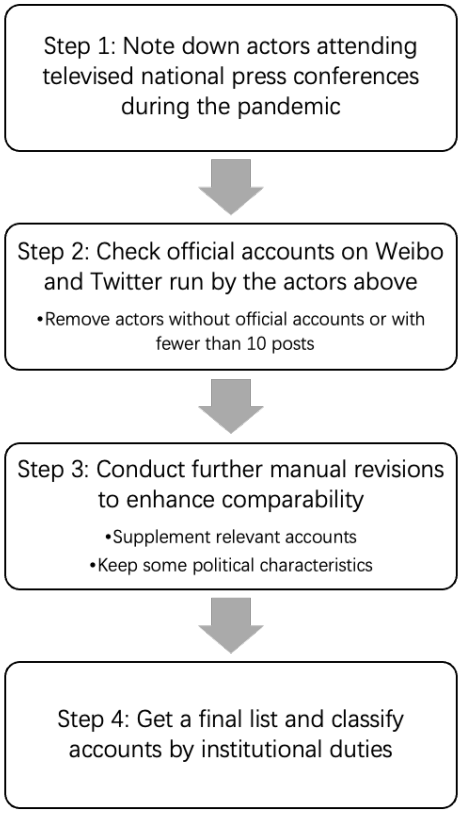


Figure 16: Process for generating the overarching sample of social media accounts

To incorporate the diverse range of relevant policy actors in the sample, the first step was to consider which voices were central and visible in public discourse. After the Covid outbreak, both China and the UK hosted press conferences to update state responses. China's conferences, named *Press Conferences of the Joint Prevention and Control Mechanism of the State Council* (JPCM), were held every day between 5 February and 19 May 2020 (with transcripts available in Chinese through www.gov.cn, no date-b). From 19 May 2020 to 27 February 2023, conferences were held in an ad hoc way (fewer than five times monthly), as necessitated by the pandemic circumstances. Chaired by the spokespersons of the National Health Commission of the PRC (NHC), a JPCM was held around one specific theme per day. Compared to national conferences in the UK, there were more attendees from various backgrounds, including department leaders, scientific experts, health researchers, influential doctors, and frontline healthcare workers.

The British government hosted press conferences between 3 March 2020 and 22 February 2022 (with transcripts available from Prime Minister's Office, 10 Downing Street, 2022). While the Prime Minister, the Chief Medical Officer, the Chief Scientific Advisor, and the Health Secretary often chaired the conferences, other department secretaries and ministers were also invited to report updates from their various areas and portfolios of ministerial work. Importantly, since the four countries of the UK (England, Scotland, Wales, and Northern Ireland) adopted different policies locally during the pandemic, to simplify the comparison (selecting one policy in the UK to compare to the Chinese counterparts), accounts dedicated to countries other than England were not included (such as @PublicHealthW, the national public health agency in Wales). But this exclusion did not apply to UK-wide accounts such as @UKParliament, which were responsible for general UK issues rather than specific countries.

The attendee lists of Covid state press conferences were treated as a proxy to locate important governmental actors in both countries. To draft the account list for data scraping, social media handles were confirmed by either checking contact information on official institution websites or searching on platforms (referring to platform verification and account profiles noted in Chapter 3). Actors without Weibo or Twitter accounts were excluded from the list. Additionally, all accounts' activities were checked manually to exclude accounts sharing fewer than 10 posts related to Covid to ensure they played active roles in disseminating information during the pandemic on the given platform.

Furthermore, only politicians' individual accounts on Twitter were included, given that Chinese political figures usually do not operate separate social media accounts beyond their institutional ones. There was one exception whereby three key medical experts had their personal Weibo accounts included in the list. Despite the absence of Weibo counterparts, the list included the political figures' Twitter accounts with respect to the characteristics of local political cultures in the UK, where social media presence and interaction are important components of monitoring the contribution of Members of Parliament (MPs) and displaying professional personas, as discussed in Chapter 3 (White *et al*., 2021).

After identifying the active accounts, further adjustments were made to ensure a comparative and manageable list of accounts from which to scrape relevant data. Given that there were several Weibo accounts without Twitter counterparts, a few Twitter accounts were purposely added to the sample. At the ministry level, four Twitter accounts were added, including the Department of International Trade, Department for Work & Pensions, Ministry of Justice, and the Bank of England. At the practitioner level, there were nine public Chinese hospitals' accounts in the list, whose roles as press conference attendees were to introduce their experiences as front-line service providers. Thus, to ensure comparability, nine NHS hospitals in England were selected and added to the list, because they all

played similar key roles in providing the highest numbers of beds to Covid patients between 20 March 2020 and 6 March 2021 (NHS England, no date).

The final list included 109 accounts, 53 from Weibo and 56 from Twitter, which are reproduced in Appendix A. To facilitate comparison, the final list classified the accounts into four categories according to their institutional roles, as shown in Table 3 with example accounts.

Table 3: Four categories of accounts and examples

Account category	**Area of work**	**Twitter**	**Weibo**
A. State ministries	Health	@DHSCgovuk, Department of Health and Social Care	@健康中国, National Health Commission (NHC) of the PRC
	Education	@educationgovuk, Department for Education	@微言教育, Ministry of Education of the PRC
	Economy	@bankofengland, Bank of England	@央行微播, The People's Bank of China
B. Political figures	Health	@MattHancock, Secretary of State for Health and Social Care	/
	Education	@GavinWilliamson, Department of Education	/
	Economy	@RishiSunak, Chancellor of the Exchequer	/
C. Executive agencies	Comparing as a whole nationwide	@MHRAgovuk, Medicines and Healthcare Products Regulatory Agency (MHRA)	@上海发布, Shanghai government; @健康上海 12320, Shanghai NHC
D. Public hospitals	Comparing as a whole nationwide	@uhbtrust, University Hospitals Birmingham	@北京协和医院, Peking Union Medical College Hospital, also known as Beijing Xiehe Hospital

In categories A and B above, accounts in two country cases were matched around one 'area of work' according to their descriptions on official websites. One account might be matched with more than one counterpart because of similar duties. Given that account-to-account direct comparison was not always available, comparing accounts in category A and B through areas of work maximised the comparison

and made good use of the scraped data. For instance, despite no counterparts of the Secretary of Health on Weibo, the comparison could be achieved by comparing the areas of 'health' across the two cases.

Additionally, two states had different types of executive agencies present at their national conferences, which explains category C in Table 3 above, including city-level Weibo accounts and nation-level Twitter accounts. Similarly, accounts in category D belong to hospitals based in cities on various scales. Considering account-to-account comparison was not available, accounts from category C and D were considered a unit to be compared (synthesising them as general executive agencies and public hospital systems). This classification was used again in data analysis, such as helping to import and organise data in NVivo (see Section 4.3.2).

In summary, this section elaborated on how this thesis used national conferences as an entry point to confirm social media accounts with manual revision. When further studies replicate this sampling process, some adjustments might be needed to account for the accounts' present statuses, which may be different from their roles in July 2021, when the confirmation and matching of these accounts were conducted. The next section unpacks another component of the framework: confirming keywords and time frames for data collection.

4.1.4 Confirming keywords and time frames

As Figure 15 elaborated, after confirming the sample of accounts to be scraped, it was then necessary to arrive at a set of keywords for conducting searches on Weibo and Twitter. This could be used to generate relevant search results to be scraped as data. Additionally, clarifying the time frames was necessary to limit the data collection to periods of time most relevant for answering the research questions. As such, while Section 4.1.3 explained how the list of included platform accounts was achieved, this section continues to elaborate on how the criteria for inclusion of social media posts were developed. It particularly justifies how search terms and time frames were devised to ensure the relevance of the collected posts.

According to digital media scholar Richards Rogers's concept of 'search as research' (2017), different query designs in digital methods have consequential impacts on the results retrieved from social media platforms, such as the representativeness of datasets generated through different keywords or hashtags. The accessibility of data also affects the types of available analysis and results to be expected, which necessitates researchers' awareness of their queries' impacts on the research results (Mayr and Weller, 2017).

For this study, search queries were built on a range of recently published work exploring discussions about Covid on social media. For Weibo, this thesis referred to another study (Wang *et al*., 2020) using a similar web scraping tool (Octopus web crawler) and used 'new coronavirus pneumonia', 'coronavirus', 'new coronavirus' and 'Covid-19'. In the Twitter case, Wang, Hao and Platt's (2021) keyword list provided the foundation for the thesis's query design, including 'coronavirus', 'corona', 'sars-cov-2', 'ncov', and 'Covid'. This list was expanded to incorporate keywords mentioned by other literature, including 'Covid-19' and '2019-ncov' (Abd-Alrazaq *et al*., 2020; Lwin *et al*., 2020).

All keywords were then manually searched on Weibo and Twitter to ensure the keyword lists were comprehensive and relevant to the research questions. In detail, Weibo keywords were checked through the official Weibo Index service (微指数 by Weibo, no date-b), and Twitter counterparts were checked against the 'Coronavirus Hashtags' in the Symplur Healthcare Hashtag Project (Symplur, no date). Then all keywords were searched in the posts published by the target accounts mentioned in Section 4.1.3 to ensure accounts did post content using these terms.

As Chapter 3 noted, 'Covid-19' (or '新冠肺炎') was used as the virus's official name on 11 February 2020, which added a contextual barrier for using Covid-related keywords for data collection. Considering the initial outbreak in Wuhan took place before this naming, all Weibo accounts 'posts before that date were manually browsed to include relevant posts discussing the pandemic but not using 'Covid-19' as keywords. This did not occur in the UK case, as the first case in England was identified after the WHO announced the naming of Covid-19.

Clarifying time frames was another important step, illustrating the work that went into cultivating the 'common ground' for comparison, even though both countries experienced the same pandemic at different paces with different ostensible 'starting points'. As introduced in Chapter 3, China and the UK experienced the pandemic differently due to their geographical contexts, which raised challenges for selecting comparable time frames. To maximise the comparability, this study adopted a longer time frame, spanning over two years from early 2020 to early 2022. The Weibo case started one month earlier than Twitter given the original outbreak took place in early January 2020 in China. Following the steps above, the final search terms used on Weibo and Twitter are reproduced in Table 4.

Table 4: Search terms and time frames for data collection

Platform	Weibo	Twitter

Search terms	'新冠' (coronavirus), '新型肺炎' (novel pneumonia), '疫情' (pandemic situation)	'covid', 'corona', 'covid-19', 'coronavirus', 'pandemic', 'sars-cov-2', 'ncov', '2019-ncov'
Time frames	Posts posted between 1 December 2019 and 31 March 2022	Tweets posted between 1 January 2020 and 31 March 2022

This study also benefited from this longer time frame: it did not strictly compare the policies adopted in specific months (e.g., when they announced lockdown restrictions, what accounts posted in month x). Instead, through sketching the *general* experiences in the two-year period, this thesis was interested in the comprehensive evolution of this pandemic, from the initial local outbreaks to the routine handling of subsequent outbreaks regionally. The longer time frame therefore distinguishes this thesis from other social media studies, which often focus on a few months during the initial outbreak (e.g., early 2020) instead of the following pandemic narratives (e.g., Li *et al*., 2021). But one consequence of having a longer time frame was collecting higher volumes of posts, which necessitated further post-collection sampling (introduced in Section 4.2.2).

4.2 Data collection

Having introduced the data sources, keywords, and time frames in Section 4.1, this section continues to elaborate on the sampling strategy of this thesis. Section 4.2.1 introduces the web scraping tools used to produce larger datasets. Section 4.2.2 explains how these primary datasets were sampled into appropriate sizes for qualitative analysis. Finally, Section 4.2.3 discusses the ethical considerations encountered in data collection and analysis.

In brief, this thesis built its queries based on a combination of keywords applied to a defined list of user accounts to avoid collecting a large amount of irrelevant data. Ethically, this strategy helped the study accurately target data relevant to the research aim, which was in line with the appeal of 'data-minimisation' in AoIR Guidelines 3.0 (franzke *et al*., 2020). It encourages researchers to only collect data relevant to their research interests, rather than misusing 'big data methods' aimlessly to build larger datasets than needed (franzke *et al*., 2020, p.20). To achieve this in practice, data collection was conducted account by account. After entering the keywords and time frames into the search box on the account page, collection tools were used to scrape all posts in the search results. These tools then downloaded the scraped posts in spreadsheets for further sampling.

4.2.1 Conducting web scraping and data cleaning

As Section 4.1.3 introduced, there were 53 Weibo accounts and 56 Twitter accounts eligible for data collection, which made the data sizes larger than the capacity of manual copying and pasting. Considering time costs and tool availability, web scraping was used in this thesis. It is an automated approach to using custom scripts to extract a large amount of content from websites, which generates data as spreadsheets (Perriam, Birkbak and Freeman, 2020, p.284). While researchers also conduct web scraping through programming languages such as Python and R, this study chose the built-in tools or 'scrapers' developed by other programming teams for research purposes, which do not require users to have any programming knowledge.

However, developing web scraping scripts or using web scrapers has several limitations. Direct web scraping is constrained to collecting data not available through website browser interfaces. In other words, the scripts of web scraping are closely dependent on the structure of websites, which necessitates regular maintenance to ensure that the scripting languages adapt to the changes in the website structure (Perriam, Birkbak and Freeman, 2020, p.284). For example, user profiles on Twitter are only available through extra scraping, while the real-time changes in user profiles might not always be accurately captured in web scraping (e.g., changing follower numbers) (Perriam, Birkbak and Freeman, 2020, p.284).

Alternatively, researchers can extract data through the Application Programming Interface (API). However, interrogating APIs is unlikely to release all data matching the search criteria, while researchers might not know the proportion of missing data. Platforms' direct control of APIs leads to them being referred to as 'black boxes' or 'walled gardens' with limited and changing public access to platform data (Vicari and Kirby, 2023), which is manifested by cases such as Twitter changing APIs to partly commercial in 2023 (X Developer Platform, no date-b). Compared to direct control of platform APIs, web scraping is relatively less controllable for platforms, which also raises further debates around whether web scraping for academic purposes violates platform terms of service or serves public interests (Perriam, Birkbak and Freeman, 2020, p.285).

In consideration of the above, Houyi Collector ('后羿采集器') was used to collect Weibo posts and Web Data Research Assistant (WDRA) was used to collect tweets. These two tools were confirmed after trials of alternatives, such as Twitter Archiving Google Sheet (TAGS), limited to capturing tweets posted more than seven days ago (TAGS, no date), and the free version of GooSeeker, limited in its number of downloads of Weibo posts (GooSeeker, no date).

Houyi Collector (Houyi) is a tool designed to scrape public websites in China (Houyicaijiqi, no date). Its credibility in Weibo data collection is supported by its use in social science studies, such as analysing online public discourses (Lei and Tang, 2024) and environmental discussions (Lu et al., 2024). Additionally, its reliability in building comparisons across Weibo and Twitter is noted by existing scholarship, such as examining user emotions during Covid (Deng and Yang, 2021) and user responses to education robots (Wang et al., 2024). For the thesis, Houyi's outputs were manually cross-checked against the original Weibo search results to ensure comprehensive data capture.

Technically, after users enter the website links, Houyi can automatically check the page and identify all collectible elements, such as post time and texts. Users can also edit or add new elements to customise the 'collection rules', where users also need to add turning page buttons to their rules. To avoid the tool collapsing, only 15 pages of posts from one account are scraped each time on Weibo. Once the rules are set, users can start the collection and all outputs are downloaded as a spreadsheet. Since Weibo posts longer than 140 characters are truncated until users manually click on the 'see more' button, this study first collected all Weibo post links through the search results. Then a secondary collection was conducted based on these post links, enabling Houyi Collector to enter each post link automatically and archive corresponding posts in full. Finally, the full texts were added to the original spreadsheets with other metadata by matching the post links.

WDRA is an online extension of the Chrome browser developed by Leslie Carr at the University of Southampton to scrape tweets (The Web Data Research Assistant, no date). When using WDRA, users need to open the search results page on Twitter first and activate WDRA. Then the page automatically scrolls down to trigger more results for scraping. WDRA stops at the end of the page and gathers all results (user names, post time, links, and other information) directly as a spreadsheet. Similar to the Houyi case, to ensure data accuracy, WDRA's output was manually cross-checked against the original search results on Twitter.

As shown in Figures 17 and 18, both tools retrieved a range of metadata from Weibo posts and tweets, including author names, published time, post links, post texts, engagement metrics, hyperlinks of visuals, and embedded media links. One single post might not possess all the metadata listed above.

Author	Date	Full Text	Repost	Commen	Likes	Image Preview	Individual Links	External Media Ti	External Media Links
健康中国	2022-03-01	#全国新冠病毒疫苗接种情况# 【新冠病毒疫苗接种情况】截至20	7	3	4	https://wx2.	https://weibo.c		
健康中国	2022-02-25	#健康发布# 【截至2月24日24时新型冠状病毒肺炎疫情最新情况】	38	2	87	https://wx3.	https://weibo.c		
健康中国	2022-02-22	#全国新冠病毒疫苗接种情况# 【新冠病毒疫苗接种情况】截至20	11	5	6	https://wx3.	https://weibo.c		
健康中国	2022-02-19	#健康发布# 中国疾控中心免疫规划首席专家王华庆：这次序贯免	17	评论	5	https://wx4.	https://weibo.c		
健康中国	2022-02-04	#全国新冠病毒疫苗接种情况# 【新冠病毒疫苗接种情况】截至20	7	1	2	https://wx3.	https://weibo.c		
健康中国	2022-01-26	#健康发布#【截至1月25日24时新型冠状病毒肺炎疫情最新情况】	32	3	34	https://wx2.	https://weibo.c		
健康中国	2022-01-17	#健康发布#【关于奥密克戎，国家卫生健康委最新解答来了！】这	562	评论	811	https://wx3.	https://weibo.c		
健康中国	2022-01-12	#健康发布#【孙春兰在河南调研时强调 加强统筹 分类施策 抓早抓	87	评论	75	https://wx2.	https://weibo.c		
健康中国	2022-01-10	#健康发布#【孙春兰在陕西调研时强调 慎终如始抓好防控措施落	7	评论	9	https://wx4.	https://weibo.c		
健康中国	2022-01-07	#全国新冠病毒疫苗接种情况# 【新冠病毒疫苗接种情况】截至20	11	2	6	https://wx1.	https://weibo.c		
健康中国	2021-12-20	#健康发布# 截至12月19日，全国累计报告接种新冠病毒疫苗2684	28	6	9	https://wx1.	https://weibo.c		
健康中国	2021-12-18	#健康发布##2022年春运客流量有较大增长# 国铁集团劳动和卫生	9	7	17	https://wx3.	https://weibo.		
健康中国	2021-12-14	#全国新冠病毒疫苗接种情况# 【新冠病毒疫苗接种情况】截至20	17	10	10	https://wx2.	https://weibo.c		
健康中国	2021-12-10	#健康大家谈# 【直播预告：康复不是锻炼那么简单，12月10日下	2	1	2	https://wx3.	https://weibo.c		
健康中国	2021-12-04	#全国新冠病毒疫苗接种情况# 【新冠病毒疫苗接种情况】截至20	16	11	14	https://wx4.	https://weibo.c		
健康中国	2021-11-30	#健康发布# 【截至11月29日24时新型冠状病毒肺炎疫情最新情况	38	4	20	https://wx1.	https://weibo.c		
健康中国	2021-11-25	#全国新冠病毒疫苗接种情况# 【新冠病毒疫苗接种情况】截至20	15	2	7	https://wx1.	https://weibo.c		
健康中国	2021-11-15	#全国新冠病毒疫苗接种情况# 【新冠病毒疫苗接种情况】截至20	9	3	8	https://wx3.	https://weibo.c		
健康中国	2021-11-13	#健康发布# 【截至11月12日24时新型冠状病毒肺炎疫情最新情况	42	9	18	https://wx4.	https://weibo.c		
健康中国	2021-11-09	#全国新冠病毒疫苗接种情况# 【新冠病毒疫苗接种情况】截至20	35	9	12	https://wx4.	https://weibo.c		
健康中国	2021-11-03	#健康发布# 【截至11月2日24时新型冠状病毒肺炎疫情最新情况】	83	28	34	https://wx1.	https://weibo.c		
健康中国	2021-10-31	#全国新冠病毒疫苗接种情况# 【新冠病毒疫苗接种情况】截至20	15	8	19	https://wx1.	https://weibo.c		
健康中国	2021-10-25	#健康发布# 【马晓伟一行赴宁夏指导疫情应对处置】受孙春兰副	30	11	35	https://wx3.	https://weibo.c		
健康中国	2021-10-24	#健康发布# 发生疫情的地区，要迅速进入应急状态；未发生疫情	6	4	3	https://wx2.	https://weibo.c		
健康中国	2021-10-04	#健康发布# 【把疫情阻断在最小范围——国务院联防联控机制综	9	3	13	https://wx4.	https://weibo.c		
健康中国	2021-09-29	#联防联控新闻发布# 【今天下午3:00，国务院联防联控机制新闻	2	3	4	https://wx4.	https://weibo.c		
健康中国	2021-09-23	#全国新冠病毒疫苗接种情况# 【新冠病毒疫苗接种情况】截至20	16	8	15	https://wx3.	https://weibo.c		
健康中国	2021-09-10	#全国新冠病毒疫苗接种情况# 【新冠病毒疫苗接种情况】截至20	16	10	16	https://wx4.	https://weibo.c		
健康中国	2021-09-03	#健康发布# 【截至9月2日24时新型冠状病毒肺炎疫情最新情况】	86	12	46	https://wx4.	https://weibo.c		
健康中国	2021-08-17	#健康发布# 【国家卫生健康委主任马晓伟谈近期多点散发的疫情	24	9	32		https://weibo.c		

Figure 17: Screenshot of Houyi Collector output from @Health China

N	ID	Replies	Retwee	Likes	Author	Retweeted By	In Reply To	Mentio	Hashta	Embedded Image	Embedded Video	Embedded URL	Embedded Site	Text	URL	Date	Time	Sanitised Text
31009	ID:150588	29	137	88	dhsgovuk				#COVID19	https://pbs.twi				Spring booster doses	https://twitt	2022/3/21	12:30:00	Spring booster dose
40007	ID:150488	3	9	16	dhsgovuk				#COVID19	https://pbs.twi				The NHS is continuin	https://twitt	2022/3/18	18:00:00	The NHS is continuir
65009	ID:150303	36	29	39	dhsgovuk				#COVID19			https://www.		Consider wearing a f	https://twitt	2022/3/13	16:00:01	Consider wearing a
141008	ID:1495851	47	162	115	dhsgovuk				#COVID19,	https://pbs.twi				As we learn to live w	https://twitt	2022/2/21	20:02:59	As we learn to live v
152009	ID:1494601	20	26	31	dhsgovuk				#COVID19			https://www.		Consider wearing a f	https://twitt	2022/2/18	09:15:00	Consider wearing a
165010	ID:149350	86	62	84	dhsgovuk				#COVID19	https://pbs.twi				Pregnant women are	https://twitt	2022/2/15	08:30:00	Pregnant women ar
214008	ID:149002	19	30	52	dhsgovuk			novavax	#COVID19		blob:https:			ICYMI: The @Novava	https://twitt	2022/2/5	18:00:00	ICYMI: The vaccine h
236009	ID:148896	15	23	24	dhsgovuk			thegptrai	#COVID19		blob:https:			It's never too late to	https://twitt	2022/2/2	20:00:02	It's never too late to
268007	ID:1487102	11	13	28	dhsgovuk			ukhsa	#COVID19					#COVID19 VACCINE U	https://twitt	2022/1/28	16:38:43	VACCINE UPDATE: D
295008	ID:148625	18	61	75	dhsgovuk				#COVID19,	https://pbs.twi				To help reduce the sp	https://twitt	2022/1/26	08:30:00	To help reduce the s
303006	ID:148559	18	50	41	dhsgovuk				#COVID19	https://pbs.twi				It's never too late to	https://twitt	2022/1/24	12:39:16	It's never too late to
354007	ID:148282	25	34	57	dhsgovuk			lucychapp	#COVID19		blob:https:			If you're pregnant, ge	https://twitt	2022/1/16	21:30:00	If you're pregnant, g
357007	ID:148274	7	19	45	dhsgovuk			ukhsa	#COVID19	https://pbs.twi				#COVID19 VACCINE U	https://twitt	2022/1/16	16:18:03	VACCINE UPDATE: D
374008	ID:1481717	7	22	27	dhsgovuk					https://pbs.twi				When you take a rap	https://twitt	2022/1/13	20:00:01	When you take a rap
412007	ID:1479792	13	23	32	dhsgovuk				#COVID19			https://www.		Help protect yourself	https://twitt	2022/1/8	12:30:00	Help protect yoursel
436008	ID:147869	63	26	67	dhsgovuk			sajidjavid	#GetBoos		blob:https:			.@sajidjavid visited N	https://twitt	2022/1/5	11:50:00	. visited Montgomer
447007	ID:1477920	53	55	81	dhsgovuk				#COVID19	https://pbs.twi				Start 2022 by gettin	https://twitt	2022/1/3	08:30:00	Start 2022 by gettin
455007	ID:1477195	22	32	40	dhsgovuk				#COVID19		blob:https:	https://www.		Help protect yourself	https://twitt	2022/1/1	08:30:00	Help protect yoursel
466009	ID:147683	9	24	49	dhsgovuk				#COVID19	https://pbs.twi				Every adult in the UK	https://twitt	2021/12/31	08:30:00	Every adult in the U
543009	ID:147259	28	35	75	dhsgovuk			ukhsa	#COVID19	https://pbs.twi				#COVID19 VACCINE U	https://twitt	2021/12/19	16:04:11	VACCINE UPDATE: D
553006	ID:1471941	3	12	42	dhsgovuk			ukhsa	#COVID19					#COVID19 VACCINE U	https://twitt	2021/12/17	20:32:20	VACCINE UPDATE: D
568009	ID:1471570	48	44	86	dhsgovuk				#COVID19	https://pbs.twi				Every adult in the co	https://twitt	2021/12/16	20:00:00	Every adult in the c
597007	ID:147006	12	22	50	dhsgovuk			ukhsa	#COVID19					#COVID19 VACCINE U	https://twitt	2021/12/12	16:04:45	VACCINE UPDATE: D
604007	ID:146936	8	19	28	dhsgovuk				#COVID19	https://pbs.twi				If you're 40 or over y	https://twitt	2021/12/10	18:05:00	If you're 40 or over y
602008	ID:1469419	12	20	24	dhsgovuk			epsom_st	#COVID19		blob:https:			Unvaccinated wome	https://twitt	2021/12/10	21:30:00	Unvaccinated wome
614008	ID:146865	2	48	79	dhsgovuk			uniofoxfor	#COVID19	https://pbs.twi				People at high risk of	https://twitt	2021/12/8	18:52:36	People at high risk o
621008	ID:146847	121	299	667	dhsgovuk				#COVID19		blob:https:			It started with Magg	https://twitt	2021/12/8	07:00:01	It started with Magg
635008	ID:1467471		11	35	dhsgovuk				#COVID19		blob:https:			On International Volu	https://twitt	2021/12/5	12:30:00	On International Vol
681007	ID:146468	4	17	34	dhsgovuk			ukhsa	#COVID19					#COVID19 VACCINE U	https://twitt	2021/11/27	20:00:05	VACCINE UPDATE: D
701007	ID:146353	7	21	46	dhsgovuk			ukhsa	#COVID19					#COVID19 VACCINE U	https://twitt	2021/11/24	16:05:15	VACCINE UPDATE: D
725007	ID:146234	37	80	101	dhsgovuk				#COVID19			https://www.		From tomorrow, peo	https://twitt	2021/11/21	09:00:01	From tomorrow, peo
721006	ID:146248	20	41	61	dhsgovuk				#COVID19			https://www.		meet up outdoors let	https://twitt	2021/11/21	18:00:00	meet up outdoors le
723007	ID:146243	18	12	24	dhsgovuk			sajidjavid	#COVID19		blob:https:			.@SajidJavid on the a	https://twitt	2021/11/21	14:40:00	. on the booster dos
732008	ID:1461735	8	15	39	dhsgovuk				#COVID19		https://vide			More than 14 million	https://twitt	2021/11/19	16:39:00	More than 14 million
753008	ID:146064	5	7	24	dhsgovuk			ukhsa	#COVID19					#COVID19 VACCINE U	https://twitt	2021/11/16	16:39:48	VACCINE UPDATE: D
785006	ID:145883	70	23	64	dhsgovuk			ukhsa	#COVID19					#COVID19 VACCINE U	https://twitt	2021/11/11	16:30:17	VACCINE UPDATE: D
862006	ID:145454	7	7	18	dhsgovuk				#COVID19	https://pbs.twi				Protect yourself and	https://twitt	2021/10/30	20:30:00	Protect yourself and
876009	ID:145368	44	33	50	dhsgovuk				#COVID19	https://pbs.twi				The #COVID19 booste	https://twitt	2021/10/28	11:30:00	The booster dose he

Figure 18: Screenshot of WDRA output from @DHSCgovuk

As this study focuses on the narratives of governmental agencies, posts written by other accounts and reposted by government accounts were removed from the datasets. Tweets not written in English and Weibo posts not written in Chinese were excluded as they were beyond the language capability of the study. After data scraping and cleaning, the original datasets finally included 50,930 Weibo posts and 28,773 tweets. As mentioned above, the larger size of the Weibo dataset was partly due to having a longer time frame, which necessitated the sampling work to reduce the data appropriate for qualitative analysis.

In summary, the main objective in designing this data collection was to construct the 'common ground' of comparability. This involved making a couple of careful decisions such as confirming social media accounts, time frames and tools as Section 4.1 noted, and selecting tools with similar outputs in this section. In essence, all the work undertaken aimed to shape the two different cases noted in Chapter 3 into highly comparable outputs.

4.2.2 Data cleaning, sampling, and preparation

As described in Section 4.2.1, both Houyi and WDRA pulled post texts in single columns, which facilitated the review of all texts in one spreadsheet. Since data collection was conducted separately for each account, individual spreadsheets of posts were consolidated into an overview spreadsheet, with each tab labelled by account name. Since the timing of posts and the use of emojis or hyperlinks impacted communication patterns, duplicate posts and non-textual elements were not removed. For ethical reasons (see Section 4.2.3), posts were manually reviewed to identify mentions of non-public-facing accounts, which were highlighted and anonymised, ensuring they were not included as examples in the findings chapters.

As mentioned in Section 4.1.2, the sampling framework also involved further, post-data-collection sampling to control the data size and make analysis feasible within the project time period. To retain the representativeness of the sample chronologically, *proportional* stratified sampling was conducted. In theory, the method of proportional stratified sampling develops the whole dataset into several sub-datasets following certain standards, such as publishing time of posts (Bhattacherjee, 2019). Proportional means the sizes of sub-datasets depended on subgroups' respective proportions of the whole dataset (Bhattacherjee, 2019).

This study applied the proportional stratified sampling to retrieve 5% of original posts gained in Section 4.2.1 as the final sample considering the analysis capability. To accomplish this, all posts from one single account were classified by their published months, and the monthly post counts were used to decide the 5% allocation. Then 5% were randomly selected from the monthly posts. This enabled the final sample to retain the weights of the monthly post volumes in line with the overall dataset. For instance, in the original @GOVUK dataset, there were 105, 153, and 73 posts in January, February and March 2020 respectively. Then the final dataset randomly selected 5% from each month, with the number of posts to be included in the final sample being 5, 8, and 4.

If the 5% of the posts were less than one, the final sample retained one post to ensure there was at least one post for each month. For instance, if account A posted 5 posts in January, the 5% would be 0.25 posts, while the final sample would retain 1 post from account A. But if account A did not post

anything in January, no post would be taken to the final sample. This adjustment aimed to ensure the final samples used in the qualitative analysis spanned the full breadth of the relevant period, enhancing the robustness of the longitudinal comparison (e.g., how certain themes are mentioned across months or years).

Following all the above steps, the final sample of this study included 3,093 Weibo posts and 2,002 tweets. For further analysis in Section 4.3, the sampled posts were organised into a new spreadsheet with each tab representing one account and posts arranged in a single column. This data preparation facilitated a smooth import into NVivo, enabling the coding of the text in each post while keeping associated metadata in the same column for context, such as posting time, engagement metrics, and hashtags.

4.2.3 Ethical considerations

This thesis received ethical approval from the University of Sheffield in October 2021 (reference number 041134). As Section 4.2.1 introduced, the data already extant on platforms was retrieved through a scraping process. However, it is risky to assume that the technical accessibility of online information always gives tacit consent for scholars to analyse and report it for academic purposes (Tiidenberg, 2018). Thus, this section notes the strategies through which samples were arrived at ethically.

Importantly, this thesis did not seek informed consent before the data collection, and all accounts and posts were, where presented, shown as screenshots in this thesis. This decision followed the British Psychological Society's *Ethics Guidelines for Internet-Mediated Research* (2021, p.9). Relevant to this study, this guideline highlights 'perceived privacy' as the core criterion to evaluate the necessity of gaining consent, while data with 'no perception and/or expectation of privacy' can be exempted (The British Psychological Society, 2021, p.9). The practice of skipping consent was also in line with Sheffield's University Research Ethics Policy Note no.14, which similarly notes informed consent as contextual decisions dependent on the 'likely perception' of platform users (The University of Sheffield, no date).

How, though, does one evaluate the perceived publicness of the data? As Appendix A lists and Section 4.1.3 noted, posts involved in this thesis came from the official social media accounts of governmental and other relevant organisations, and of certain individuals in public-facing governmental and related roles. As noted in Chapter 3, these actors' engagements on public social media platforms are specifically intended to reach wide audiences. For this purpose, their posts are unlikely to be taken as sensitive information considering their significant follower numbers (Townsend and Wallace, 2016).

For instance, government posts related to Covid included information for the public good, such as suggesting preventative measures and updating pandemic situations, which aimed to enhance users' abilities to stay safe during Covid. In this case, their narratives could be regarded as digital commitments of governmental institutions' duties, thus anonymity and paraphrasing were not required when referring to official accounts on Weibo and Twitter.

In addition, as Section 4.1.3 mentioned, all accounts were confirmed after checking their platform verifications and profile information, which further affirmed the publicness of the data. Following the decision flow chart by Williams, Burnap and Sloan (2017), data in this thesis only included existing collective organisational accounts and individual public figure accounts, which would not trigger major problems in the analysis.

However, there was a very small amount of data including personal accounts, where government accounts replied to users' concerns in public. In this context, users asking questions in public and using platform functions (e.g., mentioning official accounts) to enhance posts' visibility were likely to expect their posts to get wider attention and receive official responses. In this way, their engagement with government accounts were reasonably public in the concept of perceived publicness. Despite the nature of publicness of these individual users' posts, this thesis still applied the concept of 'ethical fabrication' (Markham, 2012) to paraphrase personal accounts' questions and remove personal identifiers, while retaining the tone and purpose of the post, to protect participants' privacy and avoid harm from online traceability.

4.3 Data analysis

After articulating the research design and data collection in the preceding two sections, this section moves on to introduce the data analysis strategies of this study. The thesis mainly uses thematic analysis (TA) on the textual data, which is supplemented by close reading of non-textual elements on Weibo and Twitter, particularly visuals. The supplement, compared to traditional TA alone, treats social media data in a platform-affordance-sensitive way to account for the role of visuals and other non-verbal elements.

To map out this adapted strategy, Section 4.3.1 starts by introducing the traditional practice of coding in TA. Section 4.3.2 contextualises TA's role in this thesis and explains how the codebook was generated. Finally, Section 4.3.3 discusses how traditional TA was supplemented by other approaches examining platform affordances, particularly visual affordances, and how these adjustments affected the final presentation in the following three chapters.

4.3.1 Introducing coding and thematic analysis

Compared to quantitative studies, qualitative scholarship often involves developing theories and concepts derived from collected data, which contrasts with the way quantitative scholarship tests theories already embedded in research questions (Clark *et al*., 2021, p.357). As explorative research, this study is interested in the insights provided by the scraped posts, which can be achieved through the practice of 'coding' as below:

> This [coding] is basically a system of indexing that enables you to sort your data. By organising qualitative material into discrete units, codes are shorthand devices that label, separate, and compile data. A code is simply a conceptual label that is written alongside sections of data that describes an 'incident'. These incidents are any points of *significance* within data (Clark, Foster and Bryman, 2019, p.273, my emphasis).

From this definition, coding can be understood as a means of generating categories, which helps scholars interpret their data from different aspects with acknowledgement of the significance of these interpretations within the overall dataset. There are two types of coding: inductive and deductive. Inductive coding is data-driven and identifies codes reflected by the data itself without referring to any other sources, such as pre-existing coding schemes, scholars' expectations, and knowledge (Braun and Clarke, 2006, p.84). In other words, scholars use inductive coding to expect arguments to come *from* the data, and they are not limited much by existing assumptions; instead, they initiate the data analysis with a fresh start (Clark, Foster and Bryman, 2019, p.271). Another style of 'theoretical' coding or 'deductive coding' relies on pre-existing codes driven by theoretical research frameworks or other analytical sources, which makes the researchers focus on *some* parts of the data (Braun and Clarke, 2006). Deducting coding means scholars gain certain knowledge through literature or other resources *before* the data analysis and bring these prior commitments *into* the data analysis.

According to social research methodologist Alan Bryman, codes are made to support scholars in building 'themes', through which scholars gain 'a theoretical understanding' of their data and justify the theoretical contribution of their works (2016, p.584). After coding, some codes might indicate interesting or unusual aspects of the data, which can be developed into broader 'themes' for further analysis to help scholars address particular arguments. According to Braun and Clarke, 'themes' at a micro level should represent 'some level of *patterned* response or meaning within the data' (2006, p.82, emphasis in original), and this requirement of reporting the *significance* of particular meanings is already achieved by coding.

In short, codes are identified first, summarised into higher-order codes, and conceptualised into top-level themes (Bryman, 2016, p.588). This forms the foundation of thematic analysis (TA), one of the most common qualitative analysis methods in social science. Synthesising the guidance from Bryman (2016) and Naeem et al. (2023), this thesis followed six steps of TA: (1) getting familiar with data; (2) establishing the codebook through pilot coding, including taking notes of relevant quotations and keywords that represent important viewpoints; (3) coding the entire dataset; (4) developing and reviewing themes by exploring codes; (5) defining and naming themes; and (6) conceptualising findings and producing the report, supported by keywords, codes, and themes. The process of applying these six steps is introduced in the next section.

4.3.2 Thematic analysis of textual data

After Section 4.3.1 elaborated the standard steps of TA, this section aims to introduce why TA was suitable for achieving the research aim, and how the TA was conducted in this thesis with contextual adjustments.

As mentioned in Chapter 2, the overarching research aim is to examine how governments and digital platforms intersected in China and the UK during Covid. In other words, the aim required an analysis to help outline how the accounts narrated the pandemic, and how these narratives took shape on the relevant platforms. This section focuses on the compatibility of TA in addressing the first point, while the next section discusses how TA was supplemented to address the second point.

As Section 4.3.1 mentioned, TA allows researchers to get a sense of the themes and their significance in the datasets through coding. Practically, TA in this thesis mainly looked for *topic* codes (interpreting what a given post is about), and *analytical* codes (reflecting insights based on the theoretical framework) (Richards, 2013). These two types of coding aligned with the research aim of this study, which seeks to explore both what was said and how prominent topics spoke to the concepts and theories mentioned in Chapter 2.

Additionally, by applying the same codebook to two datasets from distinct platforms, TA facilitated the comparison by filtering posts mentioning the same theme, which enabled further juxtaposition of how the themes were defined by two cases. Importantly, TA in this thesis went beyond reporting what topics were mentioned. It functioned as a lens to identify prominent themes that were central to achieving the research aim. Finally, the three most salient themes identified through the initial TA coding were developed to guide further analysis (Figure 19).

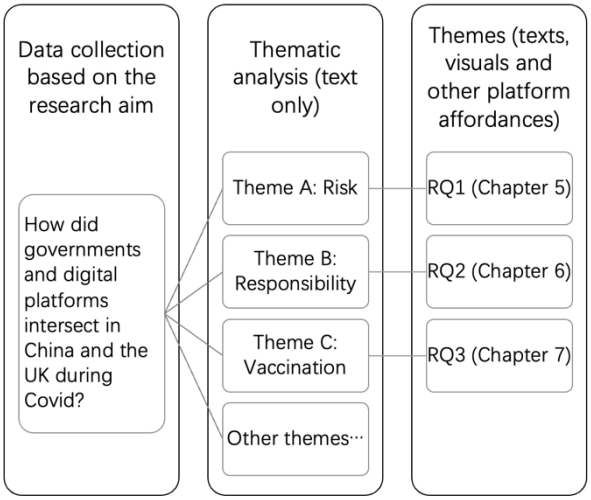


Figure 19: Coding process in this thesis

After explaining the benefits of applying TA, this section moves on to introduce how TA was applied to the texts in the datasets. This thesis began TA with a close reading of the data to build familiarity, followed by the development of the codebook through small-scale pilot coding. The codebook included both inductive and deductive codes. This dual approach allowed for an exploration of the resonance of existing concepts outlined in the literature review in Chapter 2 (e.g., risk, responsibility, nationalism, and vaccination) and to what extent they were echoed in relation to government discourses. The inductive codes enabled the identification of new topics that became relevant after engaging with the data. Table 5 presents a summary of the origins of these codes.

Some deductive codes were identified by examining relevant empirical studies (C1 in Appendix B). These studies focus on reporting prominent topics within larger datasets of Covid-related discourses on Weibo or Twitter using computational techniques, such as topic modelling or content analysis (Liao *et al*., 2020; Meadows, Tang and Zou, 2020; Wang *et al*., 2020; Schück *et al*., 2021; Xie *et al*., 2021). Codes frequently reported in these empirical studies were kept but revisited during pilot coding to adjust definitions.

The remaining deductive codes (C2-C5 in Appendix B) were derived from the literature review in Chapter 2. This framework informed the codebook design in four aspects: characteristics of risk, distribution of roles around risk, globalisation and inequality in risk, and practices of platform affordances. Together, these codes formed the final deductive codebook, outlining the general expectations for codes that might reasonably be relevant in making sense of the data.

Table 5: List of code origins

Codes	Code origins	Code type
C1.1 Sharing information	Meadows et al., 2020; Liao et al., 2020; Zhang et al., 2021.	C1 is deductive (informed by topics reported in relevant empirical studies). Except for C1.2.1 Covid knowledge, prevention, and symptoms and C1.3.2 Covid test, as inductive from the data.
C1.2 Science and expert investigations	Meadows et al., 2021; Schuck et al., 2021; Zhang et al., 2021;	
C1.3 Treatment of patients	Wang et al., 2020; Meadows et al., 2021.	
C1.4 Emotional exchange	Liao et al., 2020; Schuck et al., 2021; Xie et al., 2021.	
C 1.5 Pandemic outside the UK/China	Wang et al., 2020; Zhang et al., 2021.	
C1.6 Evaluation of Covid	Wang et al., 2020; Xie et al., 2021.	
C2.1 Certainty around measuring risks	Uncertainty and anticipation as key characteristics of risk (Section 2.1.1).	C2-C5 are deductive from the theoretical framework in Chapter 2. Except for C2.1.3 Certainty language and C4.4 Self duties and responsible citizenship, as inductive.
C2.2 Future-oriented risks and anticipation practices		
C3 New inequalities among nations	Globalisation, national relationships, and inequalities in risk (Section 2.2.1).	
C4 Different roles: definers, responsible actors, experts, and benefit owners	Mentions of different roles in the risk society, including actors defining risks (Section 2.1.3), responsible actors (Section 2.1.4), and (de) monopolising scientific rationality (Sections 2.1.1 and 2.1.3).	
C5 Platform affordance aspect	Platform affordance discussions in Section 2.3.3.	
C6 Language metaphors	/	Inductive
C7 Misinformation around the pandemic	/	Inductive

However, there were two limits to only sticking to the deductive codebook. None of the referenced empirical studies applied a comparative approach to specific government accounts, and they did not cover the same time frames as this thesis, across early 2020 and early 2022. Given these limitations,

inductive coding was used as a supplement to overcome deductive codes' limited compatibility in a comparative study. Applying mixed-style coding also enabled this thesis to overcome embedded ontologies in pre-defined codes, and to be flexible towards new ideas raised in the datasets (Murthy, 2017). Essentially, the aim of this TA coding was not only to flag resonances of concepts in the theoretical framework, but also to identify new empirical insights through this comparative process.

To add inductive insight to the deductive codebook, a short pilot study of the sample was undertaken. A small proportion of the scraped posts was read carefully, first to note any prominent codes evident in the data but absent from the deductive codes. Based on this, the earlier deductive codebook was adjusted (e.g., deleting codes, revising code definitions). For example, C1.1.1 '*government policies and guidance*' and C1.1.2 '*government support and handling of the crisis*' were split into separate codes to distinguish between policy directives and practical approaches. As shown in Table 5, four inductive codes were added under the existing deductive codes for more detailed classification. Additionally, two entirely new inductive ones — '*language metaphors*' (C6) and '*misinformation around the pandemic*' (C7) — were added to enhance thematic depth.

Following all the mentioned steps for confirming codes deductively first and then inductively, the final codebook was then confirmed (see Appendix B). A comprehensive codebook with notes and examples was valuable as an aide-memoire and reference for undertaking the analysis of 3,093 Weibo posts and 2,002 tweets, which lasted a period of approximately two months. It also stands as a resource that other researchers can use for similar studies.

To facilitate storing and indexing texts and other metadata, NVivo, computer-assisted qualitative data analysis software widely used in qualitative data analysis in social science, was used through a University-sponsored institutional licence (NVivo, no date). Practically, NVivo was used for conducting TA on texts from the sample. As introduced in Section 4.2.2, the final datasets were in spreadsheet format. The spreadsheets were then imported into NVivo as individual files account by account (see Figure 20 as an example of @UKHSA).

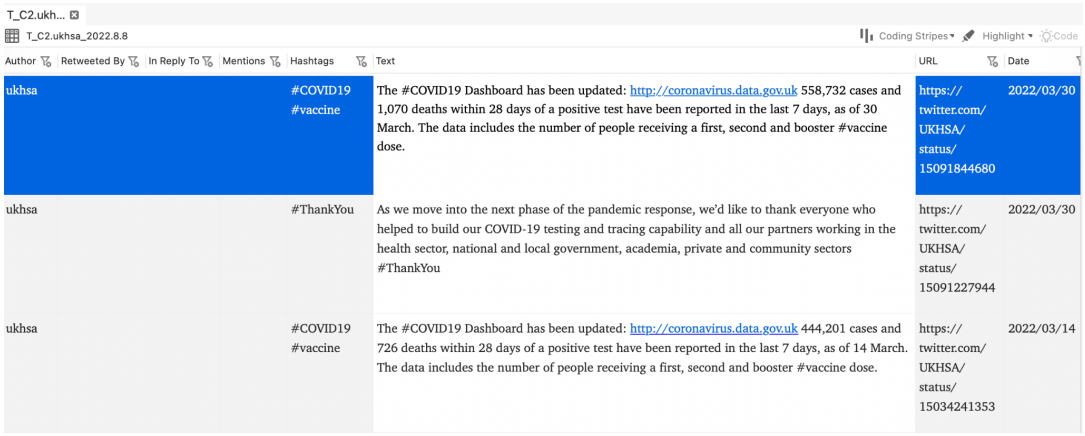


Figure 20: Screenshot of NVivo analysis interface

As Section 4.1.3 introduced, three categories of Weibo accounts and four on Twitter were included in the final datasets. To facilitate the comparison, posts from each account were imported in NVivo as independent files, which were then classified according to the same categorising standard in Section 4.1.3 (A= state ministries, B= political figures, C= executive agencies, D= public hospitals) through NVivo's file classification function (see Figure 21).

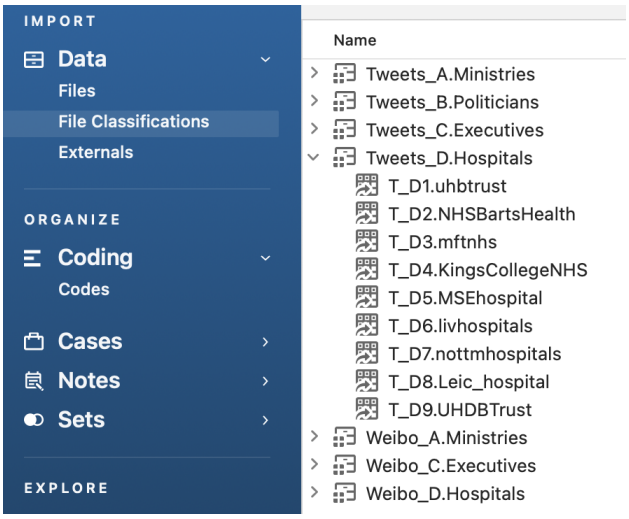


Figure 21: Screenshot of NVivo file classification

In terms of coding, the codes were not mutually exclusive, meaning one post could be labelled with several codes. To facilitate further code queries, the coding unit was a sentence. This meant the whole sentence would be coded if it matched certain definitions in the codebook. Given the size of the datasets, all analysis was processed with original texts without translation. In the following three findings chapters, all examples are reported in the original screenshots with translations. The translation from Chinese into English was conducted through the free online translator Google

Translate (Google Translate, no date). All results were then checked manually by the researcher, who is fluent in both Chinese and English, to revise mistakes not corrected by the online translator.

Once coding was completed, codes were reviewed carefully to identify 'themes' as the promised outcome of applying TA. Conceptualising codes into themes was achieved through three strategies. To identify the major codes of the datasets, codes were ranked in descending order according to the number of 'references', through which NVivo automatically recorded the frequencies of codes being labelled in the datasets. Another NVivo function, 'Matrix Coding Query', was then used to identify 'co-codes' that showed up together with the prominent codes in the datasets. Then the 'Coding Query' function was used to filter data matching the prominent codes. The matched data were then printed out and read repeatedly to generate notes to merge some codes into larger themes. All three steps were conducted iteratively to identify common themes across the Weibo and Twitter datasets and to observe how these themes were narrated on both platforms.

For example, by ranking the number of references in NVivo, it became evident that the code C4 '*responsible actors*' was mentioned most frequently, with 1,160 references across 105 of a total of 109 accounts. Using a Matrix Coding Query, it was possible to see that this code was most frequently mentioned in conjunction with: C1.1.2 '*government support and handling of the crisis*' (260 times); C1.1.3 '*non-government help and support*' (213 times); C1.2.2 '*vaccination status and development*' (90 times); C1.3.1 '*medical treatment, patients, and research*' (174 times); and 'C1.4.1 '*praising and appreciation*' (317 times). After reviewing data instances where these codes co-occur, these intersections inform the theme of 'responsibility at the levels of government', 'heroic individuals', and 'citizenship', discussed in Chapter 6.

In addition to using NVivo, AntConc (Anthony, 2023) was used to interpret TA results. Developed by Corpus Linguistics scholar Laurence Anthony at Waseda University, AntConc is an open access toolkit designed for identifying patterns in text collections. It enhances thematic conceptualisations by providing exact counts and contexts of high frequenty words, terms, and notable collocates. This functionality facilitated the preliminary understanding of NVivo coding results through prominent words and their contexts before further analysis.

The credibility of AntConc is supported by its wide use in corpus-based language analysis (e.g., Spink and Heinstrom, 2012; Weisser, 2016; O'Halloran, 2017). Its applicability within social sciences is further endorsed by institutional guides, such as those from Vrije Universiteit Amsterdam (AntConc, n.d.), the National Library of Scotland (Charlton and National Library of Scotland, 2023), and Manhattan University (Manhattan University O'Malley Library, n.d.). In this thesis, AntConc's reliability was verified through a manual cross-checking process in Microsoft Word. For example, the

accuracy of keyword occurrences and contexts was verified by searching words like ‘we’ and reviewing each sentence containing it in both Microsoft Word’s and AntConc’s results. This ensured that AntConc’s outputs accurately showed all instances and contexts of keywords.

Given the Chinese writing system does not use spaces between words as in English writing, analysing Chinese in AntConc necessitates ‘segmentation’, which is to divide sentences into a sequence of words. For example, the original sentence in the data writes: ‘全力协调，保障社区居民生活物资供应’ (‘coordinate fully, ensure community residents’ life supplies’), which after segmentation becomes ‘全力 / 协调，保障 / 社区 / 居民 / 生活 / 物资 / 供应’. Adding spaces between words is mandatory for AntConc to run the word frequency analysis.

Practically, after exporting relevant coded results from NVivo as .txt files, documents in Chinese were first processed with segmentation through SegmentAnt, free software also developed by Laurence Anthony (2017) to segment Chinese and Japanese texts. The coded Weibo posts were first uploaded to SegmentAnt, which produced the segmented texts in a new document for downloading. Then the segmented Weibo posts and tweets were imported into AntConc.

Three functions on AntConc were used to give a sense of the words used in particular narratives, including ‘Word’, ‘Cluster’, and ‘Collocate’. The function ‘Word’ was used to generate a list of word frequencies. For instance, after entering all tweets coded into *responsibility* and *government support*, AntConc shows the word ‘*we*’ was used mostly frequently – 55 times (Figure 22).

Given several words in the default stopword list have important meanings in this study (e.g., ‘we’ and ‘our’), the default stopword list was not used. Instead, each word’s relevance was manually verified within its full sentence context. For instance, as shown in Figure 22, words like ‘we’ and ‘ours’ may convey a personal tone that is meaningful for analysis. However, articles (e.g., ‘a’) and prepositions (e.g., ‘with’), whose contexts do not reveal consistent language patterns in manual review, were not included in the analysis.

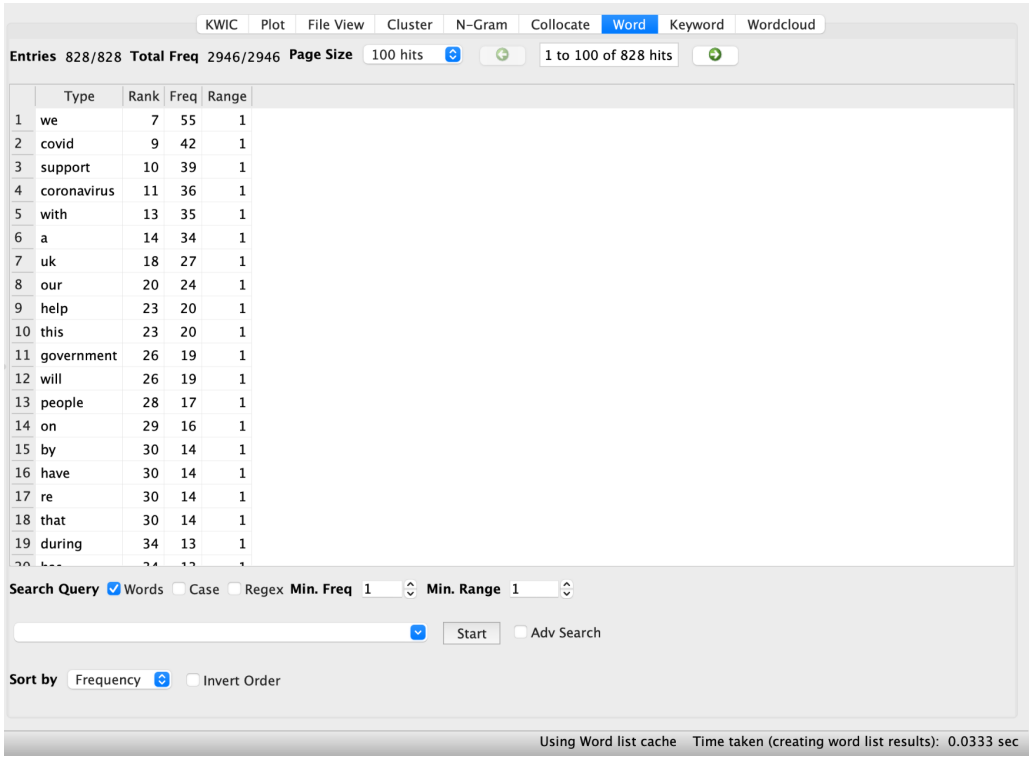


Figure 22: Screenshot of word frequency on AntConc

Once the high frequency words were identified, another function, 'Cluster', was used to map out other words used immediately to the left or right of the keywords. As shown in Figure 23, running cluster analysis helped to list all two-word terms where '*we*' were mentioned. To ensure accuracy, occurrences of 'we' were checked manually in Microsoft Word to ensure that all instances were captured by AntConc results. This cross-checking ensured that AntConc reliably presented every match in its output.

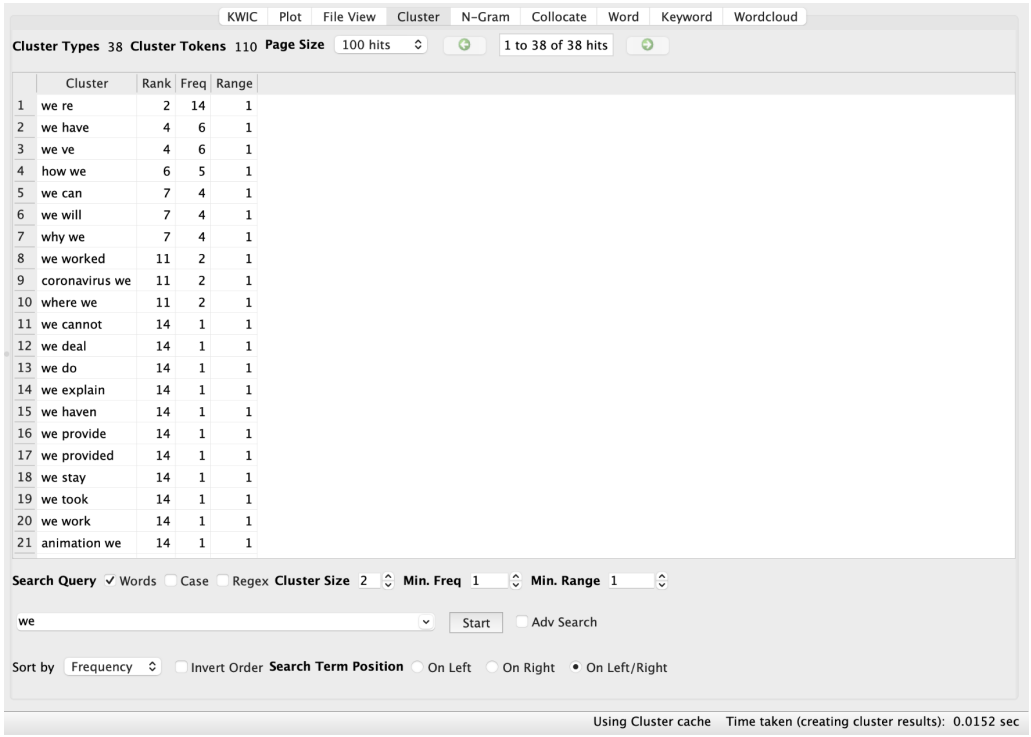


Figure 23: Screenshot of cluster on AntConc

To learn more about the contextual usage of a specific word, the function 'Collocate' was used to map out the words as 'collocates' frequently occurring near a keyword. The default window span was applied (from 5L to 5R), instructing AntConc to display collocates statistically more likely to occur within a range of five words to the left or right of the keyword. In the empirical chapters, it turned out that collocate analysis was more beneficial for exploring Chinese, which revealed a richer set of word collocates. Figure 24 displays the collocates of the word '疫情' (pandemic) within the Weibo posts coded into both *responsibility* and *government support*, including '防控' (prevention and control), '抗击' (fight against), '工作' (work), '疫情' (pandemic), and '肺炎' (pneumonia). These results will be revisited in Chapter 6.

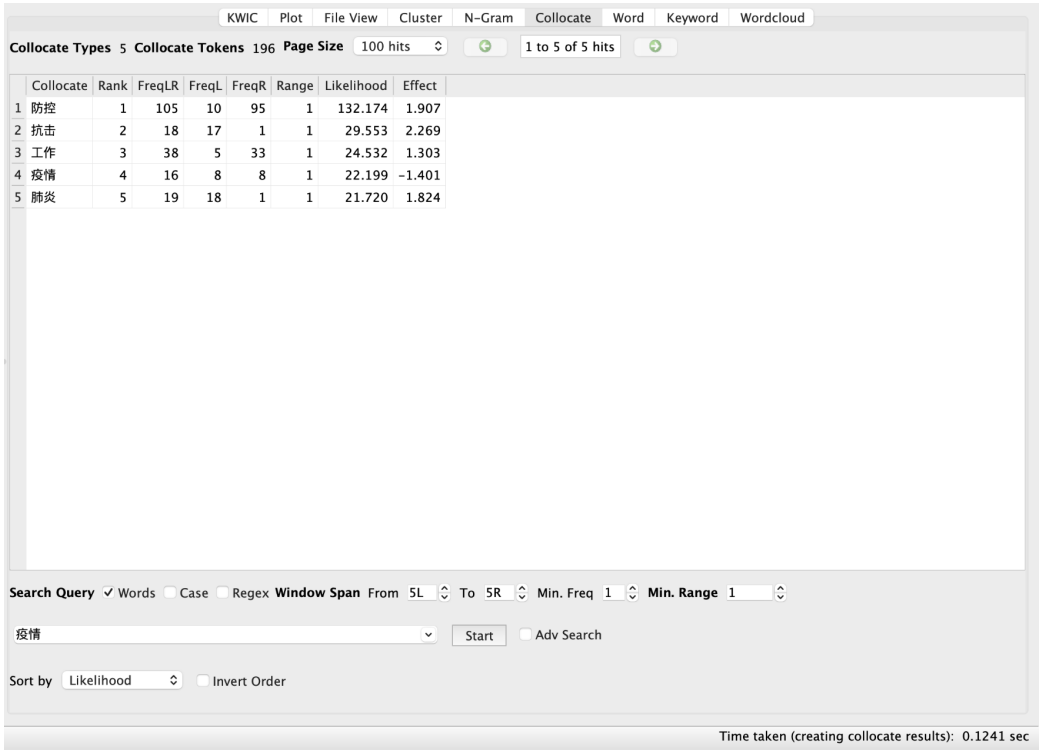


Figure 24: Screenshot of collocate on AntConc

In summary, this section introduced the reasons for using TA. It also provided details on how TA was conducted through NVivo, including confirming the codebook, importing the datasets, exploring the themes, and presenting the themes with proper translation. Finally, this section discussed the use of AntConc as a supplementary tool to understand the results from NVivo. AntConc outputs were manually checked by searching the same keywords in Microsoft Word to ensure that all matching instances were accurately presented. However, as mentioned at the beginning of this section, the research also inquired as to the platforms' impacts on shaping these narratives, while traditional text-based TA cannot fully achieve this. The next section explains how other strategies were used to be responsive to platform affordances of Weibo and Twitter, particularly through taking visuals seriously.

4.3.3 Addressing visuals as framing devices

This section aims to elaborate on how the text-oriented TA was supplemented by platform-affordance-sensitive practices. While this thesis is not a frame analysis study, this section begins by introducing key frame concepts to justify the importance of considering platform affordances as discursive elements. Importantly, this section examines why the thesis applied the concept of 'frame' as a shorthand to describe the process where the narratives of the pandemic were constructed through these accounts and posts. Before introducing the adjustments based on TA, it is important to learn why taking visuals and other metadata into account through frame theory matters.

Researching governments' accounts and their posts about Covid means exploring how events and policies were presented or 'packaged' by the relevant institutions to the wider public (Gamson and Lasch, 1983; Gamson and Modigliani, 1989). This process of presentation is conceptualised as 'frame', which, as communication scholar Robert M. Entman describes, involves selecting and emphasising specific aspects of a perceived reality in communication. Accordingly, the term 'frame' will be used frequently in the analytical chapters to distinguish the pandemic as reality and the pandemic narratives on platforms with selection and salience.

How then do the frames work? Sociologist William A. Gamson and colleagues suggest that media narratives are constructed through discursive mechanisms (Gamson and Lasch, 1983; Gamson and Modigliani, 1989). Within mechanisms, issues are 'packaged' using specific discursive devices, through which newsmakers signify their intended meanings and shape the ways stories are understood (Gamson and Lasch, 1983). In other words, meanings are constructed through certain symbolic items to the audience. Communication scholars Zhongdang Pan and Gerald M. Kosicki (1993) provide a more detailed definition of discursive devices as 'framing devices':

> They [signifying elements of a theme] function as framing devices because they are recognizable and thus can be experienced, can be conceptualized into concrete elements of a discourse, can be arranged or manipulated by newsmakers, and can be communicated in the "transportation" sense of communications. In essence, they are tools for newsmakers to use in composing or constructing news discourse as well as psychological stimuli for audiences to process. They make a frame communicable through the news media (Pan and Kosicki, 1993, p.59).

According to this quote, frames are made sense by audiences through framing devices, while the precondition of a frame being communicable is that the framing devices are interpretable within audiences' shared rules or conventions (Pan and Kosicki, 1993). If audiences come with various cultural experiences, actors' proposed meanings conveyed by the framing devices might not be interpreted in the intended ways. This highlights the contribution of comparison in examining how the same pandemic crisis has been represented through multiple framing devices in news stories (Pan and Kosicki, 1993, p.59). For instance, the Covid-19 pandemic can be narrated variously, such as a health crisis or an economic dilemma, where symbolic devices such as metaphors and moral appeals are used to construct the pandemic into specific pictures.

While some fundamental works acknowledge visuals as a form of framing (e.g., Entman, 1993, p.7; Pan and Kosicki, 1993; Gitlin, 2003, p.7), the academic consensus on visuals as framing devices is not

equivalent to that of textual framing. In Gillian Rose's foundational work *Visual Methodologies* (2016), visual analysis can benefit from applying a framing lens to unfold both the 'literal framing' (meanings and presentation of images) and 'metaphorical framing' (discursive production of the image's meanings) of visuals. Situating these two types of framing within the example of photography, Moernaut, Mast and Pauwels note that 'literal framing' (or in their words, 'picture frame') refers to presentations of a limited part of subjects to construct meanings from the visual surface (2020). They further explain that 'metaphorical framing' (or in their words, 'building metaphor') reflects selective interpretations of reality by production actors within the broader contexts of media production and culture (Moernaut, Mast and Pauwels, 2020). These shared connections between framing and visuals invite Geise and Baden (2015) to propose an expansive definition of framing devices, arguing that the definition should not be restricted to texts but include 'any kinds of devices capable of signifying interpretable information – including linguistic and visual stimuli' (p.48).

In addition, visuals, particularly those from social media platforms, often express meanings together with other elements, such as verbal elements (Moernaut, Mast and Pauwels, 2020). Researching texts or visuals in isolation partly fails to preserve the 'intertextuality' of social media data: intertextuality implies that a visual material generates meanings from itself, its neighbouring materials (e.g., surrounding captions), and the broader socio-cultural contexts (e.g., shared in a public platform) (Hand, 2017, p.217). Considering intertextuality in the light of data collection results in Section 4.2, traditional text-based TA partly fails to capture the interplay between texts, visuals, and other metadata, given that neither texts nor visuals are consumed in isolation in a single Weibo post or tweet. Therefore, visual analysis is frequently combined with other qualitative methods, such as the 'close reading' of hashtags and imagery alongside each another on Instagram (Karsgaard and MacDonald, 2020).

Therefore, 'framing devices' in this study were defined as the repertoires including textual and non-textual elements through which governmental accounts promoted specific understandings of Covid. To comprehensively address various framing devices in the original data, this study also took the platform affordances of Weibo and Twitter seriously as supplementary to TA, with a specific focus on visuals on Weibo and Twitter.

To accomplish this, two approaches were adopted to give due attention to visuals and other metadata in this study. First, in the subsequent three analysis chapters, all examples will be presented as screenshots instead of textual quotes. As Chapter 3 showed, Weibo and Twitter have different architectures shaping how the posts can be presented (e.g., character limits). Thus, presenting screenshots enables readers to see the 'intertextual' dynamics between texts and other framing

devices, such as visuals. Screenshots in this comparative research also allow researchers to be sensitive to platform-specific cultures of use, which should not be treated as universally employable across platforms (Rogers, 2018, p.100).

Another approach is to present images as 'image walls' in Chapter 5. Image walls are a collection of individual visuals (re)arranged deliberately into walls as 'meaning-making' spaces (Colombo, Bounegru and Gray, 2023, p.1960). Meaning-making, according to Richard Rogers (2021, p.18), comes from critical reflections enabled by 'close reading' of single images and 'distant reading' of their broader contexts within these image walls. To analytically display images in research outputs, Rogers (2021, p.5) proposes a method of grouping images by similarity to examine the recurring use of the same and/or similar images. This idea of grouping images is further elaborated upon in the methodological discussions on the use of image walls by digital media researcher Warren Pearce and colleagues (2020). They note that rearranging images by colour similarity or posting time can help researchers rapidly learn about posting frequencies, shifting or stable representation styles, and facilitate cross-platform comparison (Pearce *et al*., 2020).

Informed by this methodological work, this study builds image walls using tables and the software ImageSorter. ImageSorter is an image curation application developed by the Visual Computing Research Group including computer academics at HTW Berlin, University of Applied Sciences (visual computing, n.d.). In the thesis, ImageSorter was used to synthesise multiple images into one 'overview' image based on colour or publishing time (pixolution GmbH., 2023). ImageSorter also displayed the number of images included in the wall, which was cross-checked with the original dataset to ensure no images were left out. The thesis also built simple tables with screenshots and publishing dates as image walls to present the consistency of visuals over time.

In summary, this section discussed visuals as framing devices in social media contexts. This necessitated this study to apply traditional TA to texts and supplement strategies to give attention to other platform affordances, particularly visuals. The combination of the two aimed to identify the prominent themes within government discourses, and to respond to distinctive platform cultures across Weibo and Twitter.

4.4 Conclusion

This chapter introduced the methodology of this thesis from three aspects: research design, data collection, and data analysis.

Section 4.1 discussed why this study applied a comparative design to address the limited empirical non-Western-based and comparative scholarship in the sociology of risk and platform studies, as detailed in Chapters 2 and 3. Essentially, this chapter aimed to explain how the 'common ground' between two distinct contexts was arrived at methodologically. To achieve this, the study followed a sampling strategy with a series of steps to generate comparability (see Figure 15). It used search queries to a defined list of social media accounts to gather official posts as its empirical basis. The list of accounts was confirmed by including the official accounts run by attendees of national pandemic press conferences in China and the UK (see the full account list in Appendix A). The search queries included Covid-related keywords and a relatively longer time frame, covering from early 2020 to early 2022 in both cases.

In terms of data collection, Section 4.2 introduced two web scraping tools (Houyi Collector on Weibo, WDRA on Twitter) to generate results in spreadsheets for further analysis. The outcomes from these two tools were then processed through a proportional stratified sampling approach, resulting in 3,093 Weibo posts and 2,002 tweets. This study was conducted in line with the ethics application approved by the University of Sheffield in October 2021.

Moving on to the qualitative data analysis strategies discussed in Section 4.3, this study used traditional TA primarily to analyse the texts of social media posts. This involved a combination of inductive and deductive approaches using NVivo, with the full codebook shared in Appendix B. To understand the contexts of coded texts, AntConc was used to summarise the word frequency and word contexts of some themes identified through NVivo. In addition, informed by frame theory, this study considered government communication as a 'framing' strategy. It functioned through texts and other metadata on Weibo and Twitter as 'framing devices' to shape how Covid was perceived by the platform users. Thus, to capture non-verbal framing devices, the screenshot-based presentation and image wall building were complemented with the primary TA. This supplement was designed to handle Weibo posts and tweets with sensitivity in their different platform affordances as outlined in Chapters 2 and 3, which necessitated efforts to account for the role of visuals and other non-verbal materials across the two platforms.

The subsequent three empirical chapters respectively present the three most prominent themes that emerged from TA: risk and risk definitions in Chapter 5, responsibility and responsible actors in Chapter 6, and finally vaccine-mediated nationalism in Chapter 7. As mentioned in Section 4.3.3, all example posts are shared as screenshots to present both the narratives of government accounts and the places where the narratives are consumed.

Chapter 5 Risk, Uncertainty, and Digital Platforms

In Chapter 2, the literature review discussed how uncertainty and reflexivity become central to risk thinking. From risk society perspectives, uncertainties inherent in risk, associated with its delocalisation, non-compensability, and incalculability (Beck, 1992), co-exist with humans' natural desire for maintaining stability and predictability (Beck, 2008, p.6). This drives people's attempts to maximise knowledge and control in the face of approaching risk (Adam, Beck and van Loon, 2000). While risks are flexibly defined by different actors, their definitions are similarly characterised by efforts to propose their own systems of risk thinking. These systems promote particular perspectives regarding anticipation (Anderson, 2010), value judgement (Heyman, 2010), probability, classification, and temporality of specific events (Brown and Galantino, 2020) in a culturally sensitive manner (Douglas, 2002).

Reconsidering the above scholarship of risk in the context of digital platform production – in particular, the way actors describe certain issues as risky – requires taking platform affordances into account (e.g., Bucher and Helmond, 2018). Among the digital-mediated definitions of risk, it is particularly important to note governments' roles as traditional 'structures of collective risk management' providing a shared definition of risk to their populations, given their legal duties in protecting citizens from risk through welfare, economy, and other institutional strategies (Mythen, 2004, p.21). Therefore, this chapter aims to explore how and to what extent the discourse of risk was mobilised by government communication in China and the UK, through Weibo and Twitter, respectively (RQ1).

In the following chapters, examples are selectively drawn from specific accounts in the dataset, chosen based on the thematic significance of their posts (i.e., ranked by descending proportion of mentions of Code A on NVivo's summary). This approach, which predominantly selected accounts from ministerial and executive agency accounts (e.g., local government accounts in China, the NHS in the UK), may reflect a communicative pattern largely driven by higher institutional bodies in constructing and promoting risk narratives. In contrast, accounts from other account categories, particularly hospitals, appear less frequently in the following chapters due to lower activity levels on certain themes.

The findings suggest that governmental discourses in both China and the UK seek to establish provisional certainty in official communication. The emphasis on constructing certainty needs to be contextually understood in terms of governments' roles as structures of collective risk management. Central to pandemic updates, this chapter identifies the discourses of medical scientists, numerical assessment, and visual communication as three sets of framing devices, through the mobilisation of

which communication on Weibo and Twitter constructs two ‘digital risk societies’ to the public. From an audience and reception studies perspective, constructing provisional certainty can be seen as a strategic approach to managing public sentiment and institutional trust capital.

This chapter in general unpacks how the definition of Covid as a health risk was synchronised through routine pandemic updates on Weibo and Twitter. Section 5.1 discusses how the early risk definitions of Covid evolved iteratively through biological and geographical aspects, with discourses of medical expertise playing a prominent role in justifying political decisions regarding health risk assessment. Section 5.2 explores the statistically oriented pandemic update mechanisms, highlighting numbers and their display patterns as powerful framing devices of classification, value judgement, and temporality in risk thinking. This chapter then considers how platform affordances can be seen to affect official discourses. To that end, Section 5.3 focuses on visual communication to discuss how the images on Weibo and Twitter affected the frame of authority on Weibo and the statistical credibility on Twitter. Finally, Section 5.4 summaries the findings and discusses how these three sets of framing devices serve to construct digital risk societies with a tone of provisional certainty.

5.1 Uncertainty and scientific expertise at the outset of Covid

As articulated in the literature review in Chapter 2, risk thinking is characterised by acknowledging its uncertainties in a politically reflexive way (Beck, 1992, p.21). This is addressed by mobilising science evidence as a prominent base, supplemented by other types of knowledge (Beck, 1992, p.27). To capture how scientific evidence is mobilised jointly with others, Chapter 2 conceptualised this as ‘Science + X’. Here X represents knowledge and evidence beyond scientific thinking, such as imagination (Beck, 2008, p.6), political and financial values (van Loon, 2014), experiential knowledge (Borkman, 1976), personal emotions, and socio-cultural traditions (Zinn, 2006). In the area of government communication, these combinations are further reshaped by their significance in political contexts (van Loon, 2014, p.450). However, this perspective remains limitedly examined in the context of infectious diseases (Abeysinghe and White, 2011).

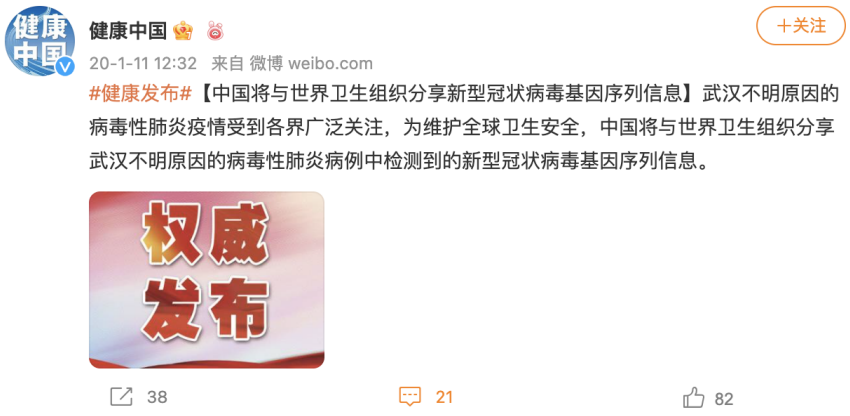
This section aims to investigate how the existence of Covid, as a new emerging pandemic with limited experience around the world, was acknowledged at the front end of the initial national outbreaks in China and the UK. To accomplish this, following the pandemic timeline introduced in Chapter 3, Section 5.1.1 analyses Weibo posts shared in January 2020 in China, because Covid was first officially confirmed to be transmissible on 20 January, followed by Wuhan lockdown on 23 January 2020. Section 5.1.2 examines tweets published between late January and early March 2020 in the UK, a period during which the first case in England was confirmed on 31 January and several policies

including the national lockdown were implemented in March 2020. Both sections explore how the uncertainty of this new crisis was addressed and how the discourse of medical expertise was employed at the early stage of this health crisis. Section 5.1.3 compares two cases and articulates how the frame of Covid as a new emerging infectious disease involved a blend of 'certainty' and 'uncertainty', with an emphasis on establishing 'provisional certainty' through scientific expertise and other types of knowledge despite the iterative nature of risk evaluation.

5.1.1 Weibo: Biological uncertainty of Covid

As introduced in Chapter 3, there was a gap in time between the initial acknowledgment of Covid on Weibo and the eventual framing of Covid as a health threat. 20 January 2020 was a key turning point in the pandemic management strategy in China, marked by a state televised announcement by the top Chinese expert, Dr Nanshan Zhong, confirming the transmissibility of the virus among humans. This was followed by President Jinping Xi's announcement of the 'national grave situation' and the Wuhan lockdown on 23 January 2020. Thus, this section presents several posts before and after 20 January 2020 to illustrate how the risky facet of Covid was identified and communicated to publics in light of uncertainty and manageability and the role of scientists' discourses in this defining process.

In the original datasets, there were only three posts released before the 20 January with two (Weibo 1 and Weibo 2) coming from @Health China (@健康中国), the official Weibo account of the National Health Commission in China (NHC), a cabinet-level department responsible for national public health. It acted in a similar role to the Department of Health and Social Care (DHSC) in the UK, as the leading organisation in pandemic control and prevention work. The other (Weibo 3) came from @Wuhan Release (@武汉发布), the official account of the Wuhan local city government.



Weibo 1

https://weibo.com/2834480301/Ip1FjgChm

Weibo 1 (translation)

#Health release# [China will share the genetic sequence information of the new Coronavirus with the WHO] The viral pneumonia pandemic of unknown cause in Wuhan has attracted widespread attention from all walks of life. To maintain global health security, China will share the gene sequence information of novel Coronavirus detected in cases of unexplained viral pneumonia with the WHO.

Weibo 1 was the earliest post in the Weibo sample discussing Covid. It offers some insights into the initial response when Covid came to attention with limited prior knowledge and experiences: on one hand, the uncertainty of acknowledging an emerging health risk is initially reflected in its naming, such as '*the viral pneumonia pandemic of unknown cause in Wuhan*' and '*novel Coronavirus detected in the cases of unexplained viral pneumonia*' in Weibo 1. Both naming attempts to merge the 'known' (e.g., that it was a viral pneumonia, with a geographical origin in Wuhan, and its gene sequence), and the 'unknown' (e.g., its cause). On the other hand, Weibo 1 highlights the strategies being carried out, where the country actively reports and shares the gene sequence at the global level.

A similar hybrid of known and unknown is evident in Weibo 2 by @Health China, posted four days later on 15 January 2020.

Weibo 2

https://weibo.com/2834480301/IpyEBD1Ut

Weibo 2 (translation):

#Health release# [Experts from Hong Kong, Macao, and Taiwan went to Wuhan for investigation] Recently, pneumonia caused by a new type of Coronavirus occurred in Wuhan.

> *To strengthen technical exchanges, at the request of relevant departments in Hong Kong, Macao, and Taiwan, on 13-14 January 2020, the Wuhan Municipal Health Commission received an on-site inspection by an expert group from Hong Kong, Macao, and Taiwan. During their stay in Wuhan, the expert team conducted a comprehensive investigation on the pandemic prevention and control, its response and handling, medical diagnosis and treatment, and pathogen detection. They also had face-to-face chats with national, provincial, and municipal experts involved in the pandemic prevention and control, and patient diagnosis and treatment, consulted and understood relevant information on prevention and control, and paid visits to laboratories of disease control institutions and medical institutions that admitted infected cases.*
>
> *The expert group from Hong Kong, Macao, and Taiwan thanked the National Health Commission, Governments of Hubei Province and Wuhan for their thoughtful arrangements, positively evaluated the relevant pandemic prevention and control, and diagnosis and treatment measures in the mainland, and put forward relevant work suggestions. This inspection will play a positive role in further promoting exchanges and cooperation between the two sides of the Taiwan Strait and Hong Kong and Macao, effectively improving the ability to prevent and control infectious diseases, and jointly maintaining health and safety.*

Like Weibo 1, Weibo 2 indicates the uncertainty of Covid through language such as '*pneumonia caused by a new type of Coronavirus*', which attributes uncertainty to its biological characteristics as a pivotal indicator of risk. This post also introduces Covid as an opportunity to strengthen collaboration between Wuhan's local institutions and external expert groups, with an emphasis on the things *being done* to improve the state's ability to control expected uncertainties. This emphasis on ongoing knowledge exchange activities aligns with Weibo 1 describing the genetic sequence sharing. Overall, both posts do not explicitly frame Covid as a risky virus but highlight the efforts of stakeholders to maintain information transparency. Both posts attach the same visual, with red text of 'authoritative release' (权威发布), which will turn out to be consistently used in the communication practice of @Health Release in Section 5.3.1.

Weibo 3 was posted by @Wuhan Release on 19 January 2020. It frames the controllability of Covid by referring to discourses of scientists.

Weibo 3

https://weibo.com/2759348142/IqbQIhnOS

Weibo 3 (translation):

#Situation report# [Expert: #new cases of Wuhan Coronavirus pneumonia are expected to increase but generally curable#] According to experts, #17 new cases of the Coronavirus disease in Wuhan#, with the further development of the testing work, it is expected that the number of new cases may continue to increase. Pneumonia caused by Coronavirus is generally curable. The initial impression of this outbreak is that the new Coronavirus is not highly contagious, and the possibility of limited human-to-human transmission cannot be ruled out, but the risk of continuous human-to-human transmission is low. Details ↓

Weibo 3 introduces the further testing results from Wuhan, suggesting Coronavirus was '*generally curable*' and '*not highly contagious*' with limited possibilities of interpersonal transmission. This post starts with a long hashtag adopted from an expert's quotes '*#new cases of Wuhan Coronavirus pneumonia are expected to increase but generally curable#*', serving as a 'headline' for this post. This hashtag also summarises the topic of the attached 6-minute video, which is a Q&A session featuring the disease control experts responding to journalists' questions. Thus, the certainty in this post arises from the frames of several biological features of Covid, which is scientifically 'known' by medical experts. The voices of 'experts' are arguably stronger than in the previous two examples, as Weibo 3 directly incorporates experts' discourses and attaches a video of their speeches to justify the risk evaluation decisions.

Considering this in light of the following posts highlighting the dangerousness of Covid, Weibo 3 conceptually indicates the frame of 'provisional certainty': it refers to a temporary state where risk is framed as manageable with conditional assurance and confidence, while this evaluation is contingent

based on the available information at a given moment. Importantly, its certainty is substantiated by promoting narratives that push against delocalisation and incalculability inherent in risk perspectives (Beck, 1992), such as the attempts to localise its sources and calculate its transmission patterns in Weibo 3.

But this frame of risk controllability might lose its status and transition into uncertainty when more information becomes available. Empirically, this refers to perceiving Covid as temporarily controllable based on existing available information, while also acknowledging it could become uncontrollable as more medical findings emerge or as the pandemic evolves. This is exemplified by statements such as '*the possibility of limited human-to-human transmission cannot be ruled out*' at the end of Weibo 3. Compared to the posts introduced later in this section, the emphasis at the front end of Covid was to acknowledge that there was yet not enough of a clear risk to necessitate all the mentioned work done to bring the situation under control.

So far, this section has reviewed three posts preceding the official classification of Covid as a serious national health risk on 20 January 2020. Before the official declaration of Covid as a national crisis, communication frequency from Weibo accounts was limited, and the language used to describe risks was tentative, presenting 'work-in-progress' updates to clarify the unknown risk to the public with the greatest extent of medical knowledge.

Having discussed the narratives before Covid was officially declared as a national crisis, this section moves on to discuss narratives after the official announcement on 20 January 2020, where there appeared to be a shift in tone from 'certainty' into a mixture of 'certainty' amid 'uncertainty'. Weibo 4, posted by @Health China on 22 January 2020, three days after Weibo 3, suggests how the same disease left many uncertainties beyond experts' knowledge.

Weibo 4

https://weibo.com/2834480301/IqEl96bSG?refer_flag=1001030103_

Weibo 4 (translation):
#Health science exchange# #Health release# [The number of confirmed cases has surged in recent days, what is the reason?] Recently, the number of cases has changed greatly, which has something to do with our deepening understanding of the disease, improving diagnostic methods, and optimising and distributing diagnostic reagents to the whole country.

Experts believe that the cases are mainly related to Wuhan: there has been human-to-human transmission, infection among medical staff, and a certain range of community transmission. The transmission route of the pandemic is mainly through the respiratory tract, and the virus may mutate. There is a risk of further spread of the pandemic.

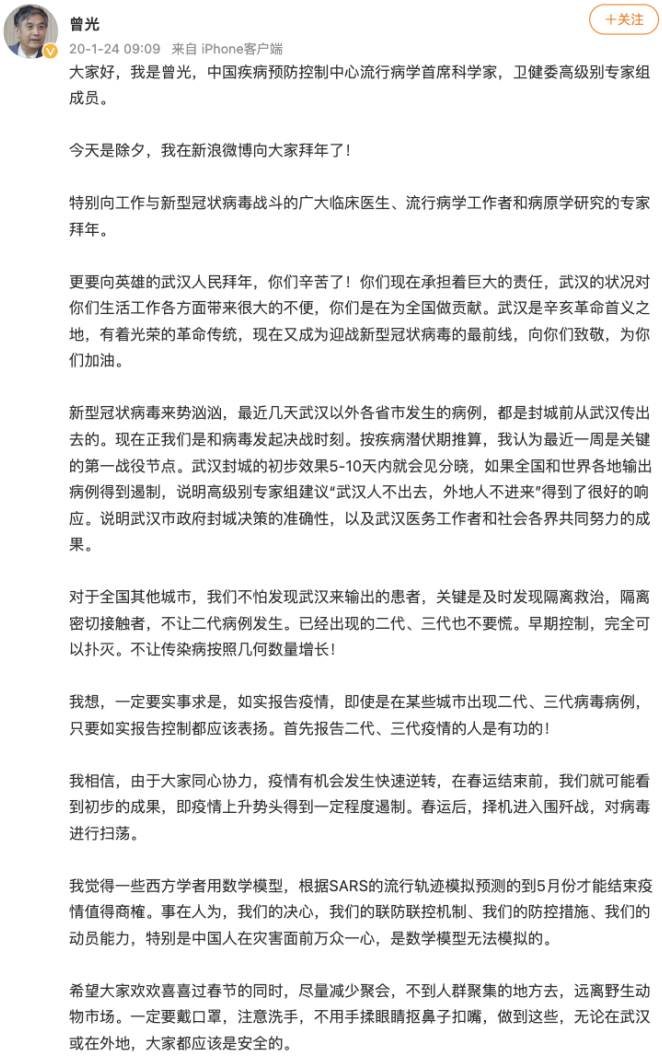
At present, given it is the Spring Festival travel season, the mobility of people has increased sharply, which objectively increases the risk of pandemic spread and the difficulty of prevention and control. We must not take it lightly and be highly vigilant! #Coronavirus pneumonia virus may mutate#

Weibo 4 explains the reasons for increasing confirmed cases, attributing it to advancements in Covid knowledge and improved diagnostic methods, or in Beck's words, the development of 'scientific sensory organs' (1992, p.27). The rise of confirmed cases is also framed as due to the uncertainties of Covid as a health risk, such as interpersonal transmission and virus mutation, with attempts to provide future-oriented 'anticipation' (Anderson, 2010) by stating '*there is a risk of further spread of the pandemic*'. In this sense, this post resonates with the previous idea of provisional certainty through addressing the known (existing human-to-human and community transmission) and the unknown (further spread and the impact on the Spring Festival).

While Weibo 4 provides an account of how narratives of authority are framed in association with scientific experts' discourses, cautious uses of language can be seen here: experts at this point can only outline existing *estimations* with limited statistical evidence and only predict a potentially worsening situation caused by the intense traffic during the Spring Festival, in the absence of substantial statistical modelling.

To closely examine the role of science experts' discourses, this section moves on to discuss statements from medical experts which provided early risk evaluations of Covid in January 2020. Weibo 5 was from the individual account of Zeng Guang (@曾光), the chief scientist at the Chinese Centre for

Disease Control and Prevention. It was selected as an example due to its significant engagement, with 24,651 reposts, 5,037 comments, and 76,827 likes at the time of data collection. In contrast to the four examples above from institutional accounts, this post came from an individual Weibo account belonging to a well-known Chinese medical scientist, although there are only three such accounts in the sampled Weibo dataset, as illustrated in Chapter 4.



曾光 +关注

20-1-24 09:09 来自 iPhone客户端

大家好，我是曾光，中国疾病预防控制中心流行病学首席科学家，卫健委高级别专家组成员。

今天是除夕，我在新浪微博向大家拜年了！

特别向工作与新型冠状病毒战斗的广大临床医生、流行病学工作者和病原学研究的专家拜年。

更要向英雄的武汉人民拜年，你们辛苦了！你们现在承担着巨大的责任，武汉的状况对你们生活工作各方面带来很大的不便，你们是在为全国做贡献。武汉是辛亥革命首义之地，有着光荣的革命传统，现在又成为迎战新型冠状病毒的最前线，向你们致敬，为你们加油。

新型冠状病毒来势汹汹，最近几天武汉以外各省市发生的病例，都是封城前从武汉传出去的。现在正我们是和病毒发起决战时刻。按疾病潜伏期推算，我认为最近一周是关键的第一战役节点。武汉封城的初步效果5-10天内就会见分晓，如果全国和世界各地输出病例得到遏制，说明高级别专家组建议"武汉人不出去，外地人不进来"得到了很好的响应。说明武汉市政府封城决策的准确性，以及武汉医务工作者和社会各界共同努力的成果。

对于全国其他城市，我们不怕发现武汉来输出的患者，关键是及时发现隔离救治，隔离密切接触者，不让二代病例发生。已经出现的二代、三代也不要慌。早期控制，完全可以扑灭。不让传染病按照几何数量增长！

我想，一定要实事求是，如实报告疫情，即使是在某些城市出现二代、三代病毒病例，只要如实报告控制都应该表扬。首先报告二代、三代疫情的人是有功的！

我相信，由于大家同心协力，疫情有机会发生快速逆转，在春运结束前，我们就可能看到初步的成果，即疫情上升势头得到一定程度遏制。春运后，择机进入围歼战，对病毒进行扫荡。

我觉得一些西方学者用数学模型，根据SARS的流行轨迹模拟预测的到5月份才能结束疫情值得商榷。事在人为，我们的决心，我们的联防联控机制、我们的防控措施、我们的动员能力，特别是中国人在灾害面前万众一心，是数学模型无法模拟的。

希望大家欢欢喜喜过春节的同时，尽量减少聚会，不到人群聚集的地方去，远离野生动物市场。一定要戴口罩，注意洗手，不用手揉眼睛抠鼻子扣嘴，做到这些，无论在武汉或在外地，大家都应该是安全的。

Weibo 5

https://weibo.com/1496814510/IqYTjo9yI?pagetype=profilefeed

Weibo 5 (paragraphs are labelled with numbers in the translation below):

1: Hello everyone, I am Zeng Guang, chief scientist of epidemiology at the Chinese Centre for Disease Control and Prevention, and a member of the high-level expert group of the National Health Commission.

2: Today is New Year's Eve, and I wish you all New Year greetings on Sina Weibo!

3: Special New Year greetings to the vast number of clinicians, epidemiologists and experts in aetiology research who are working to fight against the new Coronavirus.

4: I want to pay New Year's greetings to the heroic people of Wuhan, you have worked hard! You are now shouldering huge responsibilities. The situation in Wuhan has brought great inconvenience to all aspects of your life and work. You are making contributions to the whole country. Wuhan was the first place of the Revolution of 1911. It has a glorious revolutionary tradition. Now it has become the forefront of the fight against Coronavirus. I salute and cheer for you.

5: The new type of Coronavirus is coming fiercely. In recent days, the cases that occurred in provinces and cities outside Wuhan were all spread from Wuhan before the city was closed. Now is the time for us to launch a decisive battle with the virus. Calculated based on the incubation period of the disease, I think the last week is the key first battle node. The initial effect of the closure of Wuhan will be known within 5-10 days. If the export of cases from all over the country and around the world is contained, it means that the high-level expert groups' suggestion that 'people from Wuhan should not go out and people from other places should not come in' has received a good response. This explains the accuracy of the Wuhan government's decision to close the city, and the results of the joint efforts of Wuhan medical workers and all sectors of society.

6: For other cities across the country, we are not afraid of discovering patients imported from Wuhan. The key is to detect and treat them in time, isolate close contacts, and prevent second-generation cases from occurring. Don't panic about the second and third generations that have already appeared. Early control of them can completely extinguish this. Prevent infectious diseases from increasing geometrically!

7: I think we must seek truth from facts and report the pandemic truthfully. Even if some cities encountered second-generation and third-generation virus cases, they should be praised as long as the truthful reporting and control. Those who are the first to report the second and third generations of pandemics are meritorious!

8: I believe that due to everyone's concerted efforts, the pandemic has the opportunity to reverse rapidly. Before the end of the Spring Festival travel season, we may see initial results, that is, the rising momentum of the pandemic has been contained to a certain extent. After the

Spring Festival travel, choose the opportunity to enter the encirclement and annihilation war to sweep up the virus.

9: I think some Western scholars use mathematical models to simulate and predict that the pandemic will not end until May based on the trajectory of the SARS pandemic, which is questionable. Our determination, our joint defence and joint control mechanism, our prevention and control measures, and our mobilisation ability, especially the Chinese people's unity in the face of disasters, cannot be simulated by mathematical models.

10: I hope everyone celebrates the Spring Festival joyfully, and at the same time minimise gatherings, avoid places where crowds gather, and stay away from wild animal markets. Be sure to wear a mask, pay attention to washing your hands, and don't rub your eyes, pick your nose or mouth. If you do this, everyone should be safe, whether in Wuhan or in other places.

11: Thank you all and once again I wish you all a happy Chinese New Year.

Weibo 5 is a representative example demonstrating how the discourses of medical expertise, emotional appeal, and nationalist sentiment are intertwined to frame the current pandemic situation and appeal for national solidarity during this challenging time. In the first paragraph, Guang introduces his expertise as a member of the Expert Panel of the National Health Commission. The following three paragraphs respectively convey New Year's Eve greetings to Weibo users and appreciation of national solidarity from front-line medical staff and '*heroic people of Wuhan*'. Then in the fifth paragraph, Guang draws on scientific probabilistic knowledge ('*calculated based on incubation period of disease*') to justify the efficiency of the Wuhan lockdown and defines the current situation as '*key first battle node*'. Following this, the following three paragraphs focus on emotional expressions regarding Covid, combining assurance of pandemic manageability through early control measures, support of information transparency, and an appeal for national solidarity. Finally, the ninth and tenth paragraphs demonstrate how the frame of health risk intertwines deeply with *nationalist sentiment*: the ninth paragraph draws attention to 'the Chinese people' through sentences such as '*the Chinese people's unity in the face of disasters cannot be simulated by mathematical models*'. This narrative of nationalistic sentiment is also strengthened by the constant references to national festivities in this example.

This, in light of the roles of scientific expertise in risk situations, demonstrates how various forms of expertise and evidence can be drawn together to frame uncertainty as provisional certainty. Certainties in Weibo 5 stem from various sources – scientific, sentimental, and predictions in the absence of solid statistical predictions. Guang's identity as a key epidemiologist and the discourses of medical

scientists in the preceding examples also indicate the traditional *centralisation* of scientific rationality in establishing certainty during risk (Beck, 1992, p.27). These discourses of dominant scientific expertise are mobilised alongside other sources of knowledge and evidence (Beck, 2008, p.6), such as national sentiments of solidarity and confidence in Weibo 5. This 'hybridity' in approaching Covid speaks to the mechanism of 'Science + X' as the basis of defining risk, introduced in Chapter 2: Science (with a capital S) represents scientific approaches and evidence, while X includes a range of non-science discursive formations, such as personal emotions, socio-cultural traditions (Zinn, 2006, p.276), or nationalist sentiment, as observed in Weibo 5. This mechanism aims to illustrate how multiple discursive formations are mobilised jointly to define the 'significance' of a risk, with scientific knowledge playing a leading role (van Loon, 2014, p.450).

Scientific expertise, despite being employed collaboratively with other formats of knowledge in this mechanism, still plays a leading role in justifying risk definitions. For example, Weibo 6 was from the Shenzhen Health Commission (@深圳卫健委) on 25 January 2020. It posts the interview abstract of Professor Yuan Guoyong as a leading microbiologist and surgeon, which demonstrates how medical scientists' discourses are still used as an authoritative information source.

Weibo 6

https://weibo.com/2831150640/IraShEcnd

Weibo 6 (translation):

[Research confirmed! Wearing a mask can indeed prevent Coronavirus infection] On 25 January, Professor Yuan Guoyong, an academician of the Chinese Academy of Engineering

and a member of the high-level expert group of the National Health Commission of the Coronavirus Pneumonia, introduced in an interview that the research team of the University of Hong Kong studied and analysed a 'pneumonia family'.

Some of them had been to Wuhan and developed pneumonia of unknown cause after returning to Shenzhen. One of them was an asymptomatic infection, and another family member who had not been to Wuhan contracted pneumonia after contact with a family member who had been to Wuhan. The research team studied the epidemiological, laboratory, radiological and microbiological results of these patients and performed a systematic analysis of their genetic sequences.

In this family case sample, it is estimated that the incubation period of Coronavirus is 3 to 6 days, indicating that the incubation period is longer; some people have no obvious symptoms, but the examination found ground-glass nodules in the lungs, indicating that they may be infected without symptoms; infection even without going to Wuhan, indicating that there is 'human-to-human transmission'; this is what we have come to. In addition, there is another important finding. The youngest child in this family is not infected, and she is the only one in the family who wears a mask for a long time. It shows that wearing a mask is indeed useful.' Professor Yuan Guoyong said.

This example introduces Yuan's recent epidemiological research based on one family-based case. Like Weibo 5, this post starts by claiming authority by stating Yuan's identity as '*an academician of the Chinese Academy of Engineering and a member of the high-level expert group of the National Health Commission of the Coronavirus Pneumonia*'. The frame of authority is further strengthened by including Yuan's image, which will be further discussed in Section 5.3.1. By providing details about Yuan's family-based research, this post closely draws on scientific knowledge to demonstrate face coverings' efficiency to minimise the possibility of human-to-human transmission. Different from Weibo 5, this example highlights a more prominent role of scientific probabilistic knowledge within the mechanism of 'Science + X'. This also indicates how evaluations of unknown or unfamiliar risk can be dynamic as more knowledge or approaches to understanding the risk become available.

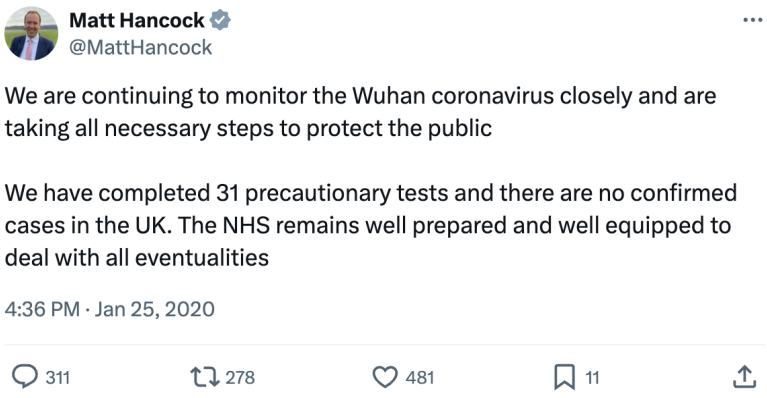
In summary, this section analysed six example posts, three before and three after the official announcement of Covid as a national health crisis on 20 January 2020. It indicated that the initial frame of Covid was characterised by establishing and communicating 'provisional certainty'. Examples showed that the frames of certainty were constructed by featuring the ongoing exploration and subsequent confirmation of the virus sources and transmissibility, accompanied by ongoing efforts to improve states' ability to control. However, this status of certainty remained *provisional* due to the

evolving biological nature of this emerging risk, limited prior experiences, and uncertainties about Covid's future spread. Additionally, the frame of Covid involved a blend of scientific expertise and non-scientific discursive formations, such as nationalist sentiments. This empirically spoke to the 'Science + X' mechanism mentioned in the literature review, with science in a dominant status in shaping the frame of Covid.

5.1.2 Twitter: Geographical uncertainty of Covid

The last section discussed how Covid came to be defined as a national health risk in China in January 2020 through a discursive pattern of provisional certainty. This section moves on to explore the initial acknowledgement of Covid by UK authorities on Twitter between January and February 2020. Findings suggest that risk surrounding Covid was framed from a distant to a local one, with similar reliance on discourses of medical expertise as seen in China.

Before the WHO declared the Covid-19 pandemic a Public Health Emergency of International Concern on 30 January 2020, Matt Hancock (@MattHancock), as Secretary of Health and Social Care at the time, posted Tweet 1 below on 25 January 2020, which was the first tweet related to the pandemic within the sampled Twitter dataset. This was followed by then-Foreign Secretary Dominic Raab's post on 31 January 2020 (Tweet 2).



Tweet 1

https://twitter.com/MattHancock/status/1221109522011430917

Tweet 2

https://twitter.com/DominicRaab/status/1223238908600836096

As Tweets 1 and 2 indicate, Covid was not immediately identified as a national risk. It was framed as something that caught official attention, necessitating consistent monitoring with the premise of prioritising overseas citizens' safety. At this stage in late January 2020, the outbreak in Wuhan was framed as a 'distant' pandemic with 'our' ongoing efforts to monitor its further spread. Tweet 1 also frames the ability to deal with upcoming risk with a tone of certainty, stating '*the NHS remains well prepared and well equipped to deal with all eventualities*', and Tweet 2 further highlights the continuous efforts to improve national abilities to tackle the crisis through '*keep working hard to provide help and support*'. This is similar to Weibo 1 and Weibo 2, which also framed Covid as something that attracted attention and highlighted ongoing efforts to improve the ability to control expected uncertainties.

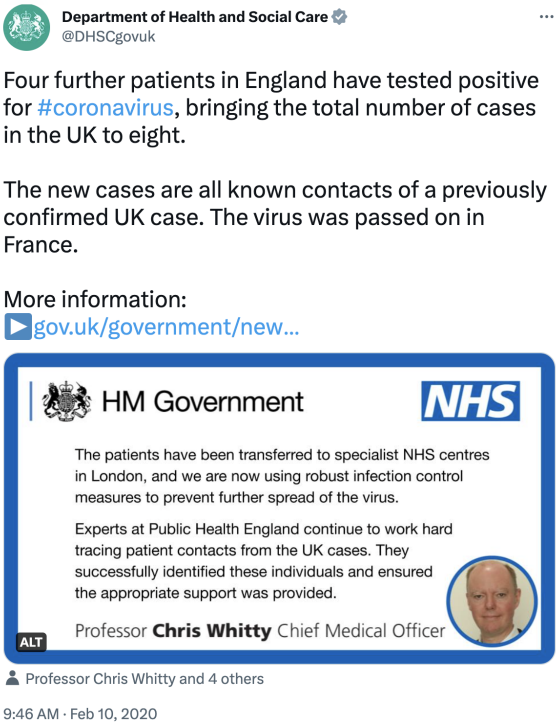
In addition to individual political figures @MattHancock and @DominicRaab, other state institutions also posted about Covid in January 2020, informing people of the potential health risks. For instance, Tweet 3 was from @UKHSA on 30 January 2020, the official Twitter account of the UK Health Security Agency (UKHSA) responsible for protecting public health by preventing and responding to infectious diseases and environmental hazards in the UK. It provides medical suggestions for people travelling from Wuhan, while it does not classify Covid as a national-level crisis but something individuals should pay attention to.

Tweet 3

https://twitter.com/UKHSA/status/1222924231257796610

Tweet 3 provides guidance for those travelling to Wuhan, presenting Covid as something of a *geographically distant* concern, with its danger evident through the tracking of travel histories. In this post, individuals may assess risk in relation to temporality (i.e., '*been to Wuhan, China in the last 14 days?*'), along with monitoring medical symptoms. Overall, three examples above published in January 2020 similarly framed Covid as a distant thing worthy of attention, but with the limited potential to pose local threats to the UK given no domestic cases found in the UK.

However, February 2020 witnessed a shift in framing COVID from 'distant risk' to 'our risk', given more local cases found in the UK. For instance, Tweet 4, which was published by the official account of the Department of Health and Social Care (@DHSCgovuk) on 10 February 2020, reports further confirmed cases in the UK.



Tweet 4

https://twitter.com/DHSCgovuk/status/1226804733450620928

Tweet 4 updates four additional confirmed cases of Covid in England, while they are reported to be trackable as '*all known contacts of a previously confirmed UK case*' from France. Here emphasising the known origins of the virus and the efficient governmental response of tracking and treatment can be regarded as a frame of virus controllability, aligning with the idea of 'provisional certainty' mentioned in Section 5.1.1. Additionally, from a platform perspective, this example features an image of a quote from Professor Chris Whitty introducing subsequent measures after identifying these confirmed cases. As a British epidemiologist, Whitty is in the role of Chief Medical Officer (CMO) in England and responsible for providing suggestions to the DHSC and other governmental institutions. Incorporating Whitty's quotes and his portrait saves a few words considering Twitter's 280-character limit at the time of data collection, while also strengthening the tone of scientific authority in this pandemic update.

Furthermore, on the same day, in Tweet 5, the individual account of Whitty as CMO (@CMO_England) also quote-tweeted Tweet 4 that quoted his words first.

Tweet 5

https://twitter.com/CMO_England/status/1226874247395598337

Here @DHSCgovuk incorporating CMO's image in Tweet 4 and @CMO_England quote-tweet in Tweet 5 can be regarded as a platform manifestation of the 'Science + X' pattern mentioned in Section 5.1.1. This concept illustrates the integration of science knowledge and non-scientific discursive elements used by actors to define risk. In this example, political judgement by official ministerial accounts acts as a form of X, which is mobilised alongside the discourse of scientific expertise (e.g., the image of the CMO) to frame the political and scientific significance of risk (van Loon, 2014, p.450). Compared to Guang's article on the Spring Festival in Weibo 5 and citation of Yuan's research in Weibo 6, Tweet 5 from the platform aspect illustrates a new format of digital engagement between ministry accounts and scientific experts' accounts.

This digitising expression of 'Science + X' also recurs in Tweet 6, where @CMO_England quote-tweeted @DHSCgovuk in March 2020. It introduces the national pandemic control strategy (the #Covid19UK Action Plan). This plan aimed to set out an overarching strategy for the UK to deal with Covid, which was based on existing experiences in tackling infectious diseases and knowledge of influenza pandemic preparedness work (Department of Health and Social Care, 2020b).

Tweet 6

https://twitter.com/CMO_England/status/1234847090473304066

This example tweet displays how the 'validity' of the Covid Action Plan, established by @DHSCgovuk, is reinforced by the quote-tweet from the CMO in a digitising way. The wording '*we need to ensure our actions (including tradeoffs) and our timing are grounded on science*' in Tweet 6 clearly points to a complex relationship between scientific expertise and political decisions. By quote-tweeting and adding comments to @DHSCgovuk, Tweet 6 illustrates how scientific expertise is integrated into politics to justify pandemic control decision making.

Together with Tweets 4 and 5, this can be seen as a manifestation of digital 'endorsement', strengthening the credibility of political institutions' decisions through the repetition of the CMO's pictures and words. In examining science's interventions in justifying the political significance of risk definitions (van Loon, 2014, p.450), the interactions between the CMO and @DHSCgovuk help us to understand how this mechanism of 'Science + X' manifests in a digitised format. However, this infiltration of political missions into Science is also challenged in terms of its efficiency. For instance, scholars have expressed concerns about the misuse of 'led by the science' narratives in public health promotion, which may push scientific expertise as 'a convenient shield, and sidestep direct accountability for unpopular decisions' (Ballo *et al*., 2022, p.6). One major concern is the deliberate omission or thinning of alternative expertise (Ballo *et al*., 2022).

Overall, this section analysed six examples posted between January and March 2020, the front end of the pandemic for the UK. It noted that the frame of Covid at its early stage was characterised by evaluating when a 'distant' risk transferred into a local one with direct threats to the UK. Its frame of provisional certainty came from the descriptions of virus traceability and controllability in the initial

batch of confirmed cases. Importantly, Covid framing was accompanied by the direct interactions between ministerial accounts and accounts of scientists, a stark contrast to the presentation of medical expertise on Weibo.

5.1.3 Discussion: Provisional uncertainty and scientific expertise

As the literature review suggested, risk thinking is traditionally tied to uncertainty originating from risk's delocalisation, non-compensability, and incalculability (Beck, 1992). However, the examples on two platforms demonstrate another discursive pattern of provisional certainty: these two cases similarly address certainty by providing relatively definite answers in relation to delocalisation and incalculability of the Covid-19 pandemic.

For the two nations, the risk of Covid came into sight at different scales: contrasting the situation in China, where there was limited prior national experience to review, frames of Covid at its early stage was closely associated with addressing the biological existence of a new virus and its unknown characteristics, particularly its potential for human transmission, which was confirmed on 20 January 2020. Examples in Section 5.1.1 featured its transmission patterns (Weibo 4, Weibo 6) and sources related to Wuhan (Weibo 4, Weibo 5), which respectively framed Covid against traditional risk characteristics of delocalisation and incalculability (Beck, 1992).

With national lessons to draw upon in the UK, Section 5.1.2 demonstrated that framing Covid in the UK involved providing definite answers about whether and when a distant risk evolved into a local one with tangible impacts on home populations. Its frame of certainty focused on the virus localisation and future spread, addressing against the delocalisation and incalculability of risk (Beck, 1992). Example tweets in Section 5.1.2 featured efforts to monitor specific locations and conduct precautionary tests when no domestic cases were confirmed (Tweets 1, 2, and 3); and the traceability of confirmed cases after a domestic outbreak (Tweets 4 and 5).

As Chapter 3 illustrated, it is important to take the timeline of the national outbreak of Covid into consideration. This explains why Covid was framed with nuanced tones of provisional certainty, with emphasis placed on figuring out its transmissibility on Weibo and its localisation being highlighted on Twitter. For instance, comparing the first Weibo post (Weibo 1) and tweet (Tweet 1) discussing Covid at its initial instance, China did not have previous national experience to draw from, whereas the UK was able to refer to other countries and initiated its risk assessment by monitoring them and repatriating British nationals from the suspected risk areas. Because Covid's transmission patterns came to be known before its initial outbreak in the UK in February 2020, this might explain fewer tweets featuring efforts to understand Covid's biological transmission ability than in the Weibo data,

and the ambiguity in confirming its transition from 'distant' to local, unlike the clear changing point in China marked by the official announcement. Therefore, the concept of provisional certainty should be considered as *relative*, as actors may hold changing attitudes towards different facets of the same risk at different timing.

Furthermore, the establishment of certainty is also *provisional*. Frames of Covid in both cases similarly addressed a gradual stabilisation of medical expertise alongside acknowledging the uncertainty of risk, in light of the broader need to minimise public panic as official information sources. Given the limited prior knowledge of Covid in the world, descriptions of Covid had to be temporary and tentative to flexibly incorporate more insights gained through advancements in scientific research.

Sections 5.1.1 and 5.1.2 both indicated that provisionality was primarily framed by drawing on discourses of medical expertise, given most examples mentioning narratives of Science, specifically medical scientists, such as Guang's long post in Weibo 5, and mentions of the CMO in Tweets 4, 5, and 6. Importantly, the existence of scientists' individual accounts on Twitter enabled direct interactions between experts and institutional accounts, as evidenced in Tweets 5 and 6. From an audience perspective, involving 'technical experts' and others with established credibility, such as medical professionals, is recognised as a common strategy to leverage established public trust in science and to mitigate potential trust issues (Covello et al., 2001; Reynolds and W. Seeger, 2005).

In addition to prominent narratives of 'according to science or scientists', there were also other narratives such as nationalist sentiments (Weibo 5) and political insights (Tweet 5) involved in the definition of Covid, to address information in a way that fit the attributes of 'imagined publics' (Barnett *et al*., 2012). This aligned with Beck's perspectives of *centralising* and *de-monopolising* scientific rationality (1992, p.27; 2008, p.6), where he suggests perceiving risk necessitates collaboration between scientific rationality and other types of knowledge. To capture this combination, this section suggests the mechanism of 'Science + X', drawing from van Loon's discussion of Science's role in risk evaluation (2014, p.450). This framework seeks to understand how the discourses of scientific expertise and other discursive formations (e.g., nationalist sentiments, political significance) have been combined in a platform-sensitive way in the frame of risk.

Finally, the way confirmed cases were communicated at the beginning of the pandemic was in clear contrast to the patterns once Covid spread across China and the UK. The growth of the domestic pandemic was accompanied by a gradation in the formats used to 'count' confirmed cases for the public, from no cases to four cases in textual-oriented updates, to many cases displayed on data dashboards and infographics, allowing for the visualisation of larger datasets and further calculations.

The next two sections revisit this point to highlight the usage of statistical data compared to the textual updates of a few confirmed cases at this early stage.

5.2 Understanding risk through numbers

Section 5.1 discussed the initial stage of acknowledging a new emerging risk and constructing it into certainty in the early months when Covid emerged. As introduced in the pandemic timeline in Chapter 3, when more information became available in the months following January 2020, both China and the UK established their own pandemic measuring mechanisms, heavily relying on the use of statistical materials. Theoretically, as detailed in the literature review in Chapter 2, defining risk is associated with providing value judgements of probabilities and classification in a given time frame (Heyman, 2010; Brown and Galantino, 2020). These risk definitions through various framing devices, among which numbers and statistics, play an important role in shaping public perceptions of the pandemic, or as described by Ian Hacking, to 'gain a fundamentally quantitative feel for nature' (1990, p.5).

This section aims to empirically explore how the use of numerical materials came to form an important component of updating about risk (RQ1). To accomplish this, this section analyses posts that rely on numbers to provide pandemic updates, such as sharing new numbers of confirmed Covid cases. This practice of statistical pandemic updates was chosen because it emerged as one of the most prominent themes identified in TA, accounting for 21.27% of Weibo posts and 9.7% of tweets in the overall datasets.

Section 5.2.1 first considers how, in the Weibo data, an apparent template for communicating raw data came to be established. Then, Section 5.2.2 demonstrates the way Twitter communication developed numbers and relevant calculations into infographics. Finally, Section 5.2.3 compares how numerical data and statistical techniques, with an emphasis on classification and temporality, were used slightly differently on Weibo and Twitter while serving as crucial framing devices to offer quantitative feelings of Covid.

5.2.1 Weibo: Templated numerical data in Covid updates

To discern which accounts were most active in releasing pandemic updates on both platforms, it is helpful to first offer a proportional representation of posts featuring pandemic updates by account. Figure 25 offers a list of all Weibo accounts that provided pandemic updates in more than 10% of their posts.

According to Figure 25, two types of accounts become prominent in posting updates to Weibo users. The first category is represented by two ministry accounts: @GOVCN as the official account of the State Council (@中国政府网) with 40.84% posts relevant to this theme and @Health China with 24.31% posts. Another category is that of city accounts, which include 11 accounts out of the overall 14 listed in Figure 25.

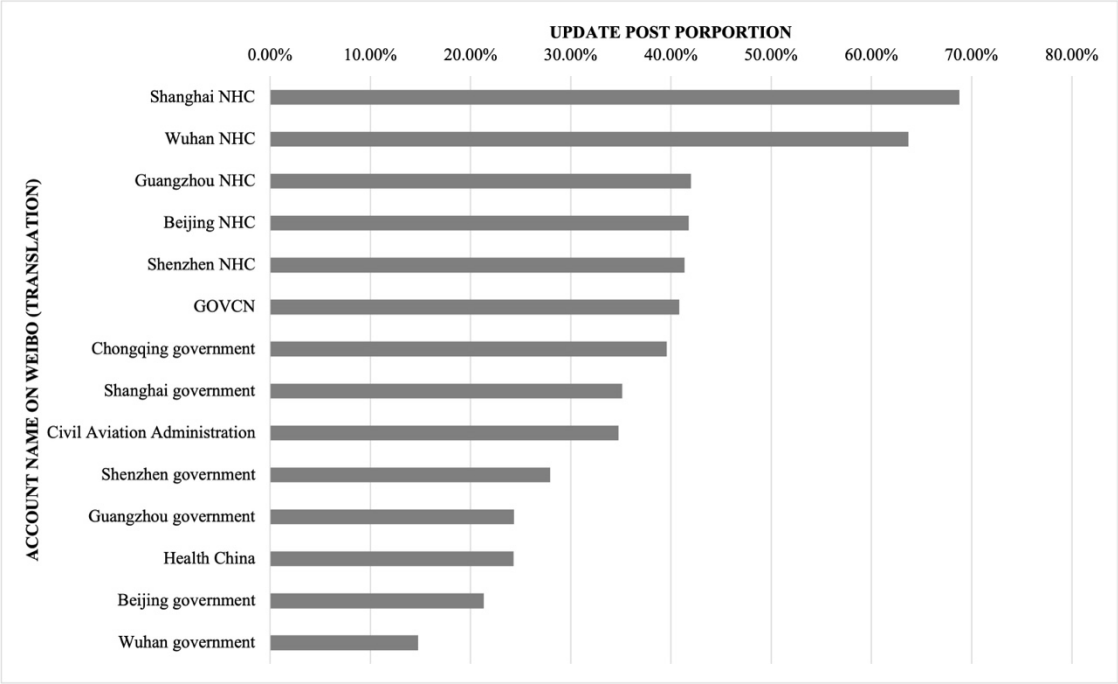


Figure 25: Proportion of posts providing numerical pandemic updates on Weibo (proportion higher than 10% only)

After identifying two types of accounts actively using numbers, to learn more about the contexts, the word frequency analysis was applied to a sub-sample of 108 posts from two ministry accounts (@GOVCN and @Health China) and 456 posts from 11 city-level accounts identified in Figure 25 (e.g., Shanghai NHC, Wuhan NHC). The word frequency analysis was run in the corpus analysis tool AntConc (Anthony, 2023), with results shown in Table 6.

Among the top 10 most frequently used words, six overlap between both cases, as underlined below. These overlapping words are *classification* words describing the numbers of Covid-related cases in different statuses (e.g., confirmed, imported, and newly increased cases). Additionally, the other non-overlapping words in both ministry accounts and city-level accounts describe the numbers with a narrative *of temporality* (i.e., specific time frame and locations). For instance, ministry accounts use words such as '*discharged* (from hospitals)', '*cumulative* or *existing* (number of cases)', while city-level accounts provide detailed timing information, such as '*month*', '*day*', and '*hour*'. Thus, these

high-frequency words provide an initial sense of how numbers are used to facilitate the constructions of classification and temporality.

Table 6: Top 10 word frequency of pandemic updates in ministry and city-level accounts on Weibo

Ministry accounts	**Word frequency**	**City-level accounts**	**Word frequency**
Cases/例	2,692	Cases/例	4,283
Cases of diseases/病例	1,235	Cases of diseases/病例	2,502
Confirmed/确诊	497	Month/月	1,841
Cumulative/累计	470	Day/日	1,732
Discharged/出院	396	Confirmed/确诊	1,630
Imported/输入	380	Newly increased/新增	1,151
Overseas/境外	379	Hour/时	943
Newly increased/新增	361	Imported/输入	844
Death/死亡	330	Overseas/境外	801
Report/报告	263	Pneumonia/肺炎	665
Existing/现有	263		

To understand the contexts of these high-frequency words, all pandemic updates from @GOVCN and @Health China were manually browsed. The observation found a high similarity in the language used by the accounts providing updates. For instance, pandemic updates within the full dataset of @Health China often begin with the term '*latest situation*' (最新情况) highlighted in square brackets at the beginning of numerical pandemic updates, such as '*[latest situation of Coronavirus pneumonia as of 24:00 on 25 January]*' (截至 2 月 24 日 24 时新型冠状病毒肺炎疫情最新情况). Figure 26 presents a screenshot of the search results for '*latest situation*' to show how the language used to update pandemic numbers become consistent.

Date	Full Text
2022-02-25	#健康发布# 【截至2月24日24时新型冠状病毒肺炎疫情最新情况】2月24日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例224例。其中境外输入病例142例（上海59例，广东52例，北京8例，四川
2022-01-26	#健康发布# 【截至1月25日24时新型冠状病毒肺炎疫情最新情况】1月25日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例44例。其中境外输入病例20例（上海10例，广西4例，北京2例，天津2例，
2021-11-30	#健康发布# 【截至11月29日24时新型冠状病毒肺炎疫情最新情况】11月29日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例39例。其中境外输入病例18例（广东9例，广西4例，云南2例，天津1例
2021-11-13	#健康发布# 【截至11月12日24时新型冠状病毒肺炎疫情最新情况】11月12日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例75例。其中境外输入病例18例（云南6例，上海4例，天津3例，北京1例
2021-11-03	#健康发布# 【截至11月2日24时新型冠状病毒肺炎疫情最新情况】11月2日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例109例。其中境外输入病例16例（上海5例，广东4例，云南2例，辽宁1例
2021-09-03	#健康发布# 【截至9月2日24时新型冠状病毒肺炎疫情最新情况】9月2日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例28例，均为境外输入病例（云南9例，上海8例，广东5例，河南2例，黑龙江
2021-08-07	#健康发布# 【截至8月6日24时新型冠状病毒肺炎疫情最新情况】8月6日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例107例，其中境外输入病例32例（云南11例，上海9例，天津5例，广东3例，
2021-07-23	#健康发布# 【截至7月22日24时新型冠状病毒肺炎疫情最新情况】7月22日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例48例，其中境外输入病例36例（广东14例，云南13例，上海3例，四川2例
2021-07-11	#健康发布# 【截至7月10日24时新型冠状病毒肺炎疫情最新情况】7月10日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例24例，其中境外输入病例12例（云南4例，上海3例，四川2例，广东1例，
2021-06-09	#健康发布# 【截至6月8日24时新型冠状病毒肺炎疫情最新情况】6月8日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例16例，其中境外输入病例8例（北京2例，上海2例，四川2例，福建1例，广
2021-06-07	#健康发布# 【截至6月6日24时新型冠状病毒肺炎疫情最新情况】6月6日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例19例，其中境外输入病例14例（上海4例，广东3例，浙江2例，云南2例，辽
2021-05-01	#健康发布# 【截至4月30日24时新型冠状病毒肺炎疫情最新情况】4月30日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例16例，均为境外输入病例（广东7例，上海3例，四川2例，浙江1例，福建
2021-03-25	#健康发布# 【截至3月24日24时新型冠状病毒肺炎疫情最新情况】3月24日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例11例，均为境外输入病例（上海4例，广东4例，甘肃2例，湖北1例）；3
2021-03-06	#健康发布# 【截至3月5日24时新型冠状病毒肺炎疫情最新情况】3月5日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例10例，均为境外输入病例（天津3例，广东3例，陕西2例，上海1例，四川1
2021-02-27	#健康发布# 【截至2月26日24时新型冠状病毒肺炎疫情最新情况】2月26日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例10例，均为境外输入病例（广东5例，陕西2例，天津1例，上海1例，四川
2021-02-19	#健康发布# 【截至2月18日24时新型冠状病毒肺炎疫情最新情况】2月18日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例10例，均为境外输入病例（上海7例，天津2例，湖南1例）；无新增死亡
2021-02-11	#健康发布# 【截至2月10日24时新型冠状病毒肺炎疫情最新情况】2月10日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例2例，均为境外输入病例（福建1例，广东1例）；无新增死亡病例；新增
2021-01-29	#健康发布# 【截至1月28日24时新型冠状病毒肺炎疫情最新情况】1月28日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例52例，其中境外输入病例16例（上海9例，广东5例，天津1例，湖南1例）
2021-01-02	#健康发布# 【截至2021年1月1日24时新型冠状病毒肺炎疫情最新情况】2021年1月1日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例22例，其中境外输入病例14例（上海4例，天津3例，广东3例
2020-12-17	#健康发布# 【截至12月16日24时新型冠状病毒肺炎疫情最新情况】12月16日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例7例，均为境外输入病例（上海6例，广东1例）；无新增死亡病例；新
2020-11-29	#健康发布# 【截至11月28日24时新型冠状病毒肺炎疫情最新情况】11月28日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例11例，均为境外输入病例（福建4例，上海3例，四川1例，天津1例，广
2020-11-21	#健康发布# 【截至11月20日24时新型冠状病毒肺炎疫情最新情况】11月20日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例16例，其中境外输入病例9例（均在上海），本土病例7例（天津5例，
2020-11-05	#健康发布# 【截至11月4日24时新型冠状病毒肺炎疫情最新情况】11月4日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例28例，其中境外输入病例20例（上海8例，四川4例，陕西3例，河南2例，
2020-10-30	#健康发布# 【截至10月29日24时新型冠状病毒肺炎疫情最新情况】10月29日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例25例，其中境外输入病例24例（上海13例，福建4例，天津2例，广东2
2020-10-21	#健康发布# 【截至10月20日24时新型冠状病毒肺炎疫情最新情况】10月20日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例11例，均为境外输入病例（广东3例，四川3例，上海2例，河南2例，非
2020-09-20	#健康发布# 【截至9月19日24时新型冠状病毒肺炎疫情最新情况】9月19日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例10例，均为境外输入病例（上海4例，广东4例，福建1例，河南1例）；无
2020-09-11	#健康发布# 【截至9月10日24时新型冠状病毒肺炎疫情最新情况】9月10日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例15例，均为境外输入病例（上海8例，广东4例，辽宁1例，四川1例，陕西
2020-08-16	#健康发布# 【截至8月15日24时新型冠状病毒肺炎疫情最新情况】8月15日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例19例，其中境外输入病例15例（上海5例，广东3例，陕西3例，天津2例，
2020-06-28	#健康发布# 【截至6月27日24时新型冠状病毒肺炎疫情最新情况】6月27日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例17例，其中境外输入病例3例（上海1例，陕西1例，甘肃1例），本土病例
2020-04-26	#健康发布# 【2020年4月27日国务院联防联控机制新闻发布会预告】国务院联防联控机制定于4月27日15时在北京国二招宾馆（北京市西直门南大街6号）东楼三层中会议厅召开新闻发布会，介绍依法防控境外疫情输入最新情
2020-04-24	#健康发布# 【截至4月23日24时新型冠状病毒肺炎疫情最新情况】4月23日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例6例，其中2例为境外输入病例，4例为本土病例（黑龙江3例，广东1例）
2020-03-23	#健康发布# 【截至3月22日24时新型冠状病毒肺炎疫情最新情况】3月22日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例39例，新增死亡病例9例（湖北9例），新增疑似病例47例。 当日新
2020-02-26	#健康发布# 【截至2月25日24时新型冠状病毒肺炎疫情最新情况】2月25日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例406例，新增死亡病例52例（湖北52例），新增疑似病例439例。当日新
2020-02-17	#健康发布# 【截至2月16日24时新型冠状病毒肺炎疫情最新情况】2月16日0—24时，31个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例2048例，新增死亡病例105例（湖北100例，河南3例，广东2例），新增疑

Figure 26: Screenshot of @Health China update posts with 'latest situation'

Similarly, further manual observation found that the updates in city-accounts also followed a stable format. For instance, Figure 27 shows the search results for @Shanghai NHC using the term '*newly increased cases*' (新增病例), which demonstrates a consistent language pattern in the update posts.

Date	WB_text
2022-02-01	【上海昨日无新增本土新冠肺炎确诊病例，新增境外输入18例，治愈出院25例，解除医学观察无症状感染者3例】2022年1月31日0—24时，通过口岸联防联控机
2022-01-23	【上海昨日无新增本土新冠肺炎确诊病例，新增境外输入13例，治愈出院38例】2022年1月22日0—24时，通过口岸联防联控机制，报告13例新增境外输入性新
2021-12-02	【上海昨日无新增本土新冠肺炎确诊病例，新增境外输入3例，治愈出院3例】2021年12月1日0—24时，通过口岸联防联控机制，报告3例新增境外输入性新冠肺
2021-12-01	【上海昨日无新增本土新冠肺炎确诊病例，新增境外输入3例】2021年11月30日0—24时，通过口岸联防联控机制，报告3例新增境外输入性新冠肺炎确诊病例。
2021-11-24	【上海昨日无新增本土新冠肺炎确诊病例，新增境外输入5例，治愈出院7例】2021年11月23日0—24时，通过口岸联防联控机制，报告5例新增境外输入性新冠肺
2021-11-06	【上海昨日无新增本土新冠肺炎确诊病例，新增境外输入3例】2021年11月5日0—24时，通过口岸联防联控机制，报告3例境外输入性新冠肺炎确诊病例。病例1
2021-10-11	【上海昨日无新增本土新冠肺炎确诊病例，新增境外输入3例，治愈出院3例】2021年10月10日0—24时，通过口岸联防联控机制，报告3例新增境外输入性新冠肺
2021-09-15	【上海昨日无新增本土新冠肺炎确诊病例，新增境外输入2例，治愈出院10例】2021年9月14日0—24时，通过口岸联防联控机制，报告2例境外输入性新冠肺炎确
2021-09-02	【上海昨日无新增本土新冠肺炎确诊病例，新增境外输入6例，治愈出院3例】2021年9月1日0—24时，通过口岸联防联控机制，报告6例境外输入性新冠肺炎确诊
2021-08-09	【上海昨日无新增本土新冠肺炎确诊病例，新增境外输入8例，治愈出院2例】2021年8月8日0—24时，通过口岸联防联控机制，报告8例境外输入性新冠肺炎确诊
2021-08-03	【上海昨日新增本地新冠肺炎确诊病例1例，新增境外输入3例，治愈出院4例】2021年8月2日0—24时，通过口岸联防联控机制，报告3例境外输入性新冠肺炎确
2021-07-14	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入5例】2021年7月13日0—24时，通过口岸联防联控机制，报告5例境外输入性新冠肺炎确诊病例。无新
2021-07-03	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入4例，治愈出院4例】2021年7月2日0—24时，通过口岸联防联控机制，报告4例境外输入性新冠肺炎确诊
2021-06-15	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入5例】2021年6月14日0—24时，通过口岸联防联控机制，报告5例境外输入性新冠肺炎确诊病例。无新
2021-05-21	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入9例，治愈出院6例】2021年5月20日0—24时，通过口岸联防联控机制，报告9例境外输入性新冠肺炎确
2021-05-13	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入2例，治愈出院5例】2021年5月12日0—24时，通过口岸联防联控机制，报告2例境外输入性新冠肺炎确
2021-04-30	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入7例，治愈出院3例】2021年4月29日0—24时，通过口岸联防联控机制，报告7例境外输入性新冠肺炎确
2021-04-29	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入5例，治愈出院3例】2021年4月28日0—24时，通过口岸联防联控机制，报告5例境外输入性新冠肺炎确
2021-04-26	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入2例，治愈出院3例】2021年4月25日0—24时，通过口岸联防联控机制，报告2例境外输入性新冠肺炎确
2021-03-16	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入病例5例，治愈出院3例】2021年3月15日0—24时，通过口岸联防联控机制，报告5例境外输入性新冠肺
2021-03-10	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入2例，治愈出院1例】2021年3月9日0—24时，通过口岸联防联控机制，报告2例境外输入性新冠肺炎确
2021-02-26	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入4例，治愈出院10例】2021年2月25日0—24时，通过口岸联防联控机制，报告4例境外输入性新冠肺炎
2021-01-27	【上海昨日新增本地新冠肺炎确诊病例1例，新增境外输入5例，治愈出院14例】2021年1月26日0—24时，通过口岸联防联控机制，报告5例境外输入性新冠肺炎
2021-01-14	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入8例，治愈出院4例】2021年1月13日0—24时，通过口岸联防联控机制，报告8例境外输入性新冠肺炎确
2020-12-29	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入4例，治愈出院5例】12月28日0—24时，通过口岸联防联控机制，报告4例境外输入性新冠肺炎确诊病
2020-12-01	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入2例，治愈出院5例】11月30日0—24时，通过口岸联防联控机制，报告2例境外输入性新冠肺炎确诊病
2020-11-28	【上海昨日无新增本地新冠肺炎确诊病例，无新增境外输入性新冠肺炎确诊病例，治愈出院4例】11月27日0—24时，无新增境外输入性新冠肺炎确诊病例。新
2020-11-04	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入4例，治愈出院5例】11月3日0—24时，通过口岸联防联控机制，报告4例境外输入性新冠肺炎确诊病例
2020-10-21	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入2例，出院8例】10月20日0—24时，通过口岸联防联控机制，报告2例境外输入性新冠肺炎确诊病例。
2020-10-17	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入5例，治愈出院1例】10月16日0—24时，通过口岸联防联控机制，报告5例境外输入性新冠肺炎确诊病
2020-09-28	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入10例，治愈出院2例】9月27日0—24时，通过口岸联防联控机制，报告10例境外输入性新冠肺炎确诊病
2020-09-19	【上海昨日无新增本地新冠肺炎确诊病例，新增境外输入2例，治愈出院1例】9月18日0—24时，通过口岸联防联控机制，报告2例境外输入性新冠肺炎确诊病例

Figure 27: Screenshot of @Shanghai NHC update posts with 'newly increased cases'

The manual observation of original datasets, such as those in Figures 25 and 26, suggests a stabilisation of the language used to report numerical data. To build direct comparisons with their Twitter counterparts (not engaging with city-level accounts), this section moves on to present two examples from @Health China (a ministry-level account) to demonstrate the consistency in language.

This aims to demonstrate how time- and space-sensitive classification, as shown in Table 6, became central and standardised in the presentation of Covid-related numbers.

The attempt to measure Covid in China started with Weibo 7 from @Health China on 21 January 2020, which was posted 10 days after the very first official Weibo post around Covid (Weibo 1), and one day after the official announcement of Covid transmissibility on 20 January 2020. The shift from Weibo 1 to Weibo 7 illustrates the speed at which the risk takes shape: within 10 days the virus moved from a '*viral pneumonia pandemic of unknown cause*' to measurable target with wide national spread.

Additionally, Weibo 8, posted on 26 January 2022 by @Health China, is selected to demonstrate the stable communication patterns around two years later after Weibo 7, with translations in Table 7 to facilitate comparison. Presenting these two examples as comparisons and later in an image wall aims to outline how the maturing of pandemic measurement and the concern of overseas imported cases jointly finalised the reporting mechanism into 'templates'.

Weibo 7 (left) and Weibo 8 (right)

Weibo 7: https://weibo.com/2834480301/IqwxFs9mE

Weibo 8: https://weibo.com/2834480301/Lcw81DXkq

Table 7: Translation of Weibo 7 and Weibo 8

Topic	**Weibo 7 (21 January 2020)**	**Weibo 8 (26 January 2022)**
Hashtag and summary	*#Health release# [Situation of Coronavirus pneumonia as of 21 January 2020 📄]*	*#Health release# [Latest situation of Coronavirus pneumonia as of 24:00 on 25 January]*
Updates in the last 24 hours	*From 0:00 to 24:00 on 20 January 2020, the National Health Commission received reports from 3 provinces (regions, municipalities) in China, with 77 newly confirmed cases of Coronavirus pneumonia (72 cases in Hubei Province, 2 cases in Shanghai, 3 cases in Beijing); 9 provinces (regions, municipalities) reported 27 new suspected cases (4 cases in Guangdong Province, 1 case in Sichuan Province, 1 case in Yunnan Province, 7 cases in Shanghai, 10 cases in Zhejiang Province, 1 case in Anhui Province, 1 case in Hainan Province, 1 case in Guizhou Province, 1 case in Ningxia Hui Autonomous Region).*	*From 0:00 to 24:00 on 25 January 31, provinces (autonomous regions, municipalities directly under the central government) and Xinjiang Production and Construction Corps reported 44 new confirmed cases. Among them, there were 20 cases of imported cases (10 cases in Shanghai, 4 cases in Guangxi, 2 cases in Beijing, 2 cases in Tianjin, 1 case in Henan, 1 case in Chongqing), including 2 cases converted from asymptomatic infections to confirmed cases (1 case in Tianjin, 1 case in Guangxi); and 24 local cases (14 cases in Beijing, including 9 in Fengtai District, 3 in Chaoyang District, 1 in Daxing District, 1 in Xicheng District; 4 cases in Heilongjiang, all in Mudanjiang City; 2 cases in Xinjiang, all in Ili Kazakh Autonomous Prefecture; 1 case in Hebei, in Baoding City; 1 case in Liaoning, in Shenyang City; 1 case in Henan, in Anyang City; 1 case in Guangdong, in Zhongshan City). There were no new deaths. There were no new suspected cases.*
Updates of medical treatment		*There were 173 new cured and discharged cases on the day, with 3,395 close contacts released from medical observation, and 1 fewer severe case compared to the previous day.* *There are currently 1,049 imported confirmed cases (no severe cases) and 3 suspected cases. The cumulative number of confirmed cases is 12,436, with 11,387 cumulative cured and discharged cases, and no deaths reported.*

Topic	Weibo 7 (21 January 2020)	Weibo 8 (26 January 2022)
Updates of cumulative numbers	*As of 24:00 on 20 January 2020, the National Health Commission received reports from 4 provinces (regions, municipalities) in China, with a total of 291 confirmed cases of Coronavirus pneumonia (270 cases in Hubei Province, 5 cases in Beijing, 14 cases in Guangdong Province, 2 cases in Shanghai); 14 provinces (regions, municipalities) reported a total of 54 suspected cases (11 cases in Hubei Province, 7 cases in Guangdong Province, 3 cases in Sichuan Province, 1 case in Yunnan Province, 7 cases in Shanghai, 1 case in Guangxi Zhuang Autonomous Region, 1 case in Shandong Province, 1 case in Jilin Province, 1 case in Anhui Province, 16 cases in Zhejiang Province, 2 cases in Jiangxi Province, 1 case in Hainan Province, 1 case in Guizhou Province, 1 case in Ningxia Hui Autonomous Region).*	*As of 24:00 on 25 January, according to reports from 31 provinces (autonomous regions, municipalities directly under the central government) and Xinjiang Production and Construction Corps, there are currently 2,487 confirmed cases (including 8 severe cases), with 98,626 cumulative cured and discharged cases, 4,636 cumulative deaths, and 105,749 cumulative reported cases. There are 3 suspected cases, and 1,505,286 close contacts have been traced, with 41,953 close contacts still under medical observation.*
Updates of asymptomatic infections		*31 provinces (autonomous regions, municipalities directly under the central government) and Xinjiang Production and Construction Corps reported 64 new asymptomatic infections, including 44 imported cases and 20 local cases (9 cases in Heilongjiang, all in Mudanjiang City; 6 cases in Xinjiang, all in Ili Kazakh Autonomous Prefecture; 5 cases in Beijing, including 3 in Xicheng District, 2 in Fengtai District); 2 cases were converted to confirmed cases on the same day (both imported cases); 31 cases were released from medical observation on the same day (29 imported cases); and 778 asymptomatic infections are still under medical observation (684 imported cases).*

Topic	Weibo 7 (21 January 2020)	Weibo 8 (26 January 2022)
Updates of other nations or regions	*1 confirmed case was reported in Japan, 2 confirmed cases in Thailand, and 1 confirmed case in South Korea.*	*A total of 31,671 confirmed cases have been reported in the Hong Kong, Macao, and Taiwan regions. Among them, there are 13,181 cases in the Hong Kong Special Administrative Region (12,623 discharged, 213 deaths), 79 cases in the Macao Special Administrative Region (all discharged), and 18,411 cases in the Taiwan region (13,742 discharged, 851 deaths).*
Updates of medical treatment	*Currently, 1,739 close contacts have been traced, 817 people have been released from medical observation, and 922 people are still under medical observation.*	

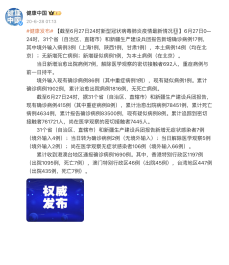
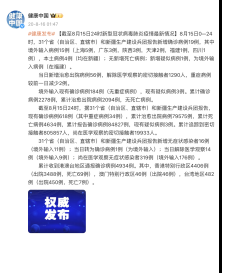
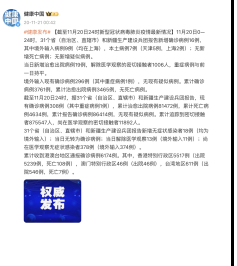
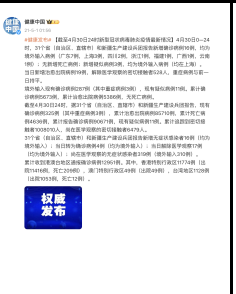
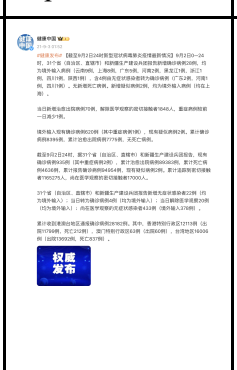
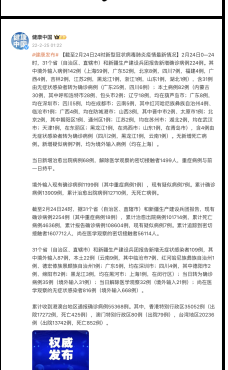
This table demonstrates a few similarities between the communication patterns adopted across the two years: both posts start with the hashtag #*Health release*#, followed by a short term '*latest situation of Coronavirus as of 24:00 on 25 January*' highlighting the main topic of the post. The first paragraphs of both posts list the simple numbers of new confirmed and suspected cases in the last 24 hours in a city-based way. Then the cumulative numbers of Covid cases are shared, followed by the numbers of cured and discharged cases.

Compared to the initial updates, Weibo 8 advances the number reporting in Weibo 7 in two ways: Weibo 8 is able to count the number of asymptomatic cases due to the advancement of testing abilities. Additionally, Weibo 8 only updated numbers of imported cases to China, specifying domestic imported sources, as international outbreaks became a major concern after the initial outbreak in China. This contrasts with Weibo 7 which counted international cases from other Asian countries due to the limited numbers. Overall, both update posts are characterised by updating the numbers in given *time frames* (last 24 hours or cumulatively), *location-oriented* attribution (X cases in Y cities), and clinical-oriented classification of cases (e.g., confirmed, suspected, and cured). This finding resonates with the key characteristics of risk thinking (e.g., temporality, classification) discussed in Chapter 2. The minor change from Weibo 7 to Weibo 8 is also suggestive of a contextual shift in framing as cases coming into the nation become a major issue evidently worth tracking.

In addition to illustrating the consistency of communication patterns in texts, Table 8 reproduces 20 screenshots of the update posts by @Health China into an image wall, which offers a rapid representation of how this communication was *visually* stabilised into a 'template' as seen in Weibo 8.

This image wall also illustrates that the visual attached to the posts remains the same across two years (e.g., a blue image with white characters, '*authoritative release*'), which will be revisited in Section 5.3.1.

Table 8: Image wall of update posts by @Health China

February 2020	March 2020	April 2020	June 2020	August 2020
				
September 2020	**October 2020**	**November 2020**	**December 2020**	**January 2021**
				
February 2021	**March 2021**	**May 2021**	**June 2021**	**July 2021**
				
August 2021	**September 2021**	**November 2021**	**January 2022**	**February 2022**
				

From a reception studies perspective, establishing and following templated communication through standardised numbers, colours, and formats can influence how numerical information is 'felt' by audiences (Engebretsen and Kennedy, 2020). Zhao and Ye's study (2022) on Covid-related data visualisations in China echoes this, highlighting how visuals meet the need for *simplification* — lowering the threshold for understanding official narratives and encouraging broader public engagement. The use of raw data within text may help address concerns about interpretation, particularly regarding the complexity of data presentation formats, rather than the data itself (e.g., inappropriate use of line graphs or bar charts in Tong, 2024). This approach should also be viewed within institutional goals of enhancing certainty, managing reputational capital, and building trust by ensuring that content is consistent both aesthetically and informatively.

Overall, this section explored the daily pandemic updates on Weibo to explore how the use of numbers became an important part of updating the risk (RQ1). It first identified two types of Weibo accounts actively providing numerical updates of the pandemic situation, including ministry accounts (e.g., @Health China) and city-level accounts. Building upon text frequency analysis and manual observation, this section suggested that updating the risk related to Covid formed a *templated* pattern on @Health China: a standardised format, including languages and visuals, was consistently applied in daily pandemic updates while allowing for the customisation of specific details, such as filling in the daily numerical data. The numerical materials involved in @Health China's narratives were mainly raw data, which differed from the numbers used in Twitter samples discussed in the next section. Therefore, templated communication could be viewed as an attempt to maintain stability in the frame of Covid. Theoretically, reporting numbers through templates also helped to establish a consistent frame for classification (e.g., categorising affected populations into different types of cases) and temporality (e.g., presenting raw data according to time and city-specific locations). The detailed reporting of numbers was also facilitated by the character limits on Weibo, presenting an important contrast to Twitter communication in the next section.

5.2.2 Twitter: Comparative statistics in Covid updates

Section 5.2.1 considered that the presentation of Covid-related numerical data on Weibo gradually formed a stable template between 2020 and 2022. It is instructive to consider the use of numerical data in the Twitter context too. This comparison theoretically offers insights into how the risk of the pandemic was addressed in statistics, given probability and classification as the core of risk thinking (Brown and Galantino, 2020), and how their presentations were further mediated by different platforms.

To learn the key accounts providing numerical pandemic updates and build a direct comparison, Figure 28 lists all Twitter accounts providing pandemic updates with numbers in more than 10% of their tweets. It shows that two accounts, @ONS and @UKHSA, were prominent in their proportion of providing updates. @ONS is the official Twitter account of the Office for National Statistics, which is the executive office of the UK Statistics Authority with its main duty listed as 'collecting, analysing, and disseminating statistics about the UK's economy, society, and population' (ONS, no date). Another account, @UKHSA, belongs to the UK Health Security Agency (UKHSA), an executive agency of DHSC. The fewer actors compared to Figure 25 may be because the Twitter datasets did not include city-level institutions in data collection, because of the different attendees at their national Covid press conferences (see Section 4.1.3 in Chapter 4).

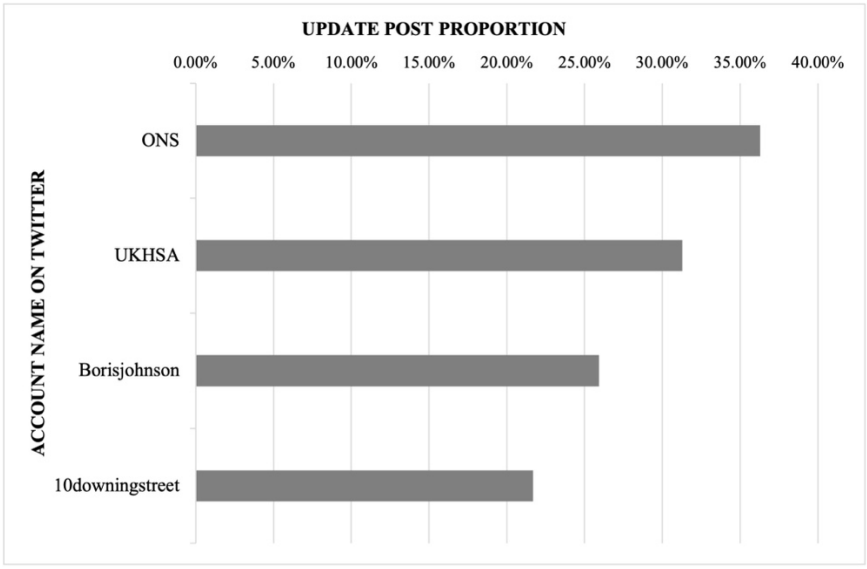


Figure 28: Proportion of posts providing numerical pandemic updates on Twitter (proportion higher than 10% only)

To build a comparison with Section 5.2.1, the word frequency analysis was applied to the sub-sample of 159 tweets from four accounts in Figure 28 (i.e., @ONS, @UKHSA, @BorisJohnson, @10DowningStreet), with results in Table 9.

Table 9: Top 10 word frequency of numerical pandemic updates in four accounts on Twitter

Word	**Word frequency**	**Word**	**Word frequency**
Covid	136	days	40
deaths	122	were	40
cases	50	week	39

positive	48	across	37
reported	43	test	37

According to Table 9, update tweets similarly engaged with the classification of populations in a temporality-sensitive way, but in nuanced ways compared to Weibo results. Classification of Covid cases is framed based on binary outcomes of positive/negative test results and deaths, aggregated for the entire UK and reported on a weekly basis. This differs from classification standards on Weibo, where cases are classified using more complicated clinical criteria (e.g., confirmed/discharged/imported/newly increased cases), across different time frames (e.g., cumulative/last 24 hours), with specific city-based attributions. It is important to note that, despite some statistical differences in the way cases are counted, some classifications and temporality are not stated in texts but packaged in infographics in light of character limits on Twitter, which will be revisited in Section 5.3.2.

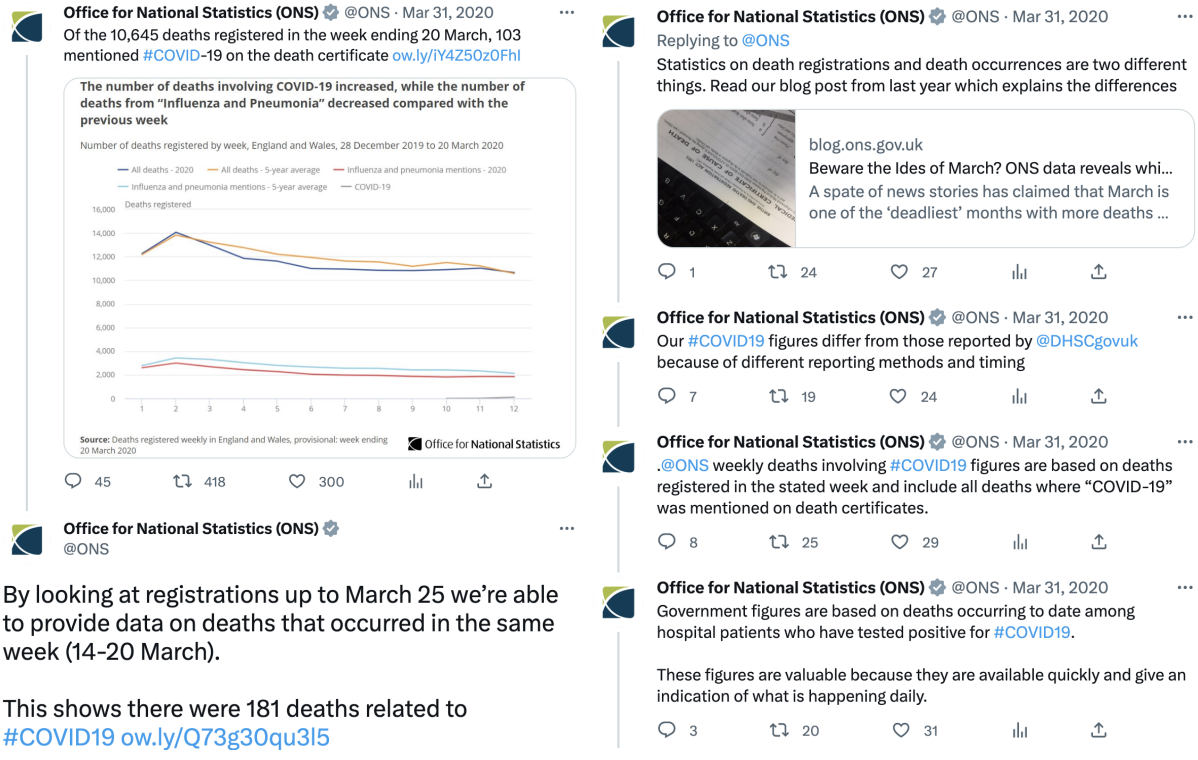
All numerical pandemic updates were then manually reviewed, but the observation did not reveal a consistent textual pattern similar to that observed on Weibo (as Figures 25 and 26). Thus, to explore the contexts of the words in Table 9, an n-gram analysis was applied to the same sub-sample of pandemic updates including 159 tweets to list the words frequently used together (Table 10). The results from n-gram analysis identify more word clusters describing the classification of the cases (e.g., based on vaccination status, care home residents), which are beyond the simple binary classification (i.e., positive/negative, deaths) identified in word frequency analysis (Table 9). Additionally, a few words in Table 10 direct users to further links (e.g., Covid dashboard, press conference slides, surveillance report) with consistent references to official websites (e.g., GOV.UK), demonstrating the importance of hyperlinks as key elements in pandemic update tweets.

Table 10: Top 10 N-Grams words in pandemic updates in four Twitter accounts

N-Gram words	**Frequency**
A positive test was reported	27
The Covid Dashboard has been updated http:// coronavirus.data.gov.uk on (date)	11
Coronavirus press conference slides	8
Weekly Covid surveillance report	8
https://gov.uk/government	7
Data include the number of people receiving a first, second and booster	7

Care homes private homes	6
Of deaths involving Covid	6
Of deaths involving #Covid registered	6
Deaths involving Covid were in this	6
https://gov.uk/government/publications/	6
Notes: The N-Gram size was set=4 in AntConc firstly. Then the broader contexts of prominent N-Grams within sentences were manually checked to identify potential longer expressions.	

To build direct comparisons with their Weibo counterparts (not engaging with individual accounts), this section moves on to present examples of @ONS to contextualise the findings from word frequency analysis and n-gram analysis (Tables 9 and 10). Different from the stabilisation of the format used to provide pandemic updates on Weibo (e.g., @Health China, @Shanghai NHC), several changes and adaptations can be found in the early updates by @ONS. For example, Tweet 7 was from @ONS on 31 March 2020, five days after the first national lockdown policies came into force. Its line graph (the left screenshot) demonstrates early attempts to provide a quantitative sense of an emerging risk by counting the death cases, which are visualised into line graphs with comparisons to other historical death numbers, such as deaths at the five-year average, and deaths caused by influenza and pneumonia.



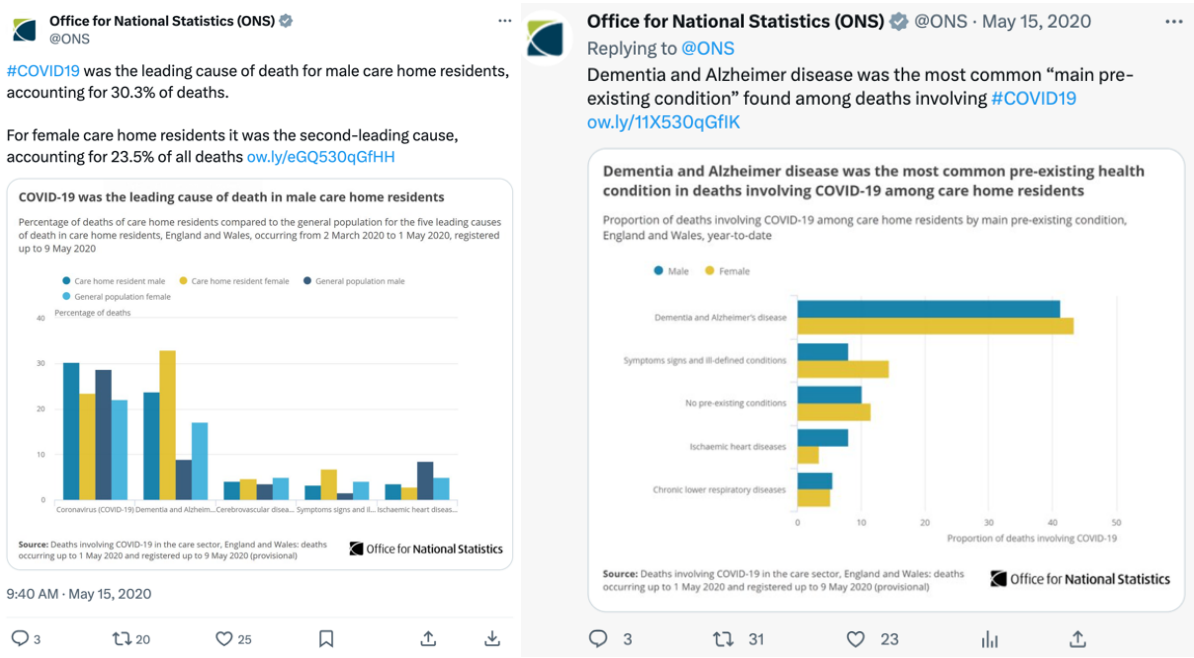
Tweet 7

https://twitter.com/ONS/status/1244906721740546048

Importantly, the line graph demonstrates how an unfamiliar risk initially comes to be perceived not only *quantitatively* but also through *comparison* against other known, familiar risks to the public. This comparative aspect is not prominently observed in the Weibo data in Section 5.2.1. This empirically aligns with Alaszewski's comment on the 'limited' knowability and measurability of an unknown risk, depending on the extent to which an approaching risk shares similarities with historical events and conforms to prediction based on existing knowledge gained from past events (2005, p.103). Importantly, to distinguish the processed numbers from raw data, this section refers to the numerical data shown on Twitter as *statistics*, where raw numbers have been processed through calculations and/or comparative techniques.

In addition to showing the comparative statistics on deaths, this example also engages with the thread function of Twitter, attaching several threads to clarify the standard for Covid death registrations. These threads supplement how deaths involving Covid are registered and prepared for publication and acknowledge variations in reporting methods across different institutions. In addition to threads, there are external sources attached to the brief threads, such as the right screenshot in Tweet 7 attaching a full @ONS blog in the context of death numbers to '*explain the differences*'. This may explain several external links identified in Table 10, such as '*http://coronavirus.data.gov.uk*', and '*https://gov.uk/government*'. Overall, Tweet 7, especially its line graph, demonstrates early attempts to quantitatively frame Covid, with a focus on (ideally) fostering statistical literacy among the public to comprehend the pandemic updates within specific character limits.

While Tweet 7 presents statistics in simple line graphs to frame Covid through references to existing death statistics, more complicated presentation of numerical data can be seen in the Twitter dataset later in 2020. Its complexity is manifested by the statistical *comparison* within certain demographic communities such as in Tweet 8. Posted on 15 May 2020, Tweet 8 from @ONS presents statistics in a series of data visualisation to demonstrate Covid's significant impacts on care homes.



Tweet 8

https://twitter.com/ONS/status/1261214768129552385

Compared to the simple outlining of death numbers in Tweet 7, this tweet displays more advanced handling of numerical data. The left bar chart is titled '*Covid-19 was the leading cause of death in male care home residents*', with captions highlighting the comparisons between '*deaths of care home residents*' and primary factors of death in '*general populations*'. The bar chart then advances this comparison by gender in different colours to visualise the higher deaths among male care home residents. Importantly, the transition from presenting general death numbers to visualising deaths in specific demographic groups illustrates how risk for sub-populations (split by gender, living conditions, and other factors) is specifically defined digitally by visualising its *deviance* from the overall population. Attention to specific demographic groups is also manifested in the right-hand bar chart in Tweet 8, which illustrates Covid deaths among care home residents with pre-existing health conditions. By visualising statistics across health conditions and genders, it suggests additional risk posed to those with dementia and Alzheimer's.

Theoretically, in light of the literature review in Chapter 2, visualising deviance in certain groups can be viewed as an attempt to take multiple socio-economic contexts into consideration when addressing health promotion within the general population (Bunton, Nettleton and Burrows, 1995). This may contextually be associated with the wider controversy concerning the disproportionate effects on mortality rates among care home residents compared to individuals living in private residences of a similar age (Schultze *et al*., 2022), potentially attributed to the lack of targeted, timely support to protect care homes in the initial wave of Covid in the UK (Booth, 2020).

Overall, this section discussed pandemic updates on Twitter to investigate the role of statistics in updating the risk (RQ1). It first identified four accounts actively updating the pandemic situation, @ONS, @UKHSA, @BorisJohnson, and @10DowningStreet. Building upon text frequency analysis, manual observation, and n-gram analysis, this section suggested that statistics provided by @ONS and @UKHSA facilitated the presentation of promoted narratives of classification and temporality in a comparative manner. Importantly, these update tweets communicated *calculated* statistics rather than raw data – for instance, statistical deviations compared to the overall population were used to illustrate additional risk for sub-populations.

From the platform aspect, compared to the textual presentation of numerical data in Section 5.2.1, the texts on Twitter play a *supplementary* role in briefly summarising the key takeaway from the detailed visual content. Due to Twitter's character limits in a single tweet, this section indicated that update tweets tended to incorporate key numerical information into visuals, and/or direct users to access full information through external links (e.g., data dashboards and websites in Table 10). This former point will be further unpacked in Section 5.3.2.

5.2.3 Discussion: Quantifying Covid risk

The preceding two sections explored pandemic updates on both platforms, which suggested numerical data as an important quantitative frame device of Covid in official communication on both Weibo and Twitter. This importance of numbers further resonates with Ian Hacking's work (1990): the use of numbers and statistical approaches fundamentally influences how uncertainty or a chance event is viewed and accessed in terms of controllability by the public, who can feel confident in or a loss of control over their future. For Hacking (1990), the way accounts classify the affected population into numbers of confirmed cases with attributes of gender, ages, and residences in specific temporality would affect the public concept of 'making up people'. Importantly, practices of enumeration and classification enable people to 'have gained a fundamentally quantitative feel for nature, how it is and how it ought to be' (Hacking, 1990, p.5).

While classification and temporality become central to the presentation of numbers in both cases, the preceding two sections showed major differences in 'which numbers to give' and 'how to give the numbers' across Weibo and Twitter. Given the relatively abundant character limits on Weibo, the *textual* classification of affected populations and descriptions of temporality in Chinese official communication are more complicated than in the UK, such as the confirmed, cured, suspected, imported, and death cases summarised across different times (i.e., daily, present, cumulative) and locations (i.e., provinces, cities). In contrast to raw data on Weibo, the use of statistics in UK official

communication facilitates contextual discussions through *comparison*. However, Twitter's character limits necessitate the practice of supplementary sources, such as hyperlinks or infographics, which will be further unpacked in Section 5.3.2.

This then raises the questions: who are the authorities, and do they have expertise to conduct this quantitative classification? TA results have suggested a series of accounts being framed as having the relevant ability and expertise to provide the numbers, such as ministry accounts (e.g., @GOVCN, @Health China) and city-level accounts on Weibo, and @ONS and @UKHSA on Twitter. In light of the 'provisional certainty' addressed in Section 5.1, incorporating numbers in pandemic updates also strengthens the frame of provisional certainty by presenting numbers to clarify the *calculability* of risk.

These differences about the numbers and their representations on platforms further indicate how the populations biologically affected by Covid are classified differently, such as confirmed and suspected cases on Weibo, or sub-populations in care homes with pre-existing health conditions on Twitter. These differences further resonate with the plural term 'Covid societies' coined by Deborah Lupton, in which she meant no society during the pandemic was singular since 'the long-term effects of which have yet to be experienced or imagined' (2022, p.2). Even though China and the UK were experiencing arguably similar situations, the perspectives they selected and presented from their original surveillance dashboards could be different. This point will be revisited in Section 5.3, as data presentation on Twitter, for instance, heavily relied on infographics due to character limits.

Considering the role of numbers at the intersection of the sociology of risk and frame theory, as actors (e.g., governmental institutions) sought to count and document the cases into numbers with public access, they shaped how the public perceived the pandemic by promoting certain classification criteria and neglecting alternatives. From the framing aspect, numerical data and statistical techniques can be seen as framing devices intertwined with selection, salience, and omission (Entman, 1993), as well as platform affordances such as character limits. From the risk perspective, this can be viewed as quantitative risk-defining work that eventually forms part of value judgements (Beck, 2008, p.7; Anderson, 2010, p.780), particularly reflecting the expertise of science and politics (Mythen, 2004, p.21). The findings of this section echo another empirical study in the context of Covid, where mortality rates, infection rates, and their engagement with discursive time frames were suggested to be key sets of numerical data (Brown, 2020). The findings also speak to the literature review of this study: numerical data and their presentation serve as classification and comparative devices through which Covid is assigned (or not) certain values between danger and safety (Brown, 2020) – in line with the key features of risk thinking about classification, value judgement (Heyman, 2010), and socio-cultural comparison (Douglas, 2002), as illustrated in Chapter 2. Therefore, at the intersection of

the sociology of risk and frame theory, practices of numerical data imply which aspects of the risks actors would like to emphasise to the public, carrying powerful discursive meanings in value judgement and power (Beck, 2008).

Finally, the literature review in Chapter 2 discussed how the risky perspective contradictorily introduces new dimensions of equality while sustaining existing inequalities within class society (Beck, 1992, p.49; Mythen, 2004, pp.24-27). Covid, as a health risk, similarly challenged existing societal positions, as the virus was biologically transmitted beyond existing limits such as boundaries, status, or vocations. However, the distribution of Covid risk also reflected disparities of class society, where individuals with social privileges (e.g., wealth, information resources) might have lower chances of getting infected. Ballo and colleagues (2022) argue that during Covid not everyone was substantially included in this 'we are all in this together' promotion in the UK, given the unequal probabilities of infection due to existing societal positions. For example, the disproportionately high infection rates observed in care homes in Section 5.2.2 also indicated how pre-existing societal inequalities were exacerbated by the pandemic.

5.3 Visual presentation of pandemic updates

The preceding section discussed how the presentation of numerical data and statistical techniques emerged as crucial framing devices for classification and value judgement within different Covid societies.

As illustrated in the methodology in Chapter 4, this thesis also considers visual elements as important framing devices (e.g., Geise and Baden, 2015; Rose, 2016). This section explores the meanings of visuals and their production politics (Moernaut, Mast and Pauwels, 2020), as well as incorporating key intertextuality between visuals and texts in social media contexts (Hand, 2017). In addition, building separate images into an 'image wall' methodologically is viewed as a powerful 'analytical displayed' image tool, helping researchers in examining recurring patterns across a series of images (Pearce *et al*., 2020; Rogers, 2021). This section therefore differs from the preceding two sections' focus on textual elements, as it examines visuals to understand their roles in shaping pandemic communication. It follows up on some discussions in Section 5.2 to analyse the role of visuals in presenting numbers on both platforms.

To achieve this aim, this section continues analysing official pandemic updates, but focuses on the visuals in these posts. Section 5.3.1 first considers how the standardised format of visuals involved in pandemic updates on Weibo demonstrates a frame of authority and expertise. Section 5.3.2

demonstrates the pattern of 'generic visuals' (Aiello, 2020) on Twitter, such as line graphs, given that classification and presentation of sub-population statistics are challenging to articulate solely through texts within platform character limits. Finally, Section 5.3.3 compares visuals across the two platforms and considers how they engage with verbal elements in official communication.

5.3.1 Weibo: Templated visual frame of authority and expertise

As discussed in Section 5.2.1, in Weibo samples, two accounts – @Health China and @GOVCN – played a key role in framing the pandemic in a quantitative way. However, these two accounts engaged with different ways of providing numbers, with pandemic updates provided through text and images from @Health China and in hyperlinks from @GOVCN. Therefore, this section focuses on the images of @Health China.

To learn about image content and distribution in @Health China, all images posted by @Health China between 20 January 2020 and 31 March 2022 were collected. As introduced in Chapter 3 and in Section 5.1.1, 20 January 2020 was the first time Covid cases were officially measured and published as numbers in China. All 4,049 downloaded images were classified by the image curation tool ImageSorter by image orientation, including 2,718 landscape images. The landscape images were then rearranged in chronological order (Figure 29 below).

Figure 29: Landscape images from @Health China between 20 January 2020 and 31 March 2022 (reproduced in ImageSorter in chronological order)

In Figure 29, a blue image with white characters is repeatedly used by @Health China across the two years – a blue banner containing white characters '*authoritative release*' (权威发布) introduced earlier in the image wall in Section 5.2.1 (Table 8). To understand this prominence, all images were rearranged by colours and reproduced in Figure 30 to facilitate understanding of the context of the 'cluster' of images.

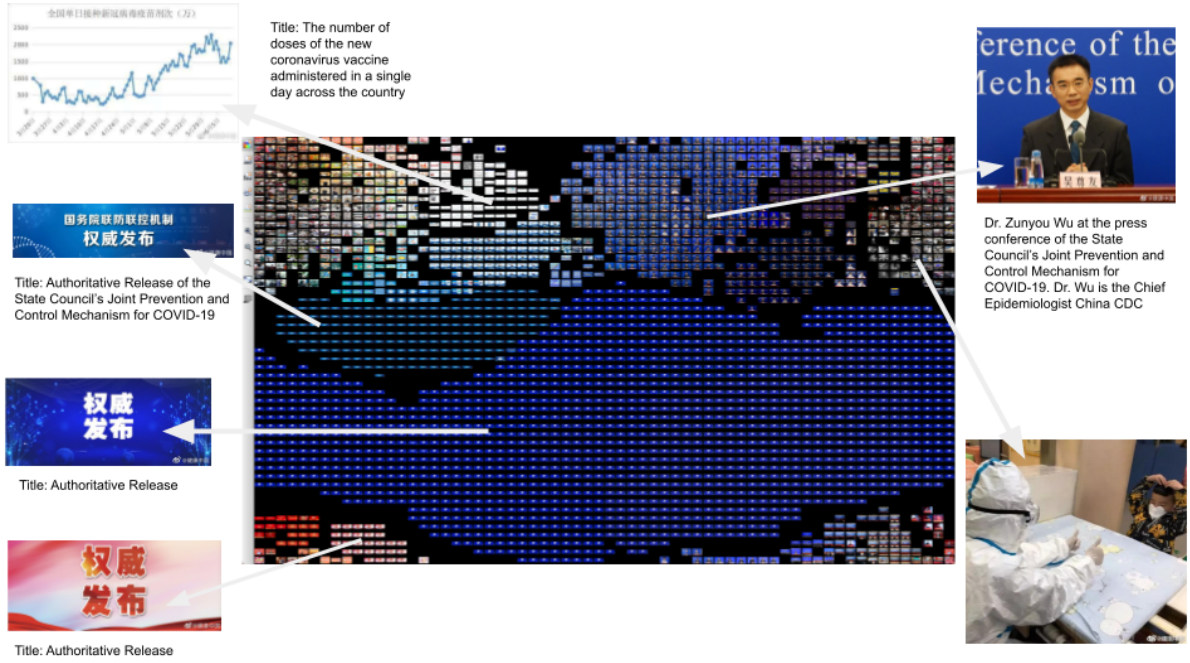
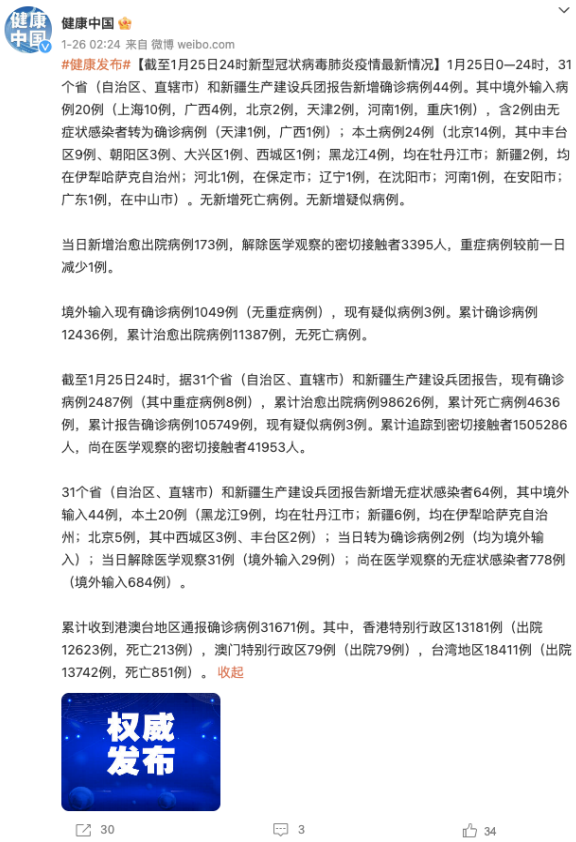


Figure 30: Landscape images from @Health China between 20 January 2020 and 31 March 2022 (reproduced in ImageSorter by colours)

In Figure 30, images from @Health China do not primarily serve informational purposes, because key information in pandemic updates, such as numbers of cases, is delivered through text as detailed in Section 5.2.1. Instead, this figure illustrates the dominance of the '*authoritative release*' banner and the portrait images of medical experts attending national Covid press conferences. This demonstrates a *visual* frame of medical expertise and political authority as 'Science + X' in defining health risk, thereby adding depth to the textual discourse of this pattern in Section 5.1.1. From an audience perspective, referencing 'qualified' actors aligns with organisational risk communication practices, as state institutions, health professionals, and scientists are perceived to carry higher credibility in risk narratives (Covello et al., 2001, p.386). For example, a survey on risk perception related to data visualisation sources in Turkey found that state institutions and international organisations were generally seen as more credible and reliable information sources (Melike Uluçay, Melek, and Özyurda-Ergen, 2021).

To understand the usage of the banner '*authoritative release*' (权威发布) in context, Weibo 8 discussed in Section 5.2.1 is reproduced again, posted by @Health China on 26 January 2020. The text of Weibo 8 presents numerical data following the templated format, while the blue banner displayed at the end illustrates another template in visuals. Importantly, this image does not add new information to the post but claims credibility from an official source.



Weibo 8

https://weibo.com/2834480301/Lcw81DXkq

In addition to the consistent use of this blue banner, @Health China strengthens the frame of authority by adding scientists' portraits at the ends of its posts, as shown in Figure 30. For instance, the two posts below, respectively posted in March 2022 and May 2021, both used the portraits of Dr Wu Zunyou. Wu worked as the Chief Epidemiologist at China CDC and was one of the key advisors in the Chinese management of the pandemic.

Weibo 9 (left) and Weibo 10 (right)

Weibo 9: https://weibo.com/2834480301/LksmTogIW

Weibo 10: https://weibo.com/2834480301/Kglu3lUtt

Weibo 9 (translation):

#Health release# Dr Wu Zunyou, Chief Epidemiologist of the Chinese Centre for Disease Control and Prevention: nucleic acid testing is very important, both timely and comprehensive. When conducting mass testing within a specific area, it must be completed within a short period, preferably completing one round of testing in 1-3 days, it must be fast. Each round of testing must cover screening for all individuals within the specified local area. We cannot screen some and miss others. If we can achieve timely and comprehensive screening, generally speaking, 3-4 rounds of nucleic acid screening can basically achieve zero cases at the societal level.

Weibo 10 (translation):

#Health release# Dr Wu Zunyou, Chief Epidemiologist of the Chinese Centre for Disease Control and Prevention: Cases in Anhui and Liaoning, based on the virus's genetic sequence, are completely identical, they are on the same transmission chain. From the dual antibody tests reported by Anhui on 14 May, all antibodies were negative, indicating that the infection time was not long, and there is probably a maximum incubation period from the discovery of cases to the earliest transmission. Given the scale of this, combined with the results of two rounds of screening in Anhui and Liaoning, the scale of this outbreak will not be too large, it will not be as large as earlier this year.

Across 10 months, these two examples refer to the same epidemiologist to frame the controllability of the current pandemic situation. In 2021 (Weibo 10), Wu's words were quoted to predict the limited expansion of the pandemic, and in 2022 (Weibo 9), his words were referred again to justify the importance of conducting nucleic acid tests in certain local areas. The use of Wu's images in both posts suggests a visual frame of medical expertise used to strengthen the validity and authority of the

information sources. The consistent use of experts' images further advances the mechanism of 'Science + X' addressed in Section 5.1.

The use of scientific narratives in Weibo 9 and Weibo 10 contrasts with the representation of Chris Whitty's images and Chris Whitty quote-tweet posts from ministry accounts in Section 5.1.2. This difference arises from the way scientific discourses are often conveyed through collective voices (e.g., Weibo 3), rather than being attributed to individual figures (e.g., individual accounts as Weibo 5). Nonetheless, both cases on Weibo and Twitter illustrate the dominance of medical expertise and other (perceived) credible sources in justifying political decisions during the uncertain phase of the pandemic (Reynolds and W. Seeger, 2005). This is accompanied by the simplification of technical and legalistic language (e.g., through numerical data or visuals) to facilitate risk communication for lay audiences (Covello, Slovic, and Von Winterfeldt, 1986, p.173; Reynolds and W. Seeger, 2005, p.47).

In summary, this section identified two types of images prominent in the image wall of @Health China: a blue banner labelled 'authoritative release' and images of medical experts consistently used at the ends of pandemic update posts. This combination of medical expertise as Science and political judgement as X further advanced the conclusions of Section 5.1.1 by presenting a visual frame of 'Science + X' in constructing the official and authoritative status of the communicated information. In addition, the consistency of the visuals advanced the findings in Section 5.2.1: in pandemic update posts on Weibo, both the textual presentation of numbers and the inclusion of images followed a standardised format known as 'templated communication'.

5.3.2 Twitter: Generic infographics and dashboards

After analysing the images involved in pandemic update posts on Weibo, this section draws a comparison on Twitter by closely examining the visual practices of @ONS and @UKHSA, two accounts identified as active actors in delivering pandemic updates in Section 5.2.2.

To build a comparison with the image wall in Section 5.3.1, all images posted by @ONS regarding Covid between 1 January 2020 and 31 March 2022 were collected. These 438 images were then rearranged in chronological order and reproduced through ImageSorter as below to provide an overview of the visual elements involved across the two years.

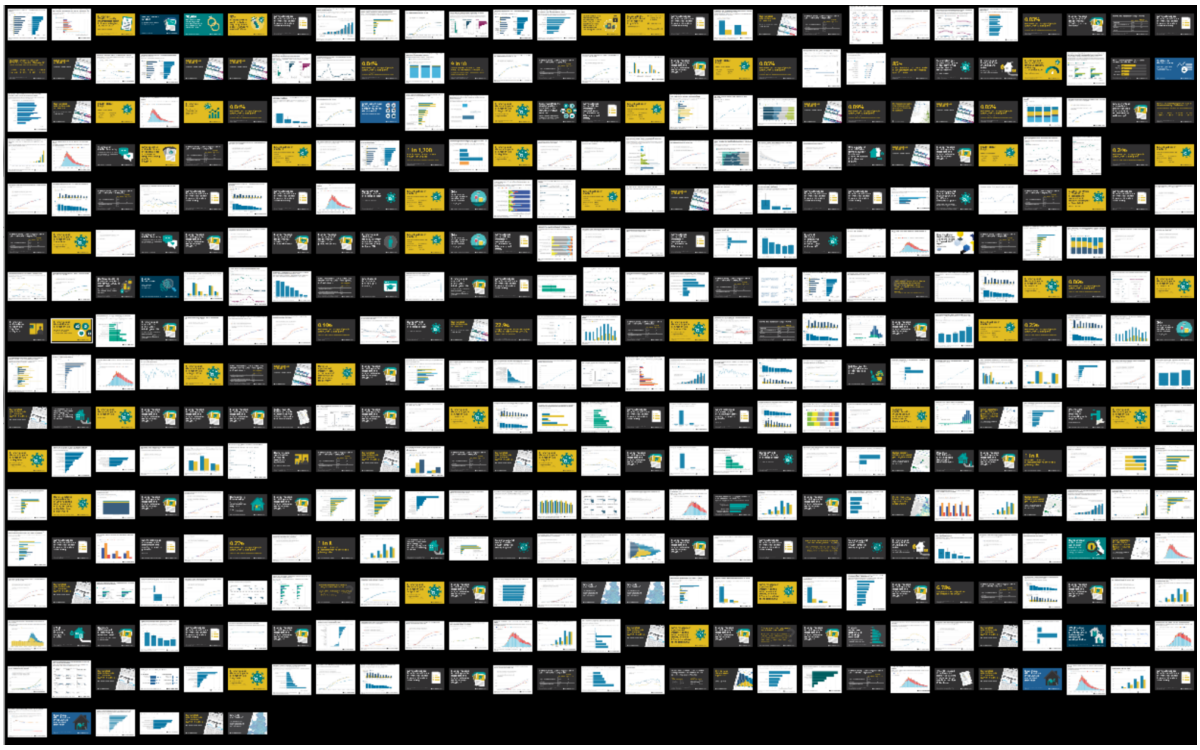


Figure 31: Landscape images from @ONS between 1 January 2020 and 31 March 2022 (reproduced in ImageSorter in chronological order)

In Figure 31, three types of visuals were used across the three years, distinguished by the colours of white, yellow, and black. The consistency in their colours and frequencies across 2020 and 2022 suggests a recurring pattern. To provide further information about these recurring image contents, all images were rearranged by colours to show clusters of similar images in Figure 32.

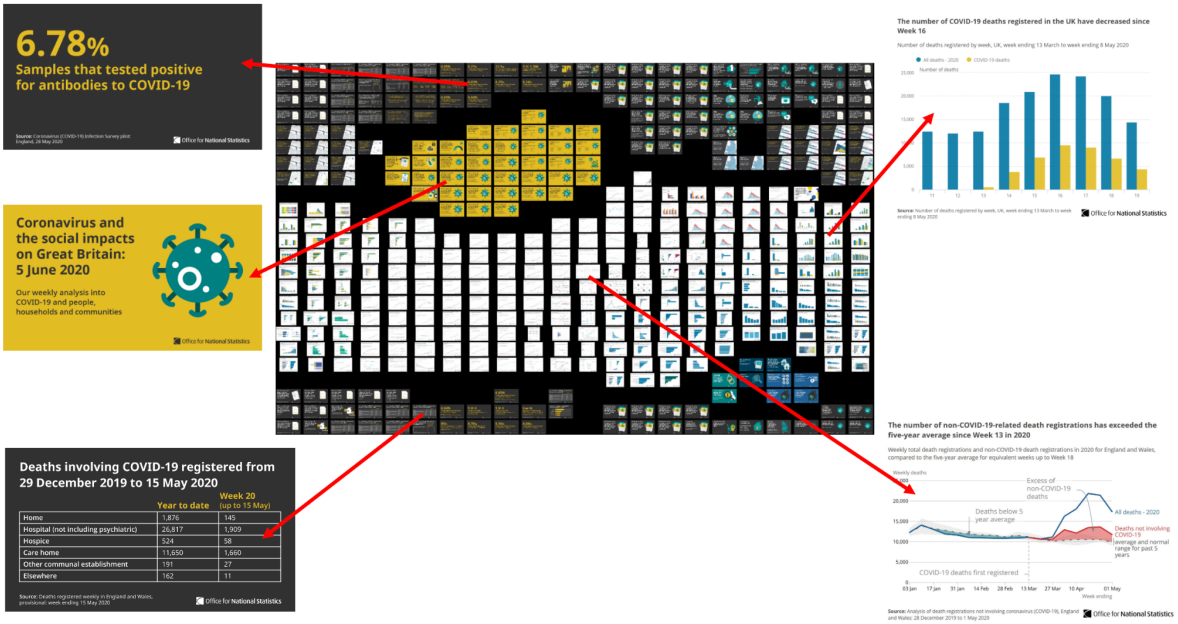


Figure 32: Images from @ONS between 1 January 2020 and 31 March 2022 (reproduced in ImageSorter by colours)

As detailed in Figure 32, most visuals are presentations of statistical data reported on a weekly basis indicated by the yellow image stating, '*weekly analysis into Covid-19 and people*'. But the clusters of images do not feature people compared to the inclusion of scientists' images in @Health China (Figure 30).

Furthermore, the predominant white cluster in the centre of Figure 32 comprises different types of infographics, including bar charts, line graphs, tables of numbers, and images with numbers, with their colours and frequencies demonstrating a consistent pattern across 2020 and 2022. These visuals, following a similar layout, can be viewed as '*generic visuals*', according to Giorgia Aiello (2020).

> Generic visuals become meaningful through the repetition and recontextualization of their key semiotic resources and the symbolic patterns associated with them. In other words, generic visuals do not become recognizable as specific visuals (e.g. *that* photograph or *that* visualization). Rather, they mobilize visual concepts and motifs that become meaningful through their reiteration over time and across media outlets and media texts (Aiello *et al*., 2022, p.314, original emphasis).

For Aiello (2020), visuals' generic nature stems from their standardised aesthetic designs and frequent recurrence in news media for specific purposes. As unpacking statistics and comparison within a 280-character-tweet becomes challenging, the pattern of generic visuals constitutes 'powerful symbolic reiteration' (Aiello *et al*., 2022, p.327) – images are designed to facilitate reproduction for routine information updates. Simple data visualisations, as standardised visual products following a particular design, were (anticipated to be) simple enough to be understood alone without a detailed explanation, as consistent exposures generate certain visual literacy to read them (Aiello *et al*., 2022). They were also powerful framing devices to feed publics with 'rhetorical cues' on the routine basis, such as bar charts, to deliver, reaffirm, and/or dilute certain value judgements regarding the Covid situation (Aiello *et al*., 2022).

Having discussed the data from @ONS, this section moves on to examine visuals by @UKHSA, another account that actively provided pandemic updates on Twitter, which demonstrated a similar pattern of 'generic visuals'. To remain consistent, all 420 images posted by @UKHSA regarding Covid between 1 January 2020 and 31 March 2022 were collected and reproduced in chronological order in Figure 33.

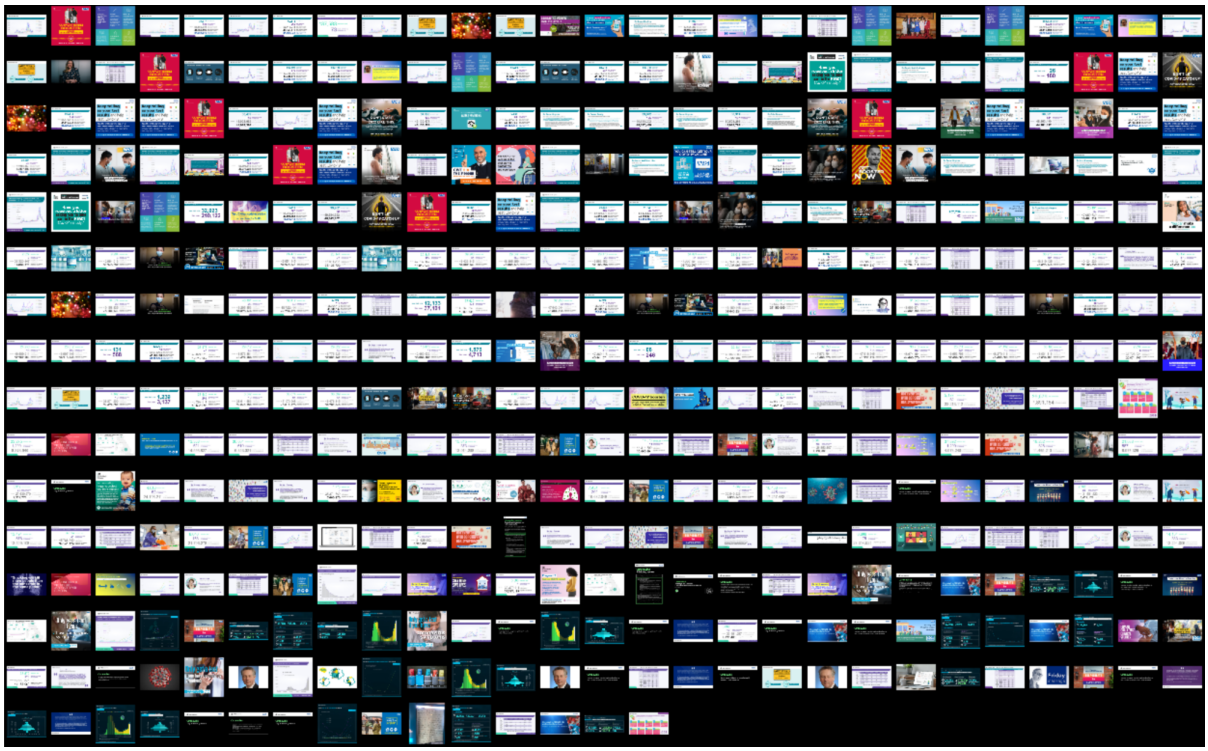


Figure 33: Landscape Images from @UKHSA between 1 January 2020 and 31 March 2022 (reproduced in ImageSorter in chronological order)

To provide further information about the image recurring across the two years, all images were rearranged by colours with results shown in Figure 34.

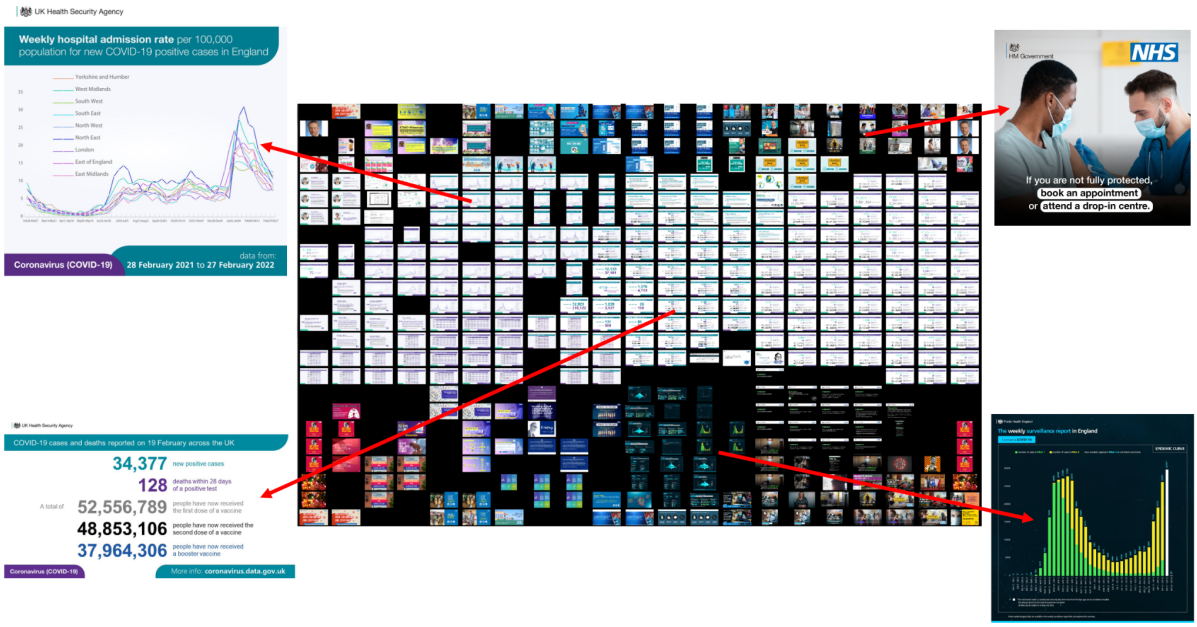
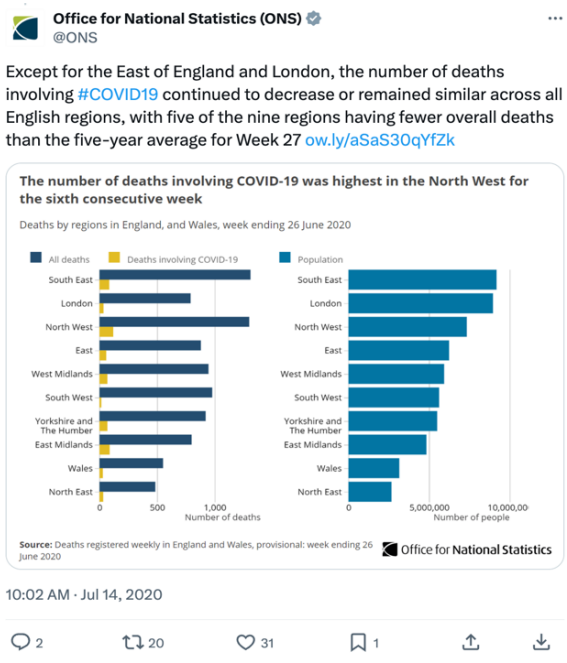
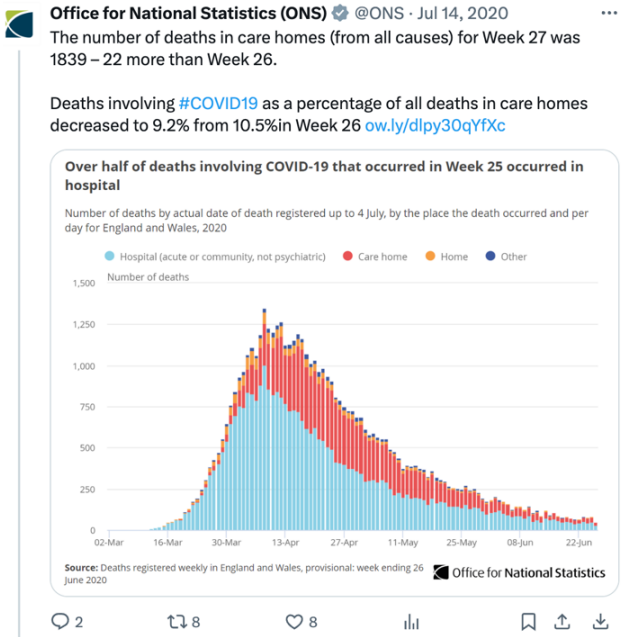


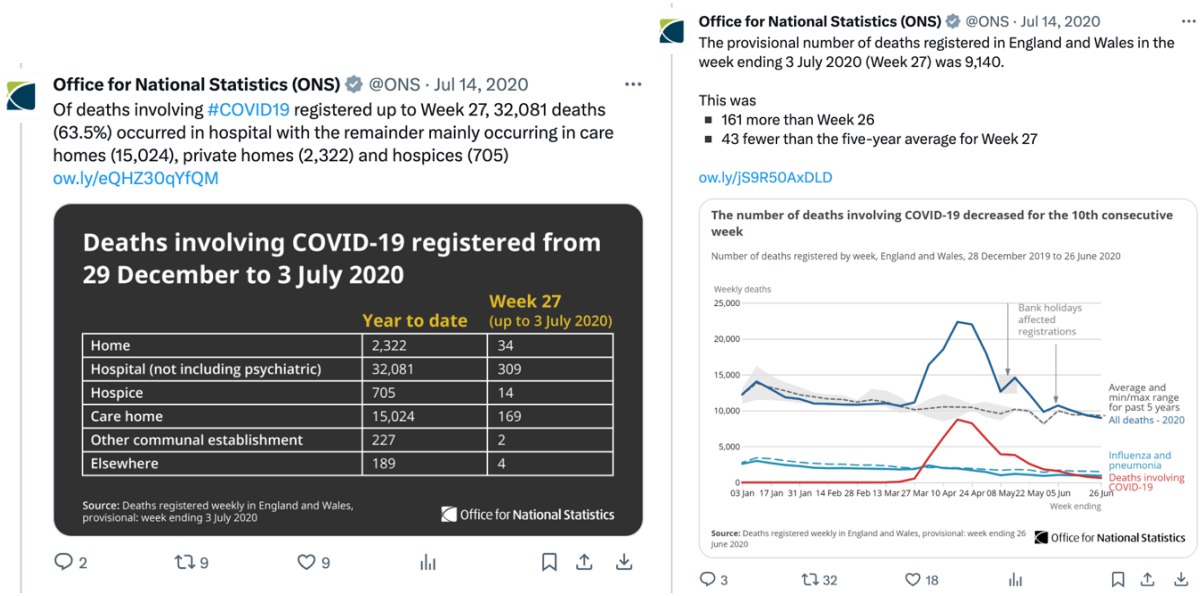
Figure 34: Images from @UKHSA between 1 January 2020 and 31 March 2022 (reproduced in ImageSorter by colours)

Like @ONS, @UKHSA also produced a series of 'generic visuals' featuring statistics in line graphs and lists of numbers. One notable difference is the inclusion of images featuring people, such as NHS-related images in Figure 34. But both @ONS and @UKHSA present visuals differently from @Health China, where pandemic updates consistently feature the blue banner of 'authoritative release' and portraits of medical experts. Importantly, the visuals in @Health China posts serve as a *supplement* to the rich information conveyed by the texts, facilitated by character counts on Weibo.

Through close observation of the generic visuals presented in the image walls, it is evident that infographics are repeatedly used to visualise statistics, addressing risk in a comparative and/or classificatory way. To provide further context for these generic visuals, Tweet 9 with several threads from @ONS in July 2020 is reproduced below as an example, providing several sets of pandemic numbers with different attributions.







Tweet 9

https://twitter.com/ONS/status/1282963749083787266

As Chapter 3 introduced, Twitter's thread function allows users to curate a series of tweets to follow up on the same topic. While engaging with similar data of Covid deaths, Tweet 9 illustrates how these threads facilitate the presentation of a series of statistics, featuring the understanding of death through various perspectives of classifications and comparisons. For instance, the top-left thread of Tweet 9 presents a type of generic group-bar chart where bars with unique colours are grouped together, allowing for a direct comparison between different 'categories'. The statistics are reproduced in bar charts to display Covid deaths in relation to the sizes of local populations across regions, with accompanying captions noting the highest risk in the Northwest over a clear time frame of '*six consecutive weeks*'. Additionally, the captions describe the weekly situation as '*five of the nine regions having fewer overall deaths than the five-year average for Week 27*', indicating a risk definition of the current Covid situation through a comparative tone with historical numbers.

The frame of classification and comparison is also evident in other visuals in Tweet 9. The top-right thread of Tweet 9 presents statistics in another type of generic clustered-bar chart, where bars representing various categories are cumulatively placed to facilitate reading the proportions. This bar chart also highlights deaths in care homes in red segments and captions. As shown in the bottom threads of Tweet 9, two other generic visuals similarly compare weekly Covid deaths with other death records (e.g., all Covid deaths, historical five-year-average deaths, deaths from influenza and pneumonia, and yearly deaths in 2022). Overall, Tweet 9 demonstrates how key characteristics of risk thinking discussed in Chapter 2 can be conveyed through statistics and further standardised in generic visuals of different types. This provides substantial evidence to understand how risk definitions,

characterised by socio-cultural and temporal classification and comparison, are digitised in official communication and localised as reproductive media products on a certain platform.

In brief, this section built upon the discussion of the textual presentation of statistics in Section 5.2.2. It analysed visuals from @ONS and @UKHSA to demonstrate how the practice of infographics became prominent in reporting statistics and how infographics followed a generic format. The findings suggested that these generic practices of infographics advanced several key characteristics of risk thinking, such as classification and comparison discussed in the literature review. In addition to a consistent pattern, these infographics also played a primary role in information provision compared to Weibo, given the significant character limits on Twitter. Additionally, while both Weibo and Twitter data classified numerical data based on geographic attributions (e.g., cities, regions), texts and infographics on Twitter also incorporated contextual comparisons across time (e.g., deaths of Covid and of five-year average), diseases (e.g., deaths of influenza and pneumonia), and demographic groups (e.g., deaths in hospitals and in care homes).

5.3.3 Discussion: Platform affordances in official pandemic updates

As discussed in the literature review, the scholarship of platform affordances suggests a departure from platform-centrism and platform universalism analytical approaches, and researchers are encouraged to consider platform affordances as 'relational' to a specific platform and culture (e.g., Willems, 2021). When comparing China and the UK, as well as Weibo and China, further consideration is needed regarding how and why the similar technical ability to share visuals, as platform affordance, is mobilised differently across Western and non-Western contexts.

In terms of image post frequencies, the image walls of three accounts (@Health China, @ONS, @UKHSA) indicate similar practices of repeatedly posting the same images as 'templated images' or simple data visualisations as 'generic visuals' (Aiello *et al*., 2022). Importantly, both texts and visuals function as key framing devices to represent certain facets of Covid to the public, while the relationship between texts and visuals varies, given their distinct abilities to unpack information within different character limits.

In @Health China, most visuals consist of banners of 'authoritative release' and portraits of medical scientists to enhance the authority and credibility of the account as a primary information source. The information is mainly reported through detailed *texts* as Section 5.1.2 discussed. In @ONS and @UKHSA, infographics are employed as the *main* visual elements to present statistics, facilitating a quick presentation of complicated comparisons (e.g., different sets of death numbers). These statistics in infographics theoretically leverage the key features of risk thinking to define the situation of Covid:

by constructing frames in terms of classification, temporality, and comparison, as mentioned in Chapter 2, three accounts deliver different portrayals of Covid through their templated or generic visuals. In light of the 'provisional certainty' raised in Section 5.1, visuals serve to transfer knowledge of Covid in an accessible way to address the uncertainty in risk. The senses of certainty and credibility are visually manifested as authority emphasised by the official discourses (authoritative release) and the presence of medical scientists on Weibo, as well as by the statistical evidence on Twitter.

From the audience and reception studies perspective, visuals in both cases serve to intensify information and capture user attention through a snapshot-style presentation. Synthesising the findings from Section 5.2, templated communication on Weibo and generic infographics on Twitter represent two routine forms of simplification, aiming for 'simple and clear' risk communication to manage public trust — one of the key criteria for evaluating the effectiveness of risk communication especially for public sector organisations (Reynolds and W. Seeger, 2005). These two practices reveal distinct ways in which audiences are imagined engaging with public health messages, recognising specific content in relation to broader cultural experiences (Tong, 2024). For instance, the combination of numerical data and visuals may affect how audiences emotionally engage with pandemic updates in their everyday experiences (Engebretsen and Kennedy, 2020).

In addition to examining different practices of posting visuals as one platform affordance, this section illustrates how platform affordance around one function can be affected by another. Section 5.3.2 illustrated that, given Twitter's significant character limits at the time of data analysis, the use of visuals and threads becomes central for conveying complicated information. This adds evidence to the practices of using hyperlinks in the textual analysis discussed in Section 5.2.2 (Table 10). However, the visual practices observed in @Health China, @ONS, and @UKHSA may not be representative of all platform users. Even on the same platform, it is challenging to equate the affordance practices of individual users with those of government entities, given the socio-cultural contexts and expected responsibility placed on them during risk (see Weibo in Zheng and Zheng, 2014; Twitter in McInnes and Hornmoen, 2018). Additionally, government-level accounts on the same platform may also navigate the ability to post visuals variously, such as inclusion of images featuring people by @UKHSA but not on @ONS. These differences, between accounts, account categories, and contexts of accounts, align with the concept of *affordances-in-practice* (Costa, 2018, p.3651), which suggests viewing platform affordance as unstable and dependent on relationships between specific user groups and platforms.

Finally, synthesising the findings of this section and Section 5.2, the combinations of texts and visuals across two platforms are still characterised by narratives of classification, probability, temporality, value judgement, and cultures, akin to traditional risk perspectives (Heyman, 2010, p.19; Brown,

2020), introduced in Chapter 2. In essence, the ways governments fulfil their political roles in pandemic administration are adaptive to social media cultures to 'translate' some characteristics of risk thinking into visible and accessible formats for their respective imagined audiences on Weibo and Twitter.

5.4 Conclusion: From risk society to digital risk societies

This chapter has reviewed the strategies used to frame risk during the pandemic, both at the front end of the respective local outbreaks in China and the UK, and when the pandemic monitoring mechanism was established in the middle of the initial outbreak. Through the analysis of their communication strategies, this chapter identified three sets of 'framing devices' to present the 'digital-mediated definitions of risk'. Section 5.1 discussed how medical scientists' discourses became prominent in establishing provisional certainty through the mechanism of 'Science + X' when acknowledging an emerging new risk with limited prior knowledge. Sections 5.2 and 5.3 both focused on posts providing pandemic updates, which respectively identified numerical data and visuals as central components to the routine framing of Covid situations. In essence, scientists' discourses, numbers, visuals, and their practices of being 'templated' or 'generic' all serve to highlight specific aspects of the frame of Covid.

While the risk society perspective is characterised by portraying uncertainty of risk associated with its delocalisation, non-compensability, and incalculability (Beck, 1992), this chapter suggests that official discourses on both platforms demonstrate a discursive pattern of *provisional certainty*, facilitated by digital platform affordances. It should be understood as a 'liminal category' of certainty, which neither guarantees permanent, complete certainty nor represents total uncertainty (Lupton, 2006, p.17) – acknowledging that absolute certainty is not assured but also not entirely absent.

Provisional certainty, instead, is a *communication strategy* that addresses the dual needs of providing information and emotional assurance to imagined audiences on a routine, timely basis (Reynolds and W. Seeger, 2005; Barnett et al., 2012). This approach reflects strategic decisions that frame uncertainty with a sense of manageability — such as the ability to quantify or communicate Covid-related data — while minimising potential harm to public trust and institutional credibility (Fischhoff, 2013; Markon, Crowe, and Lemyre, 2013). The attention to maintaining information transparency, as explored in this chapter, aligns specific identities of governments as 'structures of collective risk management', which have the political mission of protecting their populations through administrative mechanisms such as law and welfare provisions (Giddens, 1999, p.10; Mythen, 2004, p.21). However, this strategy varies across emergency types, even within the same institution (Panagiotopoulos et al., 2016).

From a reception studies perspective, the complexity of provisional certainty arises from the need to align with public acceptance of uncertainty. It requires careful navigation between full disclosure and the inclination to downplay certain risks (Frewer et al., 2002; Kasperson, 2014), especially important for public perceptions of governments with the duties of informing and taking political decisions during uncertain time (Markon, Crowe, and Lemyre, 2013, p.325). This explains why the examples in this chapter 'push back' against the incalculability of risk by presenting numerical data, either as raw numbers or comparative statistics, and construct discourses against the delocalisation of risk through city- or region-based pandemic updates. While full transparency may foster trust, it can also heighten public anxiety, whereas withholding information being perceived as inaction or concealment, potentially influencing trust and compliance with recommended measures (Frewer et al., 2002).

Additionally, this chapter shows that in both cases medical and political discourses play active roles in acknowledging consistent 'imputed risk' and demonstrate 'some measure of certainty' about the anticipated future (Lupton, 2006). This speaks to the relatively higher public acceptance of uncertainty arising from the 'scientific' process of learning risk, as opposed to lower tolerance for perceived inaction or delay from official institutions (Frewer et al., 2002).

Therefore, this chapter contributes by revisiting traditional risk perspectives (e.g., Beck's work in 1992) in the context of contemporary digital platforms: the risk society perspective was raised in the 1990s before the proliferation of social media platforms such as Weibo and Twitter, drawing upon a legacy media ecology different from that of the early 2020s when Covid took place. This does not imply that the concept of risk society is outdated in the era of digital platforms, but rather it suggests the need for *updated* efforts to empirically understand risk discourses disseminated through digital platforms, which constitute a distinct set of media (Tulloch and Zinn, 2011).

On one hand, this chapter understands the characteristics of risk, raised in risk society and its developments, still resonate in the context of Covid, such as classification, value judgement, probability, and temporality framing indicated in the examples (Heyman, 2010; Brown, 2020; Galantino and Brown, 2020). On the other hand, the introduction of social media logics, such as the cultures of Weibo and Twitter, has altered how risks are communicated (van Dijck and Poell, 2013). For instance, while scientific rationality remains central in defining risk (Beck, 1992), this chapter demonstrates how the presence of scientists has become digitally emphasised in framing the pandemic, including their quotes, visuals of scientists, and interactions with scientists' accounts. Furthermore, whereas traditional risk thinking emphasises the incalculable nature of risk, this chapter presented several examples where Covid was communicated as perceivable through numerical data. The discourses of numerical data on Weibo and Twitter are further digitised within the form of texts or

infographics, repeating on a daily or weekly basis. Therefore, as illustrated by three sets of framing devices identified in this chapter, risk communication facilitated by digital platform affordances makes some traditional characteristics of risk and risk thinking into a new communicable and visible dimension.

These findings theoretically align with Deborah Lupton's concept of 'digital risk society' to describe the impacts of digital technologies on defining risk (2016). By emphasising in 'digital' as a precondition, this chapter seeks to grasp both the core characteristics of risks (e.g., Beck, 1992) and the emerging impacts from digital contexts where official accounts construct and publish their risk definitions. This interdisciplinary extension enables media-risk researchers not only to examine how risk is defined in terms of uncertainty but also to see the influence of digital platform politics on the process of (de)visualising risk narratives (Bakir, 2010, p.13). This is important for understanding how the conceptualisation and theorisation of risk are revitalised through platform scholarship (Lupton, 2006, p.21).

Furthermore, this chapter suggests extending digital risk society into plural forms as *digital risk societies* to account for socio-cultural factors (e.g., Douglas, 2002, p.44), particularly considering the different frames of Covid in the Chinese and British contexts in this chapter. Theoretically, this necessitates updating risk studies within the platform affordance literature (e.g., Bucher and Helmond, 2018) and applying a cultural-sensitive lens to analyse risk narratives (Beck, 2016).

After identifying key framing devices as entry points to understanding the digital-mediated risk definitions, the next chapter focuses on examining the narratives of responsibility within official communication. It aims to understand how actions and actors were portrayed as responsible during the Covid pandemic (RQ2). According to Chapter 2, responsibility is a central concept within the risk perspectives – it can be viewed as a specific form of defining risk, where actors are attributed to duties or ethical characteristics in risk situations. The next chapter specifically discusses the contextual and socio-cultural meanings of responsibility for governments, 'heroic' individuals, and citizens.

Chapter 6 Responsibility and Civic Duties

Chapter 5 discussed how the risk posed by the pandemic was communicated with provisional certainty through three types of framing devices in official pandemic updates. This chapter further explores the concept of responsibility, addressing the question of which actions and actors were portrayed as responsible for pandemic management (RQ2).

As illustrated in Chapter 2, responsibility can be viewed as completing obligations and ethical, accountable practices (Giddens, 1999, p.8). Like defining risk, the process of defining responsibility or identifying actors as responsible is also considered to be constructed and justified (Beck, 1992, p.28). In discussions of risk and public health, governments and individuals emerge as two key actors bearing responsibility in their culturally specific modes of neoliberalism (Harvey, 2005; Ong, 2006; Ong, 2007; Lupton, 2012): governments are seen as structures of collective risk management, with their tasks of protecting populations from external risk such as disability and illness (Giddens, 1999). They are thus often considered as prime actors responsible for regulating public health for their populations (Petersen and Lupton, 1996). On the other hand, individuals, within the public health domain are encouraged to fulfil their citizenship responsibilities by maintaining their health through making 'rational' lifestyle choices that are beneficial for their health, as personal health is often portrayed as having implications for personal characteristics, such as self-regulation (Crawford, 1994; Petersen and Lupton, 1996, p.71). Therefore, this chapter aims to specifically unpack the definitions of responsibility regarding governments and individuals in the context of Covid.

The findings of this chapter suggest that responsibility is framed as a networked concept, sustained by inseparable contributions from governments, 'heroic' individuals, and citizens. The criteria for what constitute responsible actions or actors also vary across China and the UK. Addressing the responsibility of these three entities is also connected with the affective portrayals of individual responsibility: publics are reminded of how their decisions may contribute to or undermine others' responsible achievements within their imagined communities. For instance, both Weibo and Twitter mention how following the health protection guidance in official accounts may contribute to the overall national pandemic control progress. As in Chapter 5, communicating the details of responsible actions is further complicated by platform affordances, such as character limits and the nuanced practices of employing hashtags. These communication practices also reflect a specific audience imaginary shaped by cultural sensitivities, particularly visible in Chinese values of collectivism and Confucianism. This includes constructing the balance between 'small' self and 'greater' self, emphasising personal responsibility in relation to collective well-being (Yan, 2010b).

The first two sections respectively address how responsibility is constructed in the context of governments (Section 6.1), individuals, and medical professions together as 'heroic' individuals (Section 6.2). Then, Section 6.3 discusses how individuals are appealed to take actions to fulfil their duties to show consideration for these three actors. Finally, Section 6.4 concludes the chapter by articulating how responsibility is constructed in networked and affective ways with attention to cultural variances.

6.1 Responsibility and supportive government

As argued in the literature reviewed in Chapter 2, the process of assigning responsibility to actions and actors can be viewed as a process of articulating roles in risk. Through the lens of risk, responsibility is associated with the attributes of ethical and accountable behaviours, manifesting in the fulfilment of particular obligations (Giddens, 1999, p.8). Commitments to obligations, in the domain of public health specifically, are often expressed through a combination of top-down disciplinary measures initiated by the state, and bottom-up efforts at the individual level (Petersen and Lupton, 1996). Thus, the definition of responsibility requires a contextual approach to specifying how different stakeholders construct and justify their 'notions' of responsibility (Beck, 1992, p.28).

To specifically address RQ2, posts delivering narratives of responsible actors and societal duties were identified in the sample through TA (more details of the coding follow in Appendix B). Out of the 108 accounts in the dataset, 104 sample accounts were found to engage with the framing of responsibility, highlighting it as a significant theme in the sample.

After exploring posts featuring specific notions of responsibility constructed discursively by the frames of societal actors and actions, two topics emerged as relevant to answering RQ2: responsibility reflected through government support; and responsibility constructed within the frame of non-state efforts, including medical-related activities. These two topics are unpacked in the following analysis sections, not only because of the extensive discussions on state/individual responsibility in the public health literature, but also due to their prominence in the dataset. Among the overall 780 Weibo posts and 380 tweets discussing notions of responsibility, the topic of government-support-based responsibility was relevant in 158 Weibo posts (20.26%) and 102 tweets (26.84%). Another topic, responsibility demonstrated by non-state efforts or medical-related activities, was found in 247 Weibo posts (31.7%) and 86 tweets (22.63%). Thus, to unpack how responsibility is developed into contextual meanings within these two topics, this section moves on to elaborate on the notion of

responsibility in the context of government support, while Section 6.2 examines responsibility within non-state efforts as well as medical-related activities.

To expand on the narratives of government responsibility, Sections 6.2.1 and 6.2.2 examine the frame of government responsibility on Weibo and Twitter, respectively. Section 6.2.3 then compares how responsibility is similarly addressed in relation to supportive leadership in China and the UK, but with nuanced approaches in providing support during Covid.

6.1.1 Weibo: Responsibility through acting for pandemic prevention and control

To gain deeper insights into how responsibility was narrated in the case of governmental support, this section starts with a textual analysis of a sub-sample of 158 Weibo posts featuring government-support-based responsibility using AntConc (Anthony, 2023). Methodologically, this textual analysis aims to gain initial insights into predominant words and phrases within the sub-sample, guiding further explorations of specific topics in the data.

The left column of Table 11 presents a list of the top 10 high-frequency words. The middle column illustrates the 'clusters' of these keywords, representing two-word terms frequently used in conjunction. The right column lists the 'collocates' of keywords, representing words significantly likely to co-occur to the left or right of the keyword. Numbers in brackets indicate the frequencies of terms appearing in the sub-dataset. It should be noted that a single Chinese word can be translated to more than one word in English, such as '防控' as a single Chinese word with a meaning of 'prevention and control'. To maintain consistency throughout this chapter, all textual analysis in the subsequent sections follows the same settings in AntConc.

According to the textual analysis, the term '*prevention and control*' (防控) was the most frequently used in the sub-sample (at 181 times), followed by '*work*' (工作) (at 120 times). These two words were also used together with the search term '*pandemic*' (疫情), forming the phrase '*pandemic prevention and control work*' (疫情防控工作) as an overarching objective for the specific strategies undertaken in China. Additionally, words indicating particular actions such as '*carry out*' (开展), '*assurance*' (保障) and '*provide*' (提供) were also frequently used. Considering these words in light of their clusters and collocates helped to identify some specific pandemic responses, such as prevention supplies in Covid with the word '*supplies*', and the enterprise resumption of work and production with the word '*enterprise*'.

Table 11: Textual analysis of 158 posts featuring government-support-based responsibility on Weibo

Word frequency	**Top 5 word clusters**	**Top 5 collocated words**
Prevention and control/防控 (181)	Pandemic prevention and control/疫情 防控 (90) Pandemic prevention work/防疫 工作 (25) Pandemic prevention supplies/防疫 物资 (8) Pandemic prevention measures/防疫 措施 (7)	Pandemic/疫情 (105) Work/工作 (35) Do a good job/做好 (16) Prevention and control/防控 (4)
Work/工作 (120)	Prevention and control work/防控 工作 (25) Work mechanisms/工作 机制 (3) Assurance work/保障 工作 (3) Various work/各项 工作 (3) Other work/等 工作 (3)	Pandemic/疫情 (38) Prevention and control/防控 (35) Do well/做好 (16) Carry out/开展 (13) Community/社区 (13)
Supplies/物资 (48)	Pandemic prevention supplies/防疫 物资 (9) Prevention and control supplies/防控 物资 (8) Anti-pandemic supplies/抗疫 物资 (4)	Pandemic prevention/防疫 (10) Provide/提供 (10) Assistance/援助 (7)
Carry out/开展 (40)	Undertake pandemic-related/开展 疫情 (4) Conduct nucleic acid-related/开展 核酸 (3) Community engagement/社区 开展 (3)	Work/工作 (13) In-depth/深入 (5)
Enterprise/企业 (37)	Enterprise resumption of work/企业 复工 (6) Support for enterprises/支持 企业 (3)	Resume work/复工 (17) Resume production/复产 (10) Support/支持 (3)
China/中国 (35)	Chinese military/中国 军队 (4) The People's Liberation Army of China towards/中国人民解放军 向 (4) Approval of the People's Liberation Army of China/批准 中国人民解放军 (4)	Military/军队 (17) Request/请求 (5) Museum/博物 (4) The Central Military Commission/中央军委 (4) Approve/批准 (4)
Personnel/人员 (35)	Personnel control/人员 管控 (4) Relevant personnel/相关 人员 (3)	Control/管控 (6) Residential community/小区 (5)
Assurance/保障 (33)	Full efforts to ensure/全力 保障 (6) Service assurance/服务 保障 (4) Assurance work/保障 工作 (3)	Full effort/全力 (10) Life/生活 (6) Basic/基本 (3)

Word frequency	Top 5 word clusters	Top 5 collocated words
	Assurance of the pandemic/保障 疫情 (3)	
Community/社区 (33)	Xinhe community/新河 社区 (10) To the community/到 社区 (4)	Xinhe/新河 (12) Residents/居民 (7) Inspection/排查 (6) Participate/参加 (5)
Provide/提供 (31)	National provision/国家 提供 (6) Provide pandemic-related/提供 新冠 (4)	Supplies/物资 (10) Nation/国家 (10) Vaccine/疫苗 (10) Assistance/援助 (7) Military/军队 (7)

Notes:
1. There were 2,506 entries (unique words), with a total frequency of 7,756.
2. The word frequency analysis removed the search queries used for data collection (e.g., Covid).
3. The clusters were generated with cluster size=2, search term position on left/right.
4. The collocates were generated with significance at $p<0.05$, with window span from 5L to 5R in AntConc.

Drawing on the primary findings of this textual analysis, this section presents two examples to contextualise how these words are embedded within the broader discourse of governmental responsibility. Weibo 11 was posted by the Ministry of Natural Resources (@自然资源部) on 31 January 2020. According to this example, the predominance of the term '*prevention and control*' in Table 11 can be attributed to its role as a comprehensive strategy leading detailed measures, such as case reporting and isolation management.

Weibo 11

https://weibo.com/5000764997/Is0ty3l2f

Weibo 11 (translation):

#Watch out and help each other to fight the pandemic# #Fight against pandemic in action# On 30 January, the @Department of Natural Resources of Heilongjiang Province made a specific deployment of the work arrangements during the prevention and control of the pandemic, and made every effort to do a good job in the prevention and control of the pandemic with practical actions. The Office made it clear that it will manage confirmed and suspected cases of pneumonia infected by Coronavirus in the system, as well as close contacts and suspected exposures, in accordance with the law, to achieve early detection, early reporting and early isolation. In addition, during the period of pandemic prevention and control, it is necessary to ensure that important work is not halted, and in principle, meetings, training and other activities will not be held (organised). (China Natural Resources News Sun Jiayan)

This example indicates the term '*prevention and control of the pandemic*' as an overarching objective leading the strategies of managing Covid, which government agencies are expected to actively pursue by '*making every effort with practical actions*'. The actions, according to this post, include practices such as prompt detection, reporting, and isolation of confirmed and suspected cases. This example of defining responsibility through concrete practices partly explains the results of the textual analysis in Table 11, where words featuring specific actions become prominent, such as '*supplies*', '*enterprise*', '*assurance*' and '*provide*'. In addition to setting the key goal for society, the term '*prevention and control of the pandemic*' also signifies the temporality of Covid, which highlights the unusual nature of the current circumstances: during this ongoing crisis, new actions needed to be undertaken, and actors were imposed with new criteria of responsibilities.

Furthermore, while Weibo 11 was posted by the state-level ministry, it outlines strategies implemented by Heilongjiang provincial authority, a local agency of the Department of Natural Resources. Contextually, framing responsibility through local narratives aligned with the central policy of '*Four-party Responsibilities*' (四方责任) in China, a term occurring 19 times in the Weibo sub-sample. '*Four-party Responsibilities*' referred to emphasising four key actors in society to construct the pandemic accountability system during Covid, including local authorities, government sectors, corresponding industry sectors (e.g., education, health), and individuals. Except for individuals' duties (discussed in Section 6.3.1), the first three stakeholders are all region-based, suggesting that local institutions take a leading role in their respective regions. For instance, Weibo 12 provides an example from the State Taxation Administration (@国家税务总局) in February 2020, describing how the local tax department responded to this central appeal of '*Four-party Responsibilities*'.

Weibo 12

https://weibo.com/5120551209/IsXk0u1Wz

Weibo 12 (translation):

#Taxation personnel taking action in pandemic prevention and control# [Tax authorities nationwide implementing pandemic prevention measures and effectively carrying out taxation work] At present, it is a critical period for the prevention and control of Covid. Faced with the current severe situation, local tax authorities across the country have responded swiftly. They gathered a strong joint force of united will, did their best to overcome the difficulties, and built a tight line of defence against the pandemic. While fully implementing prevention and control measures, tax authorities are also solidly ensuring tax payment and service support during this period, contributing 'tax forces' to win the battle against the pandemic.

In this example, the term '*pandemic prevention and control*' appears in the first line in a hashtag, indicating the overarching aim of the taxation institution staff. While Weibo 12 does not mention any city names, it attaches a series of photos from various city branches of tax institutions. The presence of visual collections helps to construct how the local tax authorities across the nation '*have responded swiftly*' to fulfil this shared objective. By showcasing different actors behind the word 'local', this post illustrates how ministry solidarity is constructed across cities in light of the '*Four-party Responsibilities*'.

In summary, the textual analysis and two examples in this section demonstrated that responsibility at the governmental level on Weibo was framed to align with the overarching goal of '*pandemic prevention and control work*'. The examples reflected a recurring discourse focused on

communicating concrete, specific actions undertaken by both central and local institutions with effective outcomes. Following the policy of '*Four-party Responsibilities*', responsibility was also portrayed as active collaboration between the state-level and local authorities. This implied a sense of institutional solidarity during the health crisis, where all regions and sectors across the country were framed to work jointly to serve the people during the pandemic. This finding speaks to Zimmerman's work (1987) according to which governments, as regulators, tend to employ a rule/process-bound approach to risk decisions and communication, in contrast to non-establishment groups.

6.1.2 Twitter: Responsibility through financial support

To build comparisons with the discussions of Weibo in Section 6.1.1, this section starts with a similar textual analysis based on a sub-sample of 102 tweets featuring government-support-based responsibility. To ensure comparability, Table 12 reports a list of the top 10 high-frequency words along with their clusters and collocates.

Compared to the Weibo counterpart, several pronoun words were used frequently to refer to the roles of governments, such as '*we*' (55 times), '*our*' (24 times), which were more prominent than the word '*government*' (19 times). Word clusters of '*we*' and '*our*' also indicated first-person tone, through the use of phrases such as '*we are*', '*we have*' and '*our response*'. In addition, words indicating assistance, such as '*support*' (39 times) and '*help*' (20 times), were also used. The clusters of these two, such as '(do something) *to support* (something/someone)', and '*to help* (something/someone) ' suggested government-initiated support was constructed to conduct within specific target groups or aims, with an emphasis on the assistive nature of these actions. The word '*support*' is also frequently used together with '*financial*', indicating specific economic support.

While Table 12 does not show many collocated words compared to Table 11, some collocates indicate the temporality of actions, such as '*we are*' doing, '*government is doing* or *has done*' something, and something '*will be*' done. These phrases convey that actions are ongoing or have already been completed – to frame how past, present strategies, and future plans address the impacts of Covid in a reflexive way. Overall, according to this textual analysis, the notion of responsibility within official discourses on Twitter is linguistically represented as the government's supportive role during this health crisis, with an emphasis on temporality and financial assistance, and is delivered in a first-person voice.

Table 12: Textual analysis of 102 tweets featuring government-support-based responsibility on Twitter

Word frequency	**Top 5 word clusters**	**Top 5 collocated words**
We (55)	We re (14) We are (9) We have (6) We ve (6) How we (5)	Re (16)
Support (39)	To support (17) Support the (6) Support to (5) Support for (4) Financial support (4)	Financial (7)
With (35)	With the (8) Deal with (4) Worked with (3)	/
UK (27)	The UK (16) UK is (6) UK aid (3) UK government (3) UK s (3)	/
Our (24)	Our response (2) Our role (2) In our (2) Of our (2) Through our (2)	/
Help (20)	To help (14) Help them (4) Are helping (4) Help the (3) Will help (3)	/
This (20)	In this (3) This country (2) This month (2) During this (2) Out this (2)	/
Government (19)	The government (11) Government has (6) Government is (6) UK government (3) Government s (2) Across government (2)	Is (9) Has (6)

Word frequency	Top 5 word clusters	Top 5 collocated words
Will (19)	Will be (4) We will (4) Will help (3) Personnel will (3)	Be (6)
People (17)	People affected (4) For people (3) Young people (3)	/

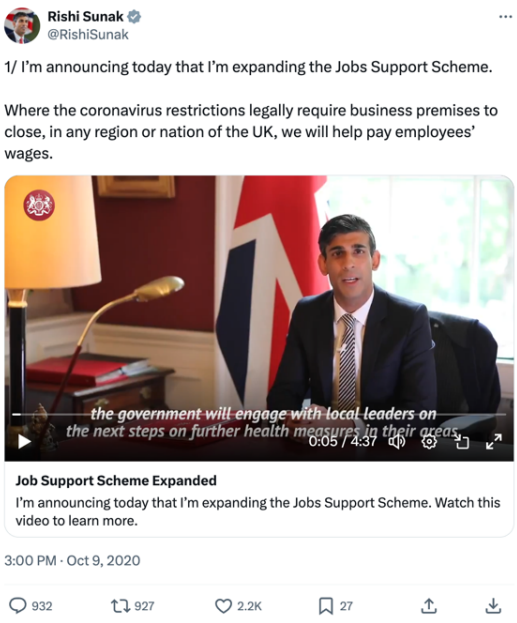
Notes:
1. There were 828 entries (unique words) with a total frequency of 2,946.
2. The word frequency analysis removed the search queries used for data collection (e.g., 'Covid').
3. The clusters were generated with cluster size=2, search term position on left/right.
4. The collocates were generated with significance at $p<0.05$, with window span from 5L to 5R in AntConc.

Drawing on the primary findings of this textual analysis, this section moves on to present additional example tweets to explore how responsibility at the government level was framed in the UK. For instance, Twitter 10 was from @10DowningStreet, the official account of the office of the UK Prime Minister, which shared excerpts from then Prime Minister Boris Johnson's speech at the national press conferences in October 2020.

Tweet 10

https://twitter.com/10DowningStreet/status/1315752406349688833

This example features a sentence from the speech, saying '*no one affected by this will be left to fend for themselves and we're going to expand our unprecedented economic support to assist those affected by these decisions*'. This tweet frames governmental duties in fostering and maintaining inclusivity amid the impacts of Covid by enabling individuals to 'catch up' with others. Within this narrative of 'no one left behind', financial support is framed as a key element. For instance, the narrative of 'no one left behind through financial support' is evident in the discussions of the Coronavirus Job Retention Scheme (CJRS), which shows up 12 times in the sub-sample. CJRS was a financial support initiative designed to help employers retain employees by covering employees' wages centrally, thereby reducing job losses due to the pandemic (HM Revenue & Customs, 2021). Tweet 11 was from then Chancellor of the Exchequer Rishi Sunak (@RishiSunak).



Tweet 11

https://twitter.com/RishiSunak/status/1314566297037004802

The three screenshots provide an account of how the state supported businesses that were forced to close operations due to the pandemic. Instead of saying 'governments will do something', the first thread in Tweet 11 adopts a first-person narrative including '*I am announcing*', '*I'm expanding*', and '*we will help pay*'. Similarly, the other threads also maintain the same conversational tone, shaping the discourse into a direct conversation between 'we' and 'you' or 'your business'. The supportive measures are articulated in simple language, such as '*we will pay employees' wages*' with each tweet containing two to three sentences, and full information available either in the video or through the attached link. In this context, the image of a responsible government is communicated through the promotion of policies in simplified and accessible language, making the eligibility criteria straightforward to understand. This might be a strategy for dealing with Twitter's character limits in a single tweet.

This frame of support and inclusion also applies to other stakeholders eligible to receive financial support. For instance, Tweet 12, from the Department of Environment, Food & Rural Affairs (@DefraGovUK) posted in June 2020, illustrates how state funds were used to support organisations such as zoos and aquariums affected by the pandemic.

Tweet 12

https://twitter.com/DefraGovUK/status/1276804530286424066

Like the preceding examples, Tweet 12 conveys a simple message to underscore that the key aim of state-wide financial support is for stakeholders' recovery from Covid's impacts. It uses the image of a lion, accompanied by emojis to draw users' attention. In other words, the responsible image of governments is closely tied to the ethical allocation of funds to support the affected actors. Moreover, aligning with the textual analysis, Tweet 12 is written in the narrative of 'we are doing' instead of 'the government is doing'. This practice of employing the first-person tone can be regarded as a strategy to *personify* the institutional voice, presenting it as a person talking directly to their audience. In this context, responsibility at the governmental level on Twitter is framed by how Covid's impacts on citizens and other stakeholders are understood and taken care of in inclusive and supportive ways.

In summary, this section presented the textual analysis of tweets portraying responsibility at the government level. It showed that government accounts on Twitter tended to frame responsibility through the portrayal of support and inclusion, particularly through financial assistance. The narratives of support were characterised by a first-person tone, using pronouns to personify official communication into 'we are doing something to support you'. Finally, this section presented examples of how financial support was allocated to those affected, indicating a recurring narrative of 'no one left behind'.

6.1.3 Discussion: Governments as structures of collective risk management

As discussed in Chapter 2, responsibility, associated with ethical and accountable attributes (Giddens, 1999, p.8), is imagined, constructed, and justified by drawing evidence together to promote a contextual image of obligation (Beck, 1992, p.28). Sections 6.1.1 and 6.1.2 have shown how this

concept of responsibility was developed into different landscapes at the governmental level in China and the UK, respectively.

In both cases, there is a similar focus on how people's interests are placed at the centre of all governmental actions, framing responsibility into the *supportive* roles played by both governments. From the audience and reception studies perspective, risk communication scholarship highlights the importance of framing positive public images through messengers' information provision to foster long-term reputation and trust management (Olsson, 2014; Balog-Way, McComas, and Besley, 2020) — or managing organisational reputational capital (Coombs, 2007). Thus, ensuring timely transparency in official communication, such as through regular updates on official 'supportive' approaches, is particularly critical for countering perceived ambiguity and addressing potential public concerns (Frewer et al., 2002; Markon, Crowe, and Lemyre, 2013).

However, the supportive roles are framed to be implemented differently in practice: in China, the discourse of responsibility is associated with the efficient and ethical implementation of the overarching strategy of 'pandemic prevention and control'. This strategy is framed to be achievable through specific response practices planned by the state, such as timely management of confirmed and suspected cases, while emphasising institutional solidarity across central and local authorities within the policy of 'Four-party Responsibilities'. In the UK, the discourse of responsibility is framed around the provision of national support, specifically highlighting financial assistance to those defined as affected by the pandemic in an inclusive way.

Another major difference comes from the languages used to construct the supportive roles: China's official communication on Weibo addresses the supportive practices from central and/or local agencies' perspectives, aligning with the 'Four-party Responsibilities' policy. In contrast, with an emphasis on 'no one will be left alone', the UK's official communication on Twitter often uses a first-person narrative, with active uses of 'we are' and 'our response'.

In summary, since risk is acknowledged for its potential impacts on institutions, given the challenges of maintaining security and trust (Beck, 1992, p.28), the discourses of the governments put a similar emphasis on describing how control over Covid can be achieved through existing or ongoing progress. Discussing these efforts, presented through a frame of responsibility of governments, helps us to understand governments as 'structures of collective risk management', with historical and political obligations to justify governance effectiveness and contributions to sustaining societal resilience (Giddens, 1999, p.10). These institutions for risk management, in this sense, hold responsibilities for being supportive of their populations' well-being, especially during health crises.

6.2 Heroic individuals

Having discussed responsibility at the government level in Section 6.1, this section examines how the notion of responsibility is framed in relation to non-state efforts, including non-institutional actors and healthcare professionals. This topic was selected given the extensive discussions on individual responsibility and citizenship in public health literature (e.g., Petersen and Lupton, 1996) in Section 2.1.4, as well as its prominence within the dataset, as indicated at the beginning of Section 6.1.

Sections 6.2.1 and 6.2.2 examine two sub-samples on Weibo and Twitter, respectively, where posts engage with the notion of responsibility in the context of non-state efforts, such as medical-related activities. Following this, Section 6.2.3 juxtaposes the frames in the two country cases and discusses how individual-level responsibility is articulated distinctly from those at the governmental level on Weibo and Twitter.

6.2.1 Weibo: Storytelling of ordinary people

In line with the previous section, this section begins with a textual analysis of the sub-sample before delving into examples. Table 13 presents the results based on 247 Weibo posts mentioning responsibility originating from non-state efforts and actors, such as healthcare professionals.

Comparing the results with those in Section 6.2.1, the term '*prevention and control work*' (防控) is similarly prominent at 119 times, serving as the focus of national pandemic management strategies. However, Table 13 displays a range of pronouns frequently used to describe responsibility reflected by non-state actors, such as '*I*' (我, 95 times), '*we*' (我们, 71 times), and '*they*' (他们, 57 times), which are not frequently applied in the narratives of government responsibility (see Table 11). The contexts of these pronouns also suggest more personalised voices in narrating the stories, as seen in phrases such as '*I want*' (我想) and '*let us*' (让我们).

Furthermore, Table 13 reflects a new emphasis on space-time where notions of responsibility of non-state actors originate. Three words and their contexts indicate responsibility associated with two specific locations '*Wuhan*' (武汉, 116 times), '*hospital*' (医院, 113 times) and '*patients*' (患者, 69 times). The context of '*Wuhan*' highlights the external assistance provided to the city, as evidenced by word clusters such as '*rush to support Wuhan*' (驰援武汉) and the collocates '*medical team*' (医疗队). Similarly, references to '*hospital*' and '*patients*' indicate contextual responsibility attributed to healthcare professionals and treatment activities in hospitals, including mentions of severe cases and hospital names (e.g., '*West China Hospital*' 华西医院). These narratives of responsibility are also

accompanied by time frames, as indicated by the frequent use of '*month*' (月) and '*day*' (日). In summary, the use of pronouns, spatial references, and temporal descriptions collectively provide informative contexts about where and when non-state actors demonstrate responsible behaviours. In other words, responsibility at the individual level is framed within a richer context than that of government actors in Section 6.1.1, which might contribute to reinforcing the public imaginary of these 'heroic' individuals.

Table 13: Textual analysis of 247 posts featuring responsibility in relation to non-state efforts on Weibo

Word frequency	**Top 5 word clusters**	**Top 5 collocated words**
Prevention and control/防控 (119)	Pandemic prevention and control /疫情 防控 (85) Prevention and control work/防控 工作 (19) Hospital infection prevention and control /院感 防控 (11) Frontline of prevention and control/防控 一线 (9) During the prevention and control period/防控 期间 (7) Prevention and control work supplies/防控 物资 (7)	Pandemic/疫情 (96) Work/工作 (29) Frontline/一线 (15) Hospital infection/院感 (13) Carry out/开展 (11)
Wuhan/武汉 (116)	Rush to support Wuhan/驰援 武汉 (11) Rush to Wuhan/奔赴 武汉 (5) People from Wuhan/武汉 人 (4) Support Wuhan/援 武汉 (4) Support Wuhan/支援 武汉 (4) Severe cases in Wuhan/武汉 重症 (4)	Medical team/医疗队 (16) Rush to support/驰援 (11) Frontline/前线 (9) Wenchuan/汶川 (6) Formerly 曾 (6)
Hospital/医院 (113)	People's Hospital/人民 医院 (16) West China Hospital/华西 医院 (16) Hospitalised severe cases/医院 重症 (8) Affiliated hospital/附属 医院 (7)	People/人民 (22) West China/华西 (19) Severe conditions/重症 (14) Affiliated/附属 (14) Mobile cabin hospital/方舱 (10)
Work/工作 (102)	Prevention and control work/防控 工作 (19) Treatment work/救治 工作 (7)	Prevention and control/防控 (29) Carry out/开展 (13) Instruct/指导 (6)

Word frequency	Top 5 word clusters	Top 5 collocated words
Month/月 (99)	Month and day/月 日 (76) Year and month/年 月 (11) In the month/于 月 (6) Month and date/月 号 (4) Evening of the month and day/月 日晚 (4)	Day/日 (86) Year/年 (13) On/于 (7) Afternoon/下午 (6)
I/我 (95)	Say I/说 我 (6) I want/我 想 (5) I always/我 一直 (3) I most/我 最 (3) I think/我 觉得 (3) Need me/需要 我 (3)	Say/说 (14) You/你 (10) Go/去 (9) Want/想 (8) Feel/觉得 (6)
Day/日 (90)	Month and day/月 日 (76) Morning of the day/日 上午 (6) Afternoon of the day/日 下午 (3)	Month/月 (86) Year/年 (10) On/于 (7) Morning/上午 (6)
We/我们 (71)	Let us/让 我们 (6) We and he/我们 他 (2) Give us/给 我们 (2)	Let/让 (8) Commute to and from work/上下班 (3)
Patients/患者 (69)	Pneumonia patients/肺炎 患者 (11) Severe case patients/重症 患者 (9) Patient treatment/患者 救治 (5) Patients seeking medical treatment/患者 就医 (3) Critically ill patients/危重症 患者 (3) Admitted patients/收治 患者 (3)	Pneumonia/肺炎 (17) Covid/新冠 (15) Treat/救治 (14) Severe illness/重症 (12)
They/他们 (57)	People them/人 他们 (3) They used/他们 用 (2) Let them/让 他们 (2)	News/新闻 (3)

Notes:
1. There were 4,709 entries (unique words), with a total frequency of 16,684.
2. The word frequency analysis removed the search queries used for data collection (e.g., Covid).
3. The clusters were generated with cluster size=2, search term position on left/right.
4. The collocates were generated with significance at $p<0.05$, with window span from 5L to 5R in AntConc.

To examine how responsibility within non-state efforts was framed using these words, this section moves on to present three example posts, focusing on two locations mentioned in the textual analysis:

Wuhan (Weibo 13 and Weibo 14) and hospitals (Weibo 15), with analytical sensitivity towards their use of pronouns and temporal-spatial descriptions. Another key reason for presenting these three examples is to illustrate the recurring pattern of storytelling: among the 247 Weibo posts featuring responsibility originating from non-state efforts and actors, 87 posts (35.2%) depict stories with individuals' real names, of which 50 posts use either direct quotes or diary-style narratives to allow the characters to 'speak' for themselves.

Weibo 13 was posted by Wuhan local government's account (@Wuhan Release) in February 2020, which told a story about bus driver Nie's voluntary work at the start of Covid.

Weibo 13

https://weibo.com/2759348142/IuUuJDqUV

Weibo 13 (translation):

[#The bus driver concealed to his wife and picked up the medical staff#: you serve the patients, I serve you, we are together!] During the pandemic prevention and control period, all bus lines in Wuhan have stopped running. However, there are still a small number of buses on the roads in Wuhan every day, and the drivers take the initiative to pick up the medical staff to and from work, and Nie Sanhua is one of them. At first, in order not to make his family concerned, Nie told his wife that he was going on a business trip. Nie told reporters that the distance from the doctors' hotel to the hospital is 9 kilometres. He and his colleagues have to drive eight times a day in two cars. 'At the end of the work every day, I saw in the rear-view mirror that the exhausted medical staff fell asleep on the chair as soon as they got in the car. I

> *drove too fast for fear of waking them up, and when I drove too slowly, I was worried that I would miss their rest time…' After picking up the last group of medical staff and returning to the hotel, Nie parked the car and carefully disinfected the car for the last time. It was already 10 pm when he finished his work. He said that since he started this job, the words he has heard the most were 'thank you', 'the word thank you is what I want to say to the medical staff, thank them, they serve the patients, I serve you, and our hearts are all together.'*

Weibo 13 shares bus driver Nie's story, transcribed from a TV news video from the state-owned national broadcaster China Central Television (CCTV). It starts with a long hashtag #*The bus driver concealed to his wife and picks up the medical staff*#, which summarises the key topic of this Weibo post as a 'headline' to attract users' attention from the first line of this long story. Using hashtags as headlines stands in clear contrast to the hashtag practice on Twitter, introduced in Section 6.2.2.

Furthermore, Nie's story is replete with detail; his words, age, and occupation are all shared to construct a rich representation of this person. According to sociologist Kristian Frisk, heroism is associated with narratives of 'great men' characterised by charisma stemming from qualities and actions deemed significant in history (2019, p.89). From the expression '*they serve the patients, I serve you, and our hearts are all together*', heroism in Weibo 13 can be viewed as voluntary risk-taking in light of the commitment to social solidarity during Covid. In addition, the way Nie's story was conveyed differs from the tone in Section 6.1.1: Weibo 13 adopts a storytelling approach with rich details (e.g., city, occupation as a bus driver, age group), accompanied by first-person quotes that unpack Nie's feelings about his voluntary work. Incorporating people's quotes and details arguably helps to shape the imagery of the individuals involved in the official communication: 'we' (platform users) might not physically meet 'heroes' in our societies, though we can still 'feel' connected and resonate with their contributions. This may also explain why pronouns and space-time descriptions became prominent in the textual analysis results (Table 13).

Similarly, the use of storytelling and quotes is found in another example (Weibo 14). It was posted by @Wuhan Release in February 2020, sharing the story of delivery man Cang Yuwei.

Weibo 14

https://weibo.com/2759348142/Ite7z5vym

Weibo 14 (translation):

#Wuhan pandemic defence line##Wuhan we are together# [#Wuhan post-90s stationmaster voluntarily delivers food to 2,000 quarantined households every day#, #vegetable delivery hero# stepped forward and moved Jiangcheng] 'I would like to thank the community stationmaster with my real name, because he bought and sent vegetables for us on his own. He was not obliged to do this, but he said that if he is commuting outside alone, we do not need to go out.' When most of the thousands of households were self-isolating and in urgent need of daily supplies, Cang Yuwei, a post-90s delivery station staff in Wuhan, has stepped forward to buy and deliver vegetables for at least 15 hours every day. The city of Jiangcheng was touched by his actions. He said, 'I can't walk away at this time. As a Wuhan native, I should contribute a little energy to Wuhan.'

Weibo 14 shares the story of delivery man Cang, who volunteered to work more than 15 hours daily to send supplies for households in isolation. It begins with four hashtags that convey the sentiment and the main topic of Cang's story. The first two hashtags, *#Wuhan pandemic defence line#* and *#Wuhan we are together#*, frame this story as a representation of local solidarity in Wuhan. The other two, *#Wuhan post-90s stationmaster voluntarily delivers food to 2,000 quarantined households every day#* and *#vegetable delivery hero#* serve as the headlines of this story, which aligns with the hashtag used in Weibo 13. The former also highlights Cang's birth decade as post-90s ('90 后'), showing that he is relatively young but demonstrating a commitment to social contributions during Covid.

Like Nie's story, this example includes direct quotes from Cang, such as '*I can't walk away at this time*'. It also includes direct quotes from residents who benefited from Cang's work, such as '*he was not obliged to do this, but he said that if he is commuting outside alone, we do not need to go out*', with significant references to pronouns. By doing this, Weibo 14 highlights the contrast between collective benefits and personal interests, suggesting Cang made a choice to support the community despite taking extra risks. This construction of 'ethical' decision-making, balancing collective and individual interests, empirically speaks to Giddens' definition of responsibility discussed in Chapter 2: Giddens (1999, p.8) considers responsibility to be associated with *decisions* made with an awareness of the consequences that may result from these decisions.

Culturally, the consistent narrative of ethical decision-making should be understood through the lens of collectivism and Confucianism in China. As discussed in Chapter 3, these values emphasise moral interconnectedness and individual obligations to support broader communities (Hofstede, 2001; Oyserman, Coon, and Kemmelmeier, 2002; Chang and Lee, 2013), such as medical staff (Weibo 13) and neighbouring households (Weibo 14). This aligns with Chinese forms of individualisation, which emphasise individual contributions (the 'small' self) to collective benefits, often symbolised by the state as the 'greater self' (Yan, 2010b). This small/greater self dynamic was echoed in Weibo 13 and Weibo 14 illustrating how the consequences of personal choices (whether to be responsible) are framed to connect with the well-being and understanding of others.

Among 50 Weibo posts using direct quotes or diary-style storytelling, 17 posts include quotes from others, including the families of 'heroic' individuals, their colleagues, and those who benefited from the heroes' efforts. By using others' quotes, wider contexts are provided to demonstrate how their families showed understanding of heroic individuals' taking additional risks for a good reason and how others could benefit from their support with appreciation. At the platform level, this facilitates a temporal framing of these heroic individuals, with additional elements bringing the story to life, translating the general levels of collectivism and Confucianism into communicative practices.

After analysing two examples featuring heroic individuals during Wuhan's early pandemic outbreak, this section considers another location reflected in the textual analysis in Table 13: hospitals and healthcare professionals. To explore responsibility within hospital-based activities and among healthcare professionals, a post from the News Office of Ministry of Education (@微言教育) in January 2020 is presented in Weibo 15.

Weibo 15

https://weibo.com/2737798435/Is2jPB0fw

Weibo 15 (translation):

#Education system pandemic prevention and control##United against pandemic##Spark unity broadcast##Heart-warming medical moments# ['I have always kept my luggage in the hospital'] On 28 January, Zhongshan University Affiliated Hospital dispatched another 40 medical personnel to Hubei, joining other members of the Guangdong medical team to support local pandemic treatment efforts. Among the nine team members sent from the First Affiliated Hospital, five were born in the 1990s. Chen Juan, born in 1996, said, 'because I did not know the specific departure time, I have always kept my luggage in the hospital.' Wang Sisi, of the same age, also stated that their families understood and supported their choice, 'we are all medical personnel and it's good to contribute in any way we can!' @Sun Yat-sen University @Health China @Peoples' Daily @Xinhua Viewpoint @CCTV News.

This example introduces the story of medical teams departing from Guangdong province to support local pandemic treatment in Hubei province. Compared to Weibo 13 and Weibo 14, this post illustrates *occupational* responsibility emerging in the healthcare profession. It features two medical staff, Chen and Wang, born in 1996, framing their decisions as a manifestation of responsibility in the young generation, such as keeping luggage in the hospital to promptly respond to the support command. The attention to the birth decade of Chen and Wang, post-1990s, echoes Weibo 14's emphasis on Cang as a post-1990s deliveryman. This further frames responsibility as a *collective* decision in society, as people of diverse age groups, including the young in their late 20s or early 30s, are collectively involved in pandemic management.

In summary, this section started with a textual analysis to explore the language used to describe responsibility among non-state efforts and actors. Compared to the tone of addressing governmental responsibilities, the sub-sample tended to use pronouns and focused on activities in Wuhan and hospitals (healthcare professionals), with specific attention to temporal-spatial descriptions. This section then presented three examples to analyse these characteristics: bus driver Nie's voluntary work in Weibo 13; delivery man Cang's support in Weibo 14; and medical staff in Weibo 15, who stayed ready to support local treatment in Hubei. By adding context and quotes, publics might be able to imagine that Covid was no longer a battle between governments, medical experts, and the virus, as Section 6.1.1 articulated. Managing Covid, according to these examples, was constructed to involve individual efforts as ordinary 'heroes', with the imaginary of these heroic individuals being strengthened by personal details and storytelling narratives. By using quotes from these heroic individuals, publics may feel encouraged to treasure others' sacrifices and behave responsibly for the sake of the whole society.

Conceptually, this section contributed to a new understanding of individual responsibility: individual responsibility was framed as making ethical *decisions* aimed at balancing collective interests (e.g., the nation) and personal interests (e.g., staying safe with one's family), where individuals might need to decide to take additional risks for a good cause (Giddens, 1999). In this section, we saw this playing out through examples that highlighted how heroic figures stepped forward to fulfil their responsibilities during the pandemic. The circumstances faced by individuals in these three examples often included the juxtaposition of how they decided to do something meaningful, such as sacrificing their 'small' families to devote themselves to the 'big' national family. These further aligned with Beck's perspective (1992) that the global expansion of risk necessitates solidarity given the interconnectedness between individuals' destinies. Culturally, such narratives may help construct emotional resonance with audiences by showcasing role models who embody Chinese values of collectivism and Confucianism to manage the relationships between personal decisions and their impacts on others (Hofstede, 2001; Wang and Liu, 2010). The use of quotes and other storytelling techniques further enhances a sense of presentness, potentially making these values more tangible and relatable to the audience.

6.2.2 Twitter: Occupational duties

Having discussed the framing of responsibility in relation to heroic individuals in China, this section moves on to build comparisons based on its counterparts on Twitter.

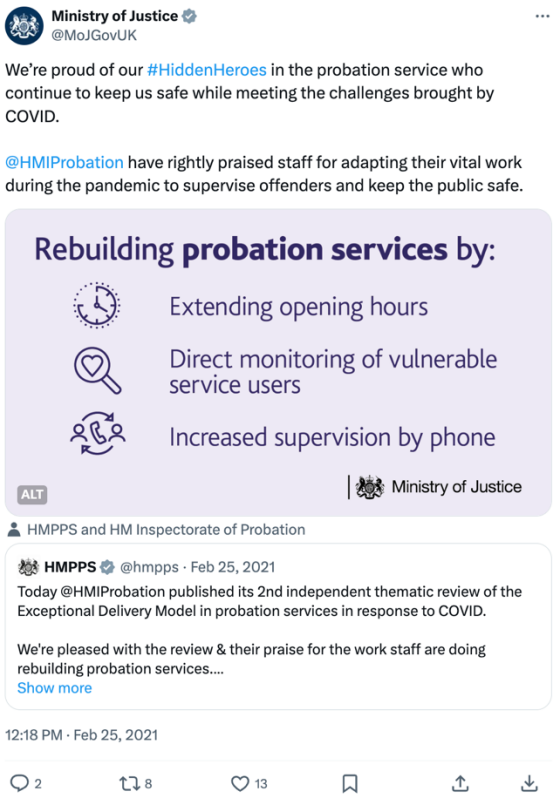
To build a direct comparison with the Weibo counterpart, the same textual analysis was conducted based on a sub-sample of 86 tweets discussing responsibility reflected by non-state efforts and actors, such as healthcare professionals. According to Table 14 below, the prominence of pronouns (e.g., '*our*' at 36 times, '*their*' 15 times) indicates a similar pattern of a first-person tone as discussed in Section 6.1.2. Additionally, the frequent use of '*NHS* '(23 times) and '*staff* '(19 times) suggests a potential connection between the construction of responsibility and NHS personnel, similar to the focus on healthcare professionals on Weibo.

Table 14: Textual analysis of 86 tweets featuring responsibility in relation to non-state efforts on Twitter

Word frequency	**Top 5 word clusters**	**Top 5 collocated words**
Our (36)	Our patients (4) Our hospitals (3) Our staff (3) Our incredible (2)	/
Have (24)	Have been (9) Who have (7) Have worked (3) Have made (2) Staff have (2) Volunteers have (2)	Been (11)
NHS (23)	NHS staff (4)	/
Who (22)	Who have (7) Those who (3) Staff who (2) Team who (2)	/
Staff (19)	NHS staff (4) Our staff (3) Staff have (2) Staff who (2)	/
During (18)	During Covid (7) Safe during (2)	Pandemic (6)
At (15)	#OurNHSPeople at (3)	/
Been (15)	Have been (9) Has been (3) Ve been (2)	Have (11)
Their (15)	Their hard (2) Their service (2) Their time (2)	Work (5)

Word frequency	Top 5 word clusters	Top 5 collocated words
With (15)	With Covid (4) Patients with (3) With someone (2) Contact with (2)	Contact (3) Someone (3)
Notes: 1. There were 936 entries (unique words), with a total frequency of 2,640. 2. The word frequency analysis removed the search queries used for data collection (e.g., Covid). 3. The clusters were generated with cluster size=2, search term position on left/right. 4. The collocates were generated with significance at $p<0.05$, with window span from 5L to 5R in AntConc.		

To understand the results above, this section moves on to present three example tweets, focusing specifically on the use of pronouns and references to NHS-related activities. For example, Tweet 13 from the Ministry of Justice (@MoJGovUK) in February 2021 expresses official appreciation for the probation service staff's hard work during Covid.

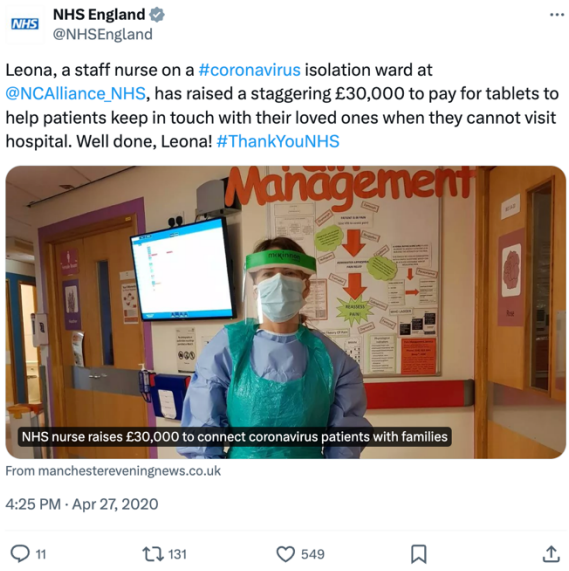


Tweet 13

https://twitter.com/MoJGovUK/status/1364912704780181506

Similar to the narratives of government responsibility, Tweet 13 begins with a sentence in first-person tone: '*we're proud of our #HiddenHeroes*'. *#HiddenHeroes* was initiated by the Butler Trust in 2020 as a national campaign to express respect to personnel in prison, probation, and youth justice, meaning 'they may be hidden, they are not forgotten' (*Covid #HiddenHeroes*, no date). By using the hashtag *#HiddenHeroes*, this example frames responsibility as a *collective* honour for a group of people, which stands in stark contrast to stories about specific *individuals* on Weibo.

From the platform affordance aspect, this tweet, composed of only two sentences, indicates how the platform character limits affect the extent of details afforded by a single tweet compared to the Weibo storytelling in Section 6.2.1. To save words, the details and full context of these probation services are summarised in visuals that list various services being provided to deal with the pandemic. The affordance of character limits also affects the limited use of direct quotes. Out of the 86 tweets featuring responsibility reflected by non-state efforts, 16 focused on NHS-based activities and 10 on hospital-related activities, all from NHS-related accounts. However, only 2 out of 86 tweets involved storytelling of a specific person. For instance, Tweet 14 includes the story of a 'heroic' individual, shared by the NHS England official account (@NHSEngland) in April 2020.



Tweet 14

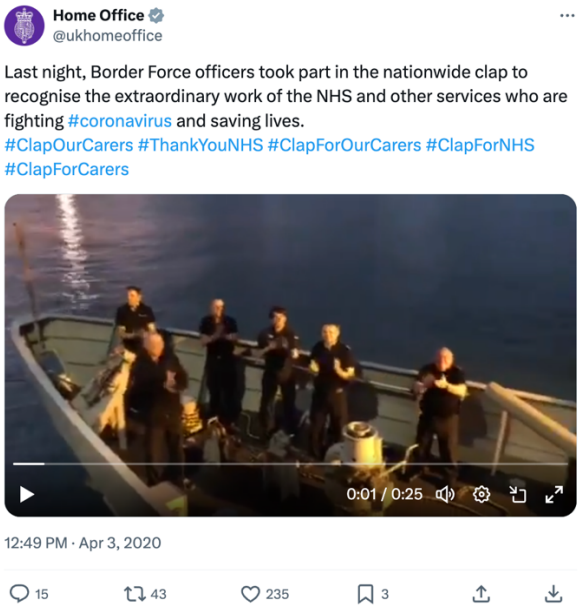
https://twitter.com/NHSEngland/status/1254793706844061698

This tweet shares the story of Leona, an NHS hospital nurse who raised funds to support patients and their families during Covid. While it does not include direct first-person narrative such as 'we are', the account comments '*well done, Leona*' to address the message in a positive tone. However, its length is much shorter compared to the detailed Weibo stories of the bus driver, the delivery man, and the medical staff in Section 6.2.1. Instead, users are directed to the external website of a regional daily

newspaper, the *Manchester Evening News* for full context. Similar to packaging information in threads and/or visuals in Chapter 5, this is likely in part due to the character limit on one single tweet, which was 280 characters at the time of data collection in 2021. Importantly, it speaks to the manner in which Twitter's platform affordances constraints a particular frame of heroism distinct from that allowed by the more permissive character limits of Weibo.

In addition, while featuring Leona's story, Tweet 14 uses the hashtag *#ThankYouNHS*, which frames individual contributions as a collective achievement of the NHS. The way hashtags are used is slightly different from Weibo posts in Section 6.2.1: some Weibo hashtags similarly address collective contributions (e.g., *#Heart-warming medical moments#* in Weibo 15), while others are used as headlines to summarise the long story at the beginning of the post, emphasising personal contributions (e.g., *#The bus driver concealed to his wife and picked up the medical staff#* in Weibo 13).

Posted by the Home Office (@ukhomeoffice) in April 2020, Tweet 15 illustrates how depictions of heroic individuals are framed to be associated with the collective accomplishments of the NHS, particularly reflected through the use of hashtags.



Tweet 15

https://twitter.com/ukhomeoffice/status/1246042166146805764

This example features the gratitude towards responsible individuals as collectivity in the NHS and other services, summarised by NHS-related hashtags such as *'#ThankYouNHS*' and '*#ClapOurCarers*'. It also includes a 30-second video showing Border Force officers standing on deck, applauding these heroic individuals together. There was a rich context behind the hashtag

#ClapForCarers: when the pandemic restrictions were in effect in March 2020, many people in the UK staying at home started to stand on their doorsteps or in front of windows to applaud. This soon spread to be a new national tribute to *#ClapForCarers* on 26 March 2020, when people clapped for key workers (NHS health workers and other care workers) every Thursday night (*Clap For Our Carers*, 2021). In January 2021, this clapping ritual returned, in the renamed '*Clap for Heroes*' campaign to express gratitude for 'all who are pushing through this difficult time' including key workers (BBC News, 2021).

In summary, drawing on the textual analysis and three examples, this section suggested that the frame of heroic individuals on Twitter is closely associated with the collective appreciation towards institutional professionals, particularly the healthcare staff in the NHS. This might explain the significance of the words '*NHS*' and '*staff*' in Table 14. In line with the narratives of government responsibility in Section 6.1.2, the prominence of pronouns (e.g., 'our'and 'their') indicates a consistent use of first-person tone describing heroic individuals on Twitter.

From the perspective of platform affordances, these collective frames on Twitter are different from the styles of the individual stories on Weibo, which are characterised by their use of storytelling narratives and direct quotes. The ability to incorporate rich details in the frame of heroic individuals further demonstrates whether and in what ways Weibo and Twitter afford particular styles of communication. According to the three examples in this section, Twitter character limits have significant implications for the level of textual detail that can be unpacked in one single tweet. Considering the texts about probation services embedded in a visual in Tweet 13, hyperlinked news about the nurse Leona in Tweet 14, and a video of *#ClapForCarers* in Tweet 15, this section has shown how supplementary sources attempt to expand the meanings provided solely through the character-limited text of the tweets. This might explain why Twitter data seldom directly engages with quotes and unpacks details of the 'heroic' individuals as seen in the Weibo data. This finding is also consistent with Chapter 5, where the use of infographics and threads became essential for providing pandemic updates – a strategy adopted to address the constraints of introducing comprehensive pandemic statistics and policy updates within a 280-character tweet.

Another difference in platform affordances comes from the practices of hashtags. On Weibo, some hashtags are used interchangeably with article headlines, summarising the key topic of a long story, such as '*#The bus driver concealed to his wife and picked up the medical staff#*' in Weibo 13. Some are shorter to describe the broader sense of solidarity during Covid, such as *#Wuhan we are together#* in Weibo 14. Twitter hashtags are often shorter and primarily promote a positive image of healthcare professionals, particularly the NHS, but they do not often feature one or two individuals as in the storytelling on Weibo. Hashtags on both Weibo and Twitter convey positive sentiment of appreciation

towards heroic individuals or medical staff, while Twitter hashtags expressing general gratitude, such as *#HiddenHeroes* and *#ThankYouNHS*, can be repeatedly used in other stories featuring NHS staff.

6.2.3 Discussion: Affective frames of risk-taking for a good cause

While traditional sociological perspectives on risk frequently consider risk as something to be minimised (e.g., Beck, 1992; Mythen, 2004), this section demonstrates a reversed picture of *risk-taking* cultures: individuals, at some point during the risk, are framed as willing to embrace additional risks for good causes. On Weibo, responsibility is constructed through individuals' heroic stories, while tweets highlight heroism within collective entities, such as NHS staff. Both cases suggest how responsibility at the non-ministry level is constructed through individual decisions to embrace additional risks for the sake of broader public goods – responsibility and risk become intertwined in these narratives of non-state efforts.

Conceptually, this resonates with Ekberg's critique of the risk society perspective being limited in interpreting risk-taking culture: individuals might evaluate a risk as being worth taking given its 'potential for a beneficial outcome' (2007, p.362). Concerning responsibility in China, the data in Section 6.2.1 indicated risk-taking for a good cause as *individuals' decisions*, which aligns with Giddens's view (1999) of responsibility as ethical and accountable choices in Chapter 2: on Weibo, the consequences of decisions are emphasised, usually as a choice between personal or collective benefits. The detailed descriptions of individual stories also provide broader contexts where the decisions were made between risk-taking and risk-avoiding futures, such as deliveryman Cang's willingness to take additional risks for the safety of residents in Weibo 14. In contrast, in UK official communication, responsibility and risk-taking for a good cause are particularly framed to address *occupational responsibility*, with particular attention to healthcare professionals. This is evident through the emphasis on NHS health care workers' contributions, who, as per work regulations, were assigned additional duties to take care of collective well-being during the pandemic (Abeysinghe and White, 2011, p.323).

At the national level, personal decisions to take additional risks for good causes are constructed to connect with individuals' sense of belonging to their perceived communities, such as their families, nations, or cities during the pandemic. The reasons people are framed as willing to step up for their nation during Covid conceptually speak to Benedict Anderson's concept of 'imagined communities' (1991): this concept explains why millions throughout history have been willing to sacrifice for their nations, cultures, and communities, even if these communities exist in an ambiguous, imagined form. Therefore, simply understanding risk society merely as 'risk-averse' society fails to capture the appealing and emotional contexts when people decide to take risks for particular reasons.

Furthermore, data show that stories of heroic individuals are framed in a more emotive way than the narratives of supportive governments in Section 6.1. In contrast to the simple language used in portraying governmental duties, the language used to frame heroic individuals is more *personalised*, particularly on Weibo. Data on Weibo use a first-person tone such as 'I' and 'we', and includes people's names and quotes, which was not prominent in the descriptions of government responsibility in Section 6.1.1. While Twitter data in both Section 6.1.2 and Section 6.2.2 use a first-person tone, example tweets in Section 6.2.2 employ hashtags from campaigns (e.g., *#ClapOurCarers*) to construct appreciation for these 'heroic' individuals collectively.

Thus, compared to the narratives of government responsibility, the narratives of non-state responsibility involve diffusing certain sentiments beyond the dissemination of information. Synthesising Sections 6.1 and 6.2, this section views the frame of responsibility as networked, including government-initiated support and contributions from non-state, non-institutional actors. In other words, responsibility is constructed as not solely achievable through governmental political promises, but also specifically reflected by local solidarity and individual heroism. From the sentiment perspective, there is a difference between a minister passively emphasising that the public has a duty, and individual storytelling indicating 'we' as people in the (imagined)community share this duty together. The audience might be implied to be more 'heroic' as in these examples, which lends this frame the register of a moral appeal.

This distinction between official accounts quoting politicians' videos and referring to individual stories points to the concept of 'affective publics' (Papacharissi, 2015): the narratives of heroic individuals present on Weibo and Twitter serve as framing devices 'designed to appeal to the emotions' (p.12). These emotions can be articulated to trigger different forms of contagions (e.g., consensus or controversy, rational or irrational), which are further complicated by various practices of platform affordances such as character limits and hashtag usage. The affective frames of heroic individuals also resonate with Franziska E. Kohlt's exploration of war metaphors during Covid: the portrayal of the NHS as 'military services' is suggested to evoke citizens' individual emotions to support them, which might contribute to fostering a collective identity for people and strengthen their belonging to a 'collective nationalism' (2020, p.11).

6.3 Citizenship and individual duties

Sections 6.1 and 6.2 discussed how governmental efforts and heroic individuals' contributions were framed as responsibility and communicated to publics. After analysing the narratives of responsibility

coming from others (i.e., what 'they' did), this final section explores how individual duties are framed and how publics are encouraged to fulfil them (i.e., what 'we' should do).

To achieve this, this section focuses on the posts identified as delivering narratives of self-duty and responsible citizenship. These posts emphasise the general imperative to remind the public of their citizen duties and the impacts of their actions on others' well-being (see Appendix B for more details). Compared to the focus on 'what they do' at the government level (Section 6.1) and the level of heroic individuals (Section 6.2), this exploration of individual duties adds meaning to the notion of responsibility by emphasising 'you should do something'.

To maintain a consistent structure with the preceding two sections, Section 6.3 is divided into three subsections: Weibo (Section 6.3.1), Twitter (Section 6.3.2), and a comparative discussion across the two cases (Section 6.3.3). Each subsection begins with a primary textual analysis of the relevant sub-sample to provide a general overview of the discursive patterns evident in the posts discussing individual duties and citizenship. Following this, several examples are presented to contextualise these narratives of individual duties, which facilitates the close analysis of the roles played by platform affordances in shaping these narratives.

6.3.1 Weibo: Proactive engagement

To understand how responsibility was narrated within the topic of individual participation and citizenship, Table 15 presents the results of textual analysis based on a sub-sample of 148 Weibo posts featuring individual duties during Covid.

Consistent with the findings in the last two sections, the term '*prevention and control*' (防控) and its synonyms continue to dominate the narratives of individual responsibility, appearing 93 times. Following closely is the word '*health*' (健康), occurring 90 times, a term not shown in previous tables. This might suggest that individual responsibilities are particularly framed with a health emphasis.

Furthermore, this textual analysis suggests the frame of individual duties is associated with authoritative classification between 'good/ethical' and 'bad/discouraged' practices. Several words in Table 15 and their contexts indicate actions that publics are encouraged (not) to take. For example, the sub-sample frequently mentions words signifying specific practices, such as '*do well*' (做好), '*cooperate*' (配合), '*masks*' (口罩), '*protection*' (防护), and words describing the way actions are suggested to be taken, such as '*proactive*' (主动) and '*timely*' (及时). The word '*no*' (不), alongside its contexts (e.g., '*no gathering*', 不聚集), also indicates prohibitive things classified as against the

norm of individual obligation. Additionally, the word '*please*' (请) is used 78 times with a clear intention of calling for actions, such as '*citizens please*' (请市民) and '*the general public please*' (请广大). This prominent classification between encouraged and unencouraged behaviours explains why the results in Table 15, compared to the descriptions of heroic individuals in Section 6.2.1, do not contain many first-person pronouns such as 'I' and 'we'.

According to Table 15, the frame of individual duties is also connected to specific policies. For example, the word '*individuals*' (人员, mentioned 84 times) is used in conjunction with city names (e.g., '*Chongqing*', '*Beijing*'), and words signifying travel (e.g., '*coming*' and '*returning*'). This should be understood within the context of the local travel restrictions in effect. Terms such as '*health monitoring*' (健康监测) and '*proactively inform*' (主动告知) both point to duties of particular populations travelling in line with the geographical-based restrictions.

Table 15: Textual analysis of 148 posts featuring individual responsibility and citizenship on Weibo

Word frequency	**Top 5 word clusters**	**Top 5 collocated words**
Prevention and control/防控 (93)	Pandemic prevention and control/疫情 防控 (55) Prevention and control measures/防控 措施 (31) Prevention and control work/防控 工作 (8) Prevention and control related/防控 相关(6) Prevention and control responsibility/防控 责任(6)	Pandemic/疫情 (63) Measures/措施 (31) Awareness/意识 (14) All/各项 (11) Implement/落实 (11) Responsibility/责任 (11)
Health/健康 (90)	Health monitoring/健康 监测 (28) Personal health/自我 健康 (8) Health management/健康 管理 (7) One's own health/自己 健康 (7) Health code/健康 码 (5)	Monitoring/监测 (31) Do well/做好 (22) Management/管理 (15) Self/自我 (13) Code/码 (12)
No/不 (86)	No gathering/不 聚集 (12) Not unnecessary unless/非必要 不 (9) No leaving Beijing/不 出京 (7) No getting together/不 扎堆 (7) No travelling abroad/不 出境 (6) No gathering/不 聚会 (6)	Gather/聚集 (28) Party/聚会 (18) Non-essential/非必要 (16) Crowding/扎堆 (16) Visit each other's homes/串门 (13) Leave Beijing/出京 (13)
Individuals/人员 (84)	Individuals please/人员 请 (9) Chongqing individuals/渝 人员 (9)	Chongqing/渝 (24) Return/返 (18)

Word frequency	Top 5 word clusters	Top 5 collocated words
	Inbound individuals/入境 人员 (4) Individuals coming to Beijing/来京 人员 (4) Individuals returning to Beijing/返京 人员 (4) Risky individuals/风险 人员 (4)	Come/来 (11) Return to Beijing/返京 (9) Enter the country/入境 (7)
Please/请 (78)	Citizens please/请 市民 (10) The general public please/请 广大 (9) Individuals please/人员 请 (9) Please promptly/请 及时 (8) Everyone please/请 大家 (5)	Citizens/市民 (20) Friends/朋友 (15) Vast/广大 (11) Understand/理解 (6)
Do well/做好 (71)	Do personal/做好 个人 (26) Cooperate and do well/配合 做好 (12) Do self/做好 自我 (11) Do Covid nucleic acid test well/做好 核酸 (5) Take care of health/做好 健康 (4)	Protection/防护 (30) Individual/个人 (28) Health/健康 (22) Monitoring/监测 (16) Self/自我 (12)
Cooperate/配合 (69)	Cooperate and do well/配合 做好 (12) Actively cooperate/积极 配合 (11) Cooperate in reporting/报告 配合 (7) Cooperate as required/要求 配合 (7) Proactively cooperate/主动 配合 (6)	Isolation/隔离 (15) Report/报告 (14) Nucleic acid Covid test/核酸 (13) Active/积极 (11) Work/工作 (10)
Masks/口罩 (62)	Wear masks/佩戴 口罩 (36) Wear masks/戴 口罩 (13) Masks and wash hands frequently/口罩 勤洗手 (7) Masks maintain/口罩 保持 (6) Go with masks/口罩 前往 (4)	Wear/佩戴 (41) Wear/戴 (15) Wash hands frequently/勤洗手 (13) Keep/保持 (12) Distance/距离 (10) Science/科学 (10)
Personal/个人 (61)	Personal protection/个人 防护 (35) Take care of oneself/做好 个人 (26) Fulfil one's personal duties/履行 个人 (6) Personal health/个人 健康 (5) Strengthen individual/加强 个人 (4)	Protection/防护 (38) Do well/做好 (28) Responsibility/责任 (9) Fulfil/履行 (8) Premise/前提 (6)
Proactive/主动 (52)	Proactively inform/主动 告知 (7) Proactively cooperate/主动 配合 (6) Should proactively/应 主动 (6) Proactively do/主动 做 (4)	Community/社区 (16) Organisation/单位 (13) Inform/告知 (8) Location/所在 (7)

Word frequency	Top 5 word clusters	Top 5 collocated words
	Please proactively/请 主动 (4)	Doctor/医生 (6)
Timely/及时 (52)	Report timely/及时 报告 (8) Please timely/请 及时 (8) Timely and nearby/及时 就近 (5) Pay attention timely/及时 关注 (4)	Symptoms/症状 (13) Community/社区 (12) Fever/发热 (11) Nearby/就近 (9) Consultation/就诊 (8)
Protection/防护 (52)	Personal protection/个人 防护 (35) Protective awareness/防护 意识 (10) Self protection/自我 防护 (6) Protective measures/防护 措施 (4)	Individual/个人 (38) Do well/做好 (30) Awareness/意识 (11)
Notes: 1. There were 1,801 entries (unique words), with a total frequency of 8,203. 2. The word frequency analysis removed the search queries used for data collection (e.g., Covid). 3. The clusters were generated with cluster size=2, search term position on left/right. 4. The collocates were generated with significance are set at $p<0.05$, with window span from 5L to 5R in AntConc.		

To provide contextual illustration of the word choices shown above, this section moves on to show an example from Weibo, specifically focusing on how the classification between encouraged and unencouraged behaviours is addressed. Weibo 16 came from the official account of Beijing city government (@Beijing Release, or @北京发布) in January 2022.

Weibo 16

https://weibo.com/2418724427/LbmaRuzEu

Weibo 16 (translation):

[Beijing CDC reminds individuals who have contacts with publicly disclosed case trajectories in the city to promptly report their situation] At the #Beijing pandemic release conference# held this afternoon, the deputy director of the Beijing Centre for Disease Control and Prevention and a member of the national pandemic expert group, Pang Xinghuo, emphasised that the strict implementation of prevention and control measures in every part and everyone is crucial to the prevention and control of the pandemic!

In this regard, citizens are reminded to enhance their awareness of protection and fulfil their personal responsibility for prevention and control. Individuals who have intersected with the disclosed case trajectories in the city should proactively report to communities, workplaces, hotels, and other relevant entities, and cooperate with various prevention and control measures including centralised isolation, home quarantine, health monitoring, and nucleic acid testing.

Continue to adhere to wearing masks scientifically, not shaking hands, washing hands frequently, ventilating frequently, and minimising overseas shopping. If you experience fever, dry cough, fatigue, loss of smell or taste, nasal congestion, runny nose, sore throat, conjunctivitis, muscle pain, or diarrhoea related to Covid, you are advised not to go to work, participate in social activities, use public transportation, or take ride-sharing services. It is

> *important to wear masks, promptly visit nearby fever clinics at designated hospitals, cooperate in nucleic acid testing and epidemiological investigations, inform healthcare professionals about activity history, contact with high-risk individuals or imported goods, and any unusual physical conditions. Do not purchase or take medicines by yourself, and fulfil personal responsibility for pandemic prevention and control.*

Transcribed partly from the local pandemic press conferences in Beijing, this example highlights the importance of everyone sticking to their '*personal responsibility for prevention and control*' as a reflection of the overall pandemic management strategy at the citizen level. This example introduces a series of recommended protective practices that people are expected to contribute through, such as '*wearing masks scientifically*' and '*informing healthcare professionals about activity history*'. Publics are also reminded of behaviours that may compromise the health of others such as '*participating in social activities*' and concealing contact history.

In this context, this example helps us understand the context of prominent words and terms identified Table 15. The term '*pandemic and control responsibility*' is mentioned several times in Weibo 16 as the overarching goal. This goal is suggested to be achieved by the successful completion of personal obligations, which involve specific actions, such as to '*cooperate*' with public policies of isolation and testing, and to '*timely*' report contact with confirmed cases.

In light of the politics of defining risk in Chapter 2, promoting practices of 'do' and 'don't' can be conceptualised as a classification among the 'good' and 'discouraged' practices that a responsible citizen is expected to engage with or avoid. This classification, evident in Table 15 and Weibo 16, describes the roles of individuals in collaborative and contributory contexts, reflecting Chinese cultures of group-contribution central to values of collectivism, Confucianism, and individualisation (Wang and Liu, 2010). These three cultural paradigms, as discussed in Chapters 2 and 3, emphasise the interconnectedness of personal actions and collective benefits, such as social harmony. These values often manifest in self-nation and family-nation relationships, which represent the interplay between the smaller self (personal identity) and the greater self (national or collective identity) (Yan, 2010b; Winfield, Mizuno, and Beaudoin, 2020). This finding aligns with examples in Section 6.2.1, where the ethical decisions of heroic individuals were framed as exemplars of moral character. These narratives, deeply rooted in cultural values, are echoed in other mainstream media representations such as the promotion of 'Great Oneness' and patriotism emotions during the Spring Festival Gala (Wang, 2010).

From the platform aspect, it is important to pay attention to the length of Weibo 16, which contains 261 English words after translation. The detailed instructions included in texts therefore do not

necessitate major information provision to be included in the visual. Rather, the visual attached to Weibo 16 is an image of an expert talking at a press conference.

In summary, based on the textual analysis of the sub-sample, this section indicated that the narratives of individual duties on Weibo were characterised by an advocacy for ethical practices to achieve the objective of 'pandemic prevention and control', with a particular emphasis on personal health. The findings of textual analysis and the provided example demonstrated that individual duties on Weibo were framed as proactively following the suggestions articulated in official communication, thereby prioritising the communication of actionable steps as 'what to do' for citizens. This appeal for public collaboration was narrated using instructive words, such as 'please', 'do well', 'cooperate', and 'proactive'. These suggestions can be viewed as a classification of practices of 'do' and 'do not' as solutions to risk, which theoretically reflect judgement and power in prompting particular risk-mitigating solutions over alternatives (Beck, 2008; Anderson, 2010).

6.3.2 Twitter: Considerate citizenship

To build a direct comparison with Section 6.3.1, this section begins by presenting a parallel textual analysis conducted on a sub-sample of 194 tweets discussing individual duties during Covid (results in Table 16).

Table 16 suggests a range of pronouns frequently used in the sub-sample. '*You*' emerges as the most frequently used word, appearing 125 times, and is used in terms such as '*if you*' and '*you can*' to appeal for public collaboration. The word '*your*' is also frequently used, 87 times, where its clusters and collocates suggest a broader sense of 'otherness', including '*your loved*', '*your friends*', and '*family*' that are framed as worthy of protection. Similarly, the use of '*we*' (43 times), '*our*' (36 times) and their contexts (e.g., '*we all*', '*protect our*') suggests the intention of fostering national solidarity through individual contributions.

In addition, publics are encouraged to fulfil their duties by identifying those who will be safeguarded from their decisions. As seen in Table 16, the words '*protect*' (63 times) and '*help*' (62 times) are frequently used in the sub-sample. Both words are often paired with pronouns to emphasise how individuals' responsible decisions may benefit those in close relationships with them, such as '*protect yourself*' (19 times). The frequent use of the word '*can*' (41 times) also serves to encourage public participation in these protective actions, as seen in contexts such as 'you/we can help'. In contrast to behaviours that are framed to be protective and helpful to society, irresponsible actions are constructed in relation to the possible risk of virus transmission, as indicated by the word '*spread*' (33 times) and its contexts (e.g., something can spread the virus; reduce or stop the spread).

In brief, Table 16 indicates how individual responsibility is framed as 'considerate citizenship': individuals are encouraged to act responsibly not only to be protective or helpful in their own interests, but also to demonstrate consideration for others and wider shared interests (Petersen and Lupton, 1996). In contrast to the Weibo counterpart in Section 6.3.1, data on Twitter do not explicitly emphasise the 'good' and 'discouraged' practices, as indicated by the absence of specific recommendations (e.g., 'no gathering', 'wear masks') and adjectives (e.g., 'proactive' and 'timely') prominent in Table 16.

Table 16: Textual analysis of 194 Tweets featuring individual responsibility and citizenship on Twitter

Word frequency	**Top 5 word clusters**	**Top 5 collocated words**
You (125)	If you (38) You can (15) You re (10) You have (9) You ve (9)	If (48) Have (20) Symptoms (16) Re (13) Around (8)
Your (87)	Your loved (11) Your hands (9) Your friends (7) Protect your (7) Wash your (7)	Yourself (16) Loved (13) Ones (13) Family (13) Friends (12)
Protect (63)	Protect yourself (19) Help protect (11) Protect your (7) Protect our (6) Protect others (5)	Yourself (19) Others (19) Family (9) Loved (8) Ones (8)
Help (62)	Help protect (11) Can help (11) Help prevent (6) Help reduce (5) Help us (5)	Reduce (10) Weight (6) Prevent (6)
If (46)	If you (38)	You (48) Have (12) Symptoms (11)
We (43)	We all (7) We can (7) We have (4) We must (4) We re (4) As we (4)	All (13)

Word frequency	Top 5 word clusters	Top 5 collocated words
Can (41)	You can (15) Can help (11) We can (7) Can get (6) Anyone can (5)	Anyone (9)
It (36)	It anyone (3) Spread it (3)	Anyone (8) Important (7)
Our (36)	Protect our (6) Our NHS (4) Our national (3) Our staff (3) Join our (3) Keep our (3)	/
Spread (33)	Spread it (3) Can spread (3) Spread by (2)	Reduce (9) Stop (8)
Notes: 1. There were 886 entries (unique words), with a total frequency of 4,631. 2. The word frequency analysis removed the search queries used for data collection (e.g., Covid). 3. The clusters were generated with cluster size=2, search term position on left/right. 4. The collocates were generated with significance are set at $p<0.05$, with window span from 5L to 5R in AntConc.		

To contextualise results in this table, this section moves on to share three example tweets featuring individual duties. Tweet 16 was from the official account of the NHS (@NHSuk) in October 2020, and Tweet 17 was from the Department for Digital, Culture, Media & Sport (@DCMS) in July 2021.

Tweet 16 (left) and Tweet 17 (right)

Tweet 16: https://twitter.com/NHSuk/status/1320670704778567680

Tweet 17: https://twitter.com/DCMS/status/1417092225117429764

These two examples respectively promote washing hands and taking vaccines as individual duties, which both echo the concept of 'considerate citizenship' indicated from the textual analysis in Table 16. Tweet 16 states the reasons as '*we can all help prevent the spread of coronavirus*', highlighting the positive outcomes that result from collective adherence to '*simple but effective*' personal duties. Similarly, Tweet 17 describes the motivation of sticking to individual duties as '*to help people, to help others, to help yourself*', indicating the aim of protecting people around us through vaccination.

In this way, the appeal for fulfilling personal duties is intertwined with reminding publics of their common interests, emphasising the closeness with 'your loved ones', or the positive contributions such as '*to help reduce the spread of Covid*'. Addressing individual duties in this emotional way might prompt publics to reconsider the benefits of responsible citizenship; playing a role in mitigating the virus spread and shielding loved ones goes beyond their personal benefits to affect the well-being of others within the perceived communities. In other words, the construction of individual duties is characterised by promoting everyone's protection of their loved ones and potential contribution to societal shared interests.

While these two examples focus on how individual duties are closely framed with contributions to the common interests, publics are also reminded that the shared interests can be undermined by irresponsible actors or actions, such as disseminating rumours and pandemic scams. For instance, Tweet 18 was from @DHSCgovuk in April 2020, responding to external concerns about false information and unverified claims during Covid from another account. It notes the sharing of disinformation as '*undermining the national effort against coronavirus*', while individuals are expected to verify information using the suggested checklist to minimise the spread of unverified claims. This example contrasts with earlier descriptions of individual contribution to public good by highlighting how individual decisions regarding responsibility can undermine collective achievements.

Tweet 18

https://twitter.com/DHSCgovuk/status/1252348432414502915

In brief, this section outlined how individual duties on Twitter were framed with a clear emphasis on considerate citizenship: publics were reminded of the potential benefits resulting from their considerate behaviours, which were in relation to the protection and help towards themselves and their loved ones. These narratives were characterised by the use of pronouns to address individual duties in a conversational way (e.g., protect yourself, your family, and your loved ones), which remained consistent with discourses of government-level responsibility (Section 6.1.2), and 'heroic' individuals' responsibility (Section 6.2.2). Compared to their Weibo counterparts, there were fewer explicit instructive practices mentioned on the Twitter sub-sample, such as a list of 'dos' and 'don'ts' as

discussed in Weibo 16. Therefore, the frame of individual responsibility on Twitter focused more on communicating to the public about '*why* to do' certain actions, while Weibo emphasised providing pragmatic guidance on '*what* to do'.

6.3.3 Discussion: Risk, citizenship, and neoliberal governance

According to Chapter 2, responsibility can be understood as something that individuals are encouraged to enact, prompted by personal ethical reflections such as moral commitments and societal norms (Beck, 1992; Giddens, 1999). At the time of data collection, there were only a few newly listed pandemic regulations, for which failure to comply might result in legal consequences such as fines. In comparison to legal obligations, individual duties are sometimes not explicitly established by laws, regulations, or are not strictly monitored by health authorities. Instead, whether a person decides to act as a 'responsible' citizen in accordance with the suggested actions promoted by official communication depends flexibly on personal values, cultures, and many other contexts. Inadequate fulfilment of moral personal duties might not result in immediate legal consequences. Therefore, when civic duties are not compulsory for everyone as legal obligations but important for controlling the situation at the national scale, it becomes crucial to persuade people to play their parts in fulfilling moral duties.

Regarding the similarity, the findings in Sections 6.3.1 and 6.3.2 showed that official communication on both Weibo and Twitter paid attention to portraying narratives of individual duties. As discussed in Chapter 2, the frame of individual autonomy reflects a neoliberal approach to allocating responsibility between states and individuals. According to Harvey (2005) and Lupton (2012), neoliberalism often delegates responsibility not through direct state intervention but through indirect means, such as 'incentives' in official risk communication that encourage self-management in lifestyle. Despite their different neoliberal and cultural contexts, both cases emphasised promoting specific actions that individuals could take to demonstrate their commitment to social responsibility consideration.

Regarding the differences, governmental communication on Weibo focused on providing information regarding feasible practices and actionable steps individuals could undertake (as in Table 15). It also mentioned a few scenarios for illustrating the promoted practices, such as how to visit hospitals ethically with developing symptoms in Weibo 16. On the other hand, UK government communication on Twitter was found to address the complementary benefits of fulfilling personal responsibilities in a conversational tone. As shown in the textual analysis results and examples in Section 6.3.2, the impacts of individual decisions on others' health were highlighted in the narratives of 'protecting yourself and your loved ones'.

Culturally, individual duties, according to Section 6.3.1, were narrated in a more pragmatic way in Chinese official communication, with a clear classification of encouraged and discouraged actions, This communication is associated with a shared acknowledgement of protecting group benefits as 'greater self' through the efforts of the 'small self' (Yan, 2010b) — a cultural tradition that resonates throughout state-sponsored individualisation, collectivism, and Confucianism discussed in Chapters 2 and 3. This approach contrasts with Western-based neoliberalism, which emphasises 'governing through freedom' to foster personal autonomy largely *independent* from state support (Harvey, 2005).

Therefore, understanding neoliberal responsibility narratives in Chinese official communication requires considering how individual self-management is constructed to *align* with and *support* state developments, without a corresponding reduction in state involvement in individual welfare — a key distinction between Western and Asian-based neoliberalism discussed in Chapter 2 (Hoffman, 2006; Ong, 2006; Ong, 2007). This empirical finding aligns with another study of China's mainstream media daily news television show *Xinwen Lianbo* – its official communication was characterised by promoting 'what roles people should play and what they could do' (Gui, 2021, p.969). Overall, the comparison between China's and UK's official frames of individual duties contributes to the understanding of cultural narratives of responsibility, regarding what people are expected to do collectively to address common risk.

From the health and risk aspect, the neoliberal style of responsibility narratives speaks to Petersen and Lupton's theorisation of new public health (1996), in the face of expanded environmental risks, individual participation in building a 'healthier' city involves maintaining self-regulation and self-control through the new identity of the *environmental citizen* (p.99). This conceptualises how the omnipresence of (health) risk necessitates individuals' involvement in identifying and managing small-scale individual or community risks, as well as acknowledging large-scale risks that threaten society or humans as a species (Petersen and Lupton, 1996, p.100). In this context, the personal autonomy of maintaining good health through self-discipline is viewed not only for personal well-being, but also as an approach to stay productive for their families, communities, and nations (Petersen and Lupton, 1996).

Despite the nuanced narratives of individual duties as discussed above, official discourses across cultures in China and the UK illustrate how risk serves as a pivotal mechanism for implementing decentralised *governmentality* – it reshapes the primary responsibility for risk-avoidance practices from state-initiated governance into individual-initiated self-regulation and citizenship. In the sense of governmentality, the prevalence of these civic duty narratives, as described by sociologist Pat O'Malley (2004) who specialises in risk and uncertainty, exemplifies how risk emerges as a crucial 'technique for self-government and for the government of others', accompanied by a novel logic for

redistributing responsibilities (p.9). Therefore, risk, when interpreted through a neoliberal and governmentality lens, generates a set of management practices that function as a 'technology of governing', describing how the relationships between the governing and the governed are configured during crises (Ong, 2006, p.3; Ong, 2007, p.4).

Finally, considering Chapters 5 and 6 together, individual duties are narrated with shared definitions of Covid/risk as a premise, while further reinforcing the definition of risk. For example, the promotion of wearing masks (Table 15 and Weibo 16) and washing hands (Tweet 16) echoes the emphasised definition of the virus transitivity via touch and air in Section 5.1. This empirically supports the point made by crisis communication scholar Orla Vigsø (2010): the way of defining 'responsible' actions as promoted solutions depends on how risk is initially framed, and these proposed solutions further feed back to the definitions of what is at stake (p.234).

6.4 Conclusion: Responsibility as networked and affective

This chapter has unpacked the notion of responsibility in risk through three perspectives: Section 6.1 discussed how responsibility in the context of governmental support was associated with being supportive and caring to publics as 'structures of collective risk management'. Section 6.2 focused on the responsibility reflected in non-state, non-institutional efforts and actors, particularly healthcare professionals – both cases showed how risk-taking for a good reason was shaped into discourse of 'heroic individuals'. Section 6.3 then analysed the narratives of individual duties and citizenship to understand how publics in China and the UK were encouraged to contribute their parts in managing Covid, reflecting socio-cultural and political aspects of neoliberal governance.

From these three perspectives surrounding responsibility, this chapter suggests that responsibility in relation to public health and risk should be considered as a *networked* concept, rather than a 'one-meaning-fits-all' societal commitment with singular, stable meanings for stakeholders in different cultures. Therefore, the above findings suggest that governments, heroic individuals, medical professions, and citizens were all granted corresponding roles in the face of Covid. In this way, responsibility should be considered as *networked* between these actors, a dynamic ecological interplay between risk management institutions, individual decisions, and citizenship.

Culturally, this chapter illustrates how official narratives of responsibility during Covid were intertwined with cultural values, such as neoliberalism, individualisation, and Confucianism, with a particular focus on individual responsibility in China (Hofstede, 2001; Harvey, 2005; Yan, 2010b). From the reception studies perspective, it is noted that audiences are likely to respond to motivated

discourses in ways that reflect their cultural values, ideology, and identity (Balog-Way, McComas, and Besley, 2020, p.2251). This insight informs the importance for policymakers of tailoring risk communication to align with specific cultural interpretations of ethical behaviour, thereby embedding resonance with target audiences.

Governments in this network are framed to play the leading role as supportive institutions of collective risk management, centrally maximising control over material resources and promoting the definitions of risk and responsibility to publics. In addition, networked responsibility implies that publics are encouraged to consider the collectives, both for the well-being of themselves and shared achievements of managing the pandemic. This is closely intertwined with collective identities of citizenship, because states (are framed to) protect the public with rights to stay safe during Covid, accompanied by complementary civic duties to show consideration for remote others in the imagined community of shared interests (Petersen and Lupton, 1996, p.13). The dominant discourse of networked responsibility, with orientations of what counts as responsible, further places *power* on how everyday risk during this pandemic should be mitigated (Mythen, 2008, p.306). This power relation, compared to laws with penalties, comes with a non-forceful approach but promotes individual self-regulation in neoliberalism (Mythen, 2008), as illustrated in Section 6.3.3.

To promote this perspective of networked responsibility, information about heroic individuals and individual duties (Sections 6.2 and 6.3) is found to be shared with expressions of sentiment, such as appreciation, demonstrating a more affective communication pattern compared to the narratives of government responsibility in Section 6.1 (Papacharissi, 2015). For Papacharissi, highlighting the emotions within the narratives of heroic individuals and citizen duties further 'defines modalities of belonging that are articulated as strangers connect and attach to each other' (2015, p.117). Through the affective frame of personal stories, individuals might be encouraged to fulfil their duties by making ethical and accountable decisions for the sake of others within the responsibility network, such as the story of medical staff in Weibo 15 and the national campaign of #ClapForNHS in Tweet 15. However, in light of socio-economic inequalities, limited attention was given to addressing diverse individual capabilities for fulfilling expected duties (Bunton, Nettleton and Burrows, 1995).

Furthermore, this chapter has shown how the networked and affective frames of responsibility on Weibo and Twitter are further complicated by platform affordances. For example, the analysis in this chapter demonstrated how the character limits on Twitter are variously overcome by presenting additional information using other non-verbal formats, such as in threads, visuals, and hyperlinks, aligning with the findings in Chapter 5. In addition, hashtags are used in nuanced ways across Weibo and Twitter: hashtags on Weibo are used both as article headlines (e.g., #*The bus driver concealed to*

his wife and picked up the medical staff#) and indicators of solidarity (e.g., *#Wuhan we are together#*), while hashtags on Twitter mainly serve as indicators of solidarity (e.g., *#ClapForHeores*).

In summary, this chapter has explored which actions and behaviours were portrayed as responsible for pandemic management (RQ2). It identified three sets of actors and their actions central to the communication of responsibility: governments, heroic individuals (particularly healthcare professionals), and citizens. The chapter found that responsibility for the latter two actors, heroic individuals and citizens, was communicated in an affective manner, highlighting emotional solidarity within the imagined society. These findings suggested the notion of responsibility as networked and affective in China's and the UK's official communication, the presentation of which were further influenced by platform affordances of Weibo and Twitter, such as character limits and hashtag practices.

After analysing risk communication in Chapter 5 and responsibility in Chapter 6, the next chapter examines the communication of Covid-vaccines in China's and the UK's official communication. As discussed in Chapter 2, the topic of national vaccination is crucial for biological risk management and public health governance and helps us to understand how the image of nationalism is constructed through the narratives of vaccination programmes.

Chapter 7 Vaccine-mediated Nationalism

The last chapter discussed how responsibility was framed in a networked system during the study's sample period, including affective narratives surrounding governmental responsibilities, heroic individuals, and citizens. To locate earlier discussions of risk, health, and responsibility at the *global* level, this chapter moves on to explore the official discourses of vaccines as risk-mitigation technologies.

In Chapter 2, the literature review discussed how the circulation of vaccines reflects the paradox between vaccines as a 'public good' in international collaboration and as 'tradable commodities' for national interests. The review also introduced how unequal distribution of vaccines is conceptualised as 'vaccine nationalism': this concept generally gestures towards the national practice of stockpiling vaccines for the benefit of those who form part of the nation, potentially affecting the accessibility or affordability of vaccines for other countries (Halabi and Rutschman, 2022, p.10). However, Chapter 2 argued that merely considering vaccine nationalism as stockpiling might fail to capture the broader symbolic meanings and nationalist rhetoric attached to national vaccination programmes (Vanderslott *et al*., 2021). Therefore, this chapter seeks to outline the rhetorical meanings associated with national vaccination programmes in China's and the UK's official communication. Specifically, this chapter aims to examine how nation-states and globalisation were portrayed through discourses centred on vaccine research and development (vaccine R&D) and post-R&D distribution (RQ3).

To address this question, this chapter focuses on posts featuring the topic of vaccination status and development, including a sub-sample of 299 Weibo posts and 484 tweets. The findings of this chapter suggest three types of nationalist rhetoric across three stages of vaccination programmes: at the vaccine R&D stage, both cases emphasise the importance of following 'gold standards' to justify the safety and effectiveness of vaccine products. At the vaccine distribution stage, domestically, vaccines are allocated to the 'vulnerable' as defined by the governments, while the public is encouraged to take vaccination choices as a manifestation of fulfilling civic responsibility. Globally, developing and African countries are prioritised in vaccine distribution due to various historical geopolitics. Overall, this chapter proposes an extension of 'vaccine nationalism' into what can be termed 'vaccine-mediated nationalism', highlighting the rhetorical expressions of 'nationalist metaphors' within constructions of vaccination as risk-mitigation tools.

Starting from the domestic level, Section 7.1 discusses how the descriptions of vaccine R&D efforts in China and the UK became reflections of national characters. Shifting the focus to the post-R&D period, Section 7.2 examines how domestic vaccine programmes were closely linked to civic duties, encouraging individuals to join the 'responsible' majority to protect the 'vulnerable' populations.

Section 7.3 discusses vaccine distribution at the international level, specifically examining how African and developing countries similarly became recipients of assistance from China and the UK for diverse historical reasons. Finally, Section 7.4 summaries three types of nationalist rhetoric emerging in vaccine R&D and post-R&D stages, outlining the importance of extending 'vaccine nationalism' into 'vaccine-mediated nationalism'.

7.1 Domestic vaccine R&D

When researching vaccines at the national level, Vanderslott and colleagues (2021, p.3) suggest an expanded focus on the national characters and nationalist symbolic meanings attached to the vaccines, going beyond the extensively studied areas of national vaccine control. Thus, this section focuses on what types of national characters vaccine R&D reflect in relation to national power and science development. As explained in Chapter 2, this study understands national characters as a set of constructed personality traits typically attached to a specific nation or its populations (McCrae and Terracciano, 2006, p.156).

Examining posts related to the topic of vaccination R&D activities, this section elaborates on how the frame of R&D is associated with narratives justifying the safety and efficiency of vaccines. Sections 7.1.1 and 7.1.2 discuss, respectively, how the safety and efficiency of China-based and UK-based vaccine efficiency is framed through different 'gold' standards. Section 7.1.3 compares these two cases and discusses how different national characters and their identities in global medical areas are constructed through updating domestic vaccine R&D.

7.1.1 Weibo: Emerging global player in vaccine R&D

The data on Weibo emphasise the global acknowledgment of China-based vaccines as national scientific accomplishments. The achievements are framed as partly originating from the quality of Chinese products meeting international standards and/or receiving global recognition.

For instance, Weibo 17 was from @NMPA (@中国药品监督) in June 2021, the official account of the National Medical Products Administration of China (NMPA). The NMPA is the organisation responsible for assessing and managing the safety of Chinese medicine and medical devices, including updating regulations and authorising China-made vaccines. The left screenshot features the WHO's authorisation of the China-made vaccine, SINOVAC, which was published as 'important news' in white text with a blue background of the 'headline article' for further information. The right screenshot shows the full page of the headline article once users click on the left page. As illustrated in

Chapter 3, headline article is Weibo's local function where users can write up to 2,000 words and add multimedia in an embedded link attached to the post.

Weibo 17

https://weibo.com/1335661387/Kihzf5xDa

Weibo 17 (translation of highlighted texts):

The WHO announced on 1 June that the inactivated Covid-19 vaccine 'Kelifer', developed by China Beijing SINOVAC Biotech Ltd., has officially passed the WHO emergency use certification.

WHO Director-General Tedros Adhanom Ghebreyesus announced at a press conference that SINOVAC's Coronavirus vaccine has been proven to be 'safe, effective and quality-assured' and has been included in the WHO emergency use list. In addition, the vaccine's easy storage makes it ideal for resource-poor settings.

According to the opinion of the WHO Strategic Advisory Group of Experts on Immunisation, WHO recommends that the SINOVAC vaccine be used for adults aged 18 and over, with two doses at an interval of 2 to 4 weeks. The data show that the vaccine is 51% effective in preventing symptoms of the Coronavirus, and 100% effective in preventing severe cases of the Coronavirus and admission to hospital.

This post discusses the approval of SINOVAC vaccines for emergency use by the WHO and notes the effectiveness of the vaccine in protecting against Covid. Both qualitative evidence (e.g., quotes from the WHO Director-General) and quantitative statistics from the WHO advisory group (e.g., '*51% effective in preventing symptoms*') are mobilised to strengthen the narrative of 'safe and efficient'. Additionally, similar to the analysis of the 'authoritative release' banner in Chapter 5, the visual of Weibo 17 employs a blue-white pattern to maintain aesthetic consistency in the visual frame of authority.

In addition to the WHO's acknowledgment in Weibo 17, this 'safe and efficient' narrative is also used by accounts of the worldwide use of Chinese vaccines. For example, Weibo 18 was posted by @Beijing Release (@北京发布) in June 2021. It shared a news article from state-owned newspaper *Beijing Daily* (北京日报), which interviewed the key Chinese pharmaceutical company SINOVAC about their vaccine progress.

Weibo 18

https://weibo.com/2418724427/Kibwj1IHs

Weibo 18 (translation):

[#SINOVAC supplied more than 600 million doses to the globe# #1 million doses of SINOVAC vaccine shipped to Dominica#] At 10:00 am on 1 June, 1 million doses of the

Coronavirus vaccine Kelifer left production plants of Beijing SINOVAC Ltd. This batch of vaccines will be shipped to Dominica on the Caribbean coast to support local pandemic prevention and control. So far, SINOVAC has supplied more than 600 million doses of vaccines to the world.

In the production plant in Daxing, the production line runs at high speed, and a dose of vaccine is packed into a large packing box after completing labelling, production information entry, packaging, and other processes. In the delivery area, the staff put the vaccines to be shipped one by one into air containers.

According to reports, an air container can hold 5 pallets of vaccines, 32 boxes of vaccines per pallet, and 1,200 vaccines for two people per box. In other words, one air container can help 380,000 local people receive one dose of vaccine. These containers are equipped with thermal insulation devices to ensure that the vaccine is always in an environment of 2 to 8°C during the transportation process.

'After these vaccines arrive at the Capital Airport, they will complete the relevant procedures as soon as possible, and then take off to Dominica.' The on-site staff said.

This morning, SINOVAC also introduced the evaluation study of the use of the Kelifer vaccine in Serrana, a small town in south-eastern Brazil. The results of the study showed that after vaccination, the number of deaths from Coronavirus in the region fell by 95%, the number of symptomatic cases fell by 80%, and the number of hospitalisations fell by 86%.

The relevant person in charge of SINOVAC stated that the production capacity of the Coronavirus vaccine Kelifer reached 2 billion doses in April this year, and the current production was advancing at full speed to allow more vaccines to serve the frontline of the pandemic. Only on 31 May, SINOVAC supplied 36.83 million doses of the Coronavirus vaccine to the world, including 3.6 million doses to the Guangdong Province of our country. In response to the mutation of the Coronavirus in some parts of the world, Meng Weining, deputy general manager of SINOVAC, said that relevant research is continuing to follow up. (Beijing Daily)

This long post updates the status of SINOVAC vaccine programmes from several aspects: it starts by introducing its global impacts, noting its recent support in Dominica. It specifically features some efforts undertaken to maintain vaccine quality throughout production, labelling, shipment, and storage processes. The post then introduces the vaccine evaluation study conducted in Brazil, accompanied by

statistical evidence to demonstrate its efficiency in preventing symptoms. The post finishes with a summary of SINOVAC vaccines' global impacts, both in terms of production capacity and their widespread application. Overall, this post indicates a frame of the safety and efficacy of SINOVAC vaccine programmes drawing on evidence around their global recognition and overseas testing results.

One similarity between Weibo 17 and Weibo 18 is their references to clinical statistics provided by external actors: Weibo 17 notes the Covid prevention rate evaluated by WHO advisory groups, while Weibo 18 mentions the decreasing case numbers after vaccination in an overseas study conducted in Brazil – both indicate a reliance on affirmations by external institutions and suggest a recurring frame of the increasing global impact of China-based vaccines. The use of numbers also speaks to the primary function of vaccines as biological risk-mitigation technologies aimed at enhancing human 'immunity-as-defence' (Cohen, 2009) to strengthen the boundary between the self/body and the non-self/viruses (Martin, 1990). Consequently, clinical statistics become relevant to provide a quantitative feeling of the extent to which the new SINOVAC vaccines manage to fulfil their key purpose of enhancing population immunity. The use of statistics aligns with the findings of Chapter 5, which similarly identified the prominence of statistics and scientific expertise discourses as framing devices in pandemic updates. Another similarity between the two posts lies in their information sources: Weibo 17 cites the *Xinhua Agency*, while Weibo 18 refers to *Beijing Daily.* Both references demonstrate the reliance on state-owned media outlets when covering news regarding foreign policy.

Thus far, the above two examples have shown how external organisations' affirmations were drawn upon within the frame of 'safe and efficient' vaccines, with an emphasis on medical statistics. This section moves on to present two additional examples to outline other international standards involved in this 'safe and efficient' narrative. Weibo 19 was posted by @Wuhan Release in May 2021.

Weibo 19

https://weibo.com/2759348142/KhqmbFVpn

Weibo 19 (translation):

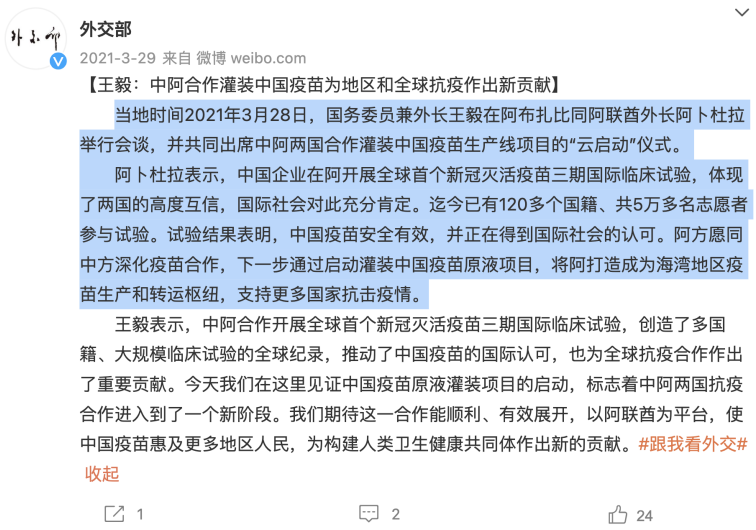
#Latest news# #Our country's Covid vaccine phase III clinical trial results published for the first time# [#Sinopharm released phase III clinical data of the world's first Covid-19 inactivated vaccine#] On 26 May, the international medical journal 'Journal of the American Medical Association' published 'Effect of 2 Inactivated SARS-CoV-2 Vaccines on Symptomatic Covid-19 Infection in Adults' by Sinopharm. The results of the study showed that 14 days after two injections of the two Covid inactivated vaccines of Sinopharm can produce high-titre antibodies and form effective protection, and the positive conversion rate of neutralising antibodies in the whole population was over 99%. The protective efficacy of the WIV04 vaccine group was 72.8%, and that of the HB02 vaccine group was 78.1%. It was reported that this was the world's first officially published phase III clinical trial results of the Covid inactivated vaccine, and this was also #our country's Covid vaccine phase III clinical trial results published for the first time#. (Xinhua Daily Telegraph)

This example features a quantitative evaluation of Sinopharm vaccines in a US peer-reviewed medical journal, *Journal of the American Medical Association* (JAMA), established in 1883. The results of this publication, including statistics on vaccines' effectiveness within different populations, provide evidence supporting the adherence of vaccines to rigorous industry standards. The description '*the world's first officially published*' in Weibo 19 also notes the (constructed) global recognition of China-based vaccines and their impacts on global public health. Additionally, the hashtag *#our*

country's Covid vaccine phase III clinical trial results published for the first time# further adds nationalist connotations by associating collective national ownership with the vaccines produced by commercial corporations. Thus, this post indicates a sense of national identity and global recognition fostered by scientific progress in vaccine R&D activities.

Additionally, the publication of clinical vaccine results in JAMA reflects the recognition of China-based vaccines from a developing country by one of the four most influential medical journals, alongside the *New England Journal of Medicine* (NEJM), the *Lancet*, and the *British Medical Journal* (BMJ). Importantly, three of the journals (JAMA, NEJM, and BMJ) historically represent the leading roles of the US and the UK in the medical field. Therefore, the frame of national identity in this example is reinforced by emphasising the country's ability to achieve a breakthrough in the existing hierarchy of knowledge exchange between developed and developing countries.

Similarly, Weibo 20 referenced the external recognition of the quality of China-based vaccines by other countries. It was posted by @Ministry of Foreign Affairs (@外交部), the official account of the Ministry of Foreign Affairs of China, in March 2021.


外交部
2021-3-29 来自 微博 weibo.com
【王毅：中阿合作灌装中国疫苗为地区和全球抗疫作出新贡献】
当地时间2021年3月28日，国务委员兼外长王毅在阿布扎比同阿联酋外长阿卜杜拉举行会谈，并共同出席中阿两国合作灌装中国疫苗生产线项目的"云启动"仪式。
阿卜杜拉表示，中国企业在阿开展全球首个新冠灭活疫苗三期国际临床试验，体现了两国的高度互信，国际社会对此充分肯定。迄今已有120多个国籍、共5万多名志愿者参与试验。试验结果表明，中国疫苗安全有效，并正在得到国际社会的认可。阿方愿同中方深化疫苗合作，下一步通过启动灌装中国疫苗原液项目，将阿打造成为海湾地区疫苗生产和转运枢纽，支持更多国家抗击疫情。
王毅表示，中阿合作开展全球首个新冠灭活疫苗三期国际临床试验，创造了多国籍、大规模临床试验的全球纪录，推动了中国疫苗的国际认可，也为全球抗疫合作作出了重要贡献。今天我们在这里见证中国疫苗原液灌装项目的启动，标志着中阿两国抗疫合作进入到了一个新阶段。我们期待这一合作能顺利、有效展开，以阿联酋为平台，使中国疫苗惠及更多地区人民，为构建人类卫生健康共同体作出新的贡献。#跟我看外交#
收起
1 2 24

Weibo 20

https://weibo.com/1938330147/K8rTuCsu5

Weibo 20 (translation of highlighted text):
On 28 March 2021 local time, State Councillor and Foreign Minister Wang Yi held talks with UAE Foreign Minister Abdullah in Abu Dhabi, and jointly attended the 'cloud launch' ceremony of the China-UAE cooperation project of filling a Chinese vaccine production line.

> *Abdullah said that a Chinese company has launched the world's first Phase III international clinical trial of a Covid inactivated vaccine in UAE, which reflects the high degree of mutual trust between the two countries and is fully recognised by the international community. So far, more than 50,000 volunteers from more than 120 nationalities have participated in the trial. The test results show that the Chinese vaccine is safe and effective and is being recognised by the international community. The UAE Arab side is willing to deepen vaccine cooperation with China. The next step is to build UAE into a vaccine production and transshipment hub in the Arabian Gulf region by launching the project of filling Chinese vaccine stock, to support more countries in fighting the pandemic.*

This example references successful clinical trials of China-based vaccines in the United Arab Emirates (UAE), followed by further collaboration to establish a local vaccine production line in UAE based on '*the high degree of mutual trust*' between the two nations. It directly describes the clinical test outcomes in the narrative of 'safe and effective', with a high validity '*being recognised by the international community*'. This aligns with preceding examples in the communication of affirmations from external actors and the growing impacts of China-based vaccines. This post also notes that the deepened collaboration between the two countries aims to extend the support to benefit more states. Importantly, this cooperation between China and the UAE points to a larger picture of a 'branch of *global health diplomacy*' facilitated by the development and distribution of vaccines (Hotez, 2014, p.2), reflecting an intertwining of medical-based resource sharing and political contexts beyond medical areas. Later Section 7.3 is dedicated to discussing how vaccine-related activities (e.g., donation) reflected national solidarity between countries (e.g., regionally-based, historically-driven).

To summarise, this section examined how the R&D of China-based vaccines was framed in official communication. It specifically explored how the validity of the vaccines was discursively constructed within a prominent narrative of 'safe and efficient', drawing on their engagement with international standards. This was justified by drawing on discourses from external actors prominent in the international biomedical infrastructure, including Western-based institutions (e.g., the WHO and JAMA) and other non-Western voices (e.g., clinical tests in Brazil and the UAE). In other words, the narrative of safe and efficient vaccines was characterised by China-based vaccines gaining international recognition through adherence to external standards and undergoing robust clinical testing, with statistical evidence in clinical areas playing a significant role. Overall, the narrative of safe and effective vaccines reflected the portrayal of national identity tied to scientific progress. Vaccines developed by a developing country meeting international technical standards could be seen as indicators of growing national power, which suggested China's character as an emerging pandemic player with increasingly acknowledged capabilities in vaccine R&D on a global scale.

7.1.2 Twitter: National pride in vaccine R&D

After analysing discourses of China's emerging role in global vaccine R&D areas, this section explores the discursive construction of vaccine R&D in the UK. As discussed in the literature review, historian of medicine Gareth Millward (2019) suggests that national vaccination programmes can serve as indicators of state power and (in)successful governance 'as symbols of their own advancement and ability to solve complex problems' (p.12). Compared to the identity of China as an emerging global player in Section 7.1.1, this section suggests that the national identity attached to UK-based vaccines is associated with national pride, recognised scientific power, and a commitment to further development.

For instance, Tweet 19 was from @CMO_England quote-tweeting @NIHRresearch – the account of the National Institute for Health and Care Research (NIHR), the largest British funder of public health research – in July 2020.

Tweet 19

https://twitter.com/CMO_England/status/1285259228949741569

This example features a breakthrough in vaccine R&D reported by @NIHRresearch, describing it as '*a testament to the remarkable scientific effort in the UK and around the world to combat COVID-19*'. While the original tweet discusses the experimental vaccines from @UniofOxford, the video's captions generalise it as the '*UK coronavirus vaccine*', reflecting a tone of collective national ownership similar to '*our country's Covid vaccine*' in Weibo 19. Another similarity lies in its reliance

on clinical testing results such as '*strong immune responses*' and '*few side effects*', though it does not share detailed clinical statistics like Weibo 19 due to character limits. Describing this outcome as '*a long way to go*' and evidence of scientific progress further suggests the national identity of the UK, a country with existing acknowledged representative achievements in vaccine R&D, but also continuing advancement in this area.

In addition, while external institutions outside China became prominent in constructing the validity of Chinese vaccines, the narratives of safety and efficiency of UK-based vaccines mainly came from the *domestic* health institutions, where the account of the Medicines & Healthcare Products Regulatory Agency (MHRA) played a key role. MHRA is a British institution responsible for regulating the safety and quality of medicines and other medical products, including Covid vaccines. It also encourages the public to report vaccine side-effects through its 'Yellow Card' scheme, a key mechanism for monitoring and assessing adverse reactions to medicines in the UK, including vaccines. The thematic analysis also found @MHRAgovuk shared the highest proportion of vaccine discussions (60%) among all sampled accounts.

Specifically, the discourse of @MHRAgovuk is mainly about authorising new vaccines and looking for side-effect reports from the public. Tweet 20 is an example of how the MHRA introduced an age group-related extension approval for the Pfizer vaccine in June 2021.

Tweet 20

https://twitter.com/MHRAgovuk/status/1400766392014721026

This example features the evaluation process by the MHRA to authorise the use of Pfizer vaccines in the 12-15 age group. Importantly, this tweet highlights that this decision is justified by the MHRA's expertise, grounded in '*a rigorous review of the safety, quality & effectiveness of the vaccine in this age group*'. Compared to drawing on global standards and overseas clinical tests in the Weibo examples, this tweet instead draws on the expertise and authority of the MHRA as a domestic institution with trusted regulatory abilities in evaluating vaccine qualities. This can be seen as a risk evaluation of emerging new artefacts with unknowns, where MHRA serves as one of the '*gold standards*' to justify the definition of 'safety and efficiency'.

The prominence of MHRA is further manifested by Tweets 21 and 22, which were both posted by @MattHancock in January 2021 and February 2022 respectively.

Tweet 21 (left) and Tweet 22 (right)

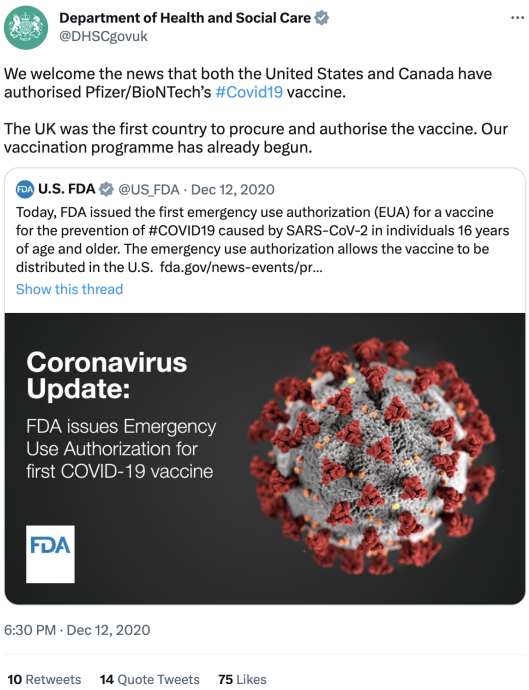
Tweet 21: https://twitter.com/MattHancock/status/1355111681710579713
Tweet 22: https://twitter.com/MattHancock/status/1489303434360725508

Tweet 21 features Hancock expressing his pride in the quality of Novavax vaccines, which are '*89.3% effective against Covid*' as an indicator of the nation's position '*at the forefront of another medical breakthrough*'. This tweet also notes Novavax awaiting the authorisation of the MHRA's '*stringent safety checks*' which would decisively impact the NHS securing further vaccine supplies. A year later, in Tweet 22 Hancock quote-tweeted MHRA's approval of Novavax, describing the vaccines'

influence in making the UK '*the freest country in Europe & Covid-19 is on track to become endemic*'. In addition to a similar reference to the MHRA as a 'gold' standard, these two examples reveal a similar tone of national pride stemming from the vaccine developments, highlighting them as manifestations of national scientific innovation power and as milestones in pandemic management. These discourses, emphasising the association of national characters with vaccine activities, can be viewed as 'nationalist rhetoric', where the imaginary of vaccine R&D evokes feelings of significant breakthrough and being the '*freest country in Europe*' in Tweet 22.

From the platform aspect, nationalist pride in texts is compounded by the visuals in both tweets, including the use of emoji of the national flag '🇬🇧'. Additionally, in Tweet 21, the national flag is incorporated as a background visual from *The Sun* (a tabloid), further visually framing the Novavax vaccine as a collective-owned national artefact. It is also important to highlight the official reference to *The Sun*, a media outlet with clear political orientations in line with that of the government majority (Conservative Party) and perceived as right-wing by British publics (Smith, 2017). Drawing on reports from sources with political leanings contrasts with the tendency to cite state-owned media on Weibo (e.g., *Xinhua* in Weibo 17, *Beijing Daily* in Weibo 18).

While the discourse of MHRA has been drawn on as the 'gold' standard, UK official communication also acknowledges other standards within the frame of 'safe and efficient'. For instance, Tweet 23 was from @DHSCgovuk quote-tweeting @US_FDA in December 2020. @US_FDA is the official account of the United States Food and Drug Administration (FDA), responsible for the control and supervision of vaccines in the US.



Tweet 23

https://twitter.com/DHSCgovuk/status/1337827143208857603

This tweet features the FDA's approval of Pfizer vaccines for use in the US and Canada, suggesting the international acceptance of UK-based vaccines. This is similar to the Weibo examples mentioning the appliance of China-based vaccines by external actors, such as the WHO, Dominica, and the UAE, followed by potential collaboration. In line with Weibo 19 referencing JAMA, referring to the FDA as 'gold standards' notes how the narrative of 'safe and efficient' in UK-based vaccines is similarly constructed by drawing on the global biomedical infrastructure.

However, the key difference lies in describing the UK as '*the first country to procure and authorise the vaccine*'. This highlights the UK in its *leading* position in the global biomedical structure, which had already conducted vaccination programmes 'ahead' of the US and Canada. Tweet 22 earlier echoes this point when mentioning '*thanks to the vaccine, the UK is the freest country in Europe*', framing UK-based vaccines in a comparative tone with an emphasis on its forefront status compared to 'otherness'. The actors involved in this comparison are usually from the West, such as Europe in Tweet 22, and the US and Canada in Tweet 23. This contrasts with Weibo posts that position China as an emerging player with growing acknowledgement in the international biomedical field with limited comparison.

In summary, this section discussed how the narrative of safe and efficient vaccines was constructed in UK official communication. The communication drew on a range of 'gold standards', with authorisation from the domestic institution, MHRA, playing a significant role in the risk assessment of vaccines. The global biomedical infrastructure was mentioned in a different manner compared to Section 7.1.1, with an emphasis on the UK's leading position in global biomedical infrastructure ahead of other key Western players, such as the US, Canada, and Europe. The frame of vaccines as prominent scientific milestones was also intertwined with the attempt to cultivate national pride, manifested by visual elements such as the national flag. While the example tweets incorporated some statistics from clinical tests, they were not as detailed as their Weibo counterparts, given the platform's character limits.

7.1.3 Discussion: Vaccines as risk-mitigation technologies with national characters

Sections 7.1.1 and 7.1.2 elaborated on how the narratives of safe and efficient vaccines were constructed in relation to the affirmations of various 'gold standards'. The abilities and outcomes of engaging with so-defined gold standards also reflect the politics of evaluating vaccines as medical

products. In other words, while vaccines are framed to be authorised within strict standards, the comparison between the two cases helps this section outline what types of 'gold' standards and authorities are drawn upon by different actors in each context and in what ways.

In terms of 'gold standards', the example posts on Weibo frequently referred to external actors within the global biological infrastructure, which involved institutional affirmations and overseas clinical tests conducted by both Western and non-Western actors. While the example tweets also touched on influential sources in the global infrastructure (e.g., the FDA in the US), their references to gold standards involved a mix of domestic and international actors, where MHRA played a dominant role.

Importantly, the engagement with external actors was addressed differently: examples on Weibo noted the institutional affirmations from the WHO and JAMA, along with successful clinical tests conducted overseas in countries such as Brazil and the UAE. The statistics of clinical tests were found to be central in justifying the safety of the vaccines, in the tone of decreasing the possibility of Covid symptoms. This aligns with vaccines' original biological purpose of reinforcing 'immunity-as-defence', seen in Chapter 2 (Cohen, 2009). In contrast, example tweets closely addressed authorisation by the domestic institution, the MHRA. While they also mentioned the FDA in the US and Europe, the emphasis was placed on the leading status of UK-based vaccine programmes, as seen in statements such as '*being the freest country in Europe*' in Tweet 22, and the narrative of advanced vaccine authorisation ahead of the US and Canada in Tweet 23.

In brief, the Weibo examples referred to external and, in most cases, Western institutions, while the tweets referred to internal and other Western agencies, particularly in North America and Europe. This indicates what constitutes the 'gold' standard is contingent, and the way to claim it and the ability to do so is highly dependent on geopolitics. However, similar references to the Global North's definition of 'gold' standards, such as the WHO, JAMA, and the FDA, suggest the prominence of the Global North's definition of 'scientific' standards in evaluating medical accomplishments. In this sense, similar reliance on Western standards reflects that both China and the UK are actors in a larger international biological infrastructure while the epistemic space of global medicine tends to be Western.

Furthermore, in both cases, vaccination programmes were employed as a discursive vehicle to construct 'nationalist rhetoric', which is exemplified through the attachment of national characters to vaccine R&D activities. One similarity between the official communication on Weibo and Twitter is their frames of vaccines as collective-owned achievements, such as '*our country's Covid vaccine*' in Weibo 19 and '*a testament to the remarkable scientific efforts in the UK*' in Tweet 19, thereby eliding their natures as commercially-owned products of pharmaceutical corporations.

However, by highlighting collective achievements, their discourses signify different national characters. As discussed earlier, the frequent mentions of overseas clinical tests indicates a central frame that China-based vaccines meet international standards and have growing global influences. The portrayals of scientific accomplishments being recognised internationally signify a national identity – an emerging global player contributing through scientific achievements during the pandemic, with increasing recognised public health impact worldwide. In contrast, the UK-based vaccines are narrated with a tone of national pride stemming from its existing leading position in the medical field, which continues to be strengthened by ongoing breakthroughs in scientific innovation compared to other Western players. This speaks to the literature review in Chapter 2 by providing empirical evidence that locally-initiated vaccine programmes also reflect national power and convey particular national characters (Vanderslott *et al*., 2021).

From a platform point of view, several functions come to be relevant in attaching national characters to the communication of vaccine R&D. Aligning with the findings in Chapter 5, a detailed introduction of clinical statistics is facilitated by Weibo's character limit, while Twitter's character limits may result in brief communication styles with limited unpacking of statistics. Weibo's headline article function, as shown in Weibo 17, also facilitates the very detailed unpacking of statistics. Additionally, visual elements in the example tweets contribute to the frame of national pride, such as the national flag elements in Tweets 21 and 22.

In summary, this section suggested the multifaceted roles of vaccination programmes at the R&D stage: as biological artefacts, they function as 'risk-mitigation technologies' with promises of reducing the possibilities of individuals' bodies contracting external risk; as collective risk-mitigation technologies, vaccine programmes have to undergo clinical tests with statistical results to gain authorisation for wide application, thereby minimising the risk *of* vaccination; as vehicles of national character, they symbolise the different images and power of nations in scientific development. Therefore, this section conceptualised vaccine R&D as risk-mitigation technologies with distinct national characters.

7.2 Domestic vaccine distribution

The previous section unpacked how vaccine R&D was narrated by official discourses in relation to safety and efficiency aligning with 'gold standards'. This raises the question of how these risk-mitigation technologies work in practices in the post-R&D period.

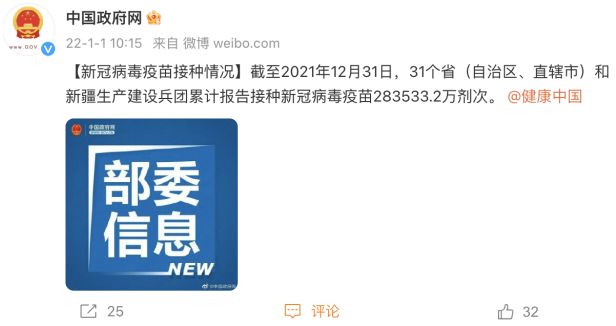
As discussed in the literature review in Chapter 2, vaccines function more than biological risk-mitigation technologies, such as manifestations of power and national characters in Section 7.1. Personal choices of vaccination also affect the public level of risk through 'herd immunity' (Randolph and Barreiro, 2020), which speaks to several concepts unpacked in the preceding chapters: risk, health, responsibility, and society. In addition, during thematic analysis, the sub-sample of posts featuring individual duties was found to closely connect with discussions of vaccination activities, demonstrating a potential topic of framing vaccination decisions as civic duties. Therefore, this section explores how vaccines were distributed domestically, with attention paid to their implications on citizenship and responsibility.

To address this, this section focuses on the posts featuring domestic vaccine distribution in the post-R&D period. It specifically examines the 'who' and 'why' of obtaining vaccination in China and the UK. Section 7.2.1 explores how domestic vaccine distributions are described on sample Weibo posts, with an emphasis on the scale of vaccination and collective solidarity. Section 7.2.2 discusses narratives regarding domestic vaccine distribution in sample tweets, with a similar emphasis on solidarity and civic duties. Section 7.2.3 finally compares the discourses on the two platforms, which similarly frame vaccination decisions associated with responsibility and citizenship identities in affective nationalist sentiments.

7.2.1 Weibo: Vaccination and civic responsibility in China

As illustrated in Chapter 5, numerical data played a key role in providing daily updates about Covid on Weibo, which were communicated following consistent formats as 'templates'. The observation of the posts in the topic of domestic vaccine distribution found that the numbers of vaccinated populations were communicated in a similar templated way. The observation identified several prominent accounts active in providing the updates, including 26 posts from @Health China, 16 from @GOVCN, and 13 from the account of the Beijing Health Commission (@Beijing NHC or @首都健康). This aligns with the findings in Chapter 5, which noted @Health China, @GOVCN, and city-level accounts (including @Beijing NHC) as key accounts in providing daily pandemic updates.

For instance, Weibo 21 was from @GOVCN in January 2022, engaging with a template to update the overall numbers of vaccine doses provided by @Health China.



Weibo 21

https://weibo.com/5000609535/L8LwZBzOu?refer_flag=1001030103_

Weibo 21 (translation):

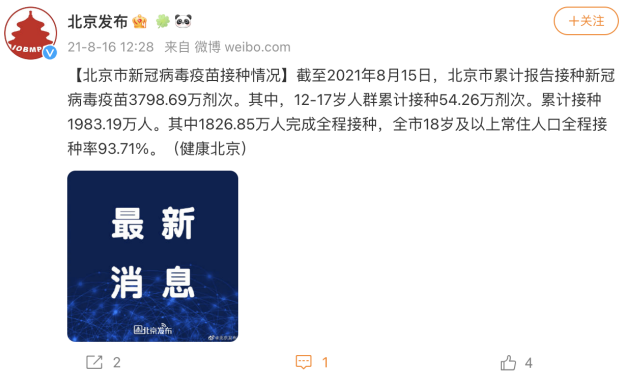
[Coronavirus vaccination status] As of 31 December 2021, 31 provinces (autonomous regions, municipalities) and the Xinjiang Production and Construction Corps have reported a total of 2,835,332,000 doses of Covid-19 vaccinations. @Health China

This example reports the cumulative numbers of vaccines given in China by 2021, although it does not provide break-down numbers related to time or geolocation attributions as seen in Chapter 5. To illustrate how this number-sharing practice developed into a template, Table 17 presents an image wall demonstrating consistency in the format used by @GOVCN, in terms of both texts and the blue image with the white texts of 'ministry information' (部委信息). This aligns with the findings in Chapter 5, where @Health China similarly applied a templated pattern to update pandemic-related numbers.

Table 17: Image wall of vaccination updates by @GOVCN

April 2021	May 2021	June 2021	July 2021	August 2021
September 2021	October 2021	November 2021	December 2021	January 2022
February 2022	March 2022			

This template was used not only by @GOVCN as a state-level account to report numbers of vaccinated populations, but also in local-level communication as in Weibo 22. It was from @Beijing Release in August 2021, updating the numbers of vaccinations in Beijing at the local level.



Weibo 22

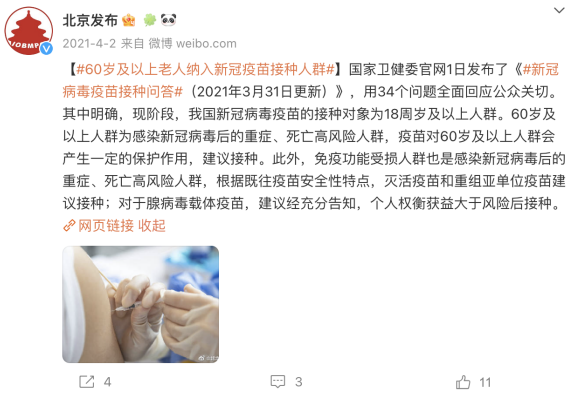
https://weibo.com/2418724427/KtKu50uZx?refer_flag=1001030103_

Weibo 22 (translation):
[Covid-19 Vaccination Situation in Beijing] As of 15 August 2021, Beijing has reported a total of 37.9869 million doses of Covid-19 vaccine administered. Among them, 542,600 doses have been administered to individuals aged 12-17. A total of 19.8319 million individuals have been vaccinated, with 18.2685 million having completed the full vaccination course. The full vaccination rate among permanent residents aged 18 and above in the entire city is 93.71%. (Beijing NHC)

Compared to the brief state-level update in Weibo 21, this example as local-level communication reports more comprehensive vaccination data: it includes detailed breakdowns across age groups (‘*individuals aged 12-17*’, ‘*residents aged 18 and above*’), vaccination status (completion of the full vaccination course), and residency status (permanent residents of the city). In addition to reporting the vaccination numbers, the scale of vaccination (93.71%) is calculated based on several criteria, focusing on residents aged 18 and above who are permanent residents of Beijing and have completed the full vaccination course. According to Chapter 2, measuring the proportion of the vaccinated populations is important as vaccination biologically functions by providing antibodies for major populations and protecting those susceptible from vaccination with high herd immunity (Randolph and Barreiro, 2020). Thus, the update template in Weibo 22 reflects an attempt to categorise populations

and assess risk from the *scale* of massive vaccination (degree of assessing risk-mitigation technologies) in the city by a certain date (temporality), while certain population groups have been given additional attention, such as those aged 12-17. This further empirically indicates classification, probability, and temporality as key characteristics of risk thinking.

While the young age group in Weibo 22 becomes one key indicator in classification, additional attention is placed on updating the vaccination progress in the (defined) 'elder' age groups. Weibo 23 was posted by @Beijing Release in April 2021, reporting the extension of the vaccination programme to the age group of over 60s in China.



Weibo 23

https://weibo.com/2418724427/K91Lp9Opf?pagetype=profilefeed

Weibo 23 (translation):

[#Inclusion of elderly aged 60 and above in Covid-19 vaccination group#] The National Health Commission's official website released the <FAQs on Covid-19 Vaccination (updated on 31 March 2021> in response to public concerns with 34 comprehensive questions. Among them, it is specified that the current target group for Covid-19 vaccination in China includes individuals aged 18 and above. The elderly aged 60 and above are considered high-risk individuals for severe illness and death after contracting the virus. Vaccination provides a certain level of protection for this age group, so it is recommended. Additionally, individuals with compromised immune functions are also at high risk of severe illness and death after contracting the virus. Based on the safety profile of past vaccines, inactivated and recombinant subunit vaccines are recommended for this group. As for adenovirus vector vaccines, it is suggested to be administered after thorough information disclosure, with individuals choosing to be vaccinated after weighing benefits against risks.

This example features the appeal for the elderly, defined as aged 60 or above, and individuals with compromised immunity to take vaccines. This appeal is constructed based on the evaluation between

risk of infections and risk of vaccination: both the elderly group and people with immunity conditions are framed as '*high-risk*' demographic groups with higher possibilities of '*severe illness and death after contracting the virus*'. Recommendations of vaccination also involve personal risk evaluation considering '*the safety profile of past vaccines*' and '*after weighing benefits against risks*'. Thus, this example, along with Weibo 22, shows how age groups (the 'young' and 'elderly') and immunity conditions serve as key classification indicators for constructing biological 'vulnerable' populations requiring vaccination protection.

In addition to classifying through age and immunity conditions, there are several Weibo posts discussing prior vaccination for individuals classified as 'key occupations'. For example, in December 2020, the account of the Ministry of Industry and Information Technology (@MITT, or @工信微报) introduced the national policy of prioritising vaccination for certain 'key' occupations and groups to minimise the pressure of imported viruses – these key occupations were related to national border work, such as cold chain logistics, port quarantine, aviation air crew, and fresh market workers, and were therefore categorised as carrying a higher risk of infection. In this sense, this policy illustrated how activities related to national borders could become additional classification factors in the domestic vaccination distribution.

So far, this section has discussed three Weibo examples in relation to vaccination: while the overall number of vaccinations was updated daily following a standardised format as a 'template', the data also emphasised the scale of vaccination within populations. Specifically, the examples showed that the importance of vaccination was emphasised for specific 'vulnerable' groups – here vulnerability was defined according to multiple factors (e.g., age groups, immunity conditions, and occupational risk) and the associated probability of increased infection and/or serious consequences. This empirically speaks to classification and probability as two fundamental characteristics of risk thinking, as articulated in Chapter 2. In essence, what is distributed is access to risk-mitigation technologies to minimise the anticipated possibility of exposure to risk, while also providing additional support to those likely to be more seriously impacted by Covid than others.

As Chapter 2 illustrated, personal choices about vaccination not only concern granting biological, individual access to risk-mitigation technologies but also contributing to enhancing population- and national-level immunity (Fine, Eames and Heymann, 2011). This explains why vaccination was narrated as a manifestation of individual duties and citizenship in the Weibo data. For instance, Weibo 24 was from @Wuhan Release in May 2021, sharing the appeal of massive vaccination from Zhong Nanshan and Zhang Boli. As a Chinese pulmonologist and leading adviser in pandemic control, Zhong Nanshan was introduced in Chapter 5 as the first Chinese scientist to declare Covid to be a

transmissible risk in January 2020. Zhang Boli also became famous during the pandemic because of his application of traditional Chinese medicine to Covid treatments.

Weibo 24

https://weibo.com/2759348142/KfIqJhkeH

Weibo 24 (translation):

[@ All! #Zhong Nanshan, Zhang Boli call for quick vaccination#] Zhong Nanshan: getting vaccinated is a very effective method to achieve genuine herd immunity. I hope everyone can work together and get vaccinated as soon as possible, contributing to the prevention of Covid for our country, the world, and for individual health. Zhang Boli: we especially hope that everyone takes this seriously and accelerates the vaccination process. This call is directed to @ your relatives and friends around you! (People's Daily)

This example reflects how the public was encouraged to get vaccinated as a contribution to reinforcing national immunity. It incorporates direct quotes from two key medical scientists to strengthen the appeal for participation, echoing the significant role of medical scientists' discourses in official communication within the framework of 'Science + X', as discussed in Chapter 5. Their quotes, '*contributing to the prevention of Covid for our country, the world, and for individual health*', and '*everyone takes this seriously and accelerates the vaccination process*', narrate individual duties for the collective benefit of the nation, where citizenship identity and participation in national vaccine programmes are intertwined as shared responsibilities. This frame of vaccination as patriotic emotion is resonant in Weibo 25 from @MITT in June 2021 sharing a video visualising the '*China's speed in Covid-19 vaccination*'.

Culturally, this example aligns with the discussion of responsibility in Chapter 6, where narratives of responsibility in China often resonated with broader cultural themes of collectivism, Confucianism,

and state-sponsored individualisation — all emphasising the individual's role in contributing to larger communities (Hofstede, 2001; Chang and Lee, 2013). This perspective is further supported by survey findings suggesting that the cultural value of collectivism may enhance individuals' vaccination intent and willingness to contribute to herd immunity during Covid in China (Wang, 2022).

Weibo 25

https://weibo.com/5149608258/Kl4jFkhuO

Weibo 25 (translation):

[#China's speed in Covid-19 vaccination in 80 seconds#] As of 19 June, the number of Covid-19 vaccine doses administered in China has exceeded 1 billion. From the first 100 million to 1 billion, the time required for each additional 100 million doses to be administered has decreased from 25 days to 5 days. Click on the video below to experience the speed of Covid-19 vaccination in China! Let's cheer together for the early establishment of herd immunity!

The video in this example presents an 80-second visualisation of vaccination numbers in China using histograms. By the end of the video, China's vaccination figures rise to the highest globally, highlighting the frame of speed and scale of the national vaccination programme. In addition to the video, the moral appeal of '*let's cheer together for the early establishment of herd immunity*' in text incorporates collective identity and patriotic sentiment into the shared objective of enhancing public immunity. Consistent with the description of 'China's vaccines' in Section 7.1.1, the hashtag *#China's speed in Covid-19 vaccination in 80 seconds#* in this example illustrates nationalist sentiment from the vaccine distribution perspective, evoking a sense of pride and solidarity due to the rapid acceleration and the scale of population vaccination efforts. Additionally, the emoji in this example, consisting of

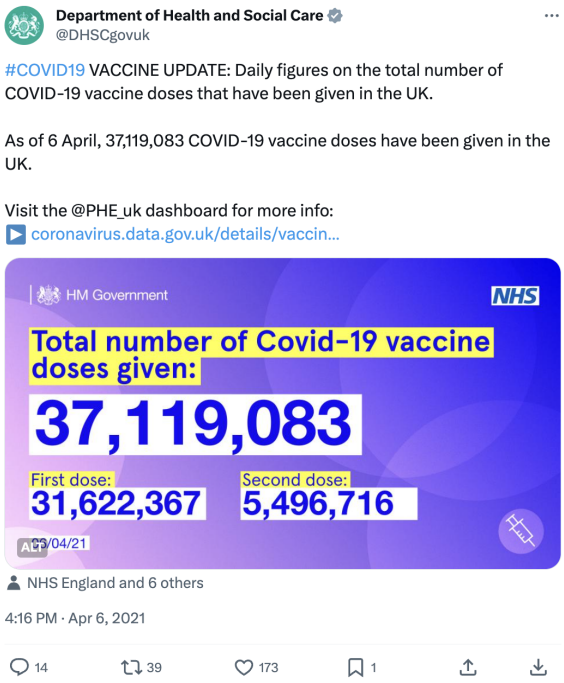
two characters ‘V’ and ‘5’, shares a similar pronunciation to ‘Weiwu’ (威武) in Mandarin, meaning ‘powerful’ in English. This emoji and the use of exclamation marks suggest how national sentiment is conveyed in an effective manner. This example, along with Weibo 24 discussed earlier, provides contextual evidence of how official narratives tend to promote specific collectivist roles for groups within society and for the individual within those groups (Winfield, Mizuno, and Beaudoin, 2010, p.346).

To summarise, this section analysed five Weibo examples regarding domestic vaccine distribution in China. The data showed that the numbers of the vaccinated population were updated daily on Weibo following a consistent ‘template’, with a focus on displaying the ‘scale’ of the vaccinated population. Early access to vaccines was framed through discourses of classification and probability, where the definition of ‘vulnerability’ was associated with age groups, immunity conditions, and occupational risk. Official communication on Weibo also framed participation in vaccination as an individual’s duty, whereby citizens were expected to contribute to national immunity through their vaccination decisions. In brief, building upon the communication of vaccine R&D in Section 7.1, this section suggested that the public was not only informed about the biological benefits and clinical safety of vaccines but was also encouraged to view vaccination choices through the lenses of patriotism, collective emotion, and responsibility. This exemplified another form of nationalist rhetoric compared to the vaccine R&D stage, emphasising the expressions of national solidarity and citizen responsibility in risk.

7.2.2 Twitter: Vaccination and civic responsibility in the UK

As the preceding section discussed nationalist rhetoric in Chinese vaccine distribution, this section explores its counterpart in the UK. Similar to the vaccination numbers reported in templates on Weibo, manual observation of tweets in the topic of domestic vaccine distribution found that vaccination numbers in the UK were also updated in a consistent format. This consistency involved the use of ‘generic visuals’ to present numbers in a concise and aesthetically consistent manner, minimising extensive textual communication against Twitter’s character limits.

The observation identified two accounts active in providing updates about vaccination, including 37 tweets from @UKHSA and 25 tweets from @DHSCgovuk, with @UKHSA having been identified as an active actor in providing general pandemic updates in Chapter 5. For instance, Tweet 24 was from @DHSCgovuk in April 2021, sharing the daily numbers of vaccinations in the UK.

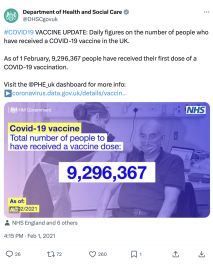
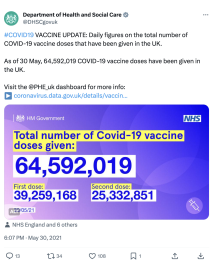


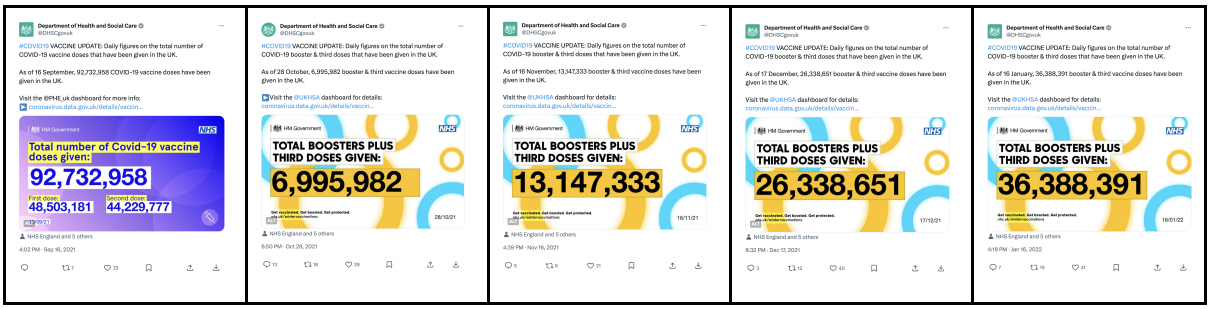
Tweet 24

https://twitter.com/DHSCgovuk/status/1379453037803102209

This example provides an overview of the general vaccination numbers administered in the UK by 6 April 2021, with additional information packaged on the official dashboard through a provided link. It only counts the number based on first or second doses, while the pandemic update tweets in Chapter 5 also engaged with numbers of specific demographic groups, such as locations, gender, and care home residents. To show the pattern of 'generic visuals' (Aiello *et al.*, 2022) involved in the vaccination updates, Table 18 presents an image wall where general numbers and dose-based numbers are updated in standardised images. Importantly, from October 2021, the visuals followed another format with a new emphasis on the numbers of boosters and third doses provided.

Table 18: Image wall of vaccination updates by @DHSCgovuk

February 2021	March 2021	April 2021	May 2021	August 2021
				
September 2021	**October 2021**	**November 2021**	**December 2021**	**January 2022**



In addition to the application of generic visuals in the general vaccination updates, additional attention was given to those defined as 'the vulnerable', consistent with Weibo counterparts in Section 7.2.1. When MHRA's authorisation of UK-based vaccines is processed on the age-group basis (Tweet 20), the domestic distribution similarly incorporates ages as key factors in the risk evaluation of vaccination. For example, Tweet 25 was from @DHSCgovuk in March 2022 introducing early vaccine access to specific demographic groups.

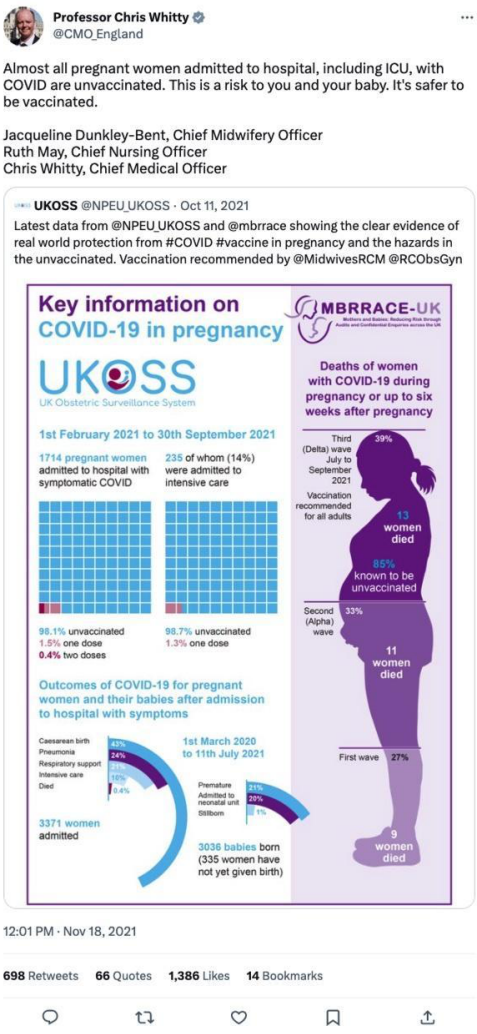
Tweet 25

https://twitter.com/DHSCgovuk/status/1505884428198981632

This example mentions three groups with higher risk profiles, thus prioritised for boosters: those aged over 75; care home residents; and individuals aged over 12 with certain conditions that suppress their immune systems. While the Weibo data adopted a different age classification (e.g., children aged 18 or below, the elderly aged 60 or above), examples on Weibo and Twitter similarly considered *ages* and

immunity conditions as biological key factors in defining 'the vulnerable'. The key difference lies in Twitter's mention of care home residents as sub-populations in terms of living conditions, which was not referenced in the Weibo data. While Weibo data also defined occupations related to international border work as high-risk, Twitter data did not feature this aspect.

Pregnancy and maternity, as another biological factor affecting risk evaluation, also gained certain attention in the appeal for vaccination, such as in Tweet 26 from Chris Whitty (@CMO_England) in November 2021.



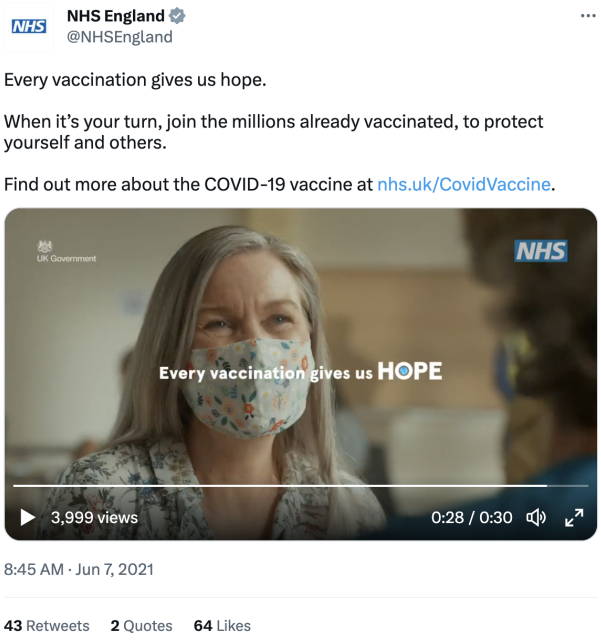
Tweet 26

https://twitter.com/CMO_England/status/1461303572050624517

This example shows @CMO_England quote-tweeting a post from the UK Obstetric Surveillance System programme (UKOSS), an institution dedicated to pregnancy research. This post encourages pregnant individuals to receive vaccination to reduce the possibilities of ICU treatments and minimise '*risk to you and your baby*'. An accompanying infographic in this post visually strengthens this

message by presenting clinical statistics to highlight the risk associated with being unvaccinated during pregnancy. In a similar fashion, the pandemic update tweets in Chapter 5 closely drew on the scientific expertise and authority of Chris Whitty, where infographics played a central role in information provision compared to text. While Weibo data also addressed prioritised vaccination for pregnant populations, the number of posts on this topic was relatively limited (4 Weibo posts compared to 17 tweets). The primary focus of these four posts was to address public concerns such as whether individuals trying to conceive should be vaccinated.

This section has thus far presented three examples to illustrate how vulnerable populations were classified on Twitter through age groups, health conditions, and living conditions. To support the shared goal of expanding vaccination scale, these groups were framed as having a greater need for early access to vaccines. To establish a direct comparison with Section 7.2.1, this section moves on to examine how vaccination choices were framed not only as medical risk-mitigation technologies but also as manifestations of individual responsibility, patriotic expressions, and other types of national rhetoric. For instance, Tweet 27, posted by @NHSEngland in June 2021, illustrates how vaccination was communicated in a personal narrative style, emphasising its role as a symbol of civic duty.



Tweet 27

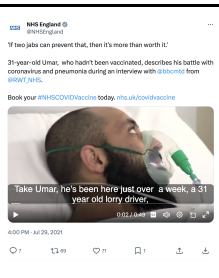
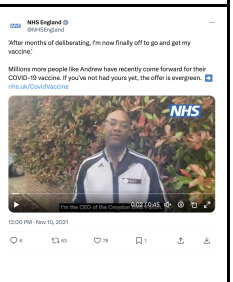
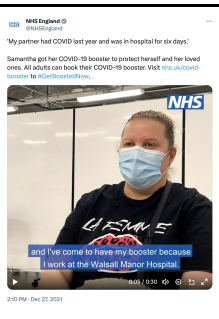
https://twitter.com/NHSEngland/status/1401807423556489223

Both the text and video in this example convey the message '*every vaccination gives us hope*', constructing vaccination as an individual choice where citizens are expected to take '*your turn*' to offer protection to others. The video, showing medical staff administering vaccination and citizens

receiving them, also presents the imagery of collective efforts in massive vaccination to encourage others to '*join the millions*'.

However, one key difference between frames of vaccination as a civic duty on Weibo and Twitter lies in the use of storytelling narratives on Twitter, which does not feature in Weibo data. Among the 68 sample tweets by @NHSEngland, 14 tweets feature one specific person sharing vaccination stories using real names. Table 19 reproduces a few such tweets to show the consistency in mobilising these personal discourses.

Table 19: Image wall of storytelling narratives by @NHSEngland

February 2021	July 2021	July 2021	October 2021	November 2021
Description of a dad	Final-year medical student	Unvaccinated with Covid	Healthcare assistant	CEO of the Croydon BME Forum
				
December 2021	December 2021	January 2022	January 2022	January 2022
A person defined as '*clinically extremely vulnerable*'	A person whose partner is in hospital with Covid	Trinidadian-British journalist	A person who has had boosters	A 13-year-old person
				

This table demonstrates 10 examples from @NHSEngland, where individuals in various occupations or with different immunity conditions share personal stories about receiving vaccines or boosters. This use of motive narratives might strengthen both the frame of safe and efficient vaccination seen in Section 7.1.2 and the narratives of individual duties in this section. All descriptions are accompanied

by visuals that incorporate individuals' voices within official communication, potentially facilitating these first-person experiences being felt in a relative and emotional way by platform users.

This practice of incorporating storytelling narratives further resonates with Section 6.2.1, where responsibility demonstrated by 'heroic individuals' on Weibo was similarly narrated through their quotes and storytelling, such as the deliveryman Cang's efforts to send daily essentials to residents in Weibo 14. The discourse of heroic individuals on Weibo in Chapter 6 and the discourse of persons choosing to get vaccinated here both demonstrate how responsibility is often communicated in an affective way, setting a role model of civic duty in the imagined society. However, from the platform affordance aspect, this image wall indicates a more dominant role of visuals in conveying personal discourses, compared to the text-based storytelling on Weibo in Chapter 6.

In summary, this section analysed four examples to explore how domestic vaccination distribution in the UK was communicated in official accounts. Similar to their Weibo counterparts, updates on the vaccinated population were provided daily with similar engagement of generic visuals as seen in Chapter 5. Priority access to vaccination was similarly provided to 'vulnerable' groups based on ages and health conditions, with care home residents also highlighted as prioritised groups. This aligns with the emphasis on high mortality rates in care home settings discussed in Chapter 5. While Twitter data also framed vaccination choices as civic duties, it specifically engaged with personal storytelling to make the discourses more affective and motivating for users. In other words, the nationalist rhetoric in this section focused on advocating public participation and national solidarity during risk, which was similar to results in Section 7.2.1.

7.2.3 Discussion: Responsible citizenship in accessing risk-mitigation technologies

Sections 7.2.1 and 7.2.2 respectively discussed how domestic vaccine distribution was framed in relation to citizen responsibility and national solidarity in risk. Although in Section 7.1 vaccination programmes were justified as 'safe and efficient' in enhancing individual immunity and reducing the probability of infection, individuals' vaccination decisions are much more complicated than solely considering their biological benefits in defending the virus.

According to Chapter 2, biologically, vaccination can be viewed as access to risk-mitigation technologies with the original purpose of enhancing individual immunity (Cohen, 2009) to reinforce herd immunity (Randolph and Barreiro, 2020), the side effects of which are evaluated to outweigh the consequences of infecting Covid. Examples in Sections 7.2.1 and 7.2.2 showed that official communication in both China and the UK engaged with routine updates of vaccination numbers in a nuanced pattern of standardised communication, highlighting the *scale* of accessing vaccines. Early

access to vaccination was similarly allocated to those defined as 'vulnerable', relating to age groups, immunity conditions, and other factors. In this context, vaccination as risk-mitigation technology is narrated as intertwined with classification and probability (e.g., Heyman, 2010; Brown, 2020; Brown and Galantino, 2020) – a core to risk thinking, as illustrated in Chapter 2.

From a societal perspective, the preceding two sections have shown how vaccination decisions were framed as symbols of civic duties, or as an emerging societal 'norm' in managing risk. In addition to learning the general numbers of domestic vaccinated populations, publics were also encouraged to '*take this seriously and accelerate the vaccination process*' (Weibo 24), or '*join the millions already vaccinated to protect yourself and others*' (Tweet 27) – the potential connection between individual decisions and identity of national citizenship was emphasised. In essence, individuals' choices are contextualised within an awareness of the 'consequences of decisions' (Giddens, 1999, p.8) regarding their contribution to (or against) the public good at the national level. Specifically, in the context of Covid, this pertains to whether one chooses to be part of the 'responsible majority' contributing to increasing the national immunity level through vaccination. This narrative aligns with the findings of Chapter 6, which considered civic duties as being productive and contributing to the public good. Theoretically, this finding speaks to Petersen and Lupton's (1996) conceptualisation of 'responsible citizenship' in new public health, where individuals are expected to adopt 'good' practices, monitor any potential risks, and make efforts to live a 'healthy' life not only for themselves, but for their nations and families too.

In light of the nationalist rhetoric, Section 7.1 elaborated on analysing the emergence of national characters in vaccine R&D when building biological risk-mitigation technologies with clear nation-oriented attributions. Building upon this, this section focused on how the uptake of these new technologies was narrated. This raises new facets of nationalist rhetoric in relation to collective responsibility, public participation, and national solidarity, defined as necessary for a nation to go through risk. Compared to Section 7.1, this section identified more affective communication with sentiment delivery in shaping civic duties in vaccination (Papacharissi, 2015, p.125). This may evoke individual feelings of citizenship identity and belonging to the nation, as seen in the use of nationalist sentiment (e.g., '*China's speed in Covid-19 vaccination*' in Weibo 25) and other motivating language (e.g., '*every vaccination gives us hope*' in Tweet 27). The patriotic sentiment constructed around vaccination narratives aligns with cultural factors in China, where collectivism, Confucianism, and state-sponsored individualisation all emphasise the group-oriented characteristics of individuals (Yan, 2010b; Chang and Lee, 2013; Yao, 2020).

In summary, focusing on the domestic level, this section elaborated on how national vaccination programmes were narrated through routine updates, framed in terms of vulnerability, and portrayed as

manifestations of civic duties and national solidarity. The following section explores the frame of vaccine distribution at the global level, introducing new perspectives on nationalist rhetoric in addition to national characters (Section 7.1) and national citizenship (Section 7.2).

7.3 Global vaccine distribution

The preceding two sections focused on vaccine R&D and domestic distribution, prompting further discussions on vaccine distribution at the global level. As illustrated in the literature review in Chapter 2, the emergence of risk introduces new forms of equality by posing inescapable threats while simultaneously sustaining hierarchy in class society (Beck, 1992, p.35, 40). This dynamic is reflected globally in the paradoxical blurring and strengthening of national borders during the global transmission of infectious diseases (Abeysinghe and White, 2011). Considering the co-existence of equality and inequality within the context of national vaccine programmes, Section 7.1 unpacked how vaccine R&D became a manifestation of national power, while others outside the powerful groups might experience pre-existing disparities in vaccine access.

This section aims to explore how the countries giving and receiving vaccines were portrayed in official communication regarding vaccine global distribution. To address this, the section examines a sub-sample of 45 Weibo and 23 tweets featuring global vaccination activities and mentioning other countries beyond China and the UK, which helps with understanding their involvement in addressing unequal vaccination access globally and identifying specific nation-state actors involved in their global vaccine distribution.

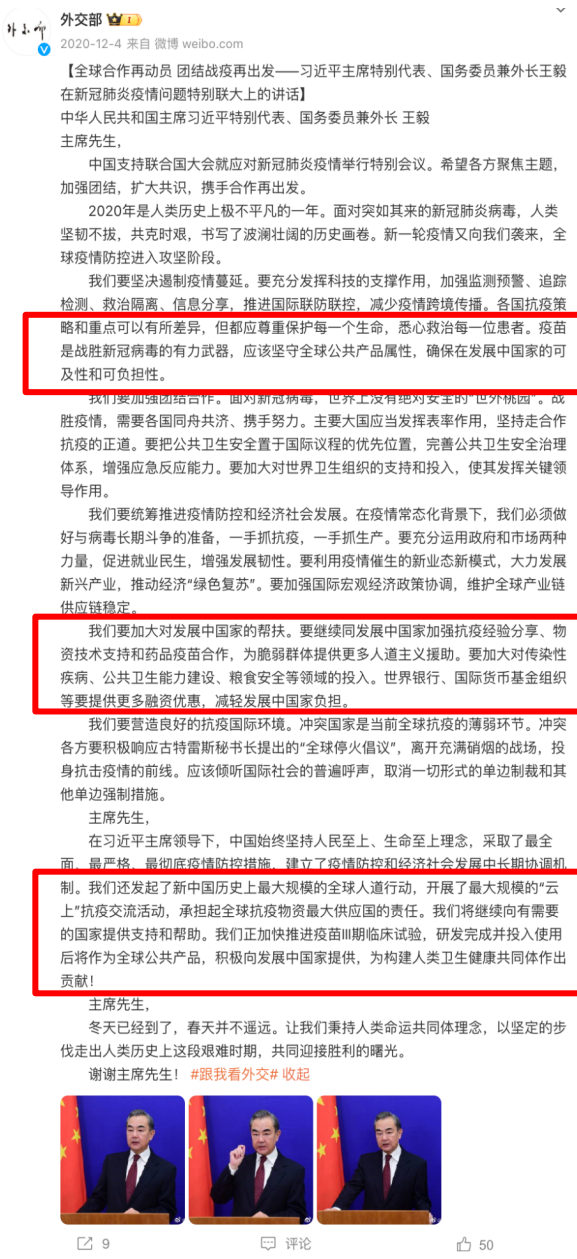
Before starting the analysis, it is necessary to acknowledge that the data did not explicitly articulate whether the vaccines were shared freely, commercially, and/or through other benefit exchanges. The data collected on Weibo and Twitter instead suggested that vaccine distributions should be viewed within broader, pre-pandemic collaborative politics between giver and recipient, such as the One Belt One Road Initiative (BRI) and the Commonwealth, introduced in Chapter 3. While vaccine distribution is often perceived interchangeably with vaccine donation by the public, the term ‘donation’ has drawn theoretical criticism for being mixed with other approaches of ‘giving’. It is argued that donations, particularly when publicly acknowledged, are not entirely altruistic, free ‘gifts’, but conditional forms of benevolence (Machin, Williams and Frith, 2020). Thus, not all types of vaccine circulation can be exclusively summarised with the word ‘donation’, because the consequences of ‘giving’ may extend beyond mere appreciation for the donors’ kindness (Machin, Williams and Frith, 2020, p.10). Therefore, this section employs the term ‘*act of giving*’ instead of ‘donation’ to flag the politics behind resource reallocation.

Section 7.3.1 discusses discourses about the distribution of China-based vaccines to developing and African countries, in the contexts of regional partnerships with Asian neighbours and China's self-identification as a developing country. Section 7.3.2 analyses similar discourses focusing on how African countries received vaccines from the UK, reflecting their historical relationship in the Commonwealth. Finally, Section 7.3.3 compares the two cases and analyses how sharing vaccine access with the global 'South' is shaped as a pivotal practice in countering vaccine hoarding through vaccine nationalism.

7.3.1 Weibo: Regional solidarity with developing countries

In Section 7.1.1, China-based vaccine R&D reflected a broader construction of national character as an emerging global player with an increasingly internationally-recognised level in science development, which is also reflected in its frame of worldwide vaccine-related activities. The manual observation of Weibo posts featuring global distribution of vaccines suggested that maintaining universal access to Covid vaccines was consistently framed as the primary mission for China as a major vaccine-producing country.

Among the 45 Weibo posts featuring global vaccine distribution, 17 are from @Ministry of Foreign Affairs, with 5 additional posts from the Spokesperson's office in the Ministry of Foreign Affairs. For instance, Weibo 26 was from @Ministry of Foreign Affairs in December 2020, sharing former Minister of Foreign Affairs Wang Yi's speech at the WHO at the Special Session of the United Nations General Assembly in response to Covid. Parts of his speech in relation to global vaccine access are highlighted and translated below.



Weibo 26

https://weibo.com/1938330147/JwTQLzUiB

Weibo 26 (translation of highlighted text):

First paragraph:

Vaccines are powerful weapons to defeat Coronavirus and should adhere to the attributes of global public goods, ensuring accessibility and affordability in developing countries.

Second paragraph:

We need to increase assistance to developing countries. We should continue to strengthen experience sharing, material and technical support, and cooperation on medicines and vaccines with developing countries, and provide more humanitarian aid to vulnerable groups.

> *We should increase investment in infectious diseases, public health capacity building, food security, and other areas. The World Bank, International Monetary Fund, and other organisations should provide more financing concessions to alleviate the burden on developing countries.*
>
> Third paragraph:
> *We have also launched the largest humanitarian action in the history of New China, conducted the largest cloud-based anti-pandemic exchange activities, and taken on the responsibility of being the largest supplier of anti-pandemic materials globally. We will continue to provide support and assistance to countries in need. We are accelerating the progress of Phase III clinical trials of vaccines, and once developed and put into use, they will be offered as global public goods. We will actively provide them to developing countries, contributing to the building of a global community of health for all humanity!*

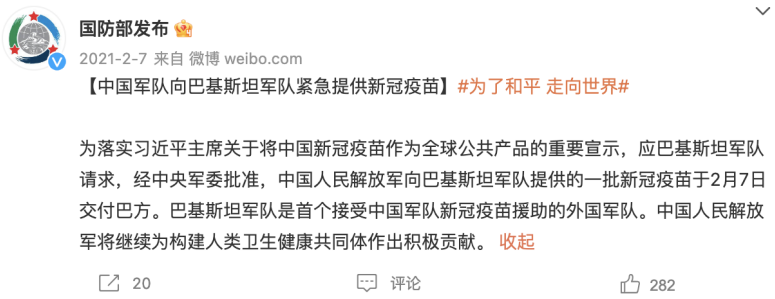
This example discusses the importance of prioritising global vaccine access for developing countries. Its first paragraph notes the nature of vaccine programmes as '*global public goods*' in terms of '*accessibility and affordability*' to developing countries. The second paragraph further calls for 'our' support of these countries, including collaborative efforts in local vaccine production and financial assistance through international organisations, such as the World Bank. The third paragraph introduces the support provided by China, including offering China-based vaccines as global public goods to developing countries. It also notes the national commitment of a country in fulfilling and continuing to uphold its corresponding '*responsibility of being the largest supplier of anti-pandemic materials globally*'.

Importantly, this example highlights the appeal of 'our' global collaboration to address current vaccine inequity, considering the varying national resources and power needed to access vaccines as risk-mitigation technologies for establishing global immunity. Assistance to developing countries is highlighted as central to this appeal, which is framed around the need for external assistance from 'us' to enhance the accessibility of vaccines for 'them'. In light of the frame of national character as an emerging global player in Section 7.1.1, the narrative of 'us' in this example further strengthens the ideal national character promoted by official communication: despite being one of the developing countries, it is willing to and able to 'give'. This also extends the discussions of government responsibility at the domestic level in Chapter 6, which involves not only being 'supportive' to home populations, but also providing support to global actors.

Having discussed the general national commitment to vaccination sharing and the national character of responsibility, this section precedes to examine posts mentioning particular countries that received

vaccine-related support from China. Manual checking of these data revealed that vaccine distribution was portrayed through three dominant frames of 'giving': the sending of vaccines, local reception of vaccines, and collaboration in local vaccine production. This section moves on to present three Weibo examples to illustrate these three frames, respectively.

As illustrated in Chapter 3, China has a long history of collaboration with developing countries in Asia and Africa, which extends to the global distribution of China-based vaccines. For instance, Weibo 27 is from @Ministry of National Defence (@国防部发布), the official account of the Ministry of National Defence of China, in February 2021. It mentions China-based vaccines being sent to Pakistan to meet the national commitment to maintaining vaccines as global public goods mentioned in Weibo 26.



Weibo 27

https://weibo.com/5611549371/K0OXOsBE6

Weibo 27 (translation):
[Chinese military provides emergency Covid-19 vaccines to Pakistani military] #For peace, towards the world# In order to implement President Xi Jinping's important declaration of making Chinese Covid-19 vaccines a global public good, and in response to a request from the Pakistani military, approved by the Central Military Commission, the People's Liberation Army of China delivered a batch of Covid-19 vaccines to the Pakistani military on 7 February. The Pakistani military is the first foreign military to receive assistance from the Chinese military in the form of Covid-19 vaccines. The People's Liberation Army of China will continue to make active contributions to the building of a global community of health for all humanity.

This example features the dispatch of China-based vaccines to Pakistan in response to a national request. In this context, the act of giving should be understood as the provision of tangible technological solutions aimed at enhancing the recipient country's capacity to manage risk. This manifests national rhetoric centred on the national commitment to keep vaccines as '*global public*

good', and a national character of being responsible for the '*building of a global immunity for health for all humanity*'. Contextually, Pakistan being the first foreign military to receive vaccine support should be viewed in historical context: since 1951, Pakistan has had diplomatic relations with China, and the two jointly engaged with several regional collaboration mechanisms such as the China-Pakistan Economic Corridor (CPEC) to expand common interests and enhance regional connectivity (Ministry of Planning, Development, & Special Initiatives, no date). Therefore, this post illustrates an act of 'vaccine giving' as a reflection of diplomatic relationships.

Portraying the act of giving is not only about featuring the country providing the assistance, but also illustrating how the support is received by recipients. For instance, Weibo 28 from @Wuhan Release in May 2021 introduces the local welcoming of China-based vaccines in the Philippines. As illustrated in Chapter 3, the Philippines is both a member of ASEAN and shares borders with southern China.

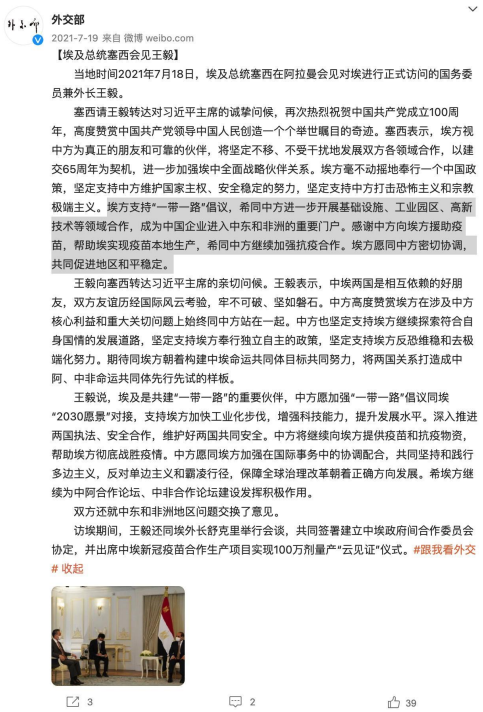
Weibo 28

https://weibo.com/2759348142/KdNsdBbUL

Weibo 28 (translation):
#Duterte receives Chinese Covid-19 vaccine# [Philippine President Duterte receives Chinese Covid-19 vaccine, responds on-site: 'I feel good'] On the evening of 3 May, Philippine President Duterte received the first dose of the Chinese Sinopharm Covid-19 vaccine. According to CCTV News, the vaccine was administered by Philippine Health Minister Duque. Based on on-site video, after receiving the vaccine, when asked 'how do you feel, Mr. President?' Duterte responded, 'I feel good. I've been looking forward to this shot for a long time.'

This example features the Philippine President receiving China's Sinopharm vaccines, expressing his anticipation in a positive tone: '*I've been looking forward to this shot for a long time*'. It also includes a video showing the vaccination scene, which adds direct insight into Duterte's attitudes towards the shared vaccines. While the preceding example of Pakistan focused on the discourses surrounding the vaccine provider, this example offers another narrative from the recipient's perspective, indicating a frame of how the China-based vaccines were received positively by foreign countries.

Up to this point, this section has discussed two frames of the act of giving, both from the giver's and the recipients' aspects. This section moves on to discuss the third type of giving, which focuses on the provision of vaccine production capabilities beyond vaccine products. This is exemplified by Weibo 29 by @Ministry of Foreign Affairs in July 2021, featuring former Foreign Minister Wang Yi's visit to Egyptian President Abdel Fattah El-Sisi.


外交部
2021-7-19 来自 微博 weibo.com
【埃及总统塞西会见王毅】
当地时间2021年7月18日，埃及总统塞西在阿拉曼会见对埃进行正式访问的国务委员兼外长王毅。
塞西请王毅转达对习近平主席的诚挚问候，再次热烈祝贺中国共产党成立100周年，高度赞赏中国共产党领导中国人民创造一个个举世瞩目的奇迹。塞西表示，埃方视中方为真正的朋友和可靠的伙伴，将坚定不移、不受干扰地发展双方各领域合作，以建交65周年为契机，进一步加强埃中全面战略伙伴关系。埃方毫不动摇地奉行一个中国政策，坚定支持中方维护国家主权、安全稳定的努力，坚定支持中方打击恐怖主义和宗教极端主义。埃方支持"一带一路"倡议，希同中方进一步开展基础设施、工业园区、高新技术等领域合作，成为中国企业进入中东和非洲的重要门户。感谢中方向埃方援助疫苗，帮助埃实现疫苗本地生产，希同中方继续加强抗疫合作。埃方愿同中方密切协调，共同促进地区和平稳定。
王毅向塞西转达习近平主席的亲切问候。王毅表示，中埃两国是相互依赖的好朋友，双方友谊历经国际风云考验，牢不可破、坚如磐石。中方高度赞赏埃方在涉及中方核心利益和重大关切问题上始终同中方站在一起。中方也坚定支持埃方继续探索符合自身国情的发展道路，坚定支持埃方奉行独立自主的政策，坚定支持埃方反恐维稳和去极端化努力。期待同埃方朝着构建中埃命运共同体目标共同努力，将两国关系打造成中阿、中非命运共同体先行先试的样板。
王毅说，埃及是共建"一带一路"的重要伙伴，中方愿加强"一带一路"倡议同埃"2030愿景"对接，支持埃方加快工业化步伐，增强科技能力，提升发展水平。深入推进两国执法、安全合作，维护好两国共同安全。中方将继续向埃方提供疫苗和抗疫物资，帮助埃方彻底战胜疫情。中方愿同埃方加强在国际事务中的协调配合，共同坚持和践行多边主义，反对单边主义和霸凌行径，保障全球治理改革朝着正确方向发展。希埃方继续为中阿合作论坛、中非合作论坛建设发挥积极作用。
双方还就中东和非洲地区问题交换了意见。
访埃期间，王毅还同埃外长舒克里举行会谈，共同签署建立中埃政府间合作委员会协定，并出席中埃新冠疫苗合作生产项目实现100万剂量产"云见证"仪式。#跟我看外交
收起
3 2 39

Weibo 29

https://weibo.com/1938330147/KpqHltmJc

Weibo 29 (translation of highlighted texts):
Egypt supports the One Belt One Road Initiative, and hopes to further carry out cooperation with China in infrastructure, industrial parks, high-tech and other fields and become an important gateway for Chinese enterprises to enter the Middle East and Africa. Thanks to China for providing vaccines to Egypt and helping Egypt achieve local production of

> *vaccines. Hope to continue to strengthen anti-pandemic cooperation with China. Egypt is willing to closely coordinate with China to jointly promote regional peace and stability.*

This example mentions the ongoing collaboration between China and Egypt in commercial and technical domains through the *One Belt One Road* Initiative, highlighting vaccination support as one reflection of this broader cooperation. Importantly, what is being shared is not only vaccines but also the vaccine *production* capacity contributing to improving Egypt's local vaccine manufacturing.

In essence, this example highlights that the collaboration between Egypt and China during Covid was not just one-time vaccine sharing but a reflection of long-term commercial and political partnerships, including involvement in the BRI. Contextually, prior to joining the BRI, Egypt was also the first Arab and African country to establish diplomatic relations with China in 1956, and it joined the BRICS mechanism upon China's invitation (Ministry of Foreign Affairs of the People's Republic of China, 2023). As illustrated in Chapter 3, the BRI and BRICS are both important diplomatic initiatives developed by China to foster global cooperation, especially with developing countries. Therefore, this example notes that the act of vaccine 'giving' is inherently political and stems deeply from historical contexts. This will be further unpacked in Section 7.3.3.

To summarise, this section started with a discussion of the national commitment to maintain China-based vaccines as global public goods, and the national character of a major vaccine-producing actor fulfilling corresponding responsibility, particularly supporting developing countries. The following three examples demonstrated three frames of the act of giving in official communication: vaccines being sent and received, as well as the production capability being transmitted across nations. Contextually, the relationship between giver and recipient further reflected China's historical relationships with developing countries, such as Pakistan in CPEC, Philippines as an ASEAN member, and Egypt in the BRI and BRICS. Three frames of 'giving' collectively demonstrated how China became active in re-allocating vaccines as the ability to manage risk in the Global South. Conceptually, this reflected the politics inherent in the act of giving vaccines, which was intertwined with national character as well as geopolitical, diplomatic dynamics.

7.3.2 Twitter: Historical solidarity in the Commonwealth

The previous section outlined how vaccine distribution activities between China and the Global South were narrated in official communication. To build a direct comparison, this section examines tweets relating to global distribution of UK-based vaccines. Data showed that the UK-produced vaccines were similarly distributed to developing and African countries, while reflecting different pictures of national vaccine diplomacy in the history of the Commonwealth. The global distribution of UK-based

vaccines was also narrated with national pride stemming from advancements in science and technology, echoing the national pride evident in vaccine R&D discussed in Section 7.1.2.

For example, Tweet 28 was from @FCDOGovUK in January 2021, introducing the vaccines being sent to developing countries from the UK.

Tweet 28

https://twitter.com/FCDOGovUK/status/1348685523758493696

Starting with the sentence '*we'll only be safe from this virus when we're all safe*', this example describes a caring and supportive national character active in distributing vaccines to developing countries. Describing vaccines' roles as '*a global solution*' and premises of global collective safety also indicates a frame of vaccination as a public good, similar to the national commitment that emerged in Section 7.3.1. Instead of using the word 'donate', the act of giving is phrased as '*helping developing countries*' which does not clearly point out the nature of giving (e.g., donation, purchase).

From a platform perspective, Tweet 28 references an article from *The Sun* to discuss the reallocation of UK-vaccines in supporting developing countries, marking the second appearance of *The Sun* in this chapter (previously seen in Tweet 21). This indicates different information source strategies compared to the reliance on state-owned media in the Weibo counterparts. In addition, the image in Tweet 28 indicates how vaccine givers and recipients are framed within national rhetoric: while the text mentions general '*developing countries*' as vaccine recipients, the image of *The Sun*'s article features

brown hands preparing for vaccination, suggesting certain imagined ethnic attributes of the recipient populations. Similar to Tweets 21 and 22 in Section 7.1.2, this example incorporates an emoji of the UK national flag to highlight nationalist sentiment within the act of 'giving'. Thus, this tweet demonstrates the UK's national commitment to supporting developing countries through vaccine sharing and conveys the national character of responsibility, aligning with the findings seen on Weibo.

After unpacking the general national commitment, this section continues to discuss specific instances of nations receiving vaccines from the UK. To build a direct comparison with Section 7.3.1, this section presents three sample tweets to discuss three frames of 'giving', including vaccines being sent out from the UK, vaccines being accepted by recipients, and collaboration between the UK and local vaccine production actors.

As introduced in Chapter 3, established in 1949, the Commonwealth of Nations reflects the formal re-acknowledgement of territories historically colonised by the previous British Empire. Among 56 member countries of the Commonwealth, 21 are from Africa and 13 from the Central American and Caribbean regions (The Commonwealth, no date-a). For example, Tweet 29 was from @DminicRaab in August 2021, discussing UK-based vaccines being sent overseas. Importantly, most countries mentioned are members of the Commonwealth, including Kenya in Africa, and Jamaica, Guyana, and Belize in the Central American and Caribbean region.

Tweet 29

https://twitter.com/DominicRaab/status/1421827285863309321

This example introduces the first batch of vaccines sent from the UK overseas. Similar to Tweet 28, this tweet includes an image of a nurse administering vaccinations to local people, which visually presents the imaginary of the recipients' ethnic attributes. The act of giving is described using the term '*sent overseas this week*', with an unclear orientation to either donation or commercial purchase.

Furthermore, it is necessary to note that the countries mentioned in this example maintain further partnerships with the UK beyond their identities as the Commonwealth members: both Kenya and Belize serve as overseas training locations through collaborative mechanisms, namely the British Army Training Unit Kenya and the British Army Training Support Unit Belize (The British Army, no date), respectively. Jamaica and Guyana also share demographical ties with the UK's British Jamaican and British Caribbean communities. These long-standing relationships, pre-dating the pandemic, indicate the importance of viewing vaccine recipients in the broader context of diplomatic and historical relations. This aligns with the findings made on Weibo in Section 7.3.1, where collaboration through the BRI and ASEAN emerged.

In addition to vaccine sharing with members of the Commonwealth, sample tweets also mention how the vaccines were perceived by recipients, such as in Tweet 30 from @FCDOGovUK in August 2021.

Tweet 30

https://twitter.com/FCDOGovUK/status/1427691699980091400

This example features both text and visuals of Nigeria welcoming vaccines donated by the UK through COVAX. Consistent with the preceding examples, this tweet also highlights the public good

character of vaccines through the description: '*only through vaccinating people worldwide can we tackle the coronavirus pandemic*'. Similar to Weibo 28 featuring the Philippine President receiving Chinese vaccines, this tweet also indicates the supportive national character of the UK active in sharing local vaccines.

This section has thus far discussed two frames of giving: the dispatch of UK-based vaccines and the perception of recipients. It moves on to present an additional example to demonstrate how the transfer of vaccine production capacity represents another form of vaccine provision. From @DominicRaab in March 2021, Tweet 31 shows the local collaborative efforts between the UK and Kenya (an East African country and a member of the Commonwealth) in enhancing global vaccine access.

Tweet 31

https://twitter.com/DominicRaab/status/1367214107619971078

This example features the UK-support mechanism of COVAX operating in Kenya, where the two countries collaborate in vaccine development. Here the act of giving extends beyond merely sending vaccines as tangible technologies carrying the functions of managing risk; it also includes transmitting the production and replication capabilities of these technologies. From a platform aspect, similar to the previous three examples, the image of Dominic Raab hearing the local staff's discussion visually strengthens the imaginary of the support recipient.

In summary, this section began by articulating the UK's national commitment to assisting developing countries by distributing vaccines as a 'global solution'. This section subsequently presented three examples to illustrate three frames of the act of giving: the dissemination and reception of UK-based

vaccines by other countries, as well as involvement in local vaccine production. Similar to Section 7.3.1, the relationship between giver and recipients was found to be characterised by the UK's historical association within the Commonwealth. While the UK's vaccine distribution efforts similarly targeted developing countries, this was primarily realised through support directed at Commonwealth members, particularly those in African, Caribbean, and Central American regions.

7.3.3 Discussion: Vaccine diplomacy in the act of 'giving'

The previous discussions on Weibo and Twitter sought to address two questions: what types of assistance related to vaccines, according to the official discourses, were 'given' to recipients? And who were framed as eligible recipients of the assistance provided by China and the UK?

For the first question, the preceding two sections aimed to identify three frames of the act of giving: vaccines being sent as tangible technologies carrying the ability to manage risk; vaccines being accepted and appreciated by the recipient actors; and vaccine production capabilities being established locally with the help of China or the UK, representing the replication of risk management capabilities. Therefore, vaccines as tradable commodities being 'given' to other countries also reshapes the social relationships between those giving and those accepting them (van der Geest and Whyte, 2021). The establishing of local vaccine production facilities can be seen as an example of de-monopolising medical knowledge held by actors inventing or producing them, and making them accessible to countries with limited production capacities (van der Geest and Whyte, 2021).

For the second question, the discourses of both countries in the examples promote the national character of fulfilling corresponding duties as major vaccine-production actors during the pandemic. These discourses emphasise national commitments to facilitating international vaccine re-distribution to developing countries as central solutions to addressing global vaccine inequality. While the developing countries were involved in both distribution plans, the geopolitics of China and the UK led them to define 'eligible' vaccine recipients differently. The recipients of China-based vaccines were Asian and African countries in the Global South with partnerships through existing collaborative mechanisms (BRICS, ASEAN, the BRI). The recipients of UK-based vaccines pointed to the UK's historical components as Commonwealth members, especially the connection with developing countries in African, Central American, and Caribbean regions. These narratives that locate vaccines or related capabilities within broader geopolitics and collaborative mechanisms further confirm the global vaccine distribution as political rather than one-off, free donations.

Furthermore, the recurrent presence of countries from the Global South in the examples implies the pre-pandemic inequality of medical resources. In light of the literature review in Chapter 2, the

emergence of risk makes it less likely for countries with insufficient resources to adequately learn and prepare for the upcoming risk (e.g., lack of capacities in vaccine R&D) (Petersen and Lupton, 1996, p.102). However, the Global South remains crucial in establishing global herd immunity to mitigate virus transmission. Thus, the limited capacities of single nations to manage risks, such as Covid transmission, necessitated international collaboration (Beck, 1992), such as vaccine re-allocation to the Global South. Consequently, global vaccine distribution at the national rhetoric level signifies the national commitment of major vaccine-producing countries to take responsibility for contributing to global immunity levels and fostering geopolitical solidarity.

In brief, while there may be overlap among some vaccine recipients from China or the UK, their relationships as givers and recipients should be unpacked within the broader contexts of geopolitics. As de Bengy Puyvallée and Storeng suggest (2022), vaccine diplomacy with Africa or other regions did not only occur in China as a means of extending international influence but was also significant for other vaccine-giving countries, such as the UK, to strengthen national partnerships and enhance global visibility (p.8). While African and developing countries were selected by both China and the UK as the targets of vaccine distribution during the Covid-19 pandemic, they manifested distinct, profound partnerships or historical ties that were established pre-pandemic.

7.4 Conclusion: Understanding nationalist rhetoric through vaccine-mediated nationalism

This chapter used vaccine-related data as an empirical vehicle to explore nationalist rhetoric emerging both during the vaccine R&D phase and in the post-R&D phase. To comprehensively describe various forms of symbolic meanings and nationalist rhetoric associated with national vaccination programmes (Vanderslott *et al*., 2021), this chapter promoted the concept of 'vaccine-mediated nationalism'. Compared to vaccine nationalism's emphasis on vaccine stockpiling (Riaz *et al*., 2021), vaccine-mediated nationalism aims to grasp various national rhetoric emerging in the narratives of vaccines, beyond the issue of centralised vaccine ownership. This chapter suggested that governmental narratives of vaccines tend to *parallel* national rhetoric with frames of cosmopolitan solidarity, without necessarily portraying these two aspects as conflicting. Paralleling means the narratives highlighting assistance to one specific nation and those emphasising international collaboration and solidarity were not constructed and presented in a mutually exclusive manner.

To present the changing roles of vaccination in this chapter and various forms of nationalist rhetoric emerging throughout the three stages, Table 20 summarises the types of nationalist rhetoric that emerged in this chapter.

Table 20: Three types of national rhetoric in Chapter 7

Stage	Vaccination roles	Manifestations of nationalist rhetoric
Domestic vaccine R&D (Section 7.1)	Vaccines as risk-mitigation technologies. Constructed as safe and efficient in enhancing individual immunity and reducing the probability of risk.	The ability to conduct vaccine R&D reflects distinct national characters and power in science development and global biomedical infrastructure. Emerging global player with increasing world recognition; national pride from the continuous advancement in science and a leading position relative to other powerful global players.
Domestic vaccine distribution (Section 7.2)	Vaccination as individual choices affecting population immunity. Priority vaccination to the defined 'vulnerable' groups, with nuanced definitions (e.g., border-related occupations, care home residents).	Vaccination is framed as a manifestation of responsibility in the identity of national citizenship, where individuals are expected to advocate national solidarity.
Global vaccine distribution (Section 7.3)	Technologies transferable across nations through vaccine 'giving' to facilitate the transmission of risk management capabilities.	National character entails a country's commitment to fulfil corresponding responsibilities as major vaccine production actors. The selection of vaccine recipients points to 'ephemeral internationalism' reflecting pre-pandemic geopolitics with developing and African countries.

As shown in this table, at the vaccine R&D stage, vaccines' *biological* roles as risk-mitigation technologies are emphasised, with their effectiveness in managing risks being justified through the narratives of 'safe and efficient': they function by enhancing individual immunities, thereby achieving the aim of reducing the possibilities of infection. The 'safe and efficient' narrative, observed on both Weibo and Twitter, draws upon the affirmations of medical institutions and clinical statistics as 'gold standards'.

The definition of 'gold standards' and the abilities to engage with them reflect a nation's standing in science development and its position within the global biomedical infrastructure – the frame of China as an emerging global player with its products receiving increasing recognition from external, international (predominantly Western-based) criteria. National pride in the UK stems from the frame of its advanced position in global biomedical areas compared to other powerful players (e.g., Europe,

US, and Canada) and the ability to justify itself through internal 'gold standards' (e.g., MHRA). Therefore, the national rhetoric, at the vaccine R&D stage, revolves around the national character in science development and positions within the global medical industries.

During the domestic distribution stage, the vaccine's *social implications* for building herd immunity and collective responsibility become central. Both cases provide routine updates of vaccination numbers to indicate the scale of vaccinated populations within the nation, which, compared to the vaccine R&D stage, focus on the collective impacts of vaccination on society. Consistent with the findings in Chapter 5, these numbers are also communicated, respectively, in templated patterns and generic visuals on Weibo and Twitter.

Furthermore, narratives of classification and probability, key to the risk thinking perspective, become prominent in framing vulnerable groups with prioritised access to vaccination. Both Weibo and Twitter similarly define vulnerability following biological categorisations of age groups and health conditions, while the high-risk occupations in sampled Weibo posts and care home residents and pregnant individuals in sample tweets are respectively classified as additional groups in need of vaccination priority. Importantly, publics on both Weibo and Twitter are expected to join the 'responsible majority' to enlarge population immunity and demonstrate consideration to society. Therefore, national rhetoric in this context of domestic distribution includes discourses of national solidarity, civic duties, and citizenship, which are similarly communicated as being central for a nation's ability to navigate its way through risk in Chapter 6.

From the perspective of vaccine global distribution, vaccines serve as *transferable* technologies, demonstrating the beneficence and capacities of 'giving' the ability to manage risk. Both Weibo and Twitter samples emphasise the national commitment to maintain their nationally produced vaccines as global public goods, with developing and African countries defined as recipients. However, the inclusion of developing and African countries in these commitments points to distinct geopolitics, such as China's relationship with Asian countries through the BRI and ASEAN, and the UK's historical ties with the Commonwealth. This suggests the concept of 'ephemeral internationalism': the *general* national commitment to promote vaccines as international public goods unavoidably entails engaging in the act of 'giving' to *specific* nations. This concept is borrowed from James and Valluvan's idea of 'general-particular outsiders' (2020), which suggests that among the general nationalism claim that 'outsiders bring risks' there would be particular definitions of 'most dangerous outsiders'. Similarly, within the general national commitment to global vaccine equity, there must be some specific eligible recipients in the context of pre-pandemic geopolitics.

Finally, from a platform perspective, this chapter showed how the communication of vaccination as a modality of nationalist rhetoric was further shaped by platform affordances. In the Weibo sub-sample, this chapter demonstrated how character limits and functions extending character limits (the headline article in Weibo 17) allow for information to be unpacked in a single Weibo post, such as details of clinical testing statistics. Additionally, in the sampled tweets, nationalist sentiment expression was facilitated using national flag elements, such as emojis and images in Tweets 21, 22, and 28. On both platforms, visuals played a significant role in constructing the imaginary of different stages of vaccine activities, such as the depiction of vaccine recipients discussed in Section 7.3.

After unpacking three themes in official communication through examples and comparisons, the next chapter synthesises the discussions from the three analytical chapters. It discusses how the official communication of risk, responsibility, vaccination, and nationalist rhetoric help us understand government discourses during Covid and its mediation through platforms.

Chapter 8 Discussion and Conclusion

This chapter aims to synthesise the thesis's findings. It discusses its twofold contributions: bridging the sociology of risk and platform studies into one theoretical framework, and applying this framework through the lens of digital sociology to examine the Covid-19 pandemic across two distinct national contexts, highlighting both similarities and differences.

To that end, Section 8.1 reflects on how the empirical findings produced and discussed in the previous three chapters address the thesis's research questions. Section 8.2 reflects on how these findings speak to the theoretical framework and existing literature reviewed in Chapter 2. It specifically discusses how this digital sociology thesis contributes to existing scholarship by proposing the concept of 'digital risk communities' to conceptualise the strategy employed in official communication. Section 8.3 discusses the methodological contributions, addressing both the limitations and broader implications noted by this thesis. Finally, Section 8.4 presents the overall conclusion of this thesis.

8.1 Revisiting the three research questions

The literature review in Chapter 2 noted the limited attention within the sociology of risk regarding how risk is reshaped by the politics of media and perceived contextually in non-Western cultures. In other words, relying solely on risk scholarships grounded in Western empirical experiences might fail to fulfil the research objective of this thesis, which aimed to explore how governments and digital platforms intersected in China and the UK during Covid. To address this gap, Chapter 2 proposed a theoretical framework that integrated the perspectives of risk research and the politics of platforms within a comparative paradigm.

As elaborated in the literature review, risk is conceptualised to reflexively flag the consequences of modernisation, characterised by uncertainty arising from its delocalisation, probability, and futurity (Beck, 1992; 2008). The uncertainties of risk also result in the proliferation of different risk definitions, such as the seriousness of Covid being variously evaluated across the world (Brown and Galantino, 2020). This is partly because actors providing the definitions can draw on their cultures (Douglas, 2002), expertise, and other reflexivity bases (Mythen, 2004). Therefore, researching how Covid as a health risk was defined and justified involves examining the value judgements inherent in the actors who provide the risk definitions (Dry and Leach, 2010). To consider how the risk associated with the Covid-19 pandemic was defined in China and the UK, the first research question sought to explore official frames of Covid through the lens of risk:

> RQ1: How and to what extent did governmental communication in China and the UK mobilise a discourse of risk through Weibo and Twitter respectively? Conceptually, to what extent does the notion of 'risk' help us to understand government social media communication during Covid?

In the literature review, responsibility is considered to be closely related to risk definitions, because responsibility is framed in terms of actors' ethical actions and accountability during the crisis (Giddens, 1999, p.8). In the new public health scholarships, states and individuals become two pivotal stakeholders: ideally, states as political institutions traditionally hold disciplinary duties for managing population health, while individuals are believed to be responsible for monitoring their own personal health as manifestations of good citizenship (Crawford, 1994; Petersen and Lupton, 1996). Understanding how this distribution of responsibility manifests in relation to this study context led to a second research question:

> RQ2: Which actions and actors were portrayed as responsible for the pandemic's management?

Finally, risk reshapes relationships between nations, while simultaneously strengthening nationwide inequalities, given the systematic association between extreme poverty and extreme risk (Beck, 1992; Mythen, 2004). Within the context of a pandemic, vaccination plays an important role as a risk-mitigation technology (Cohen, 2009), the development, ownership, and distribution of which are believed to be precious resources in building biological immunity against the virus. This makes vaccination a representative example of how national rhetoric, such as national character, is expressed through vaccination as a symbol (Vanderslott *et al*., 2021, p.3). Thus, a third research question sought to unpack the contours of risk and globalisation, particularly in relation to vaccination programmes during Covid:

> RQ3: How were nation-states and globalisation portrayed through discourses centred on vaccine research and development (R&D) and post-R&D distribution?

After outlining the three research questions and key concepts discussed in the literature review, the following three sections respectively revisit the key findings from each empirical analysis chapter and offer corresponding answers to the questions posed.

8.1.1 Establishing provisional certainty (RQ1)

To explore how the discourse of risk was embedded in the governmental discourses (RQ1), Chapter 5 offered a comparative analysis of how the pandemic was initially acknowledged right after its local outbreak and how it was subsequently addressed in routine pandemic updates. Empirically, Chapter 5 examined the posts functioning as pandemic updates before and after comprehensive pandemic surveillance mechanisms were established. This aimed to explore how uncertainty concerning the emergence of a new virus was addressed by official narratives before and after the establishment of the ability to measure risk.

Conceptually, Chapter 5 identified a communication strategy of *provisional certainty* through which the pandemic was framed, where three sets of framing devices became prominent, including scientists' discourses, numbers, and visuals, and their patterns of being 'templated' or 'generic'. According to Chapter 5, provisional certainty could be viewed as a frame of risk with an emphasis on its knowledgeability (e.g., manageable, curable), providing relatively definite answers to mitigate the uncertainty related to risk. However, it is important to note that these frames can be temporary and tentative, evolving alongside developments in risk knowledge and involvement in risk itself.

From the reception studies perspective, the practices of constructing certainty and building consensus around the significance of risk align with the longstanding emphasis on maintaining institutional reputation, trust, and positive public perception — key objectives for institutions engaging in risk communication (Covello, Slovic, Von Winterfeldt, 1986; Zimmerman, 1987; Markon, Crowe, and Lemyre, 2013). This institutional focus on addressing risk uncertainty and managing reputation capital often leads to risk communication emphasising 'what is being done to reduce the uncertainty' (Frewer et al., 2002). To achieve these trust-maintaining goals, institutions are advised to present risk judgments supported by evidence, simplifying technical and legalistic language (Covello, Slovic, Von Winterfeldt, 1986, p.173). This approach may help explain the reliance on (perceived) credible elements discussed in Chapter 5 (e.g., technical experts, numerical data), often presented in consistent formats (templated posts on Weibo or generic infographics on Twitter), leveraging the established perceived credibility associated with science and numerical data (Reynolds and W. Seeger, 2005, p.47).

At the front end of the pandemic, examples on Weibo and Twitter suggested that the uncertainty of Covid was approached differently in each country. This necessitated accounts constructing 'provisional certainty' contextually, regarding the local situations of Covid.

Weibo data suggested that during the initial outbreak, uncertainty mainly arose from the *biological unknowns* about the virus in China, the first country to deal with the pandemic. These uncertainties included its transmission patterns and geographical origins, which were intertwined with attempts to understand the unknowns through comparisons with existing knowns, such as pneumonia. Regarding the timeline of official communication, the riskiness of the virus was addressed in a tentative tone by highlighting things being done to improve the state's ability to control the outbreak before 20 January 2020, the day the virus was confirmed to be transmissible among individuals. Following this confirmation, the narratives turned to highlight the provisional certainty related to the virus (what we had learned so far) in light of ongoing efforts to address the remaining uncertainties (what we were still learning) simultaneously.

In contrast, Twitter data from the UK case indicated a different frame of uncertainty compared to China, characterised by a gradual acknowledgment of the virus's geographical proximity. While in the Chinese case, the certainty was grounded in confirming the virus transmission patterns, the UK's acknowledgment of the pandemic risk was about the locality of risk, to distinguish when and how a 'distant' risk developed into a domestic one. This definition of risk started with close monitoring of people's travel histories in January 2020, while the tangible impacts on populations were gradually informed by the explosive increase in confirmed cases following the localisation of the pandemic in the UK in late February 2020.

In addition, Chapter 5 suggested the pattern of 'Science + X' (van Loon, 2014, p.450) to conceptualise the practices where scientific rationality and evidence were mobilised jointly with other types of expertise (X) to define the early stage of Covid, such as the predictive claims of Covid being broadly transmitted without solid scientific evidence. More specifically, Chapter 5 noted that during the onset of Covid, both official communication in China and the UK primarily relied on discourses of medical expertise to frame Covid in provisional certainty. A shared characteristic across the two was to describe Covid as something that would come to be gradually understood over time with the development of medical knowledge, rather than as an insurmountable unknown. As evidenced in the examples in Chapter 5, the presence of medical experts served as a trustworthy information source to update the current knowledge and substantiate the framing of Covid as a manageable issue (e.g., Zeng Guang in China and Chris Whitty in the UK). From a platform perspective, while both cases incorporated medical experts into their official communication, there were different practices of the 'digitising' presentation of medical expertise: on Weibo, discourses of medical scientists were integrated textually within posts, such as Zeng Guang's long posts and quotations related as 'according to medical experts'. On Twitter, some medical experts maintained their own verified accounts, facilitating direct interactions between the experts and state institutions, such as Chris Whitty using his institutional account @CMO_England to quote-tweet @DHSCgovuk's tweets.

In addition to the prominence of medical expertise discourses at the front end of the pandemic, the establishment of national pandemic measurement mechanisms enabled both countries' official accounts to offer detailed updates, either daily in China or weekly in the UK. Within these update posts, numerical data and visuals both came to form important components of risk discourses, despite the distinct presentation styles employed by the two countries' accounts on the respective platforms. On Weibo, pandemic-related populations were categorised with detailed classification, such as confirmed cases, close contacts, and suspected cases, which were reported both within a 24-hour period and cumulatively. These numbers were presented as textual enumerations accompanied by city attributions (e.g., 'X cases in Y city'). This format came to establish a standardised 'template' for daily updates spanning two years in the sample datasets.

In contrast, Chapter 5 found that pandemic-related numbers on Twitter were processed into comparative *statistics* to reflect risk posed by Covid. For instance, statistics of deaths due to Covid were reported and compared on a weekly basis to reflect changes in risk, with additional historical comparisons made between Covid and mortality rates in the past five years. Sub-samples from these larger datasets were also developed for specific demographic groups (e.g., individuals with health conditions, and residents of care homes). To overcome the character limits on Twitter, these statistics and interpretations were often packed in infographics or cited as hyperlinks to websites and full dashboards, rather than long text like Weibo examples.

According to Chapter 5, further visual materials engaging these numerical data, not simply data visualisations of numbers and figures, were also rolled out in important ways. According to Weibo data, templated use of visuals could be observed in the daily pandemic updates to enhance the accounts' authority in defining risk (e.g., 'authoritative release' banners, and portraits of medical experts). In the case of Twitter, infographics played a pivotal role in packaging the multiple statistics and comparisons. These simple, routine data visualisations on Twitter also displayed the pattern of 'generic visuals' (Aiello, 2020), offering standardised formats to frame Covid through visual classification and comparison (e.g., geographical attributions, morality of Covid in different living conditions). The 'thread' function also facilitated presenting these generic visuals as a collection, which would be challenging to share in a purely textual format given Twitter's character limits.

When there were limited prior experiences to reference at the early stage of the pandemic, numbers in text on Weibo and infographics on Twitter emerged as important tools for assessing the present situation and estimating the future. In both cases, the presentation of numbers could be regarded as a set of framing devices of Covid through classification and comparison with specific temporalities (Brown, 2020; Brown and Galantino, 2020), aiding in the generation of quantitative feelings of Covid

(Hacking, 1990; Kennedy and Hill, 2018). For example, official visualisations in China are recognised as a key method of simplifying complex information, making policy language more accessible and helping audiences better understand the implications of the data (Zhao and Ye, 2022, p.29).

Descriptions of the calculability and localisation of risk facilitated by numbers and visuals further strengthened the frame of provisional certainty, given the perceived credibility attributed to numerical data, models, and methods (Melike Uluçay, Melek, and Özyurda-Ergen, 2021). Furthermore, during Covid, numbers carried powerful meanings as value judgements (Dahl and Ytre-Arne, 2023), yet the ways in which data was visualised and perceived could lead to trust issues and confusion (Tong, 2024). For instance, some example tweets specifically cited statistics related to high mortality rates among care home residents compared to the general population, indicating how people in various social positions could be disproportionately affected by risk (Mythen, 2004; Ballo *et al*., 2022).

Up to this point, this section has reviewed official strategies for communicating Covid to the public, where three sets of framing devices emerged prominently, as analysed in Chapter 5: discourses from medical experts, presentation of numerical data, and the use of visuals. These devices transformed the pandemic, once perceived as an overwhelming crisis, into perceptible frames for publics, such as statistical models drawing on historical data, or quotes from medical experts regarding ongoing studies of variants in the labs. The strategic use of these voices served to strengthen provisional certainty, framing the pandemic as something to approach with confidence and control, as a counterbalance to potential panic.

In summary, to address RQ1, Chapter 5 suggested that the official discourses in both cases functioned to promote an image of Covid in 'provisional certainty' and to dilute the uncertainty of this health crisis. Empirically, Chapter 5 identified three types of framing devices as above, through which the certainty dimensions of the pandemic were constructed and communicated. This process was further influenced by platform affordances, with the ability to share visuals, platform character limits, the headline article function on Weibo, and the thread function on Twitter all having significant impacts.

This proposal of provisional certainty appears to challenge the traditional depiction of risk in Beck's risk society (1992) where he articulates his well-known portrayal of uncertainty in risk, rooted in its delocalisation, non-compensability, and incalculability in risk society. However, it is important to note the difference between risk itself and the *official communication* of risk. While the sociology of risk typically emphasises uncertainty inherent in risk (facts) as something challenging to overcome, Chapter 5 suggested risk communication seeks to present a different picture of risk: one that is known/knowable and managed/manageable with certainty. These narratives of provisional certainty are characterised by their focus on maximising knowledge, control, and security to anticipate the

approaching risk (Beck, 2008; Anderson, 2010), while the communication does not deny the uncertainty of risk but demonstrates the capability to manage it.

Importantly, identifying the frames of provisional certainty does not conflict with acknowledging uncertainty regarding Covid. While the concept of 'risk society' was criticised for not primarily categorising infectious diseases as a risk (Abeysinghe and White, 2011; Lupton, 2022), the close examination of Covid in Chapter 5 revealed Covid's continued resonance with examples in Beck's work: delocalisation was evident in the scope and reach of Covid beyond specific regions and populations, making it challenging to accurately predict its transmission and subsequent consequences. As the world slowly progressed through the aftermath of Covid, publics might gradually have come to recognise the non-compensability of Covid's effects, as certain things – such as people's well-being and the social environment – were irreversibly impacted by the pandemic. In these dimensions, Covid's nature of uncertainty still *aligns* with Beck's concept of risk, while in government discourses, the strategy of narrating provisional certainty is employed to establish a liminal, dynamic category of Covid between permanent manageability and complete uncertainty (Lupton, 2006, p.17) to deliver assurance (even provisionally) to its publics. Its dynamic nature can be examined through researching the actors' continuous monitoring of ongoing risk (e.g., Covid). Therefore, Chapter 5 illustrated how pandemic updates can be handy starting points to track these dynamic narratives of provisional certainty.

Additionally, the concept of provisional certainty is proposed based on the discourses of particular actors: *governments*. As Chapter 2 highlighted, perceptions of the severity of certain crises might vary among actors, because risks evident for some would be overlooked by others (Davies, 2022). Compared to individuals, pandemic narratives at the state level are complicated by government roles as 'structures of collective risk management' (Mythen, 2004, p.21), which administratively bear the responsibility of regaining control against the evolving risk, maximising the well-being of their populations, and navigating further steps long before Covid. Therefore, their discourses on social media, when viewed as a form of public engagement, also aim to cater to the (imagined) information needs of publics regarding Covid, as well as to reduce (imagined) public concerns during the health crisis (Barnett *et al*., 2012).

With respect to publics' needs for stability and predictability, official communication strategies need to mobilise a set of framing devices, such as discourses of medical scientists, to translate the uncertainty and probability of the ongoing risk into 'statements of certainty and fact' (Adam, Beck and van Loon, 2000, p.4). In other words, the practice of mitigating uncertainty during emergencies (both natural and man-made disasters) is vital for authorities to clarify ambiguities and manage institutional reputation (Coombs, 2007; Panagiotopoulos *et al*., 2016). Conversely, inaction or withholding

information can erode trust (Frewer *et al*., 2002). From a reception studies perspective, effective official risk communication seeks a contextual balance, providing assurance on what actions to take and what to expect, while acknowledging the inherent unpredictability of the situation (Kasperson, 2014, p.1236). This balance needs to mitigate public anxiety while maintaining a realistic understanding of the risk, enabling individuals to make informed decisions with confidence in the messages conveyed (Frewer et al., 2002, p.370).

Therefore, this study suggests that the uncertainty embedded in public health risk and narratives of uncertainty reduction can co-exist, with the latter functioning as a political *communication strategy* for the former. The specificity of this study's data source (i.e., official accounts) also explains why the conclusions drawn in the preceding three chapters often (re)frame key concepts of the sociology of risk into diverse landscapes. Examples include the consideration of risk communication as a promotion of provisional certainty in Chapter 5, the challenge to Beck's concept of 'organised irresponsibility' in Chapter 6, and the portrayal of cosmopolitanism in Chapter 7.

Finally, as elaborated in Chapter 3, addressing certainty through social media also dovetails with the primary aim of the states involving social media in pandemic management, where use of social media is expected to disseminate authoritative information to a wider audience. However, concerning how to navigate the frame devices, the data on Weibo and Twitter demonstrate different risk communication strategies, discussed earlier in this section. These strategies were indicative of both their definitions of Covid, as well as their imaginaries of platform users (Barnett *et al*., 2012).

8.1.2 Responsibility as networked and affective (RQ2)

To explore the relevant actions and actors portrayed as responsible for pandemic management (RQ2), Chapter 6 explored how responsibility was framed in association with 'good' qualities and 'appropriate' choices during the crisis, with three key actors involved: governments, 'heroic' individuals, and citizens. This section first elaborates on the frames of responsibility constructed around each of these three stakeholders.

At the government level, responsibility on Weibo and Twitter was similarly framed into being *supportive* of publics by prioritising people's interests in general pandemic management. Data on Weibo revealed that responsibility was framed around the efficient implementation of the overarching aim of 'pandemic prevention and control work'. There were two pivotal elements in achieving this aim: concrete practices and timely collaboration between central and local institutions. In contrast, the frame of government responsibility on Twitter was characterised by offering support (particularly financial) to actors affected by Covid, aiming to ensure 'no one would be left alone'. The posts were

communicated in a first-person tone, with preferences for referring to governments as ‘we’, while full details of government support were often packaged in hyperlinks. Overall, examination of the narratives of government responsibility provided more empirical evidence to see the governments’ roles as institutions of ‘collective risk management’ (Giddens, 1999, p.10).

At the individual level, the concept of responsibility was framed as a manifestation of ‘everyday heroism’, arising from responsible actions of ordinary people (e.g., the story of bus driver Nie in Chapter 6). But Chapter 6 also found that frames of heroic individuals were different across the two cases. Weibo data prominently featured the ethical decisions made by one or a few individuals, who chose to prioritise collective interests over personal interests to fulfil their *individual responsibility* as citizens. The language used to feature heroic individuals on Weibo was characterised by providing detailed accounts of people’s everyday lives, such as their real names, occupations, quotes, and quotes from their families or those who benefitted from their contributions. Different from the exhaustive storytelling on Weibo, frames of heroic individuals on Twitter pointed to a collective appreciation for people who adhered to *occupational responsibility*, especially those in medical-related professions (e.g., clap for NHS service providers in Chapter 6). The language used was not as detailed as in the Weibo examples but packaged in other formats, including website links and visuals.

Additionally, this collective appreciation was further addressed through hashtags, such as *#HiddenHeroes* and *#ClapForNHS*, contrasting with some long Weibo hashtags being used as article headlines (e.g., *#Wuhan post-90s stationmaster voluntarily delivers food to 2,000 quarantined households every day#).* Additionally, according to the textual analysis on the posts featuring the portrayal of heroic individuals, both Weibo and Twitter data frequently used ‘I’, ‘our’ and other pronouns, in an attempt to build a personal connection between the characters of the posts and the post readers. These practices of building resonance through affective narratives might have motivated users to reconsider their actions in their role of citizenship or individual duties.

Finally, Chapter 6 indicated that the discourse of individual duties was characterised by promoting what citizens were expected to do to contribute to their societies. In essence, publics were encouraged to reconsider their roles in the pandemic while appreciating the efforts of the other two actors, namely government responsibility and the responsible actions of heroic individuals, as discussed earlier. In terms of promoting publics to fulfil their civic duties, the discourses on Weibo and Twitter were distinct: official discourses on Weibo emphasised communicating guidance to inform the public about how to adhere to their individual duties. It presented a clear classification between ‘good’ and ‘discouraging’ actions, such as conducting personal health monitoring and avoiding social gatherings in Weibo 16. In contrast, counterparts on Twitter focused on articulating the importance of adhering to individual duties. For instance, ethical decisions made by individuals were framed as contributions to

'*help people, help others, and help yourself*' (Tweet 17), while irresponsible actions would '*undermine the national effort against coronavirus*' (Tweet 18). Overall, Weibo's efforts in elaborating what constituted responsible actions and Twitter's focus on the reasons for adhering to personal duties both implied that the sense of citizenship responsibility actions could be evoked through information provision (Giritli Nygren and Olofsson, 2020).

In summary, to address RQ2, Chapter 6 suggested that responsibility during Covid was defined as an organic network comprising the collaborative efforts of three stakeholders: governments, 'heroic' individuals, and citizens. For governments, responsibility was framed into institutional obligations aimed at ensuring their populations' well-being. Similar to what was discussed in relation to the findings presented in Chapter 5, this empirically aligns with Giddens's descriptions of the welfare state as 'a form of collective risk management' established 'on the presumption of external or passive risk' (1999, pp.9-10). Within this network, Chapter 6 proposed that governments as risk management institutions play a leading role in promoting and synchronising the definitions of responsibility for the other two actors.

Narratives of the second stakeholder in Chapter 6 – heroic individuals during the pandemic – demonstrated a positive portrayal of 'risk-taking-culture' for a good cause, where individuals were praised for their embrace of additional risks, such as delivery man Cang delivering food to households in Weibo 14, and NHS nurse Leona raising funds for patients in Tweet 14. These examples illustrate how risk-taking for a good cause is intertwined with fulfilling responsibility associated with citizenship identity and/or occupational responsibility. Conceptually, this extends the discussion of risk within the sociology of risk in Chapter 2, which typically portrays risk as something to avoid and manage. This resonates with other criticisms of risk society perspectives, such as Merryn Ekberg's comprehensive review of Beck's and Giddens' works (2007), suggesting that embracing risk might generate certain positive impacts, particularly when the beneficial outcomes surpass the negative ones. Overall, the examples of risk-taking for a good cause in Chapter 6 helped to understand how risk evokes a sense of responsibility and connects individuals in imagined communities (Anderson, 1991).

In addition, Chapter 6 illustrated an *affective* narration of these risk-taking examples (Papacharissi, 2015). By highlighting the warmth in these heroism stories, the posts might attempt to bond users' feelings emotionally and reinforce a sense of belonging to the imagined community (Anderson, 1991). These affective framing devices align with the results of Franziska E. Kohlt's study of narratives that prevailed in the UK during Covid (2020), which identified the narratives of Covid in terms of 'warfare', and the narratives of moralising NHS staff as heroic 'military soldiers'. Kohlt interprets this communication strategy as a dissemination of 'social emotional labour', which aims to invoke emotions and appeal for collective behaviours among publics, leading to 're-inventing British

nationhood' in the time of challenges (2020, pp.16-17). Building upon this study, Chapter 6 further demonstrated how platform affordances shaped how these affective narratives were unpacked, whether in full stories or in a few sentences (e.g., distinct length of posts on Weibo and Twitter).

Responsibility for the third stakeholder in Chapter 6, citizens, was framed through ethical behaviours achievable by individuals. This frame encourages 'our' appreciation of the efforts made by the previous two stakeholders and emphasises the responsibility associated with citizenship identity to contribute to society during times of risk (Petersen and Lupton, 1996). In other words, posts featuring individual responsibility function as neoliberalism-style 'incentives' to increase public awareness of the potential contributions that citizens can make to their neoliberal governments (Harvey, 2005; Lupton, 2012). This approach particularly resonates with Chinese cultural traditions of collectivism, Confucianism, and individualisation, which emphasise the contribution of individuals aligning with broader societal interests (Wang and Liu, 2010; Yan, 2010b). In both cases, communicating individual responsibility on social media might aim to promote the autonomy of 'good' citizenship, where individuals (ideally) regulate their own health actively for the sake of public health. Avoiding illness during Covid was portrayed not merely as following suggested restrictions for one's own good (Crawford, 1994). Individuals, informed of the consequences of their personal choices by social media (e.g., spreading the virus through gathering), had to decide whether to stay active in their roles as families and national labour (Petersen and Lupton, 1996). For instance, individuals in good health through 'responsible choices' during Covid would be able to care for family members, save resources for local hospitals, and fulfil other civic obligations.

This section has so far reviewed three narratives of responsibility placed on governments, heroic individuals, and citizenships to address RQ2. This proliferation of narratives of responsibility partly challenged the idea of 'organised irresponsibility' addressed by risk society literature (Beck, 1992; Mythen, 2004). It suggests that uncertainty and complicity of risk leads to a systematic lack of responsibility: 'one can do something and continue doing it without having to take personal responsibility for it' (Beck, 1992, p.33). However, examples in Chapter 6 indicated that both institutional actors and non-state actors were framed to actively participate in splitting responsibility into practices. In line with Section 8.1.1, this empirical conclusion should be viewed as a format of risk *communication* strategies and in a broader context of official communication.

In summary, Chapter 6 built on the discussion of managing public health at the state and individual levels in Chapter 2. It indicated that responsibility constructed at the government and individual levels were not inherently in conflict. This conclusion, as mentioned earlier in the answers to RQ1, was drawn on official risk communication as a special information source — particularly in terms of public expectation regarding responsible governance, information integrity, and evidence-based ethical

decisions (Markon, Crowe, and Lemyre, 2013). This adds new perspectives to public health scholarship considering the tension between states and individuals in health promotion – local failures in implementing health promotion policies are often attributed to neglect of socio-economic divergences among populations and regions (e.g., Bunton, Nettleton and Burrows, 1995; Williams and Fullagar, 2019). Instead, in Chapter 6, responsibility in the official discourse was framed as networked and sustained by collective efforts, represented in affective ways on social media. This partly resonates with findings from a study analysing 3,043 Covid-related Tweets from local government accounts on Facebook, Instagram, and Twitter in 2020 in Poland (Górska *et al*., 2022). This study suggested that official communication in Poland similarly emphasised narratives of national solidarity and mobilised affective languages in communication (Górska *et al*., 2022), both of which align with the conceptualisation of responsibility as networked and affective in Chapter 6.

8.1.3 National rhetoric in vaccination campaigns (RQ3)

To explore the portrayal of nation-states and globalisation within vaccination narratives (RQ3), Chapter 7 focused on government communication of Covid vaccination programmes. Conceptually, Chapter 7 identified three sets of nationalist rhetoric during the vaccine R&D phase and the distribution phrase. To understand the politics of nationalist rhetoric, Chapter 7 proposed the concept of *vaccine-mediated nationalism*. This concept extends the notion of 'vaccine nationalism' centred specifically on vaccine stockpiling with negative impacts on cross-national solidarity in the face of international health risk (Rutschman, 2020; Katz *et al*., 2021). In brief, vaccine-mediated nationalism aims to describe vaccinations' essential *mediation* of the expressions of nationalism, reflecting the broader repertoire in which vaccines are mobilised as discursive vehicles of a variety of nationalist expressions.

In terms of nationalist rhetoric, Chapter 7 suggested that vaccine R&D activities reflected national character and respective national power within the global biological infrastructure. Both cases narrated vaccine R&D with the aim of justifying vaccine safety and efficiency, while they drew on diverse 'gold standards' in association with different institutional affirmations. Examples on Weibo drew upon statistics from overseas clinical tests and external global standards, which were predominantly Western-based (e.g., the WHO and JAMA). Examples on Twitter drew on domestic standards in the UK (e.g., MHRA) while also engaging with global institutional standards (e.g., the FDA in the US) with national pride about its advancements over other powerful global players (e.g., US, Canada, and Europe). Thus, according to Chapter 7, what constituted 'gold standards' was contingent, while both cases' engagement with them reflected the broader landscape – the Global North remained prominent in the global biological infrastructure and related knowledge exchange networks.

Therefore, at the vaccine R&D stage, Chapter 7 suggested a frame of vaccines as national *risk-mitigation technologies* with national characters rather than as commercially-owned products. In terms of national characters, discourses on China-based vaccine R&D indicated China as being an emerging global player with products verified through external standards and receiving increasing global recognition. The UK-based vaccine R&D counterpart implied the UK's global power, with manifestations of consistent advancements in scientific development fields. These expressions of national characters were further shaped by platform affordances: on Twitter, national flag elements were incorporated as emojis and visuals (Tweets 21 and 22), while on Weibo clinical test results were unpacked in full due to less-restrictive character limits (e.g., Weibo 19).

In terms of vaccine domestic distribution, Chapter 7 suggested a frame of vaccination linked to nationalist rhetoric of *citizenship responsibility* in national solidarity. In both cases, the numbers of vaccines were updated to the public on a routine basis to report the scale of vaccinated populations, indicating a templated pattern on Weibo and a collection of generic visuals on Twitter as per Chapter 5. These updates of general populations were accompanied by the prioritisation of vaccine access for 'vulnerable groups' in both cases (defined differently by age groups, health conditions, and other factors), echoing classification and probability as two key features of risk thinking. Furthermore, to enlarge the scale of vaccinated populations and protect the 'vulnerable', official communication on both Weibo and Twitter constructed vaccination as a manifestation of civic duties, such as vaccination '*for the country, the world, and for individual health*' in Weibo 24, and to '*join the millions already vaccinated, to protect yourself and others*' in Tweet 27. Importantly, the language used to frame domestic vaccination as civic duties was *affective* compared to that used in vaccine R&D and global distribution: as evidenced by the accounts of patriotic quotes such as '*China's speed in Covid-19 vaccination*' in Weibo 25, and the image wall of storytelling from @NHSEngland (Table 19). These affective frames of vaccination as civic duty on both platforms further strengthened the conclusions drawn in Chapter 6, suggesting responsibility as networked and affective.

Importantly for the research question, Chapter 7 also explored how the accounts narrated vaccine distribution at the international level. It suggested that vaccines being distributed to certain countries served as evidence of national commitments from major vaccine R&D and production actors to fulfil their corresponding responsibility in promoting global vaccine access and contributing to enhancing immunity. This finding added global-level evidence to the exploration of responsibility originating from government support in Chapter 6, reflecting government responsibility as not only being 'supportive and caring' for domestic actors but also for the world. Importantly, both cases involved developing and African countries as vaccine recipients, while these were attributed to diverse geopolitical factors, such as Asian solidarity through the BRI and ASEAN, and historical ties among Commonwealth members.

In the process of analysing global vaccine distribution, Chapter 7 identified three frames of *the act of giving* mobilised to describe how the ability to manage risk was transferred across nations: vaccines being sent to countries (e.g., Pakistan receiving China-based vaccines, and Jamaica receiving UK-based ones); vaccines being welcomed locally by recipients (e.g., the Philippine President taking Sinopharm vaccine, and Nigerian officials welcoming UK donations); and vaccines being produced through collaboration between China/the UK and another country (e.g., China and Egypt, the UK and Kenya). These examples of vaccine (re)allocation noted that global vaccine distribution went beyond one-off donations because of altruism and benevolence (Machin, Williams and Frith, 2020). In short, enabling the transfer of vaccines meant enabling the transmission of a locale's ability to manage risk, where vaccines functioned as a modality for countries acquiring or distributing the capacity for risk management.

In summary, to address RQ3, Chapter 7 proposed that vaccination should be primarily viewed as a form of biological risk-mitigation technology (Cohen, 2009). The emergence and circulation of this technology are attributed to specific nations, which are mobilised, at least in the data analysed in this thesis, to convey distinct national rhetoric. The rhetoric manifests itself in diverse forms throughout vaccine R&D and post-R&D distribution activities: through the lens of risk, the analysis shows that vaccine R&D is accompanied by a 'strict' risk evaluation of national artefacts' qualities to enable its wider circulation. The available and ethical approaches used to justify the safety of vaccines further reflect the growing medical power in China and the national pride associated with existing medical advancements in the UK. Furthermore, Chapter 7 understood vaccine distribution as sharing access to risk-mitigation technologies as precious resources during a health crisis. The distribution of rare resources to selective populations reflects which actors are domestically or globally defined as in need of assistance, and how these classifications are incorporated and justified into the national vaccine distribution strategies. Through the definitions of the vulnerable groups and countries in need of risk management capacities, vaccine distribution indicates a constructed national commitment to being responsible for both home populations and other nations with geopolitical connections.

Mapping out the national rhetoric emerging in different stages of vaccine-related activities allows for a more comprehensive understanding of national relationships and globalisation in the sociology of risk. Through analysing national rhetoric beyond the concept of 'vaccine nationalism', Chapter 7 argued that official discourses of vaccination during Covid were not simply prioritising their populations at the expense of global collective interests, as per dominant accounts of vaccine nationalism. For example, studies that identify an 'intensification of nationalism' (Lupton, 2022) are discussing a 'fragile transnationalism' characterised by nation- and citizen-centred risk responses with a decrease in global solidarity during the pandemic (Nehring and Hu, 2022). However, as mentioned in Sections

8.1.1 and 8.1.2, it is important to note the specificity of this thesis in analysing risk communication in official accounts, which might contextually lead to different conclusions compared to the analysis of other types of accounts.

To capture the above discussions of nationalist rhetoric, Chapter 7 promoted the extended concept of *vaccine-mediated nationalism*, which prompts a critical examination of national rhetoric within the context of vaccine-related activities (Vanderslott *et al*., 2021). Compared to the concept of vaccine nationalism, this extended concept does not necessitate assuming that narratives of nationalism conflict with discourses of global solidarity (Rutschman, 2020). This concept aligns with Beck's later work on cosmopolitanism (2011), considering it not a 'dichotomous other of nationalism' but as a *dialectical twin*. In other words, in the context of official communication, increasing efforts to maintain the welfare of nation-states might not simply diminish attention to transnational collaboration. Defining cross-national vaccine activities as merely vaccine hoarding fails to capture the broader performances of medical innovation, domestic welfare, and cosmopolitanism inherent in discourses of vaccines as risk-mitigation technologies.

8.2 Theoretical reflections on risk, digital platforms, and societies

Having addressed the thesis's three research questions, this section discusses how these findings speak to the theoretical framework and the research aim articulated in Chapter 2. This thesis contributes to the field of digital sociology by theoretically conceptualising official communication as the construction of 'digital risk communities', with a focus on the socio-constructive perspectives on Covid-related risks, shaped by the dynamics of official communication and politics of digital platforms. By proposing this concept, the thesis bridges the fields of the sociology of risk and platform studies, offering a novel comparative analysis across two distinct national contexts to enhance contemporary understanding of official risk narratives, with the Covid-19 pandemic serving as a timely and significant case.

To discuss how this thesis advances the concepts mentioned in the theoretical framework in Chapter 2, this section revisits the key theories first — risk society, digital risk societies, regionality and affordances of digital platforms — to demonstrate how this thesis adds to existing understandings of these concepts. Section 8.2.1 revisits the concept of risk society and evaluates its views of 'risk' in light of Covid. Section 8.2.2 explains the extended concept of 'digital risk societies' and discusses the role of 'digital' in it. Section 8.2.3 interprets the concept of 'communities' and considers why official risk communication ultimately promotes a particular frame of digital risk communities. Finally,

Section 8.2.4 introduces and defines digital risk communities, explaining why this thesis conceptualises official communication as such.

8.2.1 Mobilising risk society as a foundation

This thesis advances the sociology of risk by critically evaluating the applicability of Beck's risk society perspective across different cultural contexts, while also engaging with subsequent developments in the field. It highlights the importance of expanding these perspectives through platform studies and by incorporating non-Western cultural contexts.

While Chapter 2 critically evaluated risk society's limitations in interpreting the role of media and non-Western cultures, Beck's legacy of risk still efficiently serves as a cornerstone assembling multiple 'conceptual devices' that guide researchers to critically examine different aspects of risk within specific socio-economic contexts (Burgess, Wardman and Mythen, 2018, p.4). As this study aims to examine the intersection of government and digital platforms in the context of the health crisis, risk society's interpretations of risk, individuals, responsibility, and nations provide an informative starting point for unpacking Covid as a multifaceted event into three related and manageable concepts/themes, as evidenced in the preceding three empirical chapters. Each of these three cases focuses on one specific dimension of Covid, develops corresponding sub-samples from the two platforms, and rearranges them into comparable patterns. This was particularly valuable in terms of designing a research project in an area with limited prior scholarship, such as developing this study in the middle stages of Covid in late 2020.

However, risk society perspectives may not function well *alone* as a comprehensive empirical-based encyclopaedia able to explain particular social changes, given its known limitations in socio-cultural discussions (Douglas, 2002; Zinn, 2008), empirical evidence (Lupton, 2006), and reflections of media dynamics (Bakir, 2010; Tulloch and Zinn, 2011). This study suggests Beck's legacy may be considered as a *conceptual toolkit* in its application to specific socio-cultural contexts (Matten, 2004, p.372): it serves as a powerful informative 'catalogue' to signpost researchers to other frameworks for extending their investigations and building connections between concepts through the lens of 'risk'. For instance, as illustrated in Chapter 2, the literature review on risk – particularly risk society perspectives – highlights the limited attention given to the role of 'media' and socio-cultural factors, necessitating the integration of digital platform studies and cross-cultural research design into risk society perspectives.

For instance, sociology of risk scholars are increasingly focusing on South Asian contexts, particularly China, to examine the regional and socio-cultural dimensions of risk (Gong, 2018; Zhang, 2018). This

includes the (re)development of theories and concepts that evaluate the compatibility of Western-based frameworks, such as compressed modernity (Beck and Grande, 2010; Han and Shim, 2010; Kyung-Sup, 2010) and individualisation (Beck and Beck-Gernsheim, 2010; Yan, 2010b).

Having summarised how this thesis was initially informed by some key concepts within Beck's legacy, this section moves on to articulate how the thesis contributes to the sociology of risk through a dual comparison, both across nations and platforms. In light of Chapter 2's critical review of risk society's limits (i.e., cultures and politics of media), this dual-layered comparison aims to enhance the visibility of non-Western cultures in the sociology of risk and articulate the roles of digital platforms as a specific category of media. This objective outlines two major contributions of this thesis to both the understanding of digital platforms and the socio-cultural implications of risk.

While Beck notes the emergence of new communication technologies in his later work (2011), media dynamics are unpacked at a general level with limited attention to the changing nature of media production and representation across different media formats (Tulloch and Zinn, 2011), such as the redefined logics of mass media into new social media logics (van Dijck and Poell, 2013). From the empirical analysis in the preceding three chapters, we can see how the interventions of Weibo and Twitter reshape risk communication in both content and form. The analysis demonstrates that official risk communication is characterised by the contextual translation of key values central to risk perception — such as the need for certainty, information transparency, institutional trust, and collective responsibility — into communicable and platform-specific narratives aimed at engaging imagined audiences (Reynolds and W. Seeger, 2005; Markon, Crowe, and Lemyre, 2013). However, these adaptations also introduce new challenges in risk communication, such as the emotional burden associated with numbers (Kennedy and Hill, 2018) and the potential for misinterpretation in data visualisation (Tong, 2024).

For instance, the emphasis on information transparency and certainty in risk perception, traditionally tied to the perceived high credibility of technical experts and numerical models (Covello et al., 2001), was translated into numerical data in Chapter 5. On Weibo, such data can now be written in hundreds of words in one single Weibo post, while on Twitter, it was often visualised into generic infographics linked through threads. Similarly, in Chapter 6, the neoliberal appeal to individual responsibility during public health emergencies was communicated through discursive practices highlighting heroic individuals and personal duties. Sections 8.2.2 and 8.2.3 will return to this point to unpack how this thesis addresses risk society's limitations in digital platforms and non-Western contexts, and presents empirical evidence to illustrate the views of different risk societies.

Furthermore, risk society perspectives have been criticised for a lack of systematic consideration of socio-cultural contexts and their rich empirical discussions (e.g., Lupton, 2006; Zinn, 2008). This thesis sought to fill this gap through the comparison between China and the UK to specify traditional risk discussions in contemporary health crises with empirical evidence (Zhang, 2018). Empirical examples in the three preceding chapters contribute to our understanding of how the uncertain nature of Covid led to diverse frames among defining actors, in terms of classification, probability, value judgement, and temporality (Brown, 2020). The presentation of examples as screenshots also helps to illustrate intertextuality between texts, visuals, and other meta-data on Weibo and Twitter, indicating the interplay between frames of risk and politics of digital platforms (Bakir, 2010)

Drawing upon this dual comparison across nations and platforms, this study suggests that pandemic narratives are neither entirely different nor identical in China and the UK. This enriches the assumption of entirely different risk landscapes across Western and non-Western contexts, since nations in Western and non-Western regions are believed to have followed different pathways to achieve modernisation (Han and Shim, 2010; Kyung-Sup, 2010). Given the concept of risk as a sociological mechanism to reflexively flag unintended manufactured uncertainties resulting from modernisation practices, risk society is believed to be experienced differently across nations (Beck, 2008). For instance, the 'compressed' modernity in East Asia might prioritise economic development ahead of the establishment of comprehensive risk management, which makes East Asian nations more likely to experience global risks at a higher intensity (Han and Shim, 2010). However, when examining the national narratives on the same risk, this thesis does not demonstrate two entirely different pictures across China and the UK in approaching and managing the pandemic.

A final pivotal point is the identification of risk-taking culture for a good reason in Chapter 6, noting that risk is not always something to avoid. For example, by portraying individuals willing to step up for their nations, the analysis of heroic individuals in Chapter 6 demonstrated the culture of risk-taking for the sake of imagined (digitising) risk communities. Actors assuming the risk not only include individuals in occupations (e.g., moralising heroism emerging from NHS work by Kohlt, 2020), but also people taking on voluntary work with awareness of potentially increasing risk (e.g., delivery man Cang in Chapter 6 worked on purchasing and sending supplies to residents). This highlights the need to rethink how the boundary between safe and risky is influenced by cultural traditions that influence societal ideologies regarding individual roles within collective interests, such as the collectivism and Confucianism central to Chinese culture (Wang and Liu, 2010; Liu and Stening, 2016). This differs from personal risk-taking cultures to generate thrills, such as among skydivers (Lyng, 1990). To document these extensions, this thesis proposes the concept of 'digital risk communities' to encapsulate the dynamics of the 'digital' and the framed solidarity among publics during the health crisis. Section 8.2.4 will return to this discussion of communities.

To summarise, this section started with several implications for developing theoretical frameworks based on Beck's legacy of risk, confirming its efficiency as a conceptual toolkit with the potential to be combined with other concepts. Then it elaborated on how this study contributed to the sociology of risk, particularly to the theory of risk society. The main contributions came from its extension beyond risk society's discussions on digital platforms and non-Western contexts, and the presentation of empirical evidence to illustrate the views of different risk societies. The section finally mapped out two pivotal findings that were not fully unpacked by previous risk scholarship: the similarities between the risk societies in China and the UK, and the cultures of risk-taking for a good cause.

8.2.2 Transitioning from risk society to digital risk societies

After Section 8.2.1 elaborated on the limitations of risk society as a standalone theoretical framework, this section reviews how the concept of risk society is *extended* into digital risk societies to incorporate supplementary discussions on infectious diseases as risk, non-Western cultures, and media dynamics (Ekberg, 2007). This thesis advances Lupton's concept of digital risk societies (2016) by providing empirical comparisons of the national construction of risk mediated through digital technologies, a relatively under-explored aspect within the concept of digital risk societies.

As noted in Chapter 3, national policies in China and the UK indicated that social media were originally added to national pandemic management strategies because of their user bases and pivotal engagement mechanisms compared to other media types. Compared to mass media, social media redefine connectivity and popularity to a new level (van Dijck and Poell, 2013), which has changed public experiences of perceiving 'what is risky' and 'who defines it as risk'.

As introduced in Chapter 2, Deborah Lupton's conceptualisation of 'digital risk society' initiated an intriguing conversation between risk studies and digital platform studies (2016). Her work briefly outlined two pathways to mobilise this concept in empirical studies: risk narratives being mediated *through* digital platforms into 'digitising risk', as well as risk arising *from* digital technology use (Lupton, 2016). Nevertheless, both dimensions, while theoretically elaborated, have very limited engagement with empirical data. According to a literature analysis based on scholarship of the digital risk society between 2018 and 2023, there is greater academic interest in exploring digital technologies as sources of risk and their consequential impacts on everyday life and systematic governance, compared to scholarship on the digital representation of risk (Sundberg, 2024). Therefore, this thesis has attempted to enrich the relatively under-explored domain of 'digitising risk'. The objective has been to track how the information surrounding Covid is reconfigured and reproduced officially on digital platforms.

In addition, this thesis suggests referring to digital risk societies in *plural* forms to distinguish two contrasting pictures across platforms, whose affordances and regionalities further complicate government communication. As demonstrated by the example screenshots in the preceding three chapters, the outcome of risk communication is not merely a matter of publishing textual announcements. It also requires adapting the contents, including formats and topics, to resonate with the imagined audiences on Weibo and Twitter, such as Chinese media audiences with a cultural resonance of collectivism and Confucianism (Winfield, Mizuno, and Beaudoin, 2000). Additionally, this adaptation is closely linked to platform affordances, such as Weibo's headline article function, character limits, and threads on Twitter. While some functions are technically comparable, as mentioned in Chapter 3, their practices in pandemic communication developed distinct cultures, such as symbolic reiteration of banners or infographics (Chapter 5) and different hashtag practices (Chapter 6).

In digital risk societies, despite the risk being 'digitised', this thesis suggests that risk communication still addresses the core of risk thinking as *materialising reflexivity*. This reflexive nature is sustained by a consistent belief that present anticipation and preparedness can influence risk outcomes in the future (Anderson, 2010). A reflexive understanding of Covid can be seen from *temporal* perspectives: the frame of Covid and 'appropriate' solutions revolve around the belief that there exist interconnections between the past, present, and future of Covid – these interconnections manifested differently across China and the UK.

Importantly, this belief in reflexivity manifests itself through the employment of framing devices, digital translations of risk thinking outlined in Chapter 2: classification, probability, temporality, value judgement, and socio-cultural contexts. For instance, the presentation of numerical data in Chapter 5 and the call for specific individual responsibilities in Chapter 6 illustrated how contemporary strategies, informed by the scrutiny of historical experiences, are anticipated to affect future outcomes in consequential ways (i.e., the pandemic can be 'predictive' through numbers, the virus can be 'mitigated' through collective actions). These digital framing devices further reshape our perceptions of how the past, present and future of Covid are connected, and what constitutes the nations we live in with their capacities to assess and manage risk (Aiello *et al*., 2022). Visualising these forms of risk thinking and reflexivity is essential for official accounts to communicate uncertainty and establish certainty, thereby enhancing their credibility as trusted information sources and ethical decision-makers (Markon, Crowe, and Lemyre, 2013).

Overall, this section has articulated why risk society and digital risk societies are not two separate concepts. Instead, this section suggested that reflecting on digital platforms' impacts on everyday risk perceptions invited an *extended* concept to interpret the impacts posed by the politics of platforms on the representation of risk. In essence, the concept of digital risk societies aims to take the 'digital' as one form of media more seriously, which specifically cares about discourses of risk being digitally mediated to be (in)visible to publics. The next section elaborates on how the 'digital' is understood in this concept and how this extended concept contributes to platform studies scholarship.

8.2.3 The role of digital platforms in digital risk societies

This thesis contributes to platform studies by exploring how Weibo and Twitter shape the discursive practices of collective risk management through official accounts — distinct from personal accounts, positioned at a unique intersection of platform economies, platform affordances, and national media and political systems. It advances the field through an empirical comparison of Weibo and Twitter, two key components of Western and non-Western platform societies. The analysis leverages their technical comparability (Chapter 3) while substantiating their differences beyond theoretical discussions, particularly in terms of platform affordances across diverse socio-cultural contexts.

As discussed in Section 8.2.2, the concept of 'digital risk societies' on 'risk society' aims to highlight the significance of the *digital*, where the institutional presence in social media helps 'digitise' official definitions of risk and circulate them to certain audiences. Given the discussions in Chapter 2 around digital platforms' own politics beyond neutral information intermediaries (Gillespie, 2010), this section explores how this thesis informs our understanding of platform studies.

While the impacts of digital platforms on society at the micro level are characterised by their mechanisms of datafication, commodification, and selection, as discussed in Chapter 2 (van Dijck, Poell and de Waal, 2018), researching government social media accounts allows for a closer exploration of how these mechanisms contextually work within a specific area. The mechanism of datafication, according to platform society, points to online events being 'to a high degree technologically standardised to enable the automated process of user signals' (van Dijck, Poell and de Waal, 2018, p.35). Datafication comes to prominence when we see Weibo and Twitter as 'programmable' bases for political institutions to *digitise* their official definitions of risk and other information sources, rendering them 'platform ready' for further circulation and engagement (Helmond, 2015). This might be particularly evident on Twitter: the preceding three chapters showed several examples transforming full updates of statistics or press conference scripts into a tweet within 280-character limits, which required smart solutions like infographics, threads, and attaching hyperlinks to external websites. Although this thesis does not explore social media interactions, the

functions of engagement also serve to digitise and quantify the process of public feedback to the political system at a new (in)visible level.

Furthermore, the data in this thesis addresses the mechanism of selection to a limited extent: it might be more appropriate to characterise selection as 'curation', underscoring how the posts are represented in so-defined platform-appropriate ways based on the way users are imagined. The selection process might have undergone self-editing by the official account operation staff, as mentioned in Chapter 3 (see Weibo in Zheng, 2013; Zou, 2023; see Twitter in the Social Media Playbook by Government Digital Service, 2023). However, this thesis does not extensively touch on the mechanism of commodification, which relates to the process of transforming user data and attention into commercial gains (van Dijck, Poell and de Waal, 2018, p.38). This might be due to the unique nature of government accounts with offline administrative duties (e.g., as risk institutions in public health emergencies). It would be difficult for official accounts to involve other stakeholders in creating multi-sided markets for data exchange (Srnicek, 2017), which may potentially conflict with the supportive frame of government responsibility, primarily for public good as discussed in Chapter 6. In other words, mobilising commodification may challenge states' duties in overseeing public health emergencies to promote public good, while attempts to 'benefit' from the risk might be interpreted as unethical practices and result in a loss of trust.

Having discussed how the findings speak to social media logics, this section moves on to consider why the extension from 'risk society' to 'digital risk societies' contributes to platform studies scholarship from the regional angle. This study advances our understanding by shifting the focus away from Western-centric platform studies scholarship by enhancing the visibility of Weibo's culture with a specific geographical focus and a political context in Chinese and Asian cultures (Wang and Lobato, 2019). In essence, this thesis empirically juxtaposes the Chinese platform model with Twitter's Silicon Valley model, thereby bringing *alternative* views of the interplay between platforms and the states into academic sight (Plantin and de Seta, 2019). Recognising these alternatives speaks to the sensitivity to 'platform regionality' (Steinberg and Li, 2017): regionality means most platforms are initially developed in particular locations and/or cultural regions and cater to specific target user bases. These necessitate academic attention to examine how platforms' inherent 'presumptions' of their origins affect their practices (Steinberg and Li, 2017, p.175). This practice, more appropriately called 're-regionalising', challenges the central scholarship drawing upon Western-based platforms as universal to other 'periphery' experiences (Davis and Xiao, 2021). The comparison in this thesis suggests that they are not entirely different at all, as shown in the pandemic updates being 'templated' or 'generic' in Chapter 5. Thus, this study, at a micro level, continues Christian Fuchs's macro comparisons of the political economy of China-based and US-based social media (2016), which notes similarities and differences between two models from platform economy perspectives.

Furthermore, this comparison contributes to platform affordance scholarship. As introduced in Chapter 2, comparing platform affordances on Weibo and Twitter means comparing the communication activities limited or allowed by their socio-technical conditions (Bucher and Helmond, 2018), and understanding platform practices in relation to different cultures (Willems, 2021; Ronzhyn, Cardenal and Batlle Rubio, 2023). The preceding three chapters juxtaposed several platform functions, including character limits, visuals, hashtags, and hyperlinks, to see how they operate as 'affordance-in-practice' across cultures and contexts (Costa, 2018). From a pragmatic aspect, these comparisons also draw attention to things happening on one platform but not operating similarly or existing on the other, such as the ability to write things at length on Weibo, and cultures of packaging information in non-verbal formats on Twitter. Given the substantial differences between Weibo and Twitter, this study adds empirical evidence to challenge the over-simplistic label of Weibo as 'Chinese Twitter' (Sun, 2013).

Given the specialty of the data sources, this thesis suggests the role of government accounts during Covid be viewed primarily as information providers in a broadcasting manner, rather than being interaction-oriented. For example, the pandemic updates in Chapter 5, the depictions of responsibility at various levels in Chapter 6, and the sharing of vaccine-related stories in Chapter 7 all underlined the official accounts as prominent and authoritative sources for defining risk. Conceptually, the identification of official narratives as 'variance' from the general platform culture does not deny the interactive cultures of platformisation. This otherwise reflects how platform affordance, according to Nagy and Neff (2015, p.5), should be understood as 'adaptive and responsive' in relation to users' perceptions of digital platforms (governments as users) within their own 'socio-cultural expectations'.

This finding regarding the central aim of information provision aligns with the contextual review in Chapter 3: the discussions of national policies regarding Weibo and Twitter indicated that official accounts primarily prioritised information provision over building interactions with platform users. For example, official presence on Weibo needs to be located within the general national campaign of *New Media Outlets to Improve Government Services* (China Daily, 2019), encouraging government-run new media outlets to 'offer punctual information disclosure, policy responses, and services for the public'. Among different new media outlets, timely information provision through WeChat, Weibo, and government official websites is particularly highlighted in the campaign 'Two Micros and One Terminal' or the 'Two Wei One Duan' initiative (两微一端), with 'micros' representing Weibo and WeChat and 'terminal' representing official websites. Culturally, the provision of official information during Covid was closely intertwined with Chinese values (Winfield, Mizuno, and Beaudoin, 2000), such as the frame of heroic individuals during Covid in Chapter 6. Similarly, the use of Twitter for information update purposes aligns with the British *Social Media Playbook* published by the

Government Digital Service, a part of the Cabinet Office aimed to 'make digital government simpler, clearer, and faster for everyone' (Government Digital Service, 2023). As outlined in this guidance, social media use by UK government institutions is closely linked to enhancing information transparency and informing people promptly about service transformations (Government Digital Service, 2023).

Thus, the data involved in this study can be understood as manifestations of information provision in response to these overarching strategies in China and the UK. This perspective echoes a study examining public authorities' Twitter use in Norway and the UK during the 2014-2015 Ebola pandemic, which considered the practice as a monitoring tool *adapted* from Twitter's dialogical nature (McInnes and Hornmoen, 2018). In the context of Covid communication, another comparative study between March and May 2020 suggested the communication on UK official Twitter accounts to be characterised by discussions of social measures and evidence-based leadership, rather than for engagement purposes (Li, Chandra and Fan, 2022). Similar research on Weibo focusing on the public perception of government accounts also suggested that official interactions tend to be non-dialogical and homophilous (Medaglia and Zhu, 2017). Therefore, official accounts' roles as information sources also necessitates further platform scholarship to visualise governments' roles as platform *users*, beyond their well-researched roles as platform regulators (van Dijck, Poell and de Waal, 2018).

In summary, this section has elaborated on the 'digital' side in the concept of digital risk societies, and reviewed how this thesis contributed to the field of platform studies. It started by considering how studying official accounts on Weibo and Twitter allowed for the examination of platformisation mechanisms and platform regionality in the context of government risk communication. It then discussed the specificity of government communication on Weibo and Twitter, which was seen as creating its own non-dialogical communication patterns distinct from the general platform cultures. This unique culture further added empirical evidence to justify the concept of platform affordance as relational to cultures.

However, in the risk society framework discussed in Section 8.2.1, and in the digital risk societies one discussed in Section 8.2.2 and in this section, the discussion of risk is unpacked presuming humans are merely recipients or victims of risk. This perspective partly neglects how official communication promotes the active strategies employed by actors and the potential positive sides of risk, such as the risk-taking decisions by 'heroic' individuals seen in Chapter 6. To reflect on this, the next section extends the concept of 'digital risk societies' into 'digital risk communities' to understand digitising risk in a more ecological way.

8.2.4 Understanding official communication as constructions of digital risk communities

To comprehensively describe the politics of official communication, this thesis conceptualises it as the construction of digital risk communities. This section aims to define this concept and elaborate on how this concept is proposed in existing theories and concepts. It then highlights contributions of this conceptualisation to the sociology of risk and platform studies within the theoretical framework in Chapter 2.

According to Benedict Anderson's influential idea of nations as 'imagined communities' (1991), individuals within a nation – who have never physically met their fellow citizens before – can cultivate a shared sense of belonging. This shared feeling of national identity can be reinforced by the dissemination of symbolic representations (Anderson, 1991). Important to Anderson, the dissemination of these discursive symbols is facilitated by novels and newspapers in print capitalism, which achieve a degree of *simultaneity* among readers consuming the stories (Anderson, 1991). Likewise, this thesis identifies three symbolic representations – risk definitions, responsibility, and vaccine-oriented activities – and considers official communication a mechanism for *synchronising* national definitions of these three discursive symbols. These symbolic topics are disseminated through digital platforms such as Weibo and Twitter, which, compared to the novels and newspapers of Anderson's era, offer a broader scope of everyday publicness to allow for the updating of public perceptions regarding risk, responsibility, and nationalism (Baym and boyd, 2012).

In his later work *Cosmopolitanism as Imagined Communities of Global Risk* (2011), Beck's development of 'cosmopolitan risk communities' extended Anderson's work with a global emphasis: in these imagined communities, actors in distant places, whether they identify as part of their nations or the global community, find themselves 'following the same events with the same fears and worries as oneself' (p.1350). This shift from nationalism to cosmopolitanism aims to underscore an increasing mutual dependence beyond national borders in the face of global risk (Beck, 2011). Overcoming Anderson's focus on print media, while Beck acknowledges the impacts of mass media on constructing these communities, his work delves little into the distinct genres across mass media.

Building on the previous discussions on risk society, digital risk society, and cosmopolitan risk communities, this thesis proposes the official communication strategy during Covid as the construction of *digital risk communities*. They are defined as virtual collectives *constructed* through official communication during public health crises, rather than pre-existing entities. These communities describe a phenomenon where governments, experts, health practitioners, citizens, and other actors are brought together under a shared, officially constructed definition of risk, mediated by digital technologies. By narrating the stories within digital risk communities, governments

strategically frame citizens not merely as individuals but as part of a *collective* commons bound by a shared risk ('we are all in this together'). As a communication strategy, the construction of digital risk communities is characterised by practices to establish certainty, framing governments as leading structures for managing collective risk while fostering solidarity and collective responsibility.

Drawing on the interpretations of communities within 'imagined communities' (Anderson, 1991; Beck, 2011), the concept of digital risk communities suggests that government institutions were not constructed as separate but *embedded* within the publics they addressed during Covid. Digital risk communities emphasise that personal decisions to act for collective or individual benefits are contingent on one's reciprocal relationships within the perceived group — highlighting the importance of constructing and sustaining a sense of belonging by promoting specific representations of digital risk communities, such as framing vaccination as a decision of the 'majority' (Chapter 7).

The conceptualisation of digital risk communities makes three contributions. Firstly, it contributes to the sociology of risk by bringing attention to, in the specific context of official communication, how actors are (framed) as active and adaptive in response to risk, rather than merely enduring its uncertainty. To illustrate how the proposal of digital risk communities advances the sociology of risk exactly, Table 21 compares the characteristics of risk in the concepts of risk society and digital risk communities, respectively.

As shown in Table 21, while risk is traditionally perceived as uncertain or negative in the sociology of risk, the preceding three chapters have shown how life during Covid, in the view of official communication, had another side of certainty and positivity. For instance, Chapter 5 introduced the frame of Covid as a 'knowable' crisis through different framing devices, positioning governments as supportive and leading actors in collective risk management. Chapter 6 reflected solidarity and warmth among institutions and people through shared commitments of responsibility during Covid, particularly through the frames of heroic individuals who voluntarily took additional risk for the welfare of their communities. Additionally, Chapter 7 articulated how the development and exchange of vaccines as precious resources implied national characters in the cosmopolitan sense.

Table 21: Comparison between risk society and digital risk communities

Comparative perspectives	The concept of 'risk society'	The concept of 'digital risk communities' (official communication)
(Un)certainty	Uncertainty raised by delocalisation, non-compensability, and incalculability (Beck, 1992; 2008).	Government communication frames and promotes certainty by presenting relatively definite answers in the face of uncertainty (e.g., the enumeration of affected populations in pandemic updates in Chapter 5).
Responsibility	Organised irresponsibility during the risk (Beck, 1992); tension between state discipline and individual efforts (Petersen and Lupton, 1996).	Government communication frames responsibility as a prevailing norm during a health crisis (e.g., a collective effort sustained by different actors and actions in Chapter 6).
Nationalism	Intense sense of national borders (Meghji and Niang, 2022; Nehring and Hu, 2022).	Government communication frames nationalist rhetoric through specific symbolic representations (e.g., vaccine programmes in Chapter 7), which promotes advocacy for cosmopolitanism as a key national character.
Media	Risk being 'staged' through media (Beck, 2011).	Presentation of digitising risk shaped by digital platform politics (e.g., character limits, visuals) in three findings chapters.

Importantly, conceptualising official communication into 'risk communities' rather than 'risk societies' helps one to understand For instance, within these official frames of communities, governments function as supportive, leading actors of collective risk management; medical scientists actively engage in consistent research and contribute their expertise on Covid; heroic individuals in society voluntarily take additional risk for the welfare of their communities; and nation-states as powerful global players participate in international collaborations to transfer the ability of risk management through vaccine giving.

Digital risk communities advance the Western-centric sociology of risk by incorporating cultural and global factors. Compared to Anderson's proposal of imagined communities bounded by nation-oriented activities (1991), digital risk communities *transcend* national constructs. In confronting the overwhelming risk, actors might find themselves situated in multiple communities flexibly bound by shared interests. This allows scholars to see how individuals and other actors are constructed not as isolated and detached in the health crisis, but rather as embedded within different scales and types of communities, ranging from families to ethnic groups, nationalities to global regions. Digital risk communities also account for perceived communities where actors are framed to be emotionally

connected and capable of initiating responses to address uncertainty. This perspective is particularly significant for Chinese official communication, as it takes values of collectivism and Confucianism into account (Winfield, Mizuno, and Beaudoin, 2000; Yan, 2010b).

For example, Chapter 6 discussed the collaborative efforts of governments and individuals to safeguard shared interests, which implied the official expectations on 'us' (platform users) to fulfil corresponding responsibilities to contribute to these imagined communities. In Chapter 7, the research and development of vaccines as risk-mitigation technologies was meant to be attached to certain characteristics of national communities in China and the UK. Simultaneously, within the context of global access to vaccination, China and the UK are also (framed) located within broader cross-national communities, either geographically or historically united by shared objectives of enhancing community immunity. Therefore, digital risk communities, as constructed through official communication, contextually involve national and non-national units.

The second contribution of the thesis is to platform studies by illustrating how frames of digital risk communities are crafted through both traditional discourses and platform affordances. The three analytical chapters named a few platform functions as framing devices, which were mobilised to synchronise users' emotions with distant others to feel connected within the same pandemic. This is interesting considering how political discourses navigate digital platforms as techno-commercial spaces to connect various stakeholders through communicating 'a shared emotion state and set of symbols' (Poell and van Dijck, 2016, p.232). For instance, the hashtags in Chapter 6 demonstrated the appeal for responsible actions in an affective way (e.g., *#The bus driver concealed to his wife and picked up the medical staff#* on Weibo, *#ClapForCarers* on Twitter).

Particularly, the thesis advances platform studies by comparing the roles of visuals – such as the templated images on Weibo and generic infographics on Twitter used to provide pandemic updates in Chapter 5 – allowed for 'perceived co-viewing': the ability to post visuals on Weibo and Twitter is mobilised to synchronise public sentiments chronologically and spatially, fostering a shared watching of 'now', 'there', and 'us' during Covid (Cui, Rui and Su, 2016). The symbolic reiterations of these visuals, according to Aiello and colleagues (2022), further generate a sense of belonging to imagined communities, primarily nation-states, which are further conceptualised into 'digital nationalism' by area studies scholar Dechun Zhang (2020). Similar to the digital risk communities proposed by this study, digital nationalism also affirms the role of digital platforms in accommodating, creating and disseminating nationalist narratives dynamically, including collective national identity and the emotion of belonging (Zhang, 2020). This is particularly important when physical co-viewing was not available due to geographical distances and pandemic restrictions during Covid. Furthermore, the preceding three chapters also illustrated how platform character limits significantly influence how the

stories of these communities can be unpacked into varying levels of detail. The constraints on detailed storytelling, particularly on Twitter, may necessitate the incorporation of supplementary sources (e.g., visuals, hyperlinks, threads) to enrich the narratives to prompt users to rethink their relationships with geographically distant others.

Finally, the thesis advances risk communication scholarship by recognising that risk sometimes is not a pre-existing entity ready for communication; rather, it is contextually and socially constructed within specific platform affordances (Burgess, 2014). By emphasising the constructed nature of risk, digital risk communities view risk communication as a process of framing a shared risk scenario, defining collective concerns, values, and actions during uncertainty, and engaging audiences with interconnected identities (Markon, Crowe, and Lemyre, 2013; Nisbet, 2014). This process is further shaped by the platform politics of Weibo and Twitter, as well as by the cultural contexts of China and the UK.

From the perspective of audience and reception studies, digital risk communities represent a form of official risk communication in which publics were not positioned as passive recipients of information. Rather, publics were framed as integral components to a broader network, with legislative institutions (framed) *embedded* within it, collectively responding to risk. This framing emphasises the construction of solidarity within a neoliberal governance framework, which is crucial for mobilising citizens in risk management and sustaining institutional trust and credibility (Reynolds and W. Seeger, 2005) — particularly in the context of competing information sources on social media (Rains, Brunner, and Oman, 2014).

In summary, this section has articulated the rationale behind conceptualising official risk narratives as the construction of digital risk communities, and its contributions to the sociology of risk and platform studies respectively. This concept seeks to grasp the power of official discourses in synchronising risk definitions and evoking public solidarity across local, national, continental, and global communities. This section also explained how the frame of belonging and solidarity portrayed within these communities was further shaped by digital platform affordances. Therefore, to sustain the sense of digital risk communities, it is important to construct a shared, central frame in the tone of simultaneity and communicate this collective goal in a manner likely to generate resonance among imagined members within digital risk communities. In short, this section suggested that the process of risk communication from official accounts prompts the construction of particular digital risk communities.

8.3 Further evaluation

After highlighting the theoretical contributions in Section 8.2, this section evaluates the other implications of this thesis. Section 8.3.1 outlines the methodological contribution, followed by a discussion of limitations and suggestions for further research in Section 8.3.2.

8.3.1 Methodological contributions

As Chapter 4 articulated, it can be problematic to apply media concepts elsewhere without being aware of socio-cultural differences and assuming neutrality and similarity across media and media systems (Hallin and Mancini, 2004). Compared to a single case study in one context (e.g., a nation or platform), adopting a comparative research design 'sensitises us to variation and to similarity' and helps 'clarify the scope and applicability of the concepts we do employ' (Hallin and Mancini, 2004, p.3). For instance, Weibo and Twitter are both a reflection of the broader media systems, while Twitter's involvement in political discussions in the UK is more complicated considering its international user groups. Contextually, simplifying the issue of Covid into one national experience might not expose rich empirical variations in how Covid was represented through diverse navigation of traditional risk thinking, such as classification; and how these representations were further complicated by the politics of digital platforms. Therefore, single case studies on either Weibo or Twitter, China or the UK, might fail to capture different cultural communication patterns (Bolsover, 2017) and risk over-generalising the empirical experiences extracted from one platform to another, particularly by proposing a conclusion centred on Western cases (Hallin and Mancini, 2012, p.3).

Reflexively, the decision to build this comparison was partly influenced by the writer's positionality. As a Chinese researcher who moved to the UK during the pandemic, the writer engaged in daily practices reflected in the data, such as checking the numbers of confirmed cases through official accounts on Weibo and Twitter. This comparison enabled the writer to draw on cultural identity, lived experience, language proficiency, and platform familiarity to 'get closer' to the phenomenon being studied, as well as the situated knowledge relevant to the study context (e.g., media systems, platform cultures) as introduced in Chapter 3 (Reich, 2021). At the same time, the writer's familiarity with both cases may have introduced potential bias in interpreting the data presented in the analytical chapters. Overall, this positionality has informed the comparative study design. It equipped the writer to navigate the complexities of comparing two distinct cases, with academic sensitivity in presenting the interplay between national, cultural, and platform-specific factors throughout this thesis.

Methodologically, as illustrated in Chapter 4, this thesis offers a detailed explanation of how the comparison is achieved through steps establishing an empirical 'common ground' (Mayr and Weller,

2017, p.111) between the two countries – China and the UK – and the platforms used by their governments to communicate about the pandemic – Weibo and Twitter. While acknowledging the benefits of applying a comparative study, both Chapter 4 and the three empirical chapters have illustrated how complicated it can be to generate this common ground across distinct platforms and national contexts. The findings also make a clear acknowledgement of the inevitable loss of elements that are not fully comparable across China and the UK, Weibo and Twitter, and their implications for the final conclusions. In this sense, this study contributes by *experimentally* identifying and shaping things across two national and platform contexts into comparable landscapes for which there were few prior examples.

Additionally, the outcomes of this thesis serve as a reproducible methodology for ensuing studies. Other studies can refer to the sampling framework outlined in Chapter 4 to construct similar comparisons, using Covid national conferences as a starting point (see Appendix A). In addition, the work leading to this thesis developed a codebook (see Appendix B) applicable in cross-cultural contexts that can be re-applied in other national contexts to study pandemic narratives.

8.3.2 Limitations and future research

As Section 8.3.1 indicated, the comparative design raises questions regarding the extent to which these two cases are comparable. Chapter 4 explained several strategies adopted in this thesis to generate comparability across two quite different countries and platforms, while reflecting candidly on the complexities of doing so.

The first challenge comes from how Weibo and Twitter were used differently for official communication, despite their technical similarities as introduced in Chapter 3. For example, simplifying government narratives into the accounts held by some actors involved in the Covid national press conferences might lead to the exclusion of relevant entities without a public presence on Weibo and Twitter. Consequently, the collected data might not fully represent the nature of the two distinct political systems and platform landscapes; it might not thoroughly explain the reasons for applying these communication strategies and the national differences. Thus, this thesis demonstrates the importance of considering several platform-based factors in designing comparisons. These include data accessibility (outputs in comparable formats), temporal scope (both platforms being actively used during the crisis), and platform-specific attributes (acknowledging both similarities and differences between platform affordances).

Additionally, the establishment of official accounts on other digital platforms (e.g., WeChat and Douyin in China, Facebook and Instagram in the UK) also necessitates developing further research to

unpack the *localisation* of communication strategies tailored to specific platform audiences and platform economies. For instance, variations in algorithmic prioritisation, user interaction mechanisms, target audiences, and overall platform cultures and sentiments during the crisis may influence official communication strategies.

Comparing communication strategies also requires an honest acknowledgement of the inherent systemic differences between the political systems. As introduced in Chapter 3, national political structures are deeply intertwined with public health management strategies, approaches to information transparency, the imagined preferences of their publics in terms of language and cultural resonance, and various institutional perceptions of risk. These factors — spanning public health, politics, digital platforms, cultural elements, linguistics — collectively shaped the content and communication styles adopted by official accounts during Covid. However, these dimensions could not be fully examined within the scope of this thesis, which primarily aimed to analyse the narratives of official social media accounts during Covid through the lens of digital sociology. Future studies could address these points by incorporating messenger-oriented methods, such as interviews or ethnographic studies with stakeholders designing official posts. Additionally, audience and reception studies focusing on how users interpret these messages across platforms would offer valuable insights into public perceptions of official narratives.

Furthermore, the discussion about Covid might also involve other digital methods. The final dataset only comprises approximately 5% of all posts shared by sampled government accounts, inevitably potentially limiting the representation of the original narratives. Thus, computational approaches, such as topic modelling, might be complementary to analysing larger datasets. In addition, this thesis has repeatedly highlighted narratives that encouraged public engagement with the posts or appealed for further actions (particularly in Chapter 6's discussion). As Chapter 2 suggested, comments serve as key evidence that materialises publics' perceptions of risk and demonstrates different platform affordances. Therefore, further study might benefit from researching comments on Weibo and Twitter, enriching the empirical understanding of the concept of 'digital risk communities' addressed in Section 8.2.4.

The last limitation is raised by the changing nature of social media platforms. While the data collection was completed by mid-2022, the original posts shared before this date might have been consumed in different formats due to changes in the platform layouts. During the writing-up phase of this thesis in late 2022 and mid-2024, there were also significant changes in the platforms' architectures, particularly on Twitter (see reflections in Chapter 3). The renaming to X and changes in Twitter's historical functions, such as the paid membership and verification systems introduced in Chapter 3, all reflect the ephemerality of contemporary social media. For example, for researchers

using APIs to collect tweets, restricted free API access on X makes them rethink how to conduct platform studies when the entire platform does not appear as it once did. In other words, the changes in social media affordances and non-stable platform economy as research 'fields' shed light on how the research must be pliable enough methodologically and theoretically to anticipate and/or adapt to these changes when their existences are not within researchers' control. Since web-scraping-based collection offers limited reflections in archiving the longitudinal platform changes, future studies might consider tracing the historical changes of Weibo and Twitter through screenshots, such as comparing platform designs in tackling misinformation during Covid's initial outbreak in 2020.

Finally, this thesis can be further developed to enhance its practical implications for media practice and policy. It highlights the importance of tailoring risk messaging to different socio-political contexts and examines the role of digital infrastructures in crisis response, helping policymakers design more inclusive and responsive strategies that address diverse public concerns. By offering valuable insights into the construction of digital risk communities, the thesis provides empirical inspiration for government agencies, public health organisations, and policymakers in developing more robust and culturally sensitive communication frameworks. The findings also pave the way for future collaborations with think tanks to explore digital governance, cultural communication, and risk management.

8.4 Conclusion: Reimagining digital risk communities during Covid

Employing a comparative, digital sociology lens across China, the UK, Weibo and Twitter, this thesis aimed to explore how governments and digital platforms intersected during Covid. To contextualise the comparisons, this thesis focused on three themes prominent in government discourses: risk, responsibility, and, as a conduit of these two key ideas in a disease context, national vaccination programmes. Compared to single-case studies, adopting a comparative design allowed the analysis to determine how these three themes have been packaged by traditional (textual) discourses and platform-based framing devices into different landscapes.

Through the theoretical framework in Chapter 2, this thesis revisited the concept of risk, a longstanding subject of sociological debate, and reconsidered the proliferation of risk definitions resulting from risk uncertainties (Mythen, 2004; Ekberg, 2007). It advances the sociology of risk from two aspects: it particularly explored traditional risk theories within social media contexts to study how digital platforms redefine the ways risks are experienced, mediated, and perceived. It also advances cultural aspects of the sociology of risk by discussing the interplay between the construction of risk and cultural resonance. This is particularly important for understanding the influence of collectivism

and Confucianism in China (Wang and Liu, 2010; Yan, 2010b), such as the frame of altruistic acts that prioritised collective interests over personal benefits in Chapter 6.

Furthermore, it advances platform studies by providing empirical comparisons between Weibo and Twitter, key players in Western and non-Western platform societies (Davis and Xiao, 2021), and examining how their platform politics, including affordances, shape risk communication strategies. This study suggests that risk communication shares a similar nature of materialising reflexivity with perspectives of risk: a process of acknowledging things 'we' know so far, and adjusting strategies based on preceding insights. These characteristics shape risk communication into a mechanism for collective learning experiences shared between governments and individuals (Strydom, 2008). In this sense, an analysis of the collected data across both platforms allows us to explore how, and with what distinctive features, government accounts in China and the UK used the platforms to establish and deliver certainty amid the ambiguities inherent in the crisis.

After discussing the contribution to the sociology of risk and platform studies, this conclusion chapter moves to address the aim of this study (i.e., how governments and digital platforms intersected in China and the UK during Covid).

Despite being digitised in techno-commercial, privately-owned digital platforms such as Weibo and Twitter, still reflect the role of governments as structures of collective risk management (Giddens, 1999) – traditionally responsible for making sense of the pandemic, classifying the level of danger, and promoting appropriate solutions for society. Thus, their discourses are partly characterised by translating uncertainty of risk into 'statements of certainty and fact' (Adam, Beck and van Loon, 2000, p.4), which are constructed against delocalisation, non-compensability, and incalculability as key characteristics of risk. From the audience and reception studies perspective, establishing certainty serves to document evidence of official actions, thereby addressing the need to sustain trust and credibility. This process may strengthen the perceived relationship between the provision of official information and publics' ability to make informed decisions (Reynolds and W. Seeger, 2005), while also expanding audience reach when social media are used for official risk communication (Rains, Brunner, and Oman, 2014). In this sense, these official discourses of risk can be viewed as a framework of 'governance', where political institutions rely on it to maintain order within their populations through (re)defining and (re)allocating responsibility (O'Malley, 2004), as Chapter 6 discussed.

The preceding three chapters presented the similarities and differences of risk discourses identified through a comparison of China and the UK. Within the scholarship of health, risk, and society, these variances arise from actors' interpretations of risk thinking across five dimensions: classification,

probability, temporality, value judgement, and socio-cultural contexts. These discourses shared online can thus be viewed as *digital translations* and *public synchronisations* of key characteristics of risk thinking, with essential platform-based localisation to fit Weibo or Twitter, such as constructing classification and temporality in numbers and visuals (Chapter 5) and shaping value judgement into calls for civic duties with hashtags (Chapter 6). These translations are substantially reshaped by the politics of digital platforms, through the general political economy of platformisation (e.g., van Dijck, Poell and de Waal, 2018), the regionality of Weibo and Twitter (Steinberg and Li, 2017), and their respective local platform affordances (e.g., Ronzhyn, Cardenal and Batlle Rubio, 2023).

To synthesise these interplays of risk and platform dynamics in a socio-culturally sensitive manner, the thesis conceptualises official risk communication, at the intersection of governments and digital platforms, as the constructions of *digital risk communities*. Communities in the official discourses are not imposed upon or restricted by legal classification (e.g., citizenships), but remain open to definitions as shown in the data. For instance, this thesis has illustrated several constructions of digital communities, defined demographically (e.g., vulnerable groups with vaccination priority), geographically (e.g., city classification in pandemic updates), and emotionally (e.g., the general appeal of behaving responsibly). Platform users in different times or contexts can be constructed as belonging to diverse communities beyond singular affiliations.

Importantly, government accounts play leading roles in mobilising different framing devices to sustain the picture of digital risk communities. Their communication, in light of imagined communities (Anderson, 1991), serves to *synchronise* public definitions of risk to generate shared experience and emotional attachment to the countries. Focusing on the case of Covid as a national and global health risk, this study specifically explored three symbols through which this synchronisation has been achieved: risk, responsibility, and nationalist rhetoric attached to vaccination. Through juxtaposing two cases of risk communication and their constructions of two digital risk communities, it is evident that one success of official communication cannot be simply copied to another given the socio-cultural contexts (Wolf and Theunissen, 2023). The mechanism of translating uncertainty into certainty also needs to be addressed in platform-based appropriate ways for the imagined audiences.

In summary, one of this thesis's innovations lies in its *experimental* approach to building comparisons across nations and platforms in Western and non-Western contexts. It offers a cross-disciplinary characterisation of government communication during Covid, integrating insights from the sociology of risk and digital platform studies. This is important given that risk (e.g., Covid) was not inherently conceptualised for digital platform communication, and Weibo and Twitter as techno-commercial spaces were not originally designed for official communication. But official discourses on social media during Covid did visualise some aspects of this pandemic as something *qua* risk (Lupton, 2006,

p.19). Thus, this thesis contributes with an updated characterisation of risk using digital platform narratives as empirical evidence to reflect on the rise of contemporary digital technologies in popularising risk knowledge. Its conceptualisation of 'digital risk communities' advances traditional risk discussions' limits in unpacking media and multi-socio-cultural contexts in contemporary health crisis. While the nature of uncertainty and value judgements inherent within risk lead to diverse frames across defining actors, digital risk communities position official risk communication as frames of certainty and solidarity, which are further disseminated and complicated through the politics of digital platforms (Bakir, 2010, p.7). Its methodological strategies of generating common ground between China and the UK, Weibo and Twitter also serve as valuable examples for developing studies across national and platform contexts.

Practically, this study responds to the contemporary trend of expanding governmental duties to the practices of digital platforms, within and beyond China and the UK. As Chapter 3 indicated, mobilising digital platforms such as Weibo and Twitter complicates governments' traditional roles as platform regulators, and these practices demonstrate the distinct cultures generated by governments' digital performances. This necessitates a corresponding academic examination of how the contents are (re)designed to suit digital environments and their imagined audiences. In Davis and Xiao's words (2021), juxtaposing Western and non-Western official social media accounts provides crucial insights into their evolution from political entities to communicative 'Internet of things' with regional characteristics, where they reconfigure themselves as 'communicative intermediaries within networked digital infrastructures' (p.115). In the case of Covid, researching the politics of defining risk ultimately aims to explore how governments, as traditionally administrative institutions, find their expressions and justify their authority amid a crowd of external voices and other expertise.

Reference List

Abd-Alrazaq, A. *et al.* (2020) 'Top Concerns of Tweeters During the COVID-19 Pandemic: Infoveillance Study', *Journal of medical Internet research*, 22(4), pp. e19016–e19016. doi: 10.2196/19016.

Abeysinghe, S. and White, K. (2011) 'The avian influenza pandemic: Discourses of risk, contagion and preparation in Australia', *Health, risk & society*, 13(4), pp. 311–326. doi: 10.1080/13698575.2011.575457.

Adam, B., Beck, U. and van Loon, J. (2000) The Risk society and beyond: critical issues for social theory. London: SAGE.

Aiello, G. (2020) Generic Visuals in the News: The Role of Stock Photos and Simple Data Visualizations in Assembling Publics. Available at: https://hdl.handle.net/11585/ (Accessed: 13 June 2024).

Aiello, G. *et al.* (2022) ''Generic visuals' of Covid-19 in the news: Invoking banal belonging through symbolic reiteration', *International journal of cultural studies*, 25(3-4), pp. 309–330. doi: 10.1177/13678779211061415.

Alaszewski, A. (2005) 'Risk communication: identifying the importance of social context', *Health, risk & society*, 7(2), pp. 101–105. doi: 10.1080/13698570500148905.

Anderson, B. (2010) 'Preemption, precaution, preparedness: Anticipatory action and future geographies', *Progress in Human Geography*, 34(6), pp. 777–798. doi: 10.1177/0309132510362600.

Anderson, B. R. O. (1991) Imagined communities: reflections on the origin and spread of nationalism. Rev.ed. London: Verso.

AntConc (no date) Digital Humanities Workbench. Available at: https://www2.fgw.vu.nl/werkbanken/dighum/tools/tool_list/antconc.php (Accessed: 08 November 2024).

Anthony, L. (2005) 'AntConc: design and development of a freeware corpus analysis toolkit for the technical writing classroom', in IPCC 2005. Proceedings. International Professional Communication Conference, 2005. IEEE, pp. 729–737. doi: 10.1109/IPCC.2005.1494244.

Anthony, L. (2017) *SegmentAnt* (Version 1.1.3.) [Computer programme]. Available at: https://www.laurenceanthony.net/software (Downloaded: 04 January 2024).

Anthony, L. (2023) *AntConc* (Version 4.2.4) [Computer programme]. Available at: https://www.laurenceanthony.net/software (Downloaded: 04 January 2024).

Asean Plus Three (no date) *History*. Available at: https://aseanplusthree.asean.org/ (Accessed: 13 June 2024).

Bakir, V. (2010) 'Media and risk: old and new research directions', *Journal of risk research*, 13(1), pp. 5–18. doi: 10.1080/13669870903135953.

Balog‐Way, D., McComas, K. and Besley, J. (2020) 'The Evolving Field of Risk Communication', Risk analysis, 40(S1), pp. 2240‐2262. doi: 10.1111/risa.13615.

Ballo, R. *et al*. (2022) 'Socially-distanced science: how British publics were imagined, modelled and marginalised in political and expert responses to the COVID-19 pandemic'. doi: 10.31235/osf.io/jc82q.

Barnett, J. *et al.* (2012) 'Imagined publics and engagement around renewable energy technologies in the UK', *Public understanding of science (Bristol, England)*, 21(1), pp. 36–50. doi: 10.1177/0963662510365663.

Baym, N. K. and boyd, danah (2012) 'Socially Mediated Publicness: An Introduction', *Journal of broadcasting & electronic media*, 56(3), pp. 320–329. doi: 10.1080/08838151.2012.705200.

BBC (no date) *Learn more about what we do*. Available at: https://www.bbc.co.uk/aboutthebbc (Accessed: 16 June 2024).

BBC Media Action (2020) *A guide for the media on communicating in public health emergencies*. Available at: https://downloads.bbc.co.uk/mediaaction/pdf/communicating-in-public-health-emergencies-english.pdf (Accessed: 14 June 2024).

BBC News (2021) ‘Lockdown: Clap for Carers to return as Clap for Heroes’, *BBC News*, 6 January. Available at: https://www.bbc.co.uk/news/uk-55561108 (Accessed: 13 June 2024).
Beck, U. (1992) *Risk society: towards a new modernity*. London; Newbury Park, Calif.: SAGE Publications.
Beck, U. (2008) ‘World at Risk: The New Task of Critical Theory’, *Development and society*, 37(1), pp. 1–21.
Beck, U. (2011) ‘Cosmopolitanism as Imagined Communities of Global Risk’, *The American behavioral scientist (Beverly Hills)*, 55(10), pp. 1346–1361. doi: 10.1177/0002764211409739.
Beck, U. (2016) ‘Varieties of Second Modernity and the Cosmopolitan Vision’, *Theory, culture & society*, 33(7-8), pp. 257–270. doi: 10.1177/0263276416671585.
Beck, U. and Beck-Gernsheim, E. (2010) ‘Forward: varieties of individualisation’, in Hansen, M. H., Svarverud, R. and Nordic Institute of Asian Studies. (eds.) iChina : the rise of the individual in modern Chinese society. Copenhagen: Abingdon: NIAS; Marston [distributor]. pp. xi-xx.
Beck, U. and Grande, E. (2010) ‘Varieties of second modernity: the cosmopolitan turn in social and political theory and research’, The British journal of sociology, 61(3), pp. 409–443. doi: 10.1111/j.1468-4446.2010.01320.x.
Bell, D. (2008) China’s new Confucianism : politics and everyday life in a changing society. Princeton, N.J. ; Oxford: Princeton University Press.
Berezin, M. and Eads, A. (2016) ‘Risk is for the rich? Childhood vaccination resistance and a Culture of Health’, *Social science & medicine (1982)*, 165, pp. 233–245. doi: 10.1016/j.socscimed.2016.07.009.
Bhattacherjee, A. (2019) *Social science research: principles, methods, and practices*. Revised edition. University of South Florida.
Bolsover, G. (2017) ‘Harmonious communitarianism or a rational public sphere: a content analysis of the differences between comments on news stories on Weibo and Facebook’, *Asian journal of communication*, 27(2), pp. 115–133. doi: 10.1080/01292986.2016.1214743.
Booth, R. (2020) ‘Why did so many people die of Covid-19 in the UK’s care homes?’, *The Guardian*, 28 May. Available at: https://www.theguardian.com/society/2020/may/28/why-did-so-many-people-die-of-covid-19nson-in-the-uks-care-homes (Accessed: 13 June 2024).
Borkman, T. (1976) ‘Experiential Knowledge: A New Concept for the Analysis of Self-Help Groups’, *The Social service review (Chicago)*, 50(3), pp. 445–456. doi: 10.1086/643401.
Boyd, d. (2010) ‘Social network sites as networked publics: Affordances, dynamics, and implications’, in Papacharissi, Z. (ed.) *A networked self: identity, community, and culture on social network sites*. London: Taylor & Francis Group, pp. 39-58.
Braun, V. and Clarke, V. (2006) ‘Using thematic analysis in psychology’, *Qualitative research in psychology*, 3(2), pp. 77–101. doi: 10.1191/1478088706qp063oa.
Brown, L. M., Haun, J. N. and Peterson, L. (2014) ‘A Proposed Disaster Literacy Model’, *Disaster medicine and public health preparedness*, 8(3), pp. 267–275. doi: 10.1017/dmp.2014.43.
Brown, P. (2020) ‘Studying COVID-19 in light of critical approaches to risk and uncertainty: research pathways, conceptual tools, and some magic from Mary Douglas’, *Health, risk & society*, 22(1), pp. 1–14. doi: 10.1080/13698575.2020.1745508.
Brown, P. and Galantino, M.G. (2020) ‘Problematising categories: Understanding the Covid-19 pandemic through the sociology of risk and uncertainty’. *European Sociologist*, *1*(45).
Brownson, R. C. *et al.* (2020) ‘Reimagining public health in the aftermath of a pandemic’, *American journal of public health (1971)*, 110(11), pp. 1605–1610. doi: 10.2105/AJPH.2020.305861.
Bryman, A. (2016) *Social research methods*. Fifth edition. Oxford, United Kingdom: Oxford University Press.
Bucher, T. and Helmond, A. (2018) ‘The affordances of social media platforms’, in Burgess, J., Marwick, A. and Poell, T. (eds.) *The SAGE handbook of social media*. London: SAGE, pp.233-254.
Bunton, R., Nettleton, S. and Burrows, R. (1995) The sociology of health promotion: critical analyses of consumption, lifestyle and risk. London: Routledge.
Burgess, A. (2014) ‘Social construction of risk’, in Cho, H., Reimer, T. and McComas, K. (eds.) The SAGE handbook of risk communication. Los Angeles: SAGE, pp. 56–68.

Burgess, A., Wardman, J. and Mythen, G. (2018) 'Considering risk: placing the work of Ulrich Beck in context', *Journal of risk research*, 21(1), pp. 1–5. doi: 10.1080/13669877.2017.1383075.
Burgess, J. and Baym, N. K. (2020) *Twitter: a biography*. New York: New York University Press.
Cabinet Office (2018) *Cabinet Office Twitter Policy*. Available at: https://www.gov.uk/government/publications/cabinet-office-twitter-policy/cabinet-office-twitter-policy (Accessed: 13 June 2024).
Cabinet Office (2022) *COVID-19 Response: Living with COVID-19*. Available at: https://www.gov.uk/government/publications/covid-19-response-living-with-covid-19 (Accessed: 13 June 2024).
Cambridge Dictionary (2024) *RESPONSIBILITY | Meaning in the Cambridge English Dictionary*. Available at: https://dictionary.cambridge.org/dictionary/english/responsibility (Accessed: 13 June 2024).
Cañada, J. A. (2019) 'Hybrid Threats and Preparedness Strategies: The Reconceptualization of Biological Threats and Boundaries in Global Health Emergencies', *Sociological research online*, 24(1), pp. 93–110. doi: 10.1177/1360780418816332.
Cascini, F. *et al.* (2022) 'Social media and attitudes towards a COVID-19 vaccination: A systematic review of the literature', *EClinicalMedicine*, 48, pp. 101454–101454. doi: 10.1016/j.eclinm.2022.101454.
CGTN (2020a) *Beijing's Fengtai launches strict measures to curb COVID-19*. Available at: https://english.www.gov.cn/news/videos/202006/14/content_WS5ee579e9c6d0a6946639c06d.html (Accessed: 13 June 2024).
CGTN (2020b) *Government brief on coronavirus outbreak: source confirmed, no super-spreaders*. Available at: https://english.www.gov.cn/news/videos/202001/23/content_WS5e2959c9c6d019625c603dba.html (Accessed: 13 June 2024).
Chang, C. Y. and Lee, O. (2013) Confucianism: a modern interpretation. 2012 ed. Singapore: World Scientific Pub. Co.
Charlton, A. and National Library of Scotland (2023) Introduction to AntConc with the Gazetteers of Scotland. Available at: https://doi.org/10.34812/bhjv-b153 (Accessed: 08 November 2024).
Chen, Q. *et al.* (2020) 'Unpacking the black box: How to promote citizen engagement through government social media during the COVID-19 crisis', *Computers in human behavior*, 110, pp. 106380–106380. doi: 10.1016/j.chb.2020.106380.
Chen, X., Valdovinos Kaye, D. B. and Zeng, J. (2021) '*#PositiveEnergy* Douyin: constructing "playful patriotism" in a Chinese short-video application', *Chinese journal of communication*, 14(1), pp. 97–117. doi: 10.1080/17544750.2020.1761848.
Chen, Z. and Wang, C. Y. (2019) 'The Discipline of Happiness: The Foucauldian Use of the "Positive Energy" Discourse in China's Ideological Works', *Journal of current Chinese affairs*, 48(2), pp. 201–225. doi: 10.1177/1868102619899409.
China Daily (2018) *Rule clarifies do's, don'ts for micro blogs*. Available at: http://english.www.gov.cn/state_council/ministries/2018/02/03/content_281476034848416.htm (Accessed: 13 June 2024).
China Daily (2019) *New media outlets to improve govt services*. Available at: http://english.www.gov.cn/policies/policy_watch/2019/01/03/content_281476463094928.htm (Accessed: 13 June 2024).
China Daily (2022) *Nucleic acid tests central to strategy*. Available at: https://english.www.gov.cn/news/topnews/202202/17/content_WS620d8073c6d09c94e48a5215.html (Accessed: 13 June 2024).
China: Media System (no date). Available at: https://communication.iresearchnet.com/media/china-media-system/ (Accessed: 13 June 2024).
Clap For Our Carers (2021). Available at: https://clapforourcarers.co.uk/ (Accessed: 13 June 2024).
Clark, T. *et al.* (2021) *Bryman's social research methods.* Sixth edition / Tom Clark, Liam Foster, Luke Sloan, Alan Bryman; editorial advisor: Elena Vacchelli. Oxford, United Kingdom: Oxford University Press.
Clark, T., Foster, L. and Bryman, A. (2019) *How to do your social research project or dissertation*. Oxford: Oxford University Press.

Cohen, E. (2009) A body worth defending: Immunity, biopolitics, and the apotheosis of the modern body. Durham, NC: Duke University Press.

Colombo, G., Bounegru, L. and Gray, J. (2023) 'Visual Models for Social Media Image Analysis: Groupings, Engagement, Trends, and Rankings', *International journal of communication*, 17, pp. 1956–1983.

Comfort, L. K. *et al.* (2020) 'Crisis Decision-Making on a Global Scale: Transition from Cognition to Collective Action under Threat of COVID-19', *Public administration review*, 80(4), pp. 616–622. doi: 10.1111/puar.13252.

CompCoRe – Comparative COVID Response (no date). Available at: https://compcore.cornell.edu/ (Accessed: 13 June 2024).

Coombs, W. T. (2007) 'Protecting Organization Reputations During a Crisis: The Development and Application of Situational Crisis Communication Theory', Corporate reputation review, 10(3), pp. 163–176. doi: 10.1057/palgrave.crr.1550049.

Costa, E. (2018) 'Affordances-in-practice: An ethnographic critique of social media logic and context collapse', *New media & society*, 20(10), pp. 3641–3656. doi: 10.1177/1461444818756290.

Covello, V.T., Slovic, P. and Von Winterfeldt, D., 1986. Risk communication: A review of the literature.

Covello, V. T. et al. (2001) 'Risk communication, the West Nile virus epidemic, and bioterrorism: responding to the commnication challenges posed by the intentional or unintentional release of a pathogen in an urban setting', Journal of urban health, 78(2), pp. 382–391. doi: 10.1093/jurban/78.2.382.

Covid #HiddenHeroes (no date). Available at: https://www.hiddenheroes.uk/covid-hiddenheroes/ (Accessed:14 June 2024).

Crawford, R. (1994) 'The boundaries of the self and the unhealthy other: Reflections on health, culture and AIDS', *Social science & medicine (1982)*, 38(10), pp. 1347–1365. doi: 10.1016/0277-9536(94)90273-9

Cui, X., Rui, J. and Su, F. (2016) 'From immediate community to imagined community: Social identity and the co-viewing of media event', *Global media and China*, 1(4), pp. 481–496. doi: 10.1177/2059436416681177.

Dahl, J. M. R. and Ytre-Arne, B. (2023) 'Monitoring the infection rate: Explaining the meaning of metrics in pandemic news experiences', *Journalism (London, England)*, 24(12), pp. 2705–2722. doi: 10.1177/14648849221149599.

Davies, A. (2023) 'Twitter's blue ticks disappear as Musk attacks NY Times', *BBC News*, 2 April. Available at: https://www.bbc.co.uk/news/technology-65156216 (Accessed: 13 June 2024).

Davies, C. (2020) ''We will meet again': Queen urges Britons to stay strong', *The Guardian*, 5 April. Available at: https://www.theguardian.com/world/2020/apr/05/queen-urges-britons-stay-strong-coronavirus-covid-lockdown (Accessed: 13 June 2024).

Davies, T. (2022) 'Slow violence and toxic geographies: 'Out of sight' to whom?', *Environment and planning. C, Politics and space*, 40(2), pp. 409–427. doi: 10.1177/2399654419841063.

Davis, M. and Xiao, J. (2021) 'De-Westernizing Platform Studies: History and Logics of Chinese and US Platforms', *International journal of communication*, 15, pp. 103–122.

De Bengy Puyvallée, A. and Storeng, K. T. (2022) 'COVAX, vaccine donations and the politics of global vaccine inequity', *Globalization and health*, 18(1), pp. 26–26. doi: 10.1186/s12992-022-00801-z.

De Kloet, J. *et al.* (2019) 'The plaformization of Chinese Society: infrastructure, governance, and practice', *Chinese journal of communication*, 12(3), pp. 249–256. doi: 10.1080/17544750.2019.1644008.

Deng, W. and Yang, Y. (2021) 'Cross-platform comparative study of public concern on social media during the covid-19 pandemic: An empirical study based on twitter and weibo', International journal of environmental research and public health, 18(12), p. 6487. doi: 10.3390/ijerph18126487.

Department of Health and Social Care (2020a) *CMO for England announces first death of patient with COVID-19*. Available at: https://www.gov.uk/government/news/cmo-for-england-announces-first-death-of-patient-with-covid-19 (Accessed: 13 June 2024).

Department of Health and Social Care (2020b) *Coronavirus action plan: a guide to what you can expect across the UK*. Available at: https://www.gov.uk/government/publications/coronavirus-action-plan/coronavirus-action-plan-a-guide-to-what-you-can-expect-across-the-uk (Accessed: 13 June 2024).

Department of Health and Social Care (2021) *New campaign launches urging the public to get COVID-19 vaccine*. Available at: https://www.gov.uk/government/news/new-campaign-launches-urging-the-public-to-get-covid-19-vaccine (Accessed: 13 June 2024).

DH Pandemic Influenza Preparedness Team (2011) *UK Influenza Pandemic Preparedness Strategy 2011*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/213717/dh_131040.pdf (Accessed: 13 June 2024).

Douglas, M. (1966) Purity and danger: an analysis of concepts of pollution and taboo. London: Routledge & Kegan Paul.

Douglas, M. (2002) *Risk and blame: essays in cultural theory*. 1st ed. Oxon [England]: Routledge.

Dry, S. and Leach, M. (2010) *Epidemics: science, governance and social justice*. First edition. Boca Raton, FL: Routledge, an imprint of Taylor and Francis.

Dryhurst, S. *et al.* (2020) 'Risk perceptions of COVID-19 around the world', *Journal of risk research*, 23(7-8), pp. 994–1006. doi: 10.1080/13669877.2020.1758193.

Dunn, P. *et al.* (no date) *COVID-19 policy tracker*. Available at: https://www.health.org.uk/news-and-comment/charts-and-infographics/covid-19-policy-tracker (Accessed: 13 June 2024).

Earley, P. C. (1989) 'Social Loafing and Collectivism: A Comparison of the United States and the People's Republic of China', Administrative Science Quarterly, 34(4), pp. 565–581. doi: 10.2307/2393567.

Edgerton, D. (2018) The rise and fall of the British nation: a twentieth-century history. UK: Allen Lane.

Edoho, F. M. (2011) 'Globalization and Marginalization of Africa: Contextualization of China-—Africa Relations', *Africa today*, 58(1), pp. 103–124. doi: 10.2979/africatoday.58.1.103.

Ekberg, M. (2007) 'The Parameters of the Risk Society: A Review and Exploration', *Current sociology*, 55(3), pp. 343–366. doi: 10.1177/0011392107076080.

Engebretsen, M. and Kennedy, H. (2020) Data Visualization in Society. 1st ed. Amsterdam: Project Muse.

English.gov.cn (2018) *Guidelines issued to promote govt new media development*. Available at: http://english.www.gov.cn/policies/latest_releases/2018/12/27/content_281476453948452.htm (Accessed: 13 June 2024).

Entman, R. M. (1993) 'Framing: Toward Clarification of a Fractured Paradigm', *Journal of communication*, 43(4), pp. 51–58. doi: 10.1111/j.1460-2466.1993.tb01304.x.

Erokhin, D., Yosipof, A. and Komendantova, N. (2022) 'COVID-19 Conspiracy Theories Discussion on Twitter', *Social media + society*, 8(4), pp. 205630512211260–20563051221126051. doi: 10.1177/20563051221126051.

Evans, R. (2008) 'The Sociology of Expertise: The Distribution of Social Fluency', *Sociology compass*, 2(1), pp. 281–298. doi: 10.1111/j.1751-9020.2007.00062.x.

Fine, P., Eames, K. and Heymann, D. L. (2011) '"Herd Immunity": A Rough Guide', *Clinical infectious diseases*, 52(7), pp. 911–916. doi: 10.1093/cid/cir007.

Firmstone, J. (no date) *United Kingdom*. Available at: https://medialandscapes.org/country/united-kingdom (Accessed: 13 June 2024).

Fischhoff, B. (2013) 'sciences of science communication', Proceedings of the National Academy of Sciences - PNAS, 110(Supplement 3), pp. 14033–14039. doi: 10.1073/pnas.1213273110.

Franzke, A.S. *et al*. (2020) *Internet Research: Ethical Guidelines 3.0*. Available at: https://aoir.org/reports/ethics3.pdf (Accessed: 13 June 2024).

Frewer, L. (2004) 'The public and effective risk communication', Toxicology letters, 149(1), pp. 391–397. doi: 10.1016/j.toxlet.2003.12.049.

Frewer, L. J. et al. (2002) 'Public preferences for informed choice under conditions of risk uncertainty', Public understanding of science (Bristol, England), 11(4), pp. 363–372. doi: 10.1088/0963-6625/11/4/304.

Frisk, K. (2019) ‘What Makes a Hero? Theorising the Social Structuring of Heroism’, *Sociology (Oxford)*, 53(1), pp. 87–103. doi: 10.1177/0038038518764568.
Fuchs, C. (2016) ‘Baidu, Weibo and Renren: the global political economy of social media in China’, *Asian journal of communication*, 26(1), pp. 14–41. doi: 10.1080/01292986.2015.1041537.
Fuchs, C. (2020) ‘Everyday life and everyday communication in coronavirus capitalism’, *TripleC*, 18(1), pp. 375–399. doi: 10.31269/triplec.v18i1.1167.
Gamson, W. A. and Modigliani, A. (1989) ‘Media Discourse and Public Opinion on Nuclear Power: A Constructionist Approach’, *The American journal of sociology*, 95(1), pp. 1–37. doi: 10.1086/229213.
Gamson, W.A. and Lasch, K.E. (1983) ‘The Political Culture of Social Welfare Policy’, in Spiro, S. E. and Yuchtman-Yaar, E. (eds.) *Evaluating the welfare state: Social and political perspectives*. New York; London: Academic Press, Inc. pp. 401-415.
Gaver, W. W. (1991) ‘Technology affordances’, in *Conference on Human Factors in Computing Systems - Proceedings*. New York, NY, USA: ACM, pp. 79–84. doi: 10.1145/108844.108856.
Geise, S. and Baden, C. (2015) ‘Putting the image back into the frame: Modeling the linkage between visual communication and frame-processing theory’, *Communication theory*, 25(1), pp. 46–69. doi: 10.1111/comt.12048.
Gibson, J. J. (1979) *The ecological approach to visual perception*. Hillsdale, N.J.; London: Lawrence Erlbaum.
Gibson, J.J. (2014) ‘The theory of affordances (1979)’, in Gieseking, J. J. (ed.) *The people, place, and space reader*. New York: Routledge, pp. 67-82.
Giddens, A. (1990) *The consequences of modernity*. Cambridge: Polity.
Giddens, A. (1999) ‘Risk and responsibility’, *The Modern Law Review*, 62(1), pp.1-10.
Gillespie, T. (2010) ‘The politics of ‘platforms’’, *New media & society*, 12(3), pp. 347–364. doi: 10.1177/1461444809342738.
Giritli Nygren, K. and Olofsson, A. (2020) ‘Managing the Covid-19 pandemic through individual responsibility: the consequences of a world risk society and enhanced ethopolitics’, *Journal of risk research*, 23(7-8), pp. 1031–1035. doi: 10.1080/13669877.2020.1756382.
Gitlin, T. (2003) *The whole world is watching: mass media in the making & unmaking of the New Left*. 2003 edition. Berkeley, California; London, England: University of California Press.
Gong, Q. (2018) ‘Communicating risk and protection: Advertising discourse of young children’s healthcare products and parental reception in China’, *European journal of cultural studies*, 21(2), pp. 223–241. doi: 10.1177/1367549416656859.
Google Translate (no date) *Google Translate*. Available at: https://translate.google.co.uk/ (Accessed: 13 June 2024).
GooSeeker (no date) *GooSeeker, a community on web data extraction*. Available at: https://www.gooseeker.com/cn/en/node/home/front (Accessed: 13 June 2024).
Górska, A. *et al.* (2022) ‘Getting through COVID-19 together: Understanding local governments' social media communication’, *Cities*, 121, pp. 103453–103453. doi: 10.1016/j.cities.2021.103453.
Government Digital Service (2023) *Social media playbook*. Available at: https://www.gov.uk/guidance/social-media-playbook (Accessed: 13 June 2024).
Government Digital Service and Cabinet Office (no date) *A GDS Story - Government Digital Service*. Available at: https://gds.blog.gov.uk/story/ (Accessed: 13 June 2024).
Greenwald, G., MacAskill, E. and Poitras, L. (2013) ‘Edward Snowden: the whistleblower behind the NSA surveillance revelations’, *The Guardian*, 11 June. Available at: https://www.theguardian.com/world/2013/jun/09/edward-snowden-nsa-whistleblower-surveillance (Accessed: 13 June 2024).
Gui, L. (2021) ‘Media framing of fighting COVID-19 in China’, *Sociology of health & illness*, 43(4), pp. 966–970. doi: 10.1111/1467-9566.13271.
Hacking, I. (1990) *The taming of chance*. Cambridge: Cambridge University Press.
Halabi, S.F. and Rutschman, A.S. (2022) ‘Viral Sovereignty, Vaccine Diplomacy, and Vaccine Nationalism: The Institutions of Global Vaccine Access’, *Emory International Law Review*, *36*(1), pp. 1-32.

Hallin, D.C. and Mancini, P. (2004) *Comparing media systems: three models of media and politics*. 1st ed. Cambridge: Cambridge University Press.
Hallin, D.C. and Mancini, P. (2012) *Comparing media systems beyond the Western world*. 1st ed. Cambridge: Cambridge University Press.
Haman, M. (2020) 'The use of Twitter by state leaders and its impact on the public during the COVID-19 pandemic', *Heliyon*, 6(11), pp. e05540–e05540. doi: 10.1016/j.heliyon.2020.e05540.
Han, E. L. (2018) 'Weibo and the making of Chinese networked publics: Witness, debates and expertise', *Communication and the public*, 3(2), pp. 97–112. doi: 10.1177/2057047318757055.
Han, S.-J. and Shim, Y.-H. (2010) 'Redefining second modernity for East Asia: a critical assessment', *The British journal of sociology*, 61(3), pp. 465–488. doi: 10.1111/j.1468-4446.2010.01322.x.
Hand, M. (2017) 'Visuality in social media: Researching images, circulations and practices', in Sloan, L. and Quan-Haase, A. (eds.) *The Sage handbook of social media research methods*. London: SAGE, pp. 215-231.
Hantrais, L. (1995) *Social Research Update 13: Comparative Research Methods*. Available at: https://sru.soc.surrey.ac.uk/SRU13.html (Accessed: 13 June 2024).
Harvey, D. (2005) A brief history of neoliberalism. Oxford: Oxford University Press.
Helmond, A. (2015) 'The Platformization of the Web: Making Web Data Platform Ready', *Social media + society*, 1(2), p. 205630511560308. doi: 10.1177/2056305115603080.
Henderson, L. and Hilton, S. (2018) 'The media and public health: where next for critical analysis?', *Critical public health*, 28(4), pp. 373–376. doi: 10.1080/09581596.2018.1482663.
Heyman, B. (2010) 'The concept of risk', in Heyman, B. *et al*. (eds.) *Risk, safety, and clinical practice: health care through the lens of risk*. Oxford: Oxford University Press, pp. 15-36.
Hickey, D. *et al.* (2024) 'Auditing Elon Musk's Impact on Hate Speech and Bots', *arXiv.org*. doi: 10.48550/arxiv.2304.04129.
History.com Editors (2019) *Twitter Launches*. Available at: https://www.history.com/this-day-in-history/twitter-launches (Accessed: 13 June 2024).
HM Revenue & Customs (2021) *Claim for wages through the Coronavirus Job Retention Scheme*. Available at: https://www.gov.uk/guidance/claim-for-wages-through-the-coronavirus-job-retention-scheme (Accessed: 13 June 2024).
HM Revenue & Customs (no date) *Social media use*. Available at: https://www.gov.uk/government/organisations/hm-revenue-customs/about/social-media-use. (Accessed: 13 June 2024).
Hoffman, L. (2006) 'Autonomous choices and patriotic professionalism: On governmentality in late-socialist China', Economy and society, 35(4), pp. 550–570. doi: 10.1080/03085140600960815.
Hofstede, G. (2001) Culture's consequences: comparing values, behaviors, institutions, and organizations across nations. 2nd ed. Thousand Oaks, CA; London: Sage Publications.
Hotez, P. J. (2014) '"Vaccine Diplomacy": Historical Perspectives and Future Directions', *PLoS neglected tropical diseases*, 8(6), pp. e2808–e2808. doi: 10.1371/journal.pntd.0002808.
Houyicaijiqi (no date) *Hou Yi Cai Ji Qi* [Houyi Collector]. Available at: https://www.houyicaiji.com/?type=download (Accessed: 13 June 2024).
Hutchby, I. (2001) 'Technologies, Texts and Affordances', *Sociology (Oxford)*, 35(2), pp. 441–456. doi: 10.1177/S0038038501000219.
Hutchinson, G. and Fray, L. (2020) *A guide for the media on communicating in public health emergencies*. Available at: http://downloads.bbc.co.uk/mediaaction/pdf/communicating-in-public-health-emergencies-english.pdf (Accessed 13 June 2024).
Iqbal, M. (2025) *Twitter Revenue and Usage Statistics (2023). Business of Apps.* Available at: https://www.businessofapps.com/data/twitter-statistics/ (Accessed 7 March 2025).
Institute for Government Analysis (no date) *Timeline of UK Coronavirus lockdowns, March 2020 to March 2021*. Available at: https://www.instituteforgovernment.org.uk/sites/default/files/timeline-lockdown-web.pdf (Accessed 13 June 2024).

Internet Archive (no date) *Wayback Machine*. Available at: https://web.archive.org/ (Accessed: 13 June 2024).

Jackson, N. and Lilleker, D. (2011) 'Microblogging, Constituency Service and Impression Management: UK MPs and the Use of Twitter', *Journal of legislative studies*, 17(1), pp. 86–105. doi: 10.1080/13572334.2011.545181.

James, M. and Valluvan, S. (2020) 'Coronavirus Conjuncture: Nationalism and Pandemic States', *Sociology (Oxford)*, 54(6), pp. 1238–1250. doi: 10.1177/0038038520969114.

Jia, L. and Han, X. (2020) 'Tracing Weibo (2009-2019): The commercial dissolution of public communication and changing politics', *Internet histories (2017)*, 4(3), pp. 304–332. doi: 10.1080/24701475.2020.1769894.

Jiang, H. and Tang, X. (2023) 'Effects of local government social media use on citizen compliance during a crisis: Evidence from the COVID-19 crisis in China', *Public administration (London)*, 101(3), pp. 843–864. doi: 10.1111/padm.12845.

Jiang, M. (2016) 'The Coevolution of the Internet, (Un)Civil Society, and Authoritarianism in China', in Goldstein, A., Yang, G. and deLisle, J. (eds.) *The internet, social media, and a changing China*. Philadelphia: University of Pennsylvania Press, pp. 28-48.

Joseph, W. A. (2019) *Politics in China: an introduction*. Third edition. New York: Oxford University Press.

Juan, D. (2020) *Wuhan wet market closes amid pneumonia outbreak.* Available at: https://www.chinadaily.com.cn/a/202001/01/WS5e0c6a49a310cf3e35581e30.html (Accessed: 13 June 2024).

Karsgaard, C. and MacDonald, M. (2020) 'Picturing the pipeline: Mapping settler colonialism on Instagram', *New media & society*, 22(7), pp. 1206–1226. doi: 10.1177/1461444820912541.

Kasperson, R. (2014) 'Four questions for risk communication', Journal of risk research, 17(10), pp. 1233–1239. doi: 10.1080/13669877.2014.900207.

Katz, I. T. *et al.* (2021) 'From Vaccine Nationalism to Vaccine Equity — Finding a Path Forward', *The New England journal of medicine*, 384(14), pp. 1281–1283. doi: 10.1056/NEJMp2103614.

Kennedy, H. and Hill, R. L. (2018) 'The Feeling of Numbers: Emotions in Everyday Engagements with Data and Their Visualisation', Sociology (Oxford), 52(4), pp. 830–848. doi: 10.1177/0038038516674675.

Kohlt, F. (2020) "Over by Christmas": The impact of war-metaphors and other science-religion narratives on science communication environments during the Covid-19 crisis.

Krutrök, M. E. (2021) 'Algorithmic Closeness in Mourning: Vernaculars of the Hashtag #grief on TikTok', *Social media + society*, 7(3), p. 205630512110423. doi: 10.1177/20563051211042396.

Kyung-Sup, C. (2010) 'The second modern condition? Compressed modernity as internalized reflexive cosmopolitization', The British journal of sociology, 61(3), pp. 444–464. doi: 10.1111/j.1468-4446.2010.01321.x.

Kyung-Sup, C. (2022) The logic of compressed modernity. Cambridge: Polity.

Labour Behind the Label (2020) *Report: Boohoo & COVID-19: The people behind the profit.* Available at: https://labourbehindthelabel.org/report-boohoo-covid-19-the-people-behind-the-profit/ (Accessed: 13 June 2024).

Lan, S. (no date) *Ren Min Wang Ping: Ya Shi Si Fang Ze Ren, Bu Liu Fang Kong Si Jiao* [People's Daily Online Commentary: Firmly Enforce the Responsibilities of the Four Parties and Leave no Gaps in Prevention and Control]. Available at: http://opinion.people.com.cn/n1/2022/0707/c223228-32468692.html (Accessed: 13 June 2024).

Ledford, H. (2023) 'Researchers scramble as Twitter plans to end free data access', *Nature (London)*, 614(7949), pp. 602–603. doi: 10.1038/d41586-023-00460-z.

Leerssen, J. (2000) 'The Rhetoric of National Character: A Programmatic Survey', *Poetics today*, 21(2), pp. 267–292. doi: 10.1215/03335372-21-2-267.

Lei, Q. and Tang, R. (2024) 'Playful, coded, and emotional language: Discursive strategies of online criticism on Chinese social media', Discourse & communication. doi: 10.1177/17504813241281711.

Li, L. *et al.* (2021) 'The Response of Governments and Public Health Agencies to COVID-19 Pandemics on Social Media: A Multi-Country Analysis of Twitter Discourse', *Frontiers in public health*, 9, pp. 716333–716333. doi: 10.3389/fpubh.2021.716333.

Li, Y., Chandra, Y. and Fan, Y. (2022) 'Unpacking government social media messaging strategies during the COVID-19 pandemic in China', *Policy and internet*, 14(3), pp. 651–672. doi: 10.1002/poi3.282.

Liao, Q. *et al.* (2020) 'Public engagement and government responsiveness in the communications about COVID-19 during the early epidemic stage in China: Infodemiology study on social media data', *Journal of medical Internet research*, 22(5), pp. e18796–e18796. doi: 10.2196/18796.

Light, B., Burgess, J. and Duguay, S. (2018) 'The walkthrough method: An approach to the study of apps', *New media & society*, 20(3), pp. 881–900. doi: 10.1177/1461444816675438.

Liu, T. Q. and Stening, B. W. (2016) 'The contextualization and de-contextualization of Confucian morality: Making Confucianism relevant to China's contemporary challenges in business ethics', Asia Pacific journal of management, 33(3), pp. 821–841. doi: 10.1007/s10490-015-9415-2.

Lu, H. et al. (2024) 'A Study of the Evolution of Haze Microblog Concerns Based on a Co-Word Network Analysis', ISPRS international journal of geo-information, 13(10), p. 352. doi: 10.3390/ijgi13100352.

Luo, L. *et al.* (2021) 'Understanding citizen engagement and concerns about the COVID-19 pandemic in China: a thematic analysis of government social media', *Aslib Journal of Information Management*, 73(6), pp. 865–884. doi: 10.1108/AJIM-11-2020-0377.

Lupton, D. (2006) 'Sociology and risk', in Mythen, G. and Walklate, S. (eds.) *Beyond the risk society: Critical reflections on risk and human security*. Maidenhead: Open University Press. pp.11-24.

Lupton, D. (2012) ''Precious cargo': foetal subjects, risk and reproductive citizenship', *Critical public health*, 22(3), pp. 329–340. doi: 10.1080/09581596.2012.657612.

Lupton, D. (2015) Digital sociology. London: Routledge.

Lupton, D. (2016) 'Digital Risk Society', in Burgess, A., Alemanno, A., and Zinn, J. (eds) *The Routledge Handbook of Risk Studies*. London: Routledge, pp. 301–309.

Lupton, D. (2022) COVID Societies: Theorising the Coronavirus Crisis. London: Routledge.

Lwin, M.O. *et al*. (2020) 'Global Sentiments Surrounding the COVID-19 Pandemic on Twitter: Analysis of Twitter Trends', *JMIR public health and surveillance*, 6(2): e19447, pp. 1-4. doi: 10.2196/19447.

Lyng, S. (1990) 'Edgework: A Social Psychological Analysis of Voluntary Risk Taking', *The American journal of sociology*, 95(4), pp. 851–886. doi: 10.1086/229379.

MacArthur, A. (2024) *The Real History of X (Formerly Twitter), in Brief*. Available at: https://www.lifewire.com/history-of-twitter-3288854#:~:text=Twitter%20began%20as%20an%20idea (Accessed: 13 June 2024).

Machin, L. L., Williams, R. A. and Frith, L. (2020) 'Proposing a sociology of donation: The donation of body parts and products for art, education, research, or treatment', *Sociology compass*, 14(10), pp. 1–16. doi: 10.1111/soc4.12826.

Manhattan University O'Malley Library (no date) DAsH: Research Guide for DAsH (or digital humanities) resources and tools. Available at: https://lib.manhattan.edu/c.php?g=728252 (Accessed: 08 November 2024).

Markham, A. (2012) 'FABRICATION AS ETHICAL PRACTICE: Qualitative inquiry in ambiguous Internet contexts', *Information, communication & society*, 15(3), pp. 334–353. doi: 10.1080/1369118X.2011.641993.

Markon, M.-P. L., Crowe, J. and Lemyre, L. (2013) 'Examining uncertainties in government risk communication: citizens' expectations', Health, risk & society, 15(4), pp. 313–332. doi: 10.1080/13698575.2013.796344.

Marres, N. (2017) Digital sociology : the reinvention of social research. Cambridge, England ; Malden, Masshuttes: Polity.

Martin, E. (1990) 'Toward an Anthropology of Immunology: The Body as Nation State', *Medical anthropology quarterly*, 4(4), pp. 410–426. doi: 10.1525/maq.1990.4.4.02a00030.

Matten, D. (2004) ‘Editorial: The Risk Society thesis in environmental politics and management - a global perspective’, *Journal of risk research*, 7(4), pp. 371–376. doi: 10.1080/1366987042000208329.

Mayr, P. and Weller, K. (2017) ‘Think before you collect: Setting up a data collection approach for social media studies’, *arXiv.org*. doi: 10.48550/arxiv.1601.06296.

McComas, K. A. (2006) ‘Defining Moments in Risk Communication Research: 1996-2005’, Journal of health communication, 11(1), pp. 75–91. doi: 10.1080/10810730500461091.

McCrae, R. R. and Terracciano, A. (2006) ‘National Character and Personality’, *Current directions in psychological science: a journal of the American Psychological Society*, 15(4), pp. 156–161. doi: 10.1111/j.1467-8721.2006.00427.x.

McInnes, C. J. and Hornmoen, H. (2018) ‘‘Add twitter and stir’: The use of twitter by public authorities in Norway and UK during the 2014-15 Ebola outbreak’, *Observatorio (OBS*)*, 12(2), pp. 23–46. doi: 10.15847/obsOBS12220181173.

McIntyre, D. and Walker, B. (2019) Corpus stylistics : theory and practice. Edinburgh: Edinburgh University Press.

McVeigh-Schultz, J. and Baym, N. K. (2015) ‘Thinking of You: Vernacular Affordance in the Context of the Microsocial Relationship App, Couple’, *Social media + society*, 1(2), p. 205630511560464. doi: 10.1177/2056305115604649.

Meadows, C. Z., Tang, L. and Zou, W. (2022) ‘Managing government legitimacy during the COVID-19 pandemic in China: a semantic network analysis of state-run media Sina Weibo posts’, *Chinese journal of communication*, 15(2), pp. 156–181. doi: 10.1080/17544750.2021.2016876.

Medaglia, R. and Zhu, D. (2017) ‘Public deliberation on government-managed social media: A study on Weibo users in China’, *Government information quarterly*, 34(3), pp. 533–544. doi: 10.1016/j.giq.2017.05.003.

Meghji, A. and Niang, S. M. (2022) ‘Between Post-Racial Ideology and Provincial Universalisms: Critical Race Theory, Decolonial Thought and COVID-19 in Britain’, *Sociology (Oxford)*, 56(1), pp. 131–147. doi: 10.1177/00380385211011575.

Melike Uluçay, D., Melek, G. and Özyurda-Ergen, D. (2021) ‘Public Perception of Data Visuals in Media Coverage During COVID-19 Pandemic: The Risk Perception Model Revisited’, Trípodos (Barcelona), 1(47), pp. 135–154. doi: 10.51698/tripodos.2020.47p135-154.

Millward, G. (2019) Vaccinating Britain: Mass vaccination and the public since the Second World War. Manchester: Manchester University Press.

Ministry of Defence (2012) *Using Social Media - a guide for military personnel*. Available at: https://www.gov.uk/government/publications/using-social-media-a-guide-for-military-personnel. (Accessed: 13 June 2024).

Ministry of Foreign Affairs of the People’s Republic of China (2023) *Xi Jinping Meets with Prime Minister of Egypt Mostafa Madbouly*. Available at: https://www.fmprc.gov.cn/eng/zxxx_662805/202310/t20231019_11164182.html#:~:text=Xi%20Jinping%20pointed%20out%20that (Accessed: 13 June 2024).

Ministry of Planning, Development, & Special Initiatives (no date) *Introduction | China-Pakistan Economic Corridor (CPEC) Authority Official Website*. Available at: https://cpec.gov.pk/introduction/1 (Accessed: 13 June 2024).

Moernaut, R., Mast, J. and Pauwels, L. (2020) ‘Visual and multimodal framing analysis’, in Pauwels, L. and Margolis, E. (eds.) *The SAGE handbook of visual research methods*. Second edition. London: SAGE, pp. 484-499.

Murthy, D. (2012) ‘Towards a Sociological Understanding of Social Media: Theorizing Twitter’, *Sociology (Oxford)*, 46(6), pp. 1059–1073. doi: 10.1177/0038038511422553.

Murthy, D. (2013) Twitter: social communication in the Twitter age. Cambridge: Polity.

Murthy, D. (2017) ‘The ontology of tweets: Mixed-method approaches to the study of Twitter’, in Sloan, L. and Quan-Haase, A. (eds.) *The SAGE handbook of social media research methods*. London: SAGE, pp. 559-572.

Mythen, G. (2004) Ulrich Beck: a critical introduction to the risk society. London; Sterling, Va.: Pluto Press.

Mythen, G. (2008) 'Sociology and the Art of Risk', *Sociology compass*, 2(1), pp. 299–316. doi: 10.1111/j.1751-9020.2007.00068.x.
Naeem, M. et al. (2023) 'A Step-by-Step Process of Thematic Analysis to Develop a Conceptual Model in Qualitative Research', International journal of qualitative methods, 22. doi: 10.1177/16094069231205789.
Nagy, P. and Neff, G. (2015) 'Imagined Affordance: Reconstructing a Keyword for Communication Theory', *Social media + society*, 1(2), p. 205630511560338. doi: 10.1177/2056305115603385.
Nash, C. (2005) 'Geographies of relatedness', *Transactions - Institute of British Geographers (1965)*, 30(4), pp. 449–462. doi: 10.1111/j.1475-5661.2005.00178.x.
Nedopil, C. (2023) *Countries of the Belt and Road Initiative (BRI)*. Available at: https://greenfdc.org/countries-of-the-belt-and-road-initiative-bri/ (Accessed: 13 June 2024).
Nehring, D. and Hu, Y. (2022) 'COVID-19, Nation-States and Fragile Transnationalism', *Sociology (Oxford)*, 56(1), pp. 183–190. doi: 10.1177/00380385211033729.
Nelson, C. *et al.* (2007) 'Conceptualizing and defining public health emergency preparedness', *American journal of public health (1971)*, 97(Supplement_1), pp. S9–11. doi: 10.2105/AJPH.2007.114496.
Newton, K. (2020) 'Government Communications, Political Trust and Compliant Social Behaviour: The Politics of Covid-19 in Britain', *The Political quarterly (London. 1930)*, 91(3), pp. 502–513. doi: 10.1111/1467-923X.12901.
NHS England (no date) *Statistics» COVID-19 Hospital Activity*. Available at: https://www.england.nhs.uk/statistics/statistical-work-areas/covid-19-hospital-activity/ (Accessed: 13 June 2024).
Nisbet, M.C. (2014) 'Framing, the media, and risk communication in policy debates', in Cho, H., Reimer, T. and McComas, K. (eds.) The SAGE handbook of risk communication, pp.216–227.
Norman, D. A. (1998) *The design of everyday things*. London: MIT Press.
NVivo (no date) *About NVivo*. Available at: https://help-nv.qsrinternational.com/14/win/Content/about-nvivo/about-nvivo.htm (Accessed: 13 June 2024).
O'Halloran, K. (2017) Posthumanism and deconstructing arguments : corpora and digitally-driven critical analysis. 1 ed. London ; New York: Taylor & Francis.
Olsson, E.-K. (2014) 'Crisis Communication in Public Organisations: Dimensions of Crisis Communication Revisited', Journal of contingencies and crisis management, 22(2), pp. 113–125. doi: 10.1111/1468-5973.12047.
O'Malley, P. (2004) *Risk, uncertainty, and government*. London; Portland, Or.: GlassHouse.
Ong, A. (2006) Neoliberalism as exception : mutations in citizenship and sovereignty. Durham, N.C.; London: Duke University Press.
Ong, A. (2007) 'Neoliberalism as a mobile technology', Transactions - Institute of British Geographers (1965), 32(1), pp. 3–8. doi: 10.1111/j.1475-5661.2007.00234.x.
ONS (no date) *What we do - Office for National Statistics*. Available at: https://www.ons.gov.uk/aboutus/whatwedo (Accessed: 13 June 2024).
Oyserman, D., Coon, H. M. and Kemmelmeier, M. (2002) 'Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses', Psychological bulletin, 128(1), pp. 3–52. doi: 10.1037//0033-2909.128.1.3.
Ørmen, J., Helles, R. and Bruhn Jensen, K. (2021) 'Converging cultures of communication: A comparative study of Internet use in China, Europe, and the United States', *New media & society*, 23(7), pp. 1751–1772. doi: 10.1177/14614448211015977.
PA News (2009) *Government's new Twitter strategy - Channel 4 News*. Available at: https://www.channel4.com/news/articles/science_technology/governments%2Bnew%2Btwitter%2Bstrategy/3286162.html (Accessed: 13 June 2024).
Pan, Z. and Kosicki, G. M. (1993) 'Framing analysis: An approach to news discourse', *Political communication*, 10(1), pp. 55–75. doi: 10.1080/10584609.1993.9962963.

Panagiotopoulos, P. *et al.* (2016) 'Social media in emergency management: Twitter as a tool for communicating risks to the public', *Technological forecasting & social change*, 111, pp. 86–96. doi: 10.1016/j.techfore.2016.06.010.

Papacharissi, Z. (2015) *Affective publics: sentiment, technology, and politics*. Oxford; New York, NY: Oxford University Press.

Pearce, W. *et al.* (2020) 'Visual cross-platform analysis: digital methods to research social media images', *Information, communication & society*, 23(2), pp. 161–180. doi: 10.1080/1369118X.2018.1486871.

Perriam, J., Birkbak, A. and Freeman, A. (2020) 'Digital methods in a post-API environment', *International journal of social research methodology*, 23(3), pp. 277–290. doi: 10.1080/13645579.2019.1682840.

Petersen, A. and Lupton, D. (1996) The new public health: health and self in the age of risk. London: SAGE.

Pixolution GmbH. (2023) *ImageSorter* (Version 4.2) [Computer programme]. Available at: https://imagesorter.software.informer.com/ (Downloaded: 7 February 2023).

Plantin, J.-C. and de Seta, G. (2019) 'WeChat as infrastructure: the techno-nationalist shaping of Chinese digital platforms', *Chinese journal of communication*, 12(3), pp. 257–273. doi: 10.1080/17544750.2019.1572633.

Plantin, J.-C. *et al.* (2018) 'Infrastructure studies meet platform studies in the age of Google and Facebook', *New media & society*, 20(1), pp. 293–310. doi: 10.1177/1461444816661553.

Plough, A. and Krimsky, S. (1987) 'The Emergence of Risk Communication Studies: Social and Political Context', Science, technology, & human values, 12(3/4), pp. 4–10.

Poell, T. and van Dijck, J. (2016) 'Constructing public space: Global perspectives on social media and popular contestation', *International journal of communication*, 10(1), pp. 226–234.

Poell, T., Nieborg, D. and van Dijck, J. (2019) 'Platformisation', *Internet policy review*, 8(4), pp. 1–13. doi: 10.14763/2019.4.1425.

Prime Minister's Office, 10 Downing Street (2022) *Slides, datasets and transcripts to accompany coronavirus press conferences*. Available at: https://www.gov.uk/government/collections/slides-and-datasets-to-accompany-coronavirus-press-conferences (Accessed: 13 June 2024).

Prime Minister's Office, 10 Downing Street and The Rt Hon Boris Johnson (2020) *PM: Six people can meet outside under new measures to ease lockdown*. Available at: https://www.gov.uk/government/news/pm-six-people-can-meet-outside-under-new-measures-to-ease-lockdown#:~:text=Press%20release- (Accessed: 13 June 2024).

Public Health England and Department of Health and Social Care (2020) *Novel coronavirus and avian flu: advice for travel to China*. Available at: https://www.gov.uk/government/news/novel-coronavirus-and-avian-flu-advice-for-travel-to-china (Accessed: 13 June 2024).

Rains, S.A., Brunner, S.R. and Oman, K. (2014) 'Social media and risk communication', in Cho, H., Reimer, T. and McComas, K. (eds.) The SAGE handbook of risk communication, pp.228–239.

Randolph, H. E. and Barreiro, L. B. (2020) 'Herd Immunity: Understanding COVID-19', *Immunity (Cambridge, Mass.)*, 52(5), pp. 737–741. doi: 10.1016/j.immuni.2020.04.012.

Rao, H. R. *et al.* (2020) 'Retweets of officials' alarming vs reassuring messages during the COVID-19 pandemic: Implications for crisis management', *International Journal of Information Management*, 55, pp. 102187–102187. doi: 10.1016/j.ijinfomgt.2020.102187.

Reich, J. A. (2021) 'Power, Positionality, and the Ethic of Care in Qualitative Research', Qualitative sociology, 44(4), pp. 575–581. doi: 10.1007/s11133-021-09500-4.

Reynolds, B. and W. Seeger, M. (2005) 'Crisis and Emergency Risk Communication as an Integrative Model', Journal of health communication, 10(1), pp. 43–55. doi: 10.1080/10810730590904571.

Riaz, M. M. A. *et al.* (2021) 'Global impact of vaccine nationalism during COVID-19 pandemic', *Tropical medicine and health*, 49(1), pp. 1-4. doi: 10.1186/s41182-021-00394-0.

Richards, L. (2013) *Handling qualitative data: a practical guide*. Second edition. Los Angeles: SAGA.

Rogers, R. (2017) ‘Foundations of Digital Methods: Query Design’, in Van Es, K. and Schäfer, M.T. (eds.) *The Datafied Society: Studying Culture through Data*. Amsterdam: Amsterdam University Press, pp. 75-94.
Rogers, R. (2018) ‘Digital methods for cross-platform analysis’, in Burgess, J., Marwick, A. E. and Poell, T. (eds.) *The SAGE handbook of social media*. London: SAGE, pp. 91-110.
Rogers, R. (2021) ‘Visual media analysis for Instagram and other online platforms’, *Big data & society*, 8(1), p. 205395172110223. doi: 10.1177/20539517211022370.
Ronzhyn, A., Cardenal, A. S. and Batlle Rubio, A. (2023) ‘Defining affordances in social media research: A literature review’, *New Media & Society*, 25(11), pp. 3165–3188. doi: 10.1177/14614448221135187.
Rose, G. (2016) Visual methodologies: an introduction to researching with visual materials. 4th edition. London: SAGE.
Rosen, A. and Ihara, I. (2017) *Giving you more characters to express yourself*. Available at: https://blog.x.com/en_us/topics/product/2017/Giving-you-more-characters-to-express-yourself (Accessed: 13 June 2024).
Rosenberg, C. E. (1989) ‘Disease in History: Frames and Framers’, *The Milbank quarterly*, 67(1), pp. 1–15. doi: 10.2307/3350182.
Ruta, M. (2018) *Three Opportunities and Three Risks of the Belt and Road Initiative*. Available at: https://blogs.worldbank.org/en/trade/three-opportunities-and-three-risks-belt-and-road-initiative (Accessed: 13 June 2024).
Rutschman, A.S. (2020) ‘The reemergence of vaccine nationalism’, *Georgetown Journal of International Affairs (online)*, Saint Louis U. Legal Studies Research Paper No. 2020-16.
Schück, S. *et al.* (2021) ‘Concerns discussed on Chinese and French social media during the COVID-19 lockdown: comparative infodemiology study based on topic modeling’, *JMIR formative research*, 5(4), pp. e23593–e23593. doi: 10.2196/23593.
Schultze, A. *et al.* (2022) ‘Mortality among Care Home Residents in England during the first and second waves of the COVID-19 pandemic: an observational study of 4.3 million adults over the age of 65’, *The Lancet regional health. Europe*, 14, pp. 100295–100295. doi: 10.1016/j.lanepe.2021.100295.
Sellwood, C. (2017) *Operating Framework for Managing the Response to Pandemic Influenza* Available at: https://www.england.nhs.uk/wp-content/uploads/2017/12/nhs-england-pandmic-influenza-operating-framework-v2.pdf (Accessed: 13 June 2024).
Selwyn, N. (2019) What is digital sociology? Cambridge, UK ; Medford, MA: Polity Press.
Shi, Z. and Yang, G. (2016) ‘New media empowerment and state-society relations in China’, in deLisle, J., Goldstein, A. and Yang, G. (eds.) *The Internet, social media, and a changing China*. Philadelphia: University of Pennsylvania Press, pp. 71-85.
Smith, M. (2017) *How left or right-wing are the UK’s newspapers? | YouGov*. Available at: https://yougov.co.uk/politics/articles/17715-how-left-or-right-wing-are-uks-newspapers (Accessed: 13 June 2024).
Sparks, C. (2010) ‘China’s Media in Comparative Perspective’, *International journal of communication*, 4, pp. 552–566.
Spink, A. and Heinstrom, J. (2012) Library and information science trends and research Europe. 1st ed. Bingley: Emerald.
Srnicek, N. (2017) *Platform capitalism*. Cambridge, England; Malden, Massachusetts: Polity.
Staniland, K. and Smith, G. (2013) ‘Flu frames: Pandemics and Emerging Infectious Diseases: the Sociological Agenda’, *Sociology of health & illness*, 35(2), pp. 309–324.
Steele, L. G. and Lynch, S. M. (2013) ‘The Pursuit of Happiness in China: Individualism, Collectivism, and Subjective Well-Being During China’s Economic and Social Transformation’, Social indicators research, 114(2), pp. 441–451. doi: 10.1007/s11205-012-0154-1.
Steinberg, M. and Li, J. (2017) ‘Introduction: Regional Platforms’, *Asiascape: digital Asia*, 4(3), pp. 173–183. doi: 10.1163/22142312-12340076.
Stewart, H., Mason, R. and Dodd, V. (2020) ‘Boris Johnson orders UK lockdown to be enforced by police’, *The Guardian*, 23 May. Available at:

https://www.theguardian.com/world/2020/mar/23/boris-johnson-orders-uk-lockdown-to-be-enforced-by-police (Accessed: 13 June 2024).
Strugar, M. (2024) *Top 25 Surprising Twitter Statistics UK Edition*. Available at: https://cybercrew.uk/blog/twitter-statistics-uk/ (Accessed: 13 June 2024).
Strydom, P. (2008) 'Risk Communication: World Creation Through Collective Learning Under Complex Contingent Conditions', *Journal of risk research*, 11(1-2), pp. 5–22. doi: 10.1080/13669870701521248.
Su, Z. et al. (2021) 'How the media construct happiness under cultural perspective in China: Through collectivistic and individualistic values', Social science quarterly, 102(6), pp. 2619–2639. doi: 10.1111/ssqu.13073.
Sun, H. (2013) 'Sina Weibo of China: From a Copycat to a Local Uptake of a Global Technology Assemblage', *International journal of sociotechnology and knowledge development*, 5(4), pp. 27–37. doi: 10.4018/ijskd.2013100103.
Sundberg, L. (2024) 'Towards the Digital Risk Society: A Review', *Human affairs (Bratislava, Slovakia)*, 34(1), pp. 151–164. doi: 10.1515/humaff-2023-0057.
Svensson, M. (2016) 'Connectivity, Engagement, and Witnessing on China's Weibo', in deLisle, J., Goldstein, A. and Yang, G. (eds.) *The Internet, social media, and a changing China*. Philadelphia: University of Pennsylvania Press, pp. 49-70.
Symplur (no date) *COVID-19 Social Media - Influencers And Hashtags*. Available at: https://www.symplur.com/topic/covid-19/ (Accessed: 13 June 2024).
TAGS (no date) *TAGS*. Available at: https://tags.hawksey.info/ (Accessed: 13 June 2024).
Template Twitter Strategy for Government (no date). Available at: https://mikekujawski.ca/ftp/Twitter&Government_UK.pdf (Accessed: 13 June 2024).
The British Army (no date) *Deployments*. Available at: https://www.army.mod.uk/deployments/ (Accessed: 13 June 2024).
The British Psychological Society (2021) *Ethics guidelines for Internet-mediated research*. Available at: https://explore.bps.org.uk/binary/bpsworks/64374754e0c1dd30/5a757d7c2d39a9837f0eedec1b9ba28fa5e9e38f0bffa9950b678ab727803959/rep155_2021.pdf (Accessed: 14 June 2024).
The Commonwealth (no date-a) *Member countries*. Available at: https://thecommonwealth.org/our-member-countries (Accessed: 13 June 2024).
The Commonwealth (no date-b) *Our History*. Available at: https://thecommonwealth.org/history (Accessed: 13 June 2024).
The University of Sheffield (no date) *Research Ethics Policy*. Available at: https://www.sheffield.ac.uk/rpi/ethics-integrity/policy (Accessed: 13 June 2024).
The Web Data Research Assistant (no date) *Web Data Research Assistant (WebDataRA)*. Available at: https://southampton.ac.uk/~lac/WebDataResearchAssistant/ (Accessed: 13 June 2024).
The World Bank (no date) *Upper middle income | Data*. Available at: https://data.worldbank.org/country/XT (Accessed: 13 June 2024).
Thomala, L.L. (2024) *China: MAU of Sina Weibo 2023. Statista.* Available at: https://www.statista.com/statistics/795303/china-mau-of-sina-weibo/ (Accessed 7 March 2025).
Tiidenberg, K. (2018) 'Ethics in digital research', in Flick, U. (ed.) *The SAGE handbook of qualitative data collection*. London: SAGE, pp.466-479.
Tong, J. (2024) 'From content to context: A qualitative case study of factors influencing audience perception of the trustworthiness of COVID-19 data visualisations in UK newspaper coverage', Journalism (London, England), 25(7), pp. 1481–1499. doi: 10.1177/14648849231190725.
Townsend, L. and Wallace, C. (2016) *Social media research: A guide to ethics*. Available at: https://www.gla.ac.uk/media/Media_487729_smxx.pdf (Accessed: 13 June 2024).
Tulloch, J. C. and Zinn, J. O. (2011) 'Risk, health and the media', *Health, risk & society*, 13(1), pp. 1–16. doi: 10.1080/13698575.2010.543123.
Understanding Weibo's 'Super Topics' (2019). Available at: https://toppandigital.com/translation-blog/understanding-weibos-super-topics/ (Accessed: 13 June 2024).

Ungar, S. (2008) 'Global Bird Flu Communication: Hot Crisis and Media Reassurance', *Science communication*, 29(4), pp. 472–497. doi: 10.1177/1075547008316219.
United Nations Security Council (no date) *Current Members | United Nations Security Council*. Available at: https://www.un.org/securitycouncil/content/current-members#:~:text=PERMANENT%20AND%20NON%2DPERMANENT%20MEMBERS (Accessed: 13 June 2024).
Van der Geest, S. and Whyte, S. R. (2021) 'The Charm of Medicines: Metaphors and Metonyms', *Socio-anthropologie*, (43), pp. 161–171. doi: 10.4000/socio-anthropologie.8508.
Van Dijck, J. (2021) 'Seeing the forest for the trees: Visualizing platformization and its governance', *New media & society*, 23(9), pp. 2801–2819. doi: 10.1177/1461444820940293.
Van Dijck, J. and Poell, T. (2013) 'Understanding Social Media Logic', *Media and communication (Lisboa)*, 1(1), pp. 2–14. doi: 10.17645/mac.v1i1.70.
Van Dijck, J., Poell, T. and de Waal, M. (2018) *The platform society: public values in a connective world*. New York: Oxford University Press.
Van Loon, J. (2014) 'Remediating risk as matter-energy-information flows of avian influenza and BSE', *Health, risk & society*, 16(5), pp. 444–458. doi: 10.1080/13698575.2014.936833.
Vanderslott, S. *et al.* (2021) 'Vaccine nationalism and internationalism: perspectives of COVID-19 vaccine trial participants in the United Kingdom', *BMJ global health*, 6(10), p. e006305. doi: 10.1136/bmjgh-2021-006305.
Vanian, J. (2022) *Twitter is now owned by Elon Musk — here's a brief history from the app's founding in 2006 to the present*. Available at: https://www.cnbc.com/2022/10/29/a-brief-history-of-twitter-from-its-founding-in-2006-to-musk-takeover.html (Accessed: 13 June 2024).
Vicari, S. and Kirby, D. (2023) 'Digital platforms as socio-cultural artifacts: developing digital methods for cultural research', *Information, communication & society*, 26(9), pp. 1733–1755. doi: 10.1080/1369118X.2022.2027498.
Vigsø, O. (2010) 'Naming is Framing: Swine Flu, New Flu, and A(H1N1)', *Observatorio (OBS*)*, 4(3), p. 229.
visual computing (no date) ImageSorter. Available at: https://visual-computing.com/projects/imagesorter (Accessed: 11 November 2024).
Wagner-Egger, P. *et al.* (2011) 'Lay perceptions of collectives at the outbreak of the H1N1 epidemic: heroes, villains and victims', *Public understanding of science (Bristol, England)*, 20(4), pp. 461–476. doi: 10.1177/0963662510393605.
Wang, G. and Liu, Z.-B. (2010) 'What collective? Collectivism and relationalism from a Chinese perspective', Chinese journal of communication, 3(1), pp. 42–63. doi: 10.1080/17544750903528799.
Wang, J. (2019) The other digital China: nonconfrontational activism on the social web. Cambridge, Massachusetts: Harvard University Press.
Wang, J. *et al.* (2020) 'Concerns expressed by Chinese social media users during the COVID-19 pandemic: Content analysis of Sina Weibo microblogging data', *Journal of medical Internet research*, 22(11), pp. e22152–e22152. doi: 10.2196/22152.
Wang, Q. et al. (2024) 'Discovering public attitudes and emotions toward educational robots through online reviews: a comparative analysis of Weibo and Twitter', Kybernetes. doi: 10.1108/K-02-2024-0402.
Wang, W. Y. and Lobato, R. (2019) 'Chinese video streaming services in the context of global platform studies', *Chinese journal of communication*, 12(3), pp. 356–371. doi: 10.1080/17544750.2019.1584119.
Wang, X. (2010) 'Entertainment, Education, or Propaganda? A Longitudinal Analysis of China Central Television's Spring Festival Galas', Journal of broadcasting & electronic media, 54(3), pp. 391–406. doi: 10.1080/08838151.2010.498848.
Wang, X. (2022) 'Attitudes toward COVID-19 vaccines and vaccine uptake intent in China: The role of collectivism, interpersonal communication, and the use of news and information websites', Current research in ecological and social psychology, 3, p. 100065. doi: 10.1016/j.cresp.2022.100065.

Wang, Y., Hao, H. and Platt, L. S. (2021) 'Examining risk and crisis communications of government agencies and stakeholders during early-stages of COVID-19 on Twitter', *Computers in human behavior*, 114, pp. 106568–106568. doi: 10.1016/j.chb.2020.106568.

Wedell-Wedellsborg, A. (2010) 'Between self and community: the individual in Contemporary Chinese literature', in Hansen, M. H., Svarverud, R. and Nordic Institute of Asian Studies. (eds.) iChina : the rise of the individual in modern Chinese society. Copenhagen: Abingdon: NIAS; Marston [distributor]. pp. 164-192.

Weibo (2018) *Tou Tiao Wen Zhang Shi Yong Zhi Nan* [Headline Article Usage Guide]. Available at: https://weibo.com/ttarticle/p/show?id=2309404301255450192315&mod=zwenzhang (Accessed: 13 June 2024).

Weibo (no date-a) *Ru He Shen Qing Zheng Fu Guan Fang Ren Zheng* [How to Apply for Government Official Verification]. Available at: https://kefu.weibo.com/faqdetail?id=20064 (Accessed: 13 June 2024)

Weibo (no date-b) *Wei Zhi Shu Wang Ye Ban* [Website Version of Weibo Index]. Available at: https://data.weibo.com/index (Accessed: 05 October 2023).

Weisser, M. (2016) Practical corpus linguistics : an introduction to corpus-based language analysis. First edition. Hoboken, NJ: Wiley-Blackwell.

Weller, K. *et al.* (2014) *Twitter and society*. New York: Peter Lang.

White, H. *et al*. (2021) *Parliamentary Monitor 2021*. Available at: https://www.instituteforgovernment.org.uk/publication/parliamentary-monitor-2021 (Accessed: 13 June 2024).

WHO (2005) *Outbreak communication: Best practices for communicating with the public during an outbreak*. Available at: https://www.who.int/publications/i/item/outbreak-communication-best-practices-for-communicating-with-the-public-during-an-outbreak (Accessed: 13 June 2024).

WHO (2009) Pandemic influenza preparedness and response: a WHO guidance document. Geneva: World Health Organization.

WHO (2018) *Communicating risk in public health emergencies*. Available at: https://www.who.int/publications/i/item/9789241550208 (Accessed: 13 June 2024).

WHO (2020a) *Coronavirus disease (COVID-19): Herd immunity, lockdowns and COVID-19*. Available at: https://www.who.int/news-room/questions-and-answers/item/herd-immunity-lockdowns-and-covid-19 (Accessed: 13 June 2024).

WHO (2020b) *WHO Director-General's opening remarks at the media briefing on COVID-19 - 28 February 2020*. Available at: https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---28-february-2020 (Accessed: 13 June 2024).

WHO (2020c) *WHO outbreak communication guidelines*. Available at: https://www.who.int/publications/i/item/WHO-CDS-2005.28 (Accessed: 13 June 2024).

WHO (2023) Statement on the Fifteenth Meeting of the International Health Regulations (2005) Emergency Committee regarding the Coronavirus Disease (COVID-19) Pandemic. Available at: https://www.who.int/news/item/05-05-2023-statement-on-the-fifteenth-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-coronavirus-disease-(covid-19)-pandemic (Accessed: 13 June 2024).

WHO (2024) *COVID-19 deaths | WHO COVID-19 dashboard*. Available at: https://data.who.int/dashboards/covid19/deaths?n=o (Accessed: 13 June 2024).

WHO (no date-a) *Archived: WHO Timeline - COVID-19*. Available at: https://www.who.int/news/item/27-04-2020-who-timeline---covid-19 (Accessed: 13 June 2024).

WHO (no date-b) *Coronavirus disease (COVID-19) pandemic*. Available at: https://www.who.int/europe/emergencies/situations/covid-19#:~:text=Cases%20of%20novel%20coronavirus%20(nCoV (Accessed: 13 June 2024).

WHO (no date-c) *COVAX: Working for global equitable access to COVID-19 vaccines*. Available at: https://www.who.int/initiatives/act-accelerator/covax (Accessed: 13 June 2024).

WHO (no date-d) *Infodemic*. Available at: https://www.who.int/health-topics/infodemic#tab=tab_1 (Accessed: 13 June 2024).

Willems, W. (2021) 'Beyond platform-centrism and digital universalism: the relational affordances of mobile social media publics', *Information, communication & society*, 24(12), pp. 1677–1693. doi: 10.1080/1369118X.2020.1718177.

Williams, M. L., Burnap, P. and Sloan, L. (2017) 'Towards an Ethical Framework for Publishing Twitter Data in Social Research: Taking into Account Users' Views, Online Context and Algorithmic Estimation', *Sociology (Oxford)*, 51(6), pp. 1149–1168. doi: 10.1177/0038038517708140.

Williams, N. (2013) *A time for sharing (government content on Facebook and Twitter) - Inside GOV.UK*. Available at: https://insidegovuk.blog.gov.uk/2013/12/02/a-time-for-sharing-government-content-on-facebook-and-twitter/ (Accessed: 13 June 2024).

Williams, O. and Fullagar, S. (2019) 'Lifestyle drift and the phenomenon of 'citizen shift' in contemporary UK health policy', *Sociology of health & illness*, 41(1), pp. 20–35. doi: 10.1111/1467-9566.12783.

Williams, R. (2021) '"It's harder for the likes of us": racially minoritised stem cell donation as ethico-racial imperative', *BioSocieties*, 16(4), pp. 470–491. doi: 10.1057/s41292-021-00241-9.

Winfield, B. H., Mizuno, T. and Beaudoin, C. E. (2000) 'Confucianism, Collectivism and Constitutions: Press Systems in China and Japan', Communication law and policy, 5(3), pp. 323–347. doi: 10.1207/S15326926CLP0503_2.

Winfield, B. H. and Peng, Z. (2005) 'Market or Party Controls?: Chinese Media in Transition', *Gazette (Leiden, Netherlands)*, 67(3), pp. 255–270. doi: 10.1177/0016549205052228.

Wolf, K. and Theunissen, P. (2023) 'One voice or multi-issue movement? Exploring the role of bonding and bridging social capital within the COVID-19 antivax movement', *Public relations review*, 49(2), p. 102316. doi: 10.1016/j.pubrev.2023.102316.

World Health Assembly (2006) *International health regulations (2005).* 4th ed. Geneva: WHO.

World Nuclear Association (no date) *Chernobyl Accident 1986 - World Nuclear Association*. Available at: https://world-nuclear.org/information-library/safety-and-security/safety-of-plants/chernobyl-accident (Accessed: 13 June 2024).

World Population Review (no date) *GDP Ranked by Country 2023*. Available at: https://worldpopulationreview.com/countries/by-gdp (Accessed: 13 June 2024).

www.gov.cn (2007a) *Zhong Hua Ren Min Gong He Guo Zheng Fu Xin Xi Gong Kai Tiao Li* [Open Government Information Regulation of the People's Republic of China]. Available at: https://www.gov.cn/zwgk/2007-04/24/content_592937.htm (Accessed: 13 June 2024).

www.gov.cn (2007b) *Zhong Hua Ren Min Gong He Guo Tu Fa Shi Jian Ying Dui Fa* [Emergency Response Law of the People's Republic of China]. Available at: https://www.gov.cn/flfg/2007-08/30/content_732593.htm (Accessed: 13 June 2024).

www.gov.cn (2013) *Guo Wu Yuan Ban Gong Ting Guan Yu Jin Yi Bu Jia Qiang Zheng Fu Xin Xi Gong Kai Hui Ying She Hui Guan Qie Ti Sheng Zheng Fu Gong Xin Li De Yi Jian* [Opinions of the General Office of the State Council on Further Strengthening Open Government Information Responding to Social Concerns in order to Raise Government Credibility]. Available at: https://www.gov.cn/zhengce/content/2013-10/18/content_1219.htm (Accessed: 13 June 2024).

www.gov.cn (no date-a) *Guo Jia Tu Fa Gong Gong Shi Jian Yu An Ti Xi* [National Emergency Public Incident Response Plan System]. Available at: https://www.gov.cn/yjgl/2005-08/31/content_27872.htm (Accessed: 13 June 2024).

www.gov.cn (no date-b) *Guo Wu Yuan Lian Fang Lian Kong Ji Zhi: Quan Wei Fa Bu* [Official Release of the Press Conference of the Joint Prevention and Control Mechanism of the State Council]. Available at: https://www.gov.cn/xinwen/gwylflkjz128/index.htm (Accessed: 13 June 2024).

X (2021) *Permanent suspension of @realDonaldTrump*. Available at: https://blog.x.com/en_us/topics/company/2020/suspension (Accessed: 13 June 2024).

X Developer Platform (no date-a) *Counting characters*. Available at: https://developer.x.com/en/docs/counting-characters (Accessed: 13 June 2024).

X Developer Platform (no date-b) *X API | Products*. Available at: https://developer.x.com/en/products/twitter-api (Accessed: 13 June 2024).

X Help Center (no date-a) *About profile labels and checkmarks on X*. Available at: https://help.twitter.com/en/rules-and-policies/profile-labels (Accessed: 13 June 2024).
X Help Center (no date-b) *About X Premium*. Available at: https://help.twitter.com/en/using-x/x-premium#tbverified-orgs (Accessed: 13 June 2024).
X Help Center (no date-c) Legacy verification policy, Twitter. Available at: https://help.twitter.com/en/managing-your-account/legacy-verification-policy (Accessed: 13 June 2024).
Xie, R. *et al.* (2021) 'Exploring Public Response to COVID-19 on Weibo with LDA Topic Modeling and Sentiment Analysis', *Data and information management*, 5(1), pp. 86–99. doi: 10.2478/dim-2020-0023.
Xinhua (2015) *Accounts of govt agencies flourish on WeChat: report*. Available at: http://english.www.gov.cn/news/top_news/2015/01/21/content_281475042464005.htm (Accessed: 13 June 2024).
Xinhua (2020) *Kang Ji Xin Guan Yi Qing De Zhong Guo Xing Dong Bai Pi Shu (Shuang Yu Quan Wen)* [Fighting Covid-19 China in Action White Paper (Bilingual Full Text)] Available at: https://language.chinadaily.com.cn/a/202006/08/WS5edde063a310834817251871.html (Accessed: 13 June 2024).
Xue, J. *et al.* (2020a) 'Public discourse and sentiment during the COVID 19 pandemic: Using latent dirichlet allocation for topic modeling on twitter', *PloS one*, 15(9), pp. e0239441–e0239441. doi: 10.1371/journal.pone.0239441.
Xue, J. *et al.* (2020b) 'Twitter discussions and emotions about the COVID-19 pandemic: Machine learning approach', *Journal of medical Internet research*, 22(11), pp. e20550–e20550. doi: 10.2196/20550.
Yan, Y. (2010a) 'Introduction: conflicting images of the individual and contested process of individualization', in Hansen, M. H., Svarverud, R. and Nordic Institute of Asian Studies. (eds.) iChina : the rise of the individual in modern Chinese society. Copenhagen: Abingdon: NIAS; Marston [distributor]. pp. 1-38.
Yan, Y. (2010b) 'The Chinese path to individualization', The British journal of sociology, 61(3), pp. 489–512. doi: 10.1111/j.1468-4446.2010.01323.x.
Yang, G. (2021) 'INTRODUCTION.: Social Media and State-Sponsored Platformization in China', in Yang, G. and Wang, W. (eds.), *Engaging Social Media in China: Platforms, Publics, and Production*. Michigan State University Press, pp. xi–xxxii.
Yang, Z. and Vicari, S. (2021) 'The Pandemic across Platform Societies: Weibo and Twitter at the Outbreak of the Covid-19 Epidemic in China and the West', *The Howard journal of communications*, 32(5), pp. 493–506. doi: 10.1080/10646175.2021.1945510.
Yao, X. (2000) An introduction to Confucianism. Cambridge: Cambridge University Press.
Yi, J., Gina Qu, J. and Zhang, W. J. (2022) 'Depicting the Emotion Flow: Super-Spreaders of Emotional Messages on Weibo During the COVID-19 Pandemic', *Social media + society*, 8(1), p. 205630512210849. doi: 10.1177/20563051221084950.
Zeng, R. and Li, M. (2020) 'Social media use for health communication by the CDC in mainland China: National survey study 2009-2020', *Journal of medical Internet research*, 22(12), pp. e19470–e19470. doi: 10.2196/19470.
Zhang, D. (2020) 'Digital Nationalism on Weibo on the 70th Chinese National Day', *The journal of communication and media studies (Champaign)*, 6(1), pp. 1–19. doi: 10.18848/2470-9247/CGP/v06i01/1-19.
Zhang, J. Y. (2018) 'Cosmopolitan risk community in a bowl: a case study of China's good food movement', *Journal of risk research*, 21(1), pp. 68–82. doi: 10.1080/13669877.2017.1351473.
Zhao, L. and Ye, W. (2022) 'Visualization as infrastructure: China's data visualization politics during COVID-19 and their implications for public health emergencies', Convergence (London, England), 28(1), pp. 13–34. doi: 10.1177/13548565211069872.
Zheng, L. (2013) 'Social media in Chinese government: Drivers, challenges and capabilities', *Government information quarterly*, 30(4), pp. 369–376. doi: 10.1016/j.giq.2013.05.017.

Zheng, L. and Zheng, T. (2014) 'Innovation through social media in the public sector: Information and interactions', *Government information quarterly*, 31(1), pp. S106–S117. doi: 10.1016/j.giq.2014.01.011.

Zheng, P., Adams, P. C. and Wang, J. (2024) 'Shifting moods on Sina Weibo: The first 12 weeks of COVID-19 in Wuhan', *New media & society*, 26(1), pp. 346–367. doi: 10.1177/14614448211058850.

Zhou, Y. R. (2022) 'Vaccine nationalism: contested relationships between COVID-19 and globalization', *Globalizations*, 19(3), pp. 450–465. doi: 10.1080/14747731.2021.1963202.

Zimmerman, R. (1987) 'A Process Framework for Risk Communication', Science, technology, & human values, 12(3/4), pp. 131–137.

Zinn, J. (2008) Social theories of risk and uncertainty: an introduction. 1st ed. Malden, MA: Blackwell Pub.

Zinn, J. O. (2006) 'Recent Developments in Sociology of Risk and Uncertainty', *Historical Social Research*, 31(2 (116)), pp. 275–286.

Zou, S. (2023) 'Restyling propaganda: popularized party press and the making of soft propaganda in China', *Information, communication & society*, 26(1), pp. 201–217. doi: 10.1080/1369118X.2021.1942954.

Appendix A: List of official accounts on Weibo and Twitter for data collection

Theme	UK Actors on Twitter	Chinese Actors on Weibo
Category A: State ministries		
Central Government	@GOVUK: the UK Government @UKParliament: UK Parliament @cabinetofficeuk: UK Cabinet Office @10DowningStreet	@中国政府网: China Government Website Operation Centre, General Office of the State Council
Health	@DHSCgovuk: Department of Health and Social Care	@健康中国: National Health Commission
Technology, development and information	@beisgovuk: Department for Business, Energy & Industrial Strategy	@锐科技: Ministry of Science and Technology
		@工信微报: Ministry of Industry and Information Technology
Transportation	@transportgovuk: Department for Transport	@中国交通: Ministry of Transport @民航局消费者事务中心: Consumer Affairs Centre, affiliated to the Civil Aviation Administration of China @国家邮政局: State Post Bureau, regulated by the Ministry of Transport
Finance (Domestic) & Commerce (International)	@hmtreasury: HM Treasury @tradegovuk: Department for International Trade @UKEF: UK Export Finance	@商务微新闻: Ministry of Commerce @国家税务总局: State Taxation Administration
		@市说新语: State Administration for Market Regulation (SAMR) @中国药品监管: National Medical Products Administration, regulated by SAMR @国家知识产权局: China National Intellectual Property Administration, regulated by SAMR

Theme	UK Actors on Twitter	Chinese Actors on Weibo
Social Affairs	@dwppressoffice, @DWP: Department for Work & Pensions	@民政微语: Ministry of Civil Affairs
Police	@ukhomeoffice: Home Office	@中国警方在线: Ministry of Public Security @国家移民管理局: National Immigration Administration, regulated by the Ministry of Public Security
Foreign Affairs	@FCDOGovUK @FCDOtravelGovUK	@外交部: Ministry of Foreign Affairs of the PRC @外交部发言人办公室: the Spokesperson's Office
		@海关发布: Foreign Affairs, General Administration of Customs
Environment and Agriculture	@DefraGovUK: Department for Environment Food & Rural Affairs	@水利部发布: Ministry of Water Resources @自然资源部: Ministry of Natural Resources (MNR) @国家林业和草原局: National Forestry and Grassland Administration, regulated by MNR
		@中国气象局: China Meteorological Administration
Education	@educationgovuk: Department for Education	@微言教育: Ministry of Education
Culture and communication	@DCMS: Department for Digital, Culture, Media & Sport	@文旅之声: Ministry of Culture and Tourism
Justice	@MoJGovUK: Ministry of Justice	@司法部: Ministry of Justice
Security	@DefenceHQ: Ministry of Defence	@国防部发布: Ministry of National Defence
Central Bank	@bankofengland: Bank of England	@央行微播: The People's Bank of China
Statistics	@ONS: Office for National Statistics	/
Category B: Political figures (Twitter mainly)		

Theme	UK Actors on Twitter	Chinese Actors on Weibo
PM	@BorisJohnson, PM Boris Johnson	/
Royal Family	@RoyalFamily, The Royal Family	/
Scientific Advisor	@CMO_England, Professor Chris Whitty, England's chief medical officer for England @uksciencechief, Sir Patrick Vallance, chief scientific advisor	@张文宏医生, Wenhong Zhang, the head of the centre of infectious diseases, Huashan Hospital of Fudan University, China @曾光, Zeng Guang, Chief Scientist in Epidemiology in CDC @吴尊友 ChinaCDC, Zunyou Wu, the Chief Expert in Epidemiology in CDC
Health	@MattHancock, Matt Hancock, Secretary of State for Health and Social Care	/
	@sajidjavid, Sajid Javid, Secretary of State for Health and Social Care after 26 June 2021	/
Economy	@RishiSunak, Rishi Sunak, Chancellor of the Exchequer	/
NHS	@SMHopkins, Dr Susan Hopkins of NHS Test and Trace	/
	@NikkiKF, Dr Nikki Kanani, Deputy Medical Director of Primary Care for NHS England	/
Business	@AlokSharma_RDG, Alok Sharma, Business Secretary	/
Home Affairs	@pritipatel, Priti Patel, Home Secretary	/
Foreign	@DominicRaab, Dominic Raab, Foreign Secretary	/
Communities	@RobertJenrick, Robert Jenrick, Communities Secretary	/
Education	@GavinWilliamson, Gavin Williamson, Department of Education	/
Transport	@grantshapps, Grant Shapps, Transport Secretary	/
	@networkrail, Sir Peter Hendy, Chair of Network Rail, directing the restart of the transport system	/

Theme	UK Actors on Twitter	Chinese Actors on Weibo
Digital, Culture, Media and Sport	@OliverDowden, Oliver Dowden, Digital, Culture, Media and Sport Secretary	/
Category C: Executive agencies		
Executive Institution	Both departmental and non-departmental agencies are included: 1. @MHRAgovuk: Medicines and Healthcare Products Regulatory Agency 2. @UKHSA: The UK Health Security Agency 3. @NHSEngland: NHS England; @NHSEnglandMedia: NHS England Media; @NHSuk: NHS 4. @CareQualityComm: The Care Quality Commission 5. @NICEComms: National Institute for Health and Care Excellence	Regional institutions are the main executive parts of the Chinese health system. Influential provincial governments and corresponding NHC are listed below: 1. @上海发布: Shanghai government; @健康上海 12320: Shanghai NHC 2. @北京发布: Beijing government; @首都健康: Beijing NHC 3. @深圳微博发布厅: Shenzhen government; @深圳卫健委: Shenzhen NHC; 4. @中国广州发布: Guangzhou government; @健康广州: Guangzhou NHC 5. @重庆发布: Chongqing government; @重庆卫生健康: Chongqing NHC； 6. @武汉发布: Wuhan government; @健康武汉官微: Wuhan NHC
Advisory Group	@sageuk: Scientific Advisory Group for Emergencies	@疾控科普: Chinese Centre for Disease Control and Prevention @中科院之声: The Chinese Academy of Sciences
Category D: Public hospitals		
Public Hospital	The list is confirmed by ranking the total numbers of occupied beds due to the Covid from 20 March 2020 to 6 April 2021. 1. @uhbtrust: University hospitals Birmingham NHS Foundation Trust 2. @nhsbartshealth: Barts Health NHS Trust 3. @mftnhs: Manchester University NHS Foundation Trust 4. @kingscollegenhs: King's College Hospital NHS Foundation Trust	The accounts below are influential hospitals, whose representatives have been invited to JPCM conferences because of their significant contribution to assisting Wuhan. 1. @北京协和医院: Peking Union Medical College Hospital, also known as Beijing Xiehe Hospital 2. @北京大学人民医院: Peking University People's Hospital

Theme	UK Actors on Twitter	Chinese Actors on Weibo
	5. @msehospitals: Mid and South Essex NHS Foundation Trust 6. @livhospitals: Liverpool University Hospitals NHS Foundation Trust 7. @nottmhospitals: Nottingham university hospitals NHS trust 8. @leic_hospital: University Hospitals of Leicester NHS Trust 9. @uhdbtrust: University Hospitals of Derby and Burton NHS Foundation Trust	3. @瑞金医院: Ruijin Hospital, Shanghai Jiaotong University School of Medicine 4. @北京大学第三医院: Peking University Third Hospital 5. @江苏省人民医院南医大一附院微博: Jiangsu People's Hospital 6. @四川大学华西医院: West China Hospital, Sichuan University 7. @西安交通大学第一附属医院: The First Affiliated Hospital of Xi'an Jiaotong University 8. @中南大学湘雅医院: Xiangya Hospital Central South University 9. @华山感染: Huashan Hospital

Appendix B: Final codebook for data analysis

High-level codes	Codes	Definitions	Examples on Weibo (with translation)	Examples on Twitter
C1. Codes from empirical studies (after revision in inductive coding)				
C1.1 Sharing informati-on	C1.1.1 Government policies and guidance	Introduce new policies	@中国广州发布：要求全市包括省汽车站、市汽车站、天河站、滘口站等在内的 21 个客运站启动旅客体温检测工作，自 1 月 21 日 17 时开始，对进站和出站旅客进行体温测量，并积极做好相关防治工作。 Twenty-one passenger stations within the city, such as the Provincial Bus Station, Municipal Bus Station, Tianhe Station, Jiaokou Station, and so on, are mandated to initiate passenger temperature screening. Commencing at 5:00 PM on 21 January, temperatures of both arriving and departing passengers will be monitored, and they will actively implement necessary preventive and control measures.	@RishiSunak: Our Sick Pay Rebate Scheme will help SMEs by reimbursing them for the cost of Statutory Sick Pay for Covid-related absences. Firms will be eligible for the scheme from today and they will be able to make claims retrospectively from mid-January.
	C1.1.2 Government support and handling of the crisis	Introduce government efforts in the tone of: we (governments) are doing	@国家林业和草原局：全国多地拿出资金，提供专项扶持贷款和专项疫情补助，帮助花农、花企渡过难关。 Many places across the country have provided funds to provide special support loans and special pandemic subsidies to help flower farmers and flower companies tide over the difficulties.	@ukhomeoffice: We're giving police an extra £30m to increase patrols and ensure that members of the public are complying with coronavirus rules and restrictions.
	C1.1.3 Non-government help and support	Share non-institutional efforts in supporting the state, such as individuals' experiences	@民政微语：太原市社会福利院的孩子们用画，致敬一线医务工作者，为#武汉加油# 。 Children from Taiyuan Social Welfare Institute used paintings to pay tribute to frontline medical workers and #cheer for Wuhan#	@DCMS: "Truly outstanding" charities funding helped thousands of organisations and millions of people amid the #coronavirus pandemic #CommunitiesCan |

High-level codes	Codes	Definitions	Examples on Weibo (with translation)	Examples on Twitter
				#PlanForJobs | @TNLComFund
	C1.1.4 Updates around the pandemic	Update the pandemic situation, particularly using statistical reporting	@健康中国：【截至 2 月 24 日 24 时新型冠状病毒肺炎疫情最新情况】2 月 24 日 0—24 时，31 个省（自治区、直辖市）和新疆生产建设兵团报告新增确诊病例 224 例。 [As of 24:00 on 24 February, the latest update on the Coronavirus pneumonia outbreak]: On 24 February, from 0:00 to 24:00, 31 provinces (autonomous regions, municipalities directly under the central government) and the Xinjiang reported 224 new confirmed cases.	@ONS: In England, 797 deaths involving #COVID19 were registered in the week ending 24 December (compared with 702 deaths registered the previous week).
	C1.1.5 Recommend ations for stakeholders	Provide guidance to the public in the tone of: 'you should do'	@中国警方在线：在疫情期间，除必须立即就医的患者，尽量少去医院或者不去，必须需要到医院的，尽量就近诊疗，避开发热门诊等科室。 During the pandemic period, except for patients who must seek medical treatment immediately, try to go to the hospital as little as possible or not. Those who must go to the hospital should try to get treatment as close as possible, avoid fever clinics and other departments.	@defragovuk: Always put disposable face coverings and gloves in the bin to protect yourself, others and our #environment. Wear reusable and washable face coverings if you can. Don't create #litter when going outdoors.
C1.2 Science and Expert investigat-ions	C1.2.1 Covid knowledge, prevention and symptoms	Provide medical information about the pandemic	@武汉发布：【新型冠状病毒肺炎知识大全】你知道什么是新型冠状病毒肺炎吗？临床表现都有哪些？如何防护？一图 get 所有预防要点！ [Complete knowledge about Coronavirus pneumonia] Do you know what Coronavirus pneumonia is? What are the clinical symptoms? How to protect? Get all the prevention points in one picture!	@DHSCgovuk: Any one of these symptoms, even if mild, could be #COVID19. high temperature new, continuous cough loss or change in sense of smell or taste
	C1.2.2 Vaccination	Mention vaccine-related issues,	@首都健康：截至 2021 年 12 月 21 日，北京市累计报告接种新冠病毒	@MHRAgovuk: Help make

High-level codes	Codes	Definitions	Examples on Weibo (with translation)	Examples on Twitter
	status and development	such as vaccine mechanism, vaccine development achievements	疫苗 5549.36 万剂次，累计接种 2236.10 万人。 As of 21 December 2021, Beijing has reported a total of 55.4936 million doses of COVID-19 vaccine, and a total of 22.361 million people have been vaccinated.	vaccines better for everyone - report Covid-19 vaccination side effects to the MHRA Yellow Card scheme.
	C1.2.3 Scientific information and technology	Mention other technologies used in the pandemic	@司法部：夏天已经到了，随着天气渐热，很多人有了疑问，家里的空调能不能开？商场、办公室的中央空调会不会存在防疫隐患？戳下面，为你详细讲解！ Summer has arrived, and as the weather gets hotter, many people have questions. Can the air conditioner be turned on at home? Will central air conditioners in shopping malls and offices pose any potential pandemic prevention risks? Click below to explain it to you in detail!	@DHSCgovuk: Using their incredible sense of smell, dogs can detect if a person is carrying a particular disease
C1.3 Treatmen-t of patients	C1.3.1 Medical treatment, patients and research	Discuss medical staffs or resources	@上海发布：因有症状，入关后即被送至指定医疗机构隔离留观。综合流行病学史、临床症状、实验室检测和影像学检查结果等，诊断为确诊病例。 Due to symptoms, they were sent to a designated medical institution for isolation and observation after entering the customs. Based on the epidemiological history, clinical symptoms, laboratory test and imaging test results, they were confirmed as Covid cases.	@MattHancock: This important trial uses the blood of coronavirus survivors to treat hospital patients with #coronavirus.
	C 1.3.2 Covid test	Mention Covid test, such as the number of negative samples	@深圳卫健委：开展公交行业全员核酸检测工作，离深行业人员就地检测，并两天内完成本轮核酸检测工作。 Carry out nucleic acid testing for all employees in the public	@fcdotravelgovuk: Update on pre-arrival PCR test requirement and removal of day 5 and day 10 PCR

High-level codes	Codes	Definitions	Examples on Weibo (with translation)	Examples on Twitter
			transportation industry, and complete this round of nucleic acid testing within two days.	tests for all airport arrivals.
C1.4 Emotiona-l exchange	C1.4.1 Praising and appreciation	Praise actors or express thanks	@外交部：我们对医护人员、一线工作者、国际组织和科学界为应对新冠肺炎疫情作出的不懈努力深表感谢。 We express our deep gratitude to medical staff, frontline workers, international organisations and the scientific community for their tireless efforts in responding to the COVID-19 pandemic.	@ukhomeoffice: Last night, Border Force officers took part in the nationwide clap to recognise the extraordinary work of the NHS and other services who are fighting #coronavirus and saving lives.
	C1.4.2 Reassurance of the public	Encourage the public during hardship, and respond to public concerns	@中国气象局：对于我们国家来说，有了前期控制新冠肺炎的成功经验，即使冬季到来，呼吸道传染病增加，即使新冠肺炎再发生，也不会出现像武汉早期那样严重的疫情。 For our country, with the successful experience of controlling COVID-19 in the early stage, even if winter comes and respiratory infectious diseases increase, and even if COVID-19 occurs again, there will not be a pandemic as severe as the early days in Wuhan.	@NHSuk: If you've had coronavirus, it's understandable that you'll want to get back to normal as quickly as possible — but it can take time.
	C1.4.3 Showing empathy to affected people	Express empathy such as wishing speedy recovery	@北京大学人民医院：致敬！缅怀！铭记！北京大学人民医院援鄂医疗队在驻地集体为新冠疫情期间牺牲的烈士和逝世的同胞默哀。 Pay tribute, in memory, remember! The medical team from Peking University People's Hospital assisting Hubei collectively observed a moment of silence for the martyrs who sacrificed their lives during the COVID-19 pandemic and the compatriots who passed away.	@DHSCgovuk: The #COVID19 restrictions can be challenging, especially if you are apart from loved ones.

High-level codes	Codes	Definitions	Examples on Weibo (with translation)	Examples on Twitter
	C1.4.4 Alert about the pandemic	Alert the pandemic seriousness, such as 'do not take the virus lightly'	@民航局：公众在出行过程中依然要绷紧疫情防控这根弦，保持一定的警惕性。 The public should continue to be vigilant and maintain a certain level of alertness in pandemic prevention and control during their travels.	@DHSCgovuk: You MUST NOT meet socially in groups of more than six people.
C1.5 Pandemic outside the UK/China	C1.5.1 Overseas and global updates	Provide information about 'overseas', 'global' or related issues, such as overseas pandemic restrictions or updates	@外交部：当前全球疫情仍未见底，世界经济复苏尚需时日，各国抗疫情、稳经济、保民生的任务十分艰巨。 At present, the global pandemic has not yet reached its bottom, and the world economy still requires some time for recovery. The tasks of combating the pandemic, stabilizing the economy, and safeguarding people's livelihoods are extremely challenging for all countries.	@fcdotravelgovuk: #Jordan Update to information and advice on coronavirus (COVID-19) local measures and returning to the UK
	C1.5.2 Border control and imported patients	Emphasis on state boundaries, including travel restrictions, imported cases	@海关发布：【3.27 吨疫情防控物资运抵乌鲁木齐国际空港口岸　海关启动绿色通道快速通关】 [3.27 tons of pandemic prevention and control materials arrived in Urumqi International Airport Port Customs launched green channel for rapid customs clearance]	@ukhomeoffice: As international travel resumes, we must continue with vital checks at the border to protect the country from Covid-19 strains entering the UK.
C1.6 Evaluation of Covid	C1.6.1 Economic and other impacts	The general impacts on the society	@海关发布：当前，新冠肺炎疫情仍在全球持续蔓延，世界经济严重衰退，国际环境日趋严峻复杂，不确定性、不稳定性明显增多。 Currently, the COVID-19 pandemic continues to spread around the world, the world economy is in severe recession, the international environment is becoming increasingly severe and complex, and uncertainty and instability are significantly increasing.	@UKEF: Our Export Insurance Policy helped @PeopleforceRec bridge the financing gap between placing candidates and getting paid when #coronavirus impacted its existing insurance cover.

High-level codes	Codes	Definitions	Examples on Weibo (with translation)	Examples on Twitter
	C1.6.2 Personal impacts	Individuals affected by the pandemic such as influences for the households	@民政微语：对交通管控等原因滞留、遭遇临时困难的外来人员，要提供食宿等帮扶。对生活不能自理、无人照料的老幼病残等人员要安排提供照料。 For foreigners who are stranded due to traffic control and other reasons and encounter temporary difficulties, assistance such as food and accommodation should be provided. Arrangements should be made to provide care for the elderly, the young, the sick and the disabled who cannot take care of themselves and have no one to take care of them.	@DWP: Financial support could be available if your income has been affected by coronavirus.
	C1.6.3 Education impacts	Impacts on education such as school reopening	@微言教育：面对突如其来的疫情，甘肃教育系统疫情防控迅速进入应急状态、兰州中小学校全部停课 In the face of the sudden pandemic, Gansu's education system quickly entered an emergency state for pandemic prevention and control, and all primary and secondary schools in Lanzhou were suspended.	@educationgovuk: We've published information setting out what the new temporary Covid-19 measures announced yesterday by @10DowningStreet mean for early years providers, out-of-school settings, schools, colleges and universities.
	C1.6.4 Positive impacts from Covid and policies	Pandemic as opportunities or positive impacts from the pandemic	@外交部发言人办公室：作为外商投资重要目的地，在去年全球对外投资总额下降 40%的背景下，中国吸引的外国直接投资仍逆势增长 4. 5%。 As an important destination for foreign investment, despite the 40% decline in total global foreign investment last year, China managed to attract foreign direct investment, which grew against the trend, increasing by 4.5%.	@UKEF: The Coronavirus Job Retention Scheme allows employers to claim for their furloughed employees' wages.
C2 - C5 Codes from conceptual work (after revision in inductive coding)				

High-level codes	Codes	Definitions	Examples on Weibo (with translation)	Examples on Twitter
C2.1 Certainty around measuring risks	C2.1.1 Covid as a risky issue	Note current, upcoming or increasing risks of the pandemic	@民政微语：近期国内新冠肺炎疫情呈现多点散发态势，传播风险尚未见底，叠加秋冬季流行病高发因素，疫情防控形势严峻复杂。 Recently, the domestic COVID-19 pandemic has been spreading from multiple sources, and the risk of transmission has not yet reached its lowest point. Furthermore, the high incidence of the pandemic in the fall and winter seasons adds to the complexity and severity of the pandemic prevention and control situation.	@10downingstreet: Greater Manchester will move from Local COVID Alert Level High to Very High at 00:01 on Friday 23 October 2020.
	C2.1.2 Pandemic normalisati-on and low risks	Note decreasing risks of the pandemic	@市说新语：今年国庆中秋是常态化疫情防控下迎来的首个长假，维护好“双节”市场秩序稳定责任重大。 This year's National Day and Mid-Autumn Festival is the first long holiday under normalized pandemic prevention and control. It is a heavy responsibility to maintain the stability of the market order during the ‘double festival’.	@ONS: Our latest estimates show the number of #COVID19 reinfections is low overall.
	C2.1.3 Certainty language	Use words with definity, such as ‘the best way’, ‘the only way’, ‘you must’	@中国警方在线：即便疫情时间再长，任何一个中国人，也不会担心自己被放弃被抛弃。 No matter how long the pandemic lasts, no Chinese will worry about being abandoned or abandoned.	@fcdogovuk: Only through vaccinating as many people globally as possible can we tackle COVID-19.
C2.2 Future-oriented risks and anticipati-on practices	C2.2 Plans and future-oriented anticipation	Use future-tense to introduce post-pandemic recovery strategies	@民政微语：目前，民政部已经制定了适用于不同风险等级的养老机构疫情防控指南，各地会根据地方实际采用。 At present, the Ministry of Civil Affairs has formulated pandemic prevention and control guidelines for elderly care institutions suitable for different risk levels, which will be	@dwppressoffice: Today government has set out plans to ease guidance for the 2.2m shielding from #coronavirus across England.

High-level codes	Codes	Definitions	Examples on Weibo (with translation)	Examples on Twitter
			adopted by various localities based on local actual conditions.	
C3 New inequalities among nations	C3 Another country besides China or the UK	Mention another country or regions	@国家移民管理局：2 月 19 日晚，由日本长崎县政府、日本中华总商会等机构向湖北省义捐的 7. 89 吨、价值 300 余万元的防疫物资从江苏盐城南洋国际机场入境。 On the evening of February 19th, a donation of 7.89 tons of pandemic prevention materials worth over 3 million yuan, contributed by organisations including the Nagasaki Prefectural Government of Japan and the Japan Chinese Chamber of Commerce, arrived at Nanyang International Airport in Yancheng, Jiangsu Province, and entered Hubei Province.	@fcdogovuk: The UK is helping women traders in southern Africa to cope with the economic impact of COVID-19.
C4 Different roles: definers, responsible actors, experts and benefit owners	C4.1 Definers, decision-makers and leadership	Actors define the pandemic issues	@司法部：当地时间 1 月 30 日晚，世界卫生组织总干事谭德塞在日内瓦举行新闻发布会，说明新型冠状病毒感染的肺炎疫情已构成国际关注的突发公共卫生事件 On the evening of 30 January, local time, the Director-General of the WHO, Tedros Adhanom Ghebreyesus, held a press conference in Geneva, stating that the outbreak of the novel Coronavirus infection, had become a Public Health Emergency of International Concern.	@UKparliament: Chancellor @RishiSunak will update the @HouseofCommons on the government's economic package in response to coronavirus.
	C4.2 Covid experts	Actors framed as ‘experts’)	@健康中国：国家卫生健康委组织中国疾控中心专家就有关问题作了最新解答 The National Health Commission organized experts from the Chinese Centre for Disease Control and Prevention to provide the latest answers to relevant questions.	@educationgovuk: @DrAmirKhanGP demonstrates how to carry out a lateral flow test, with the help of his niece.

High-level codes	Codes	Definitions	Examples on Weibo (with translation)	Examples on Twitter
	C4.3 Responsible actors	Actors framed as responsible actors, or allocating duties	@健康中国：疫情发生以来，广大医务工作者不顾个人安危，迎难而上，英勇奋战在抗击疫情最前线。 Since the outbreak of the pandemic, numerous healthcare workers have fearlessly and selflessly confronted the challenges, displaying tremendous courage as they bravely battle on the frontlines of the fight against the pandemic.	@ukhomeoffice: People from across government are coming together to support Afghan families as they start their new lives in this country. Here, Border Force staff are helping to process people ahead of vital healthcare checks and Covid vaccinations, carried out by local health organisations.
	C4.4 Self duties and responsible citizenship	Allocate duties to individuals	@疾控科普：持续做好自我健康监测，出现可疑症状时，及时就诊，并做好防范感染他人的措施。 Continue to monitor your health, seek medical advice promptly when suspicious symptoms occur, and take measures to prevent infection of others.	@10downingstreet: Getting our jabs is one of the best things we can do to boost our immunity and protect our family and friends from COVID-19.
	C4.5 Other roles	Other actors, including opportunists, leading roles, victims, or good examples	@市说新语：部分不法商家也趁机哄抬价格，多处米店、超市出现抢购潮。恐慌的民众，为疫情防控带来了新的巨大的压力。 Certain dishonest merchants also exploited the situation by inflating prices, leading to panic buying at numerous rice shops and supermarkets. This panic buying has introduced new and significant challenges to pandemic prevention and control efforts.	@ukhomeoffice: Criminals are exploiting #coronavirus to scam people into parting with money and their personal information, and trying to con them into buying goods and services that don’t exist.
C5 Platform affordance aspect	C5.1 Platform affordances	Use languages to encourage users to engage with platform	@中国政府网：转发！教育部 4 个提醒送给研考考生	@fcdogovuk: Keep up to date with our latest travel information by signing up to

High-level codes	Codes	Definitions	Examples on Weibo (with translation)	Examples on Twitter
		functions, such as comments	Repost! The Ministry of Education has four reminders for graduate examination students.	Twitter notifications. Follow our embassies https://twitter.com/i/lists/537356
	C5.2 Reading more with links	Use languages to encourage users to click the links	@微言教育：戳链接，进一步了解网络辅导服务详细情况↓网页链接 Click on the link to get more information about online tutoring services, ↓webpage link.	@UKEF: Find out more: https://gov.uk/guidance/export-insurance-policy…
	C5.3 More visual information	Use languages to encourage users to read the visuals carefully	@北京大学人民医院：跟着视频来操作，APP 使用、新冠核酸检测预约. . . Follow the video instructions to perform tasks such as using the app and scheduling a COVID-19 nucleic acid test appointment.	@defencehq: Watch a timelapse of the build http://ow.ly/zkxv50z26LB
C6 Language metaphors		Use metaphors	@健康中国：对湖北、武汉主战场坚持不懈实行严防严控 In the main battlegrounds of Hubei and Wuhan, an unwavering commitment to strict prevention and control measures is being maintained.	@MattHancock: There's light at the end of the tunnel
C7 Misinformation around the pandemic		Management of fake news	@武汉发布：当前，疫情防控正处于关键期，一些不准确的信息和谣言时有出现，为防疫抗疫工作带来困扰。 Currently, pandemic prevention and control is in a critical period, and some inaccurate information and rumors appear from time to time, causing trouble for pandemic prevention and anti-pandemic work.	@ukhomeoffice: Contrary to reports claiming multiple arrivals tested positive for coronavirus, just one person has tested positive and will be dealt with in line with PHE guidance.