

A Comparative Study of Metaphors of Cancer and Covid-19 Prevention in UK Newspapers

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Abstract

This thesis investigates how cancer prevention and Covid-19 prevention are metaphorically framed in British newspapers. Guided by Cameron's discourse dynamics framework, the analysis examines metaphor patterns through three complementary lenses: systematic metaphors, metaphoremes, and metaphor scenarios. My study develops two self-compiled and topic-specific corpora and critically evaluates issues of representativeness, balance, and comparability in corpus design, including the selection of query terms. To retrieve relevant texts, it adapts and combines established approaches to query-term identification and data collection. An adapted metaphor identification procedure is then applied to identify topic-related linguistic metaphors. Linguistic metaphors are grouped into semantic vehicle groups and analysed quantitatively and qualitatively using corpus-based methods.

Findings show that both domains are extensively discussed through metaphors. Four vehicle groups, War & Violence, Journey, Mechanics, and Performance are most frequent in both corpora. Across both domains, metaphor patterns can support both positive and negative framings. For instance, Mechanics metaphors present illness prevention as systematic procedures, while Clothing metaphors question the validity of prevention strategies by emphasising inflexibility and lack of tailoring. Covid-19 discourse additionally constructs topic-specific framings of performativity (e.g., *hygiene theatre*), whereas cancer prevention is frequently framed through uncertainty (e.g., Gambling metaphors). The analysis further shows that agency is constructed differently across domains, and that possible empowering or disempowering effects depend on metaphor construction and context.

The thesis contributes a transparent and replicable procedure for corpus-based metaphor analysis of illness prevention and demonstrates how metaphor patterns express ideological positioning in public communication.

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Abbreviations

ACE	Australian Corpus of English
BNC 1994	British National Corpus (1994)
CADS	corpus-assisted discourse studies
CI	95% confidence interval
CMT	Conceptual Metaphor Theory
CQ	core query terms
GloWbE	Global Web-based English Corpus
GSL	General Service List
ICE corpus	International Corpus of English
ICEs	Idiomatically Combining Expressions
IPs	Idiomatic Phrases
LDOCE	Longman Dictionary of Contemporary English
LL test	log-likelihood test
LOB	Lancaster-Oslo-Bergen Corpus
MEDAL	Macmillan English Dictionary for Advanced Learners
MI	mutual information
MIP	Metaphor Identification Procedure
MIPVU	Metaphor Identification Procedure VU University Amsterdam
MPA	Metaphorical Pattern Analysis
NGSL	New General Service List
Ofcom	Office of Communications
RQTR	relative query term relevance
SiBoI Corpus	Siena-Bologna Modern Diachronic Corpus
UKHSA	UK Health Security Agency
USAS	UCREL Semantic Analysis System
VIP	Vehicle Identification Procedure
WIDLII	When In Doubt, Leave It In

Chapter 1 Introduction

1.1 Language, Metaphors and Healthcare

Language and communication form the foundation of patient-centred care and are positively associated with patient satisfaction, diagnostic accuracy and treatment adherence (Howick et al., 2018). To participate effectively in healthcare interactions, patients need to be able to access, understand, process, and use health information (Parker et al., 1995).

Advances and discoveries in medicine introduce new terminology of medical language, thereby increasing the complexity of information for both healthcare practitioners and patients (Derevianchenko et al., 2018). When patients struggle to comprehend medical information or instructions, they may experience feelings of shame or embarrassment and conceal their lack of understanding of medical terms (Wolf et al., 2007). Under normal circumstances, the knowledge gap between clinician and patient can be gradually narrowed through communication and information exchange (Lyons & Dolezal, 2024). However, when patients have difficulties in understanding complex medical information, terminology, or instructions and, due to shame, hesitate to acknowledge their confusion, this gap remains unbridged (Lyons & Dolezal, 2024). As a result, clinicians may wrongly assume comprehension, and patients' silence or compliance may be misinterpreted as informed consent (Lyons & Dolezal, 2024). In other words, such concealment obstructs the narrowing of the knowledge gap and limits patients' ability to exercise full autonomy within the consent process.

Palumbo (2017) focuses on the concept of health literacy within the framework of organizational health literacy, emphasising the capacity of healthcare institutions to facilitate effective communication and understanding. The structural complexity of healthcare systems, as Brach et al. (2014) observe, is a widespread barrier that can undermine collaboration between patients and professionals. In other words, within contemporary healthcare environments, both clinicians and patients face communicative challenges that obstruct

cooperative and informed decision-making. Thus, attention to healthcare language is essential, as it influences communication at every level of the healthcare system.

Metaphorical language is widely used across healthcare contexts and appears in various settings, including helping individuals make sense of illness, improving communication between patients and healthcare professionals, and enhancing the effectiveness of health education messages (Gibbs & Franks, 2002; Krieger et al., 2010). By condensing complex ideas into more accessible forms, metaphors make abstract concepts easier to understand and may, through triggering concern, increase acceptance of preventive measures (Landau et al., 2018). In other words, metaphors facilitate comprehension and shape the communicative influence of health messages. Patients often use metaphors to express emotions and illness experiences that are difficult to convey literally, enabling them to make sense of suffering and communicate it to others (Gibbs & Franks, 2002; Demjén & Semino, 2016). Similarly, when clinicians use metaphors appropriately, patients perceive them as more communicatively competent (Casarett et al., 2010).

Metaphors also shape people's thinking, emotions, and behaviour (Lakoff & Johnson, 1980; Thibodeau & Boroditsky, 2011). They are powerful persuasive tools since they have the potential to link abstract or complex medical concepts to familiar, concrete imagery, thereby evoking emotional resonance (Demjén & Semino, 2020). According to Rossi (2021), metaphors persuade through implicit arguments that shape reasoning and encourage audiences toward specific attitudes or values. In healthcare discourse, research has shown that they can shape health-related beliefs, influencing public willingness to adopt preventative measures (Hauser & Schwarz, 2015 & 2020; Scherer et al., 2015). For example, Scherer et al. (2015) find that describing influenza metaphorically as a *beast*, *riot*, *army*, or *weed* increases participants' willingness to receive the flu vaccine. Across three studies containing both conventional and novel metaphors, metaphorical descriptions all lead to higher vaccination intentions than literal explanations, suggesting that metaphors can effectively influence people's behaviour (Scherer et al., 2015).

Nevertheless, the use of metaphors in healthcare communication also carries potential risks and unintended consequences. First, metaphors may lead to misunderstanding or misinterpretation when patients fail to grasp their intended meaning, which can cause confusion about medical information or even misperceptions of diagnosis (Chapman et al., 2003). Second, Snowdon et al. (1997: 1347) show that when parents interpret randomisation through metaphors such as a *lottery*, they understand the allocation process as 'a trivial way of managing a serious situation' rather than as a scientific method. Such misunderstandings prevent them from grasping the medical rationale behind random allocation and therefore lead to uninformed decisions. Third, metaphors can provoke negative emotional reactions if patients are unable to identify the intended similarity between the metaphor and its target concept, thereby reducing patients' willingness to follow medical advice (Krieger et al., 2010). In other words, while metaphors can be effective and beneficial, inappropriate or insensitive use can make them ineffective or even harmful, potentially leading to misunderstanding and alienation.

It can be concluded that while metaphors can enrich understanding and strengthen communication, their uses possibly demand critical awareness and sensitivity. Therefore, studying metaphors in healthcare discourse is crucial since they reflect and shape how people conceptualize illness and relevant care. As Talley (2016) notes, metaphors should occupy a central place in discussions of health communication, and those involved in healthcare, clinicians, communicators, educators, and the media should bear a responsibility to remain sensitive to how to use metaphors with caution and reflexivity.

1.2 Susan Sontag

Discussions of metaphor and the experience of illness often begin with references to Susan Sontag's seminal works *Illness as Metaphor* (1978) and *AIDS and its Metaphors* (1989). She is among the first critics to warn that the tendency to metaphorize illness in socio-cultural

discourse may have negative consequences for patients. She critiques the metaphorical representations relevant to illnesses such as cancer and AIDS, arguing that they can obscure the actual experience of illness and construct harmful associations between disease, moral decline, fear, and shame. These figurative framings, she suggests, contribute to patients' marginalization and self-stigmatization. In other words, when diseases such as cancer and AIDS are metaphorically related with moral or emotional negativity, they are seen as shameful conditions, which may in turn discourage people from seeking medical help.

Sontag (1990: 3) initially argues that 'the most truthful way of regarding illness - and the healthiest way of being ill' is to resist metaphorical thinking in communicating and understanding disease. She points out that if we conceive of illness as 'an evil, invincible predator' rather than as a medical condition, the diagnosis itself becomes a form of psychological trauma, as it inevitably induces fear and despair in patients (Sontag, 1990: 7).

Sontag's proposal has been met with considerable criticism. Holmes (2011: 265) notes that Sontag's opposition to the use of metaphor may result in a "'metaphors are bad" or "good metaphor/bad metaphor" policy', which could ultimately 'slip into a ban on all images, all representation.' Such excessive caution, he suggests, risks constraining patients' capacity for meaningful self-expression (Holmes, 2011). According to Lakoff & Johnson (1980), metaphor is a fundamental feature of language, playing a central role in shaping human cognition. As Semino (2021: 52) notes, 'eliminating metaphors is neither feasible nor desirable'. As integral and often unconscious features of human cognition, metaphors expand our conceptual and communicative capacities by enabling us to reason about complex domains through familiar ones (Semino, 2021). While they can mislead or obscure, they can equally enlighten and console (ibid).

In *AIDS and its Metaphors*, Sontag (1990: 93) acknowledges that 'one cannot think without metaphors', but maintaining that we should deliberately abandon those that are harmful, particularly those with discriminatory or militaristic connotations. She is especially concerned

with the pervasiveness of Military imagery in illness discourse, which ‘overmobilizes’, ‘overdescribes’, and ‘powerfully contributes to the excommunicating and stigmatizing of the ill’ (Sontag, 1990: 182).

However, subsequent scholars have challenged her position. Wackers & Plug (2022) observe that Violence metaphors have become highly conventionalized within cancer discourse and are likely to persist across communicative contexts, including those that are beyond control, suggesting that such metaphor is deeply entrenched in medical language. Flusberg et al. (2018) also note that although War metaphors entail risks, they can have positive effects in certain contexts, such as heightening a sense of urgency or strengthening motivation for reactive actions. Seale (2001) further critiques Sontag’s analysis for relying primarily on literary texts and personal observation rather than systematic empirical evidence, which she views as a limitation of her argument.

Despite these criticisms, Sontag’s reflections continue to inform contemporary discussions of metaphor in health communication, particularly regarding how linguistic framing influences patients’ experiences, identities, and attitudes toward illness.

1.3 Metaphors and Newspaper

According to Marzano et al. (2023), news reporting can affect health-related behaviour, shaping how people perceive risks and respond to public health guidance. For instance, the extensive media coverage of a clinical report that speculates on a link between the MMR vaccine and autism on the basis of a very small number of cases (Offit & Coffin, 2003). Although this report does not establish a causal relationship, and is later discovered to involve scientific fraud, it attracts intense media attention and generates widespread public concern (Godlee et al., 2011). In England, this period of coverage is followed by a substantial decline in MMR vaccination uptake, from approximately 94% to 75%, alongside an increase in reported measles cases (Offit & Coffin, 2003). Conversely, extensive reporting on the death of a UK

reality television star Jade Goody from cervical cancer prompts a significant rise in participation in national screening programmes (Lancucki et al., 2012). Similarly, Niederkrotenthaler et al. (2022) show that news reports emphasizing recovery and hope in the context of suicide crises can reduce suicidal ideation among vulnerable individuals. It can be concluded that media coverage can have effects on public behaviour and emotional responses.

Metaphors in media discourse can be used to 'popularize and condense complex issues' and influence how audiences interpret and evaluate events (Hellsten, 2000: 214). During health crises, they can also be used to influence understanding and emotion (Basnyat & Lee, 2015). Basnyat & Lee's (2015) analysis of Singaporean news coverage of the H1N1 pandemic, for instance, shows that War & Violence metaphors cast the government as actively defending the public, thereby helping to justify the adoption of stringent control measures.

Therefore, it can be concluded that analysing metaphorical expressions in public discourse helps to understand how the media shapes and defines events and concepts (Heywood & Semino, 2007).

1.4 Cancer Prevention and Covid-19 Prevention

Compared with treatment, illness prevention offers the potential to achieve greater reductions in major health problems, as its primary goal is to reduce morbidity and premature mortality within populations, a core principle of public health (Clarke & Viney, 1984). Prevention should cover all stages of disease and illness trajectories (Ursano, 2011). Clarke & Viney (1984: 41-42) defines prevention 'as having the dual aims of preventing mental and physical dysfunction and promoting health', which 'assumes that human beings have the ability to identify true cause and effect relationships which affect their health and then formulate programmes that, in practice, will prevent adverse health outcomes.'

However, not all preventative measures are equally effective. According to Saward & Sorensen (1978), the most successful interventions are those that require the least personal responsibility, whereas those that rely primarily on individual responsibility are often the least effective. In other words, when prevention programmes place the main burden of maintaining health on individuals, their success tends to be limited.

In medical practice, the focus of preventative strategies is put on a population-based approach to healthcare (Hays, 2018). Similarly, Dahl et al. (2014) suggest that nursing education and professional practice treat illness prevention and disease control as guiding principles. Reflecting this tradition, major medical and regulatory bodies explicitly require the integration of disease prevention and health promotion into professional training and practice standards (O'Keefe & Jensen, 2007; Hays, 2018). For example, the World Federation for Medical Education, in its Edinburgh Declaration (1988), calls for greater emphasis on health promotion and disease prevention within medical curricula and in the teaching of patient management.

Successful preventative campaigns, such as tobacco control and vaccination programmes demonstrate that disease prevention are most effective when pursued at multiple levels: within individual doctor–patient interactions and through public education campaigns, political advocacy, and legislative reform (Hays, 2018). To encourage preventative health behaviours, a range of persuasive messages has been designed to influence both cognition and behaviour (O'Keefe & Jensen, 2007). Scherer et al. (2015) suggest that metaphors can influence people's judgments and behaviours of preventative measures such as decisions about vaccination.

Cancer is a group of diseases with major social impact and is a leading cause of death in most countries and globally, cancer accounts for roughly one in 7 deaths (Brawley, 2017). Although its global burden is immense, evidence suggests that cancer risk, partly influenced by epigenetic mechanisms is to some extent modifiable through healthy behaviours and environmental factors (Bolt et al., 2021). According to the World Health Organization (2022),

between 30% and 50% of cancers can be prevented through measures such as maintaining a healthy lifestyle, engaging in regular physical activity, eating a balanced diet, receiving appropriate vaccinations, and ensuring early detection through screening. Nevertheless, its prevalence continues to make cancer one of the most critical challenges in public health. The NHS (2025) estimates that 1 in 2 individuals born after 1960 will develop cancer in their lifetime. Parkin et al. (2011) estimate that in the UK in 2010, 42.7% of cancers (45.3% in men; 40.1% in women) are attributable to exposure to fourteen modifiable risk factors, with tobacco use, dietary habits, obesity, and alcohol consumption identified as the most significant contributors.

Personal agency is emphasized in prevention discourse. Higginson (1976) suggests that individuals should control their micro or personal environment, such as smoking, alcohol use, and diet. For example, the Personal Cancer Plan encourages each person to examine how much change they are willing to make through personal action and to adopt a disciplined and proactive approach to cancer prevention. Higginson (1976) further notes that individuals should not postpone personal action while waiting for community-level initiatives, as the earlier preventative measures are taken, the more effective they are likely to be.

However, Evans et al. (2012) stress that structural and social environments can limit people's control and freedom to choose. For instance, groups with lower socioeconomic status and limited health literacy may be unable to adjust lifestyle and may therefore fail to benefit from cancer-prevention systems such as screening. Moreover, since many causal pathways lie beyond individual control, institutional responsibility may be better suited to addressing these complex determinants (Bolt et al., 2021). For example, governments can invest in education to raise population health literacy and provide adequate support for informed decision-making and healthy lifestyle adoption (Bolt et al., 2021). Similarly, Brawley (2017) highlights the role of government in cancer prevention. Through regulation, education, and support programmes, governments can reshape socioeconomic and physical environments to encourage healthy

behaviour, such as reducing tobacco use, sustaining physical activity, maintaining a healthy weight, and improving nutrition (Brawley, 2017).

In summary, while personal lifestyle choices play a role in modulating cancer risk, social structures controlled by the government determine the extent to which individuals can act on such choices.

Covid-19, first identified in late 2019, is an acute respiratory infectious disease that has caused a global public health crisis (Breakwell et al., 2021). To limit transmission, handwashing and respiratory hygiene, such as frequent handwashing and covering the mouth and nose when coughing or sneezing, are essential (Güner et al., 2020).

Also, social distancing reduces contact between people who may unknowingly be infectious (Wilder-Smith & Freedman, 2020). In the UK, this has involved the closure of schools and workplaces, restricting gatherings, maintaining at least two metres of distance from non-household members, and wearing face coverings in crowded public settings where distancing is impractical (Breakwell et al., 2021). Citizens have been instructed to stay at home except for essential purposes (Flynn et al., 2020). The government further has advised the public to avoid unnecessary contact and travel, work from home where possible, and stay away from social venues such as pubs, theatres, and restaurants (Atchison et al., 2021).

Quarantine and isolation are effective preventative measures that separate infected or symptomatic individuals and restrict the movement of those exposed to confirmed or suspected cases to prevent further transmission (Güner et al., 2020). The World Health Organization (2021) recommends a 14-day quarantine after the last exposure, ideally in a designated facility or a separate room at home (Güner et al., 2020). In the UK, anyone developing a new continuous cough or fever, later expanded to include loss of taste or smell has been instructed to self-isolate (Flynn et al., 2020).

Environmental hygiene also plays a role: frequently touched surfaces and high-risk areas should be disinfected daily using household disinfectants containing diluted bleach solutions (Güner et al., 2020, GOV UK, 2025).

Testing and contact tracing are used to identify cases, isolate them, and interrupt transmission chains (Güner et al., 2020). In the UK, Covid-19 testing has operated under 5 pillars: Pillar 1 provides testing for patients with clinical needs and frontline healthcare staff; Pillar 2 provides testing for key workers and their households; Pillar 3 provides antibody testing; Pillar 4 provides population-level surveillance and Pillar 5 aims to rapidly expand testing capacity (GOV UK, 2020).

Vaccination is an important part of the UK government's Covid-19 recovery strategy, offering long-term immunity against infection (Harnden et al., 2021). Surveys of UK adults show that, despite some uncertainty about vaccine details, most participants intend to be vaccinated (Sherman et al., 2021).

According to Atchison et al. (2021) and Breakwell et al. (2021), disease control requires individuals to modify their behaviours to limit opportunities for viral transmission, and most behavioural changes have occurred in response to official guidance. However, the capacity to comply varies across social groups and without supportive policies to reduce inequalities, disadvantaged populations face greater barriers to adherence, limiting overall policy effectiveness (Atchison et al., 2021). It can therefore be concluded that effective Covid-19 prevention depends on coordinated action between individuals and government institutions.

Despite differing modes of transmission and mechanisms of disease, both cancer and Covid-19 prevention have attracted widespread public and media attention. Each centre on the interplay between individual and collective responsibility for health. Comparing their metaphorical framings in UK newspaper discourse reveals how the media construct preventative measures, risk, and responsibility across distinct public health contexts.

1.5 Purpose of the Study

The purpose of this study is to identify and compare the metaphorical patterns used in UK newspaper discourse to describe cancer and Covid-19 prevention, examining how these metaphors construct the two illnesses, represent preventative actions, shape public understanding, and frame responsibility in different health contexts. To achieve this objective, I aim at addressing the following research questions:

1. Which metaphors are predominantly used to describe cancer prevention and how do they frame cancer prevention?
2. Which metaphors are predominantly used to describe covid-19 prevention and how do they frame covid-19 prevention?
3. What are the similarities or differences between the metaphors of cancer and Covid-19 prevention and their framing strategies?

To achieve these objectives, the study adopts a corpus-based approach, combining quantitative and qualitative methods to ensure systematic and replicable analysis of metaphor use across both datasets. Two specialised and representative corpora were constructed, consisting of texts from major UK newspapers that discuss cancer prevention and Covid-19 prevention respectively. A theoretical framework was required to systematically identify and analyse metaphors, helping to uncover how they shape and evaluate events and express implicit perspectives in public discourse.

1.6 Structure of the Study

This thesis is organised into 7 chapters.

Chapter 1 introduces the background and rationale of the study, outlining the significance of investigating and comparing metaphors relevant to cancer and Covid-19 prevention in the media discourse. It also presents the research objectives and questions overview that guide the overall study.

Chapter 2 provides the theoretical foundation for the study. It discusses key frameworks that inform the analysis, the Discourse Dynamics approach, and corpus-based methods of metaphor analysis.

Chapter 3 reviews relevant literature on the framing function of metaphors in health discourse and summarises existing research on metaphors related to cancer and Covid-19 prevention. Together, discussions in Chapter 2 & 3 establish the conceptual and analytical grounding for the study.

Chapter 4 outlines the methodological framework. It explains the procedures for corpus construction, the identification and vehicle grouping of linguistic metaphors, and the methods used for quantitative and qualitative analysis. The chapter also introduces the reliability testing and the analytical decisions made to ensure systematic and replicable results.

Chapter 5 presents the findings of the study, combining quantitative data with qualitative interpretations. It analyses major metaphorical patterns identified in both corpora and explores how they construct and evaluate illness prevention.

Chapter 6 discusses the results comparatively, highlighting both shared and contrasting metaphorical framings of cancer and Covid-19 prevention. It examines how these metaphors reflect and possibly shape public perceptions of health, agency and risk.

In the final chapter, I summarise the main findings, address the research questions, and evaluate my study's contribution to understanding metaphor use in health communication. The chapter also considers the theoretical and methodological implication of the research and concludes by reflecting on its limitations and suggesting directions for future studies on media representations of illness prevention.

Chapter 2 Literature Review

This chapter consists of 7 sections. Section 2.1 introduces the main ideas and suggests some limitations of Conceptual Metaphor Theory in researching linguistic metaphors. Section 2.2 discusses the functions of metaphors in health communication, with a particular focus on their framing function. Section 2.3 presents the Discourse Dynamics Framework, which is followed in my study, and reviews 3 analytical approaches used to examine the systematicity of metaphors. Section 2.4 reviews previous studies that adopt corpus-based approaches to metaphor analysis, with particular attention to how collocation and concordance analysis have been used. Section 2.5 explains the decision of the analytical approaches adopted to explore the framing of metaphors in this study.

2.1 Conceptual Metaphor Theory

According to Lakoff & Johnson (1980), metaphor is not just a rhetorical or poetic device, and it is pervasive in our everyday language and thought. They emphasize that ‘human thought processes are largely metaphorical’ and ‘the human conceptual system is metaphorically structured and defined’ (Lakoff & Johnson, 1980: 6). Based on this insight, they developed the Conceptual Metaphor Theory (CMT), which views metaphor as a fundamental cognitive mechanism.

Lakoff (1993: 203) claims that ‘the locus of metaphor is not in language at all, but in the way we conceptualize one mental domain in terms of another’. In other words, when a metaphor is used, the speaker not only describe features of the particular thing but also to think about it and to conceptualise the abstraction of one thing using another thing. A conceptual metaphor is organised by two conceptual domains, the source domain (usually a concrete domain) and the target domain (usually an abstract domain). When we conceptualise the target domain in terms of the source domain, the source domain is used to understand the target domain. That is, the conceptual metaphor is related to a mapping between two domains (Lakoff & Johnson,

1980). For example, in the conceptual metaphor LIFE IS JOURNEY, the source domain JOURNEY is expressed through metaphorical language that helps to conceptualize the target domain LIFE. As is noted by Lakoff & Johnson (1980: 19 & 58), 'no metaphor can ever be comprehended or even adequately represented independently of its experiential basis', and they 'are grounded by virtue of systematic correlates within our experience'.

Another principle of Conceptual Metaphor Theory (CMT) is its potential for ideological framing effects (Lakoff & Johnson, 1980). Since no single target domain can fully cover all aspects of the source domain, different source domains can be mapped onto the same target domain to create different versions of reality. It can be concluded that each mapping can only highlight certain specific aspects of the target domain (Kövecses, 2017). In other words, the ideological implications embedded in conceptual metaphors are conveyed by emphasizing certain elements while hiding others, which is considered to be the framing effect of the metaphor. For instance, the conceptual metaphor LIFE IS JOURNEY makes people think that life is one-way but at the same time may ignore the role of reflection and failure in life (Semino et al., 2018; Kövecses, 2020).

Additionally, CMT suggests that the correspondence between two domains is pre-established in people's cognitive systems as part of their conceptual framework. Once metaphorical mappings are activated in the brain, the source domain is automatically and unconsciously mapped onto the target domain (Lakoff, 1993). In other words, CMT distinguishes between conceptual metaphors and linguistic metaphors, proposing that conceptual metaphors may occupy a more central role compared to linguistic metaphors (Kövecses, 2017).

Although CMT has extensively been applied to discuss metaphors, it receives criticism (Semino, 2008; Deignan, 2016). CMT is criticized for its lack of strict methods to infer conceptual metaphors from authentic data (Deignan, 2016). According to Semino (2008: 10), compared to conceptual metaphors, 'the textual manifestations of metaphor and for authenticity of the linguistic data that is adduced as evidence' may be ignored. Cameron et al. (2009: 63) also

notes that CMT 'seriously downplays the influence of language on metaphor and the importance of the specifics of the language using situation in which metaphor occur'. Hart (2011) analyses the role of metaphor in discourse and suggests the importance of the discourse context in the interpretation of metaphor by the audience. That is, language uses have an impact on the interpretation of variation in metaphor use, which might be neglected by CMT, which might view linguistic metaphors as merely instantiations of conceptual metaphors (Cameron et al., 2009; Deignan et al., 2013, Deignan, 2016).

Linguistic metaphors should not be used to identify conceptual metaphors without other evidence and then use pre-existing conceptual mappings to prove the existence of these linguistic metaphors (Gibbs, 2011). Gibbs (2011) states that CMT relies on its own reasoning to justify its claims, and the circularity feature of this theory may hinder the exploration of the conceptual basis of metaphors.

Finally, CMT may also overlook how metaphors are used in real social interaction contexts (Gibbs, 2006). Gibbs (2006) and Cameron (2010) emphasize the connection between language, thought, and culture, arguing that the use of metaphors is closely tied to specific social interaction settings. The realization of metaphors depends on the different contexts in which interactions take place, meaning that people's thoughts may adapt according to the changing situations. This suggests that our thinking is not entirely governed by predetermined conceptual metaphors (Gibbs, 2006 & Cameron, 2010). Additionally, Gibbs (2006:10) supports this perspective, suggesting that the extensive examples of conceptual metaphors 'may only reflect aspects of the 'idealized' speaker-hearer, but not how people ordinarily speak, or write, in naturalistic discourse.' This further emphasizes the need to consider metaphors as they occur in real-world communication, rather than relying only on theoretical, idealized models.

Despite the controversy, numerous studies have suggested that metaphors in language are related to metaphors in thought, since their framing effects help people emphasize and express different aspects of a particular issue (Cameron et al., 2010; Semino et al., 2018).

2.2 Functions of Metaphors in Health Communication

Both Goatly (1997) and Deignan (2012) draw on Halliday's three metafunctions of language: ideational, interpersonal, and textual, to systematically categorize the functions of metaphor. On the ideational level, both Goatly (1997) and Deignan (2012) highlight the role of metaphor in expressing abstract, complex, or unfamiliar concepts. Metaphors can help fill lexical gaps, construct explanatory or conceptual models, and support the reconceptualization of complex phenomena through analogy (Goatly, 1997). In this sense, metaphors serve a modelling or illustrative function, shaping interpretive frameworks and enabling learners to grasp complex ideas in more accessible ways (Littlemore, 2016). Although such explanatory metaphors are central to metaphor research, Deignan (2012) observes that they are not the most valuable. Goatly (1997) notes that while metaphors enable productive analogical reasoning, they may also lead to misleading or fallacious interpretations. On the interpersonal level, Goatly (1997) and Deignan (2012) highlight the role of metaphor in managing relationships, expressing attitudes, and negotiating social roles. Metaphors can convey emotional positions, foster intimacy between speakers and listeners, introduce humor or playfulness, enhance the persuasive force of discourse, and help mitigate face-threatening acts. Both scholars further emphasize the ideological function of metaphors, noting how metaphors can reinforce dominant power structures or convey particular worldviews, which 'is both ideational and interpersonal: it demands Reconceptualization, but it involves value judgements and depends upon differing subjectivities' (Goatly, 1997: 166). Deignan (2012) adds that the interpersonal function is especially prominent in evaluative, critical, and persuasive contexts, where metaphors contribute to constructing authority, positioning speakers and audiences, and fostering solidarity. On the textual level, metaphors contribute to the overall organization and coherence of discourse. According to Goatly (1997), they help thematically unify texts across longer stretches of language, creating structural cohesion, aiding interpretation and foregrounding key information. The textual function of metaphors focuses on thematic continuity and help guide the listener or reader through complex topic development (Deignan,

2012). Similarly, Ponterotto (2003) emphasizes that overarching metaphors serve an organizing role by ensuring semantic and conceptual consistency throughout the text.

In the study of metaphor in natural discourse, an increasing number of scholars emphasize its interpersonal functions (Goatly, 1997; Deignan, 2012; Appleton & Flynn, 2014; Tay, 2017). While traditional Conceptual Metaphor Theory focuses on metaphor as a tool for cross-domain conceptual mapping, researchers such as Goatly (1997) and Deignan (2012) note that metaphors in real-life discourse often serve multiple functions simultaneously. For instance, a single metaphorical expression may convey emotional attitudes and contribute to the structural organization of a text. This emphasis on the pragmatic and communicative dimensions of metaphor highlights the centrality of interpersonal function in metaphor research. As Goatly (1997:166) points out, many ideational and interpersonal metaphors carry ‘perlocutionary effects’, in that they indirectly prompt the audience to act. This persuasive and affective potential is a key aspect of metaphor’s interpersonal function. For example, in a quantitative analysis of Chinese psychotherapy sessions, Tay (2017) indicates that therapists employ metaphors more frequently than clients, particularly during the initial support building and closing phases of interaction. These metaphors are often used to express empathy, mirror clients’ language, and affirm their emotions, thereby fostering trust and alignment in the therapeutic relationship. Similarly, Appleton & Flynn (2014) demonstrate that cancer patients use metaphors to express their emotions, integrate their illness experiences, reconstruct self-identity, and project hopes for the future. These uses reflect the ideational function of metaphor, as they contribute to the understanding and making sense of illness and the interpersonal function, as they help patients express inner experiences, connect with others, and achieve emotional regulation and self-positioning in the face of major life events.

Within the interpersonal function of metaphor, the evaluative function receive attention, particularly in contexts that involve emotional or social sensitivity (Lakoff & Johnson, 1980). Deignan (2010) identifies four mechanisms through which metaphors can convey evaluation: by activating entailments inherent in the metaphor, invoking culturally

shared scenarios or mini-narratives, selecting source domains that express the speaker's stance, and drawing on the connotative meanings of literal expressions. These mechanisms often operate in combination across different discourse contexts, offering speakers a way to express judgments indirectly and implicitly and allowing readers or listeners to infer meanings rather than receiving them explicitly, which is particularly effective in socially sensitive discourse (Deignan, 2012; Demjén et al., 2016). For example, Semino et al. (2013) analyse the metaphor *vaccine against Berlusconi*, originally used by journalist Montanelli, which frames Berlusconi as a disease requiring treatment, thereby conveying a negative evaluative stance. As the metaphor is recontextualized in media and public discourse, its evaluative dimension becomes significantly intensified: Berlusconi is represented as a poison or an addictive drug, while the Italian public shift from an immune and rational collective to helpless people. Additionally, the Italian Left, absent in the original metaphor, is depicted as infected and internally divided, further expanding the scope of criticism. This case illustrates how metaphors express evaluation by reframing responsibility and causal attribution.

In the health discourse, Camus (2016) shows that metaphor plays an evaluative role in media representations of cancer treatments, which tend to be evaluated positively through metaphors associated with precision, such as *tailor* and *à la carte*. This illustrates that metaphor serves the ideational function of conveying information and more importantly, allows speakers to express evaluative stances, potentially exerting persuasive and directive force at the level of communication. In the context of end-of-life care discourse, Demjén et al. (2016) explores how metaphors of a 'good death' and a 'bad death' reflect contrasting systems of value judgment. A good death is typically framed through metaphors of peace, control, and openness, while a bad death is described metaphorically in terms of struggle, concealment, loss of control, and rejection of professional support. According to Demjén et al. (2016), these metaphorical choices serve an evaluative function, allowing speakers to express stances and indirectly critique patients' attitudes or choices. Importantly, the evaluative power of metaphors is relevant to its framing function, which highlight some aspects and downplay other aspects (Lakoff & Johnson, 1980; Demjén et al., 2016). As Semino et al. (2018) point out,

metaphors activate specific cognitive frames, guiding discourse participants in how to define a problem, assign responsibility, and give possible responses, thereby shaping their evaluative stance and value judgments.

The framing function of metaphor has been regarded as one of its most central functions, particularly prominent in the context of public discourse (Ritchie & Cameron, 2014; Semino et al., 2018). This concept builds on Entman's (1993: 52) definition of framing:

Framing essentially involves selection and salience. To frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described.

Lakoff & Johnson (1980) suggest that the mapping from the source domain to the target domain is partial and selective. As Semino (2008: 91) explains, metaphors have 'consequences for how a particular issue is "framed" or structured, which aspects are foregrounded and which are backgrounded, what inferences are facilitated, what evaluative and emotional associations triggered, what courses of action seem to be possible and so on' when they are used to shape how people understand particular issues. In addition to highlighting, Ritchie & Cameron (2014) point out that the framing function of metaphor is about emotional direction, sensory simulation, and value judgment. That is, metaphor frames an issue by activating familiar scenarios or schemas, guiding people's interpretations and attitudes.

At the cognitive level, the framing power of metaphor lies in its ability to shape individuals' reasoning. Experimental research by Robins & Mayer (2000) demonstrates that presenting the same social issue using different conceptual metaphors, such as *TRADE IS WAR* and *TRADE IS A TWO-WAY STREET* can lead participants to make different decisions. This effect likely stems from the entailments and emotional associations activated by the source domain, which pre-structure the target domain within a particular interpretive space (Robins & Mayer, 2000).

Similarly, Thibodeau & Boroditsky (2011) conduct a series of experiments showing that metaphor can guide public judgment: framing crime as a beast leads participants to support punitive measures, while framing it as a *virus* leads them to take social reform. These findings suggest that metaphor activates specific frame structures that subtly shape people's thought processes, causal reasoning, and value judgments. Hart (2023), from a cognitive linguistic perspective, suggests that meaning construction involves the activation of 'event-frames', which are basic cognitive structures such as motion, causation, and transfer, formed through repeated bodily experiences and cultural schemas. For instance, metaphors such as LIFE IS A JOURNEY may invoke cultural frames of travel, which embeds more basic event-frames such as translocation, influencing how people conceptualize abstract issues at a cognitive level (Hart, 2023).

At the discourse-based level, research suggests that the framing function of metaphor emerges through processes of repetition, negotiation, and stabilisation across texts and speakers (Cameron, 2003; Bogetić, 2019). In this view, metaphorical frames develop dynamically across discourse, allowing metaphors to be adopted, contested, or reworked in relation to existing framings (ibid).

From a more integrated perspective, Semino et al. (2018) propose a three-level framework for analysing the framing function of metaphors: the cognitive, discourse-based, and practice-based levels. The cognitive level focuses on how metaphor constructs selective conceptual representations through cross-domain mappings. The discourse-based level examines how metaphors are systematically used and patterned across specific texts, analysing their distribution, combinations, and variations within particular contexts. The practice-based level expands the analysis to include social interaction, emphasizing how metaphor use is shaped by situational context, social roles, and ideological aims. Similarly, Sullivan (2023) introduces a three-tier model to refine metaphorical framing: semantic, cognitive, and communicative framing. Semantic framing refers to the basic meaning structures activated by linguistic units themselves. Cognitive framing relates to the knowledge

schemas and conceptual structures behind linguistic forms, which are grounded in embodied experience and cultural knowledge. Communicative framing highlights the speaker's strategic activation of certain cognitive frames in context to shape the audience's understanding, emotional stance, and evaluative judgment. Sullivan (2023) further notes that metaphor, as a cross-level framing device, operates simultaneously across these layers: it appears in specific lexical choices at the semantic level, draws on broader conceptual systems at the cognitive level, and serves discourse goals at the communicative level. Semino et al. (2018) similarly emphasize that these levels are not discrete but interconnected, working together to form a dynamic system. Therefore, it can be concluded that the study of metaphorical framing should adopt a multi-level analytical perspective, taking into account the interplay between conceptual construction, discourse organization, and social or communicative practice.

2.3 Discourse Dynamic Framework and Three Approaches to Analysing Metaphors

As mentioned before, CMT focuses on the cognitive level of metaphor but has limitations in accounting for metaphor in use. Also, explaining functions of metaphor patterns requires a multi-perspective approach that considers multi-level dimensions. This section introduces other perspectives for metaphor analysis and explains the approach adopted in this study.

2.3.1 Discourse Dynamic Framework and Systematic Metaphors

Cameron (2010) suggests that metaphors are tools for people to communicate thoughts, opinions, and viewpoints in social interactions, and based on this idea, developed the discourse dynamics framework. It stands in contrast to the conceptual metaphor theory, which argues that metaphorical conceptualizations exist in the mind before they manifest linguistically (Lakoff, 1993). In comparison, the discourse dynamics approach focuses on the discourse level and indicates that the systematic metaphor arises from the discourse within a specific context, and as Maslen (2016: 92) emphasizes, it 'has[have] no meaning without reference to that context'. Semino et al. (2018) also note that the discourse approach focuses

on how metaphors are used in real-life discourses, considering factors such as the writers, the context, the purposes, and the potential impacts of its uses.

The discourse dynamics framework is based on Vygotsky's sociocultural theory, which emphasizes the dynamic relationship between thought and language (Cameron, 2010). Vygotsky (1962) believes that thought and language are interdependent, and their relationship is an evolving process: thoughts are expressed through language and continually transform as language develops. Within this framework, the development of discourse is influenced not only by the content of communication but also by the progression of discussions between interactants. Each participant forms a complex system of interaction based on their communicative activities, which are further connected to broader social, cultural, and contextual networks. In other words, any discourse event is connected to larger or smaller systems, which can be identified across dimensions of time and social hierarchy. Speech at any given moment may be the result of events occurring over extended periods, such as hours, days, months, or even years (Vygotsky, 1962). Vygotsky (1962) also notes that, beyond the time scale, social levels also influence the progression of discourse. For example, an individual's communicative activity may be shaped by different groups within their environment. These factors contribute to the complexity of the discourse dynamic system, making it constantly evolving (Cameron, 2010).

This theory forms the foundation of the discourse dynamics framework, which argues that 'discourse, an iterative system of mental, physical, and physiological processes, is anything but static' (Maslen, 2016: 88). On the contrary, it is complex and dynamic, constantly in flux and change, influenced by various social, cognitive, and physical factors that impact it in ways that cannot be fully predicted or explained (Cameron, 2010). Every element can be understood as a complex system, engaging with and adjusting to the other elements (Cameron, 2007a). In other words, discourse is an evolving system that develops as different interactional contexts change. Cameron (2003: 42) further introduced the concept of 'talking-and-thinking-in-interaction', suggesting that discourse not only reflects people's

thoughts but also influences them. Language becomes an externalization of thought, and thoughts and attitudes shift according to the interactional context (Cameron, 2003). In other words, thoughts are not isolated but exist within the interaction with discourse. In this process, linguistic metaphors emerge, playing a role in the interaction between expression and cognition.

Cameron et al. (2009) suggests that complexity and dynamic systems theory emphasize the importance of change and interconnectedness within social and cognitive systems. From this perspective, metaphors are not fixed and static mappings but rather 'a temporary stability emerging from the activity of interconnecting systems of socially-situated language use and cognitive activity' (Cameron et al., 2009: 64).

According to Cameron (2007a), a complex system is composed of various types of elements or agents that interact through diverse relationships or connections, with its complexity arising not only from the diversity and interconnections of its components but also from its dynamic nature, where both the elements and their relationships are constantly changing. Complex systems can exist at different levels and scales, often displaying a nested structure, which are open instead of closed systems, capable of absorbing new energy from external sources (Cameron, 2007a & 2010). It can be concluded that from a complex systems perspective, the context of discourse is not a separate background but an integral part of the discourse system, due to the connections between its elements or agents (Cameron, 2007a). Change in a complex system can manifest gradually and smoothly or happen suddenly and dramatically when the system shifts to a new behaviour (ibid). In a constantly changing system, temporary stability can emerge, leading to relatively stable behavioural patterns with some variation, and conventional metaphors and specific lexico-grammatical forms can be viewed as the outcomes of the language system adapting and evolving through use (Cameron, 2007a). Systematicity in metaphors come from their consistent and repeated use of metaphorical expressions with specific semantic features to discuss particular topics (Maslen, 2016). Cameron et al. (2009) suggests that conventionalised metaphors may be viewed as emergent features of discourse

systems, which are both individual and social, reflecting stable behaviour patterns within social groups. This type of conventionalized metaphor, which remains relatively stable in terms of lexico-grammatical patterns, affect, and pragmatics, is referred to as metaphoremes, which will be discussed in detail in Section 2.3.2 and included in my research as an approach to explore the framing of metaphors (Cameron & Deignan, 2006 & Cameron et al., 2009). Although metaphoremes exhibit relatively high stability, they still possess a certain degree of flexibility or variation due to the dynamic nature of the system (Cameron et al., 2009).

In conclusion, the discourse dynamics framework avoids the static and pre-defined mappings assumed in CMT. Instead, it is based on empirical data and emphasizes the dynamic nature of language use in real-world contexts. This allows for the explanation of functions and patterns of metaphors in natural discourse, particularly in expressing attitudes and evaluative stances. Since my research focuses on specific metaphors, related to cancer prevention and Covid-19 prevention and how they are used to convey evaluation and stance, the discourse dynamics framework is adopted as the theoretical foundation of my study.

In the discourse dynamic framework, the source domain and target domain are replaced by the terms vehicle and topic, as this framework focuses on ‘the words they actually said’ rather than assuming how speakers conceptualize their ideas (Cameron et al., 2010: 118). Therefore, using the term vehicle is more logical than source domain term (ibid).

After identifying metaphors, vehicle terms are grouped and labelled based on their semantic features, which refers to the *vehicle group*, leading to a clearer understanding of the interconnections between metaphors, with the focus on generalization while ensuring the labels remain closely connected to the original text (Maslen, 2016). The topic, or given information, is assigned to each vehicle term to help explore the systematic connections between metaphors (Cameron et al., 2010). Cameron et al. (2010: 127) define a systematic metaphor as ‘a set of linguistic metaphors in which connected vehicle words or phrases are used metaphorically about a particular topic’. Systematic metaphors can be used to analyse

the complexity of a situation at a given moment (Maslen, 2016). Within the discourse dynamic framework, systematic metaphor, often presented in small italic capitals, is used in place of conceptual metaphor to emphasize the linguistic patterns emerging from discourse in specific, real-world contexts (Cameron et al., 2009). Maslen (2016: 95) states that the emergence of a systematic metaphor is driven by ‘the stable, repeated use of metaphors with particular semantic characteristics to talk about a particular topic’, with each metaphor contributing to the formation of ‘a broader, but coherent conception of a topic’. Each metaphor vehicle has its own semantic characteristics, which, while not identical, are related to one another (Cameron et al., 2010). According to Maslen (2016), features of systematic metaphors may differ as they are not typically generated by each speaker and may arise from varying combinations of participants. Also, they may appear at different moments in a discourse, sometimes appearing intermittently and at other times clustering during brief, focused exchanges (ibid).

Analysing these metaphors helps to understand the participants in a specific discourse, such as people, places, and time, and serves as a valuable tool for researchers to understand the underlying ideas, attitudes, thoughts, and values that a speaker or writer may not explicitly express during their discourse (Cameron, 2010). Additionally, systematic metaphor analysis allows researchers to examine changes within a specific text, observing how the vocabulary and phrases associated with metaphors build connections with the topics or concepts discussed during speaker interactions or written arguments (Cameron, 2010). It also shows how these connections develop, through mechanisms such as expansion, overlap, or reinforcement (Cameron, 2010; Maslen, 2016).

Cameron et al. (2010) use an example to illustrate the emergence of a systematic metaphor from the discourse of a focus group, who frequently employed game-related metaphors to discuss the risk of terrorism. Linguistic metaphors such as *a poker game* and *a game of bluff* are used to describe the risk, both of which involve the odds of winning (Cameron et al., 2010). According to Cameron (2010: 85), these metaphors exist at the microgenetic moment, forming part of a system on a microgenetic timescale, which can be connected to broader systems,

such as 'phylogenetic (or social life) timescale encompassing years, decades and centuries'. In other words, Cameron et al. (2009) state that metaphors in the discourse reflect the interplay of individuals' interrelated systems, including systems related to language, cognition, emotion and evaluation. For example, *poker game* and *a game of bluff* metaphors may be related to a participant's metaphor on the microgenetic timescale, such as *they're actually dicing with your life* and another metaphor *my number's up*, used to describe the worst-case scenario. Together, these metaphors highlight the unpredictability of outcomes, thus forming a systematic metaphor: *BEING AFFECTED BY TERRORISM IS PARTICIPATING IN A GAME OF CHANCE* (Cameron et al., 2010). This systematic metaphor may convey feelings of fear and helplessness regarding terrorism, as people can only rely on luck when facing it, contributing to a negative framing of responses to terrorism (Cameron & Maslen, 2010a). This example illustrates how metaphors that emerge on a microgenetic scale in discourse link together and connect with a broader sociocultural system, framing 'the ideas, attitudes, and values of discourse participants' (Cameron et al., 2010: 137).

2.3.2 Metaphoremes

A substantial body of research indicates that word combinations are not arbitrary but are often constrained by specific lexico-grammatical structures or patterns (Sinclair, 2003; Hunston, 2002, 2010 & 2022). Hunston (2002) defines the term *pattern* as a regular usage trend evident in concordance lines. These regularities of use can be defined as the patterns of the word. When examining the use of a word, it is possible to observe that the word exhibits multiple use patterns. In other words, the surrounding context or patterns are often closely relevant to the meaning of a word. For example, Sinclair (2003) looks at 30 citations of *free hand* and finds that when the noun group's determiner is a possessive adjective, both *free* and *hand* show literal meanings. When the determiner is *a*, the phrase *a free hand* conveys the meaning of an unrestricted opportunity, representing a metaphorical or idiomatic expression. Similarly, Deignan (2005) states that when *teeth* is metaphorically used, describing the enforcement power or authority of a law or public body to implement decisions effectively, it has a fixed

lexico-grammatical pattern, used only in the plural form and typically following the verb *have*, such as 'have *teeth*'. She also points out that when the word *heart* is used metaphorically to express the concept of center (e.g., at its *heart*...), its use is flexible and lacks rigidity, allowing it to be employed in various contexts. However, when *heart* conveys a metaphorical sense of generosity, its patterns are relatively fixed, as seen in expressions such as '*heart* of gold'. Deignan (2005) concludes that many metaphorical expressions are lexico-grammatically fixed, and their degree of fixedness makes them similar to idiomatic expressions, though they exhibit greater variability compared to idioms. According to Cameron & Deignan (2006), metaphorical uses of words tend to be more fixed than their literal uses in terms of lexico-grammatical patterns, resulting in a limited range of forms for many linguistic metaphors.

As suggested by the discourse dynamics framework, there is a dynamic relationship between language, thought, and sociocultural contexts, which may be reflected through metaphors as a linguistic manifestation (Cameron, 2010). Cameron & Deignan (2006) propose that layered impact of metaphors within the time scale of the specific discourse event contributes to the overall affective effects of the interaction and on a larger timescale, the repeated use of metaphors in dialogue may gradually standardize the associated attitudinal and evaluative judgments. Based on the discourse dynamics framework, Cameron & Deignan (2006) suggest that metaphors evolve and shift within the dynamic language interactions between individuals, leading to localization changes that bring about a degree of stability in structure, meaning, affect, and pragmatics. In other words, in interactions, people adjust language based on specific communicative needs. Through repeated use, certain linguistic forms gradually stabilize as the preferred means of expressing metaphorical concepts within a discourse community, becoming a shared resource for expression and thought among its members. Among these, affective meaning includes 'the beliefs, attitudes, values, and emotions of participants' (Cameron & Deignan, 2006: 674). These newly emerging established consistencies within language are referred to as metaphoremes (ibid).

The concept of metaphoreme is introduced to describe non-literal lexical items with the stability of patterns or forms at the lexical level and ‘highly specific semantics and pragmatics’ and can be used ‘as shorthand for the ideational and evaluative content’ (Cameron & Deignan, 2006: 671 & 677). They define metaphoreme as ‘a bundle of relatively stable patterns of language use, with some variation, that describes how people use lexical item’ (Cameron & Deignan, 2006: 686). For instance, they suggest that *lollipop trees*, describing trees drawn as circles atop vertical lines, might be a metaphoreme. It appears as a stable lexico-grammatical form in the specific small discourse community of students and teachers and also carries an implied critical slant towards the method of drawing trees in this way. They then discuss the use of metaphor *baggage* through an analysis of the 59-million-word section of the Bank of English. The use symbolizes difficult memories or unresolved emotional issues carried from the past, consistent with the conceptual metaphor DIFFICULTIES ARE BURDENS (Cameron & Deignan, 2006). Evidence of this stabilized use comes from corpus data, which shows that the metaphor *baggage* as a noun frequently pairs with specific pre-modifiers such as *emotional* or *excess* and verbs such as *carry* or *dump*, indicating that the metaphor *baggage* crystallizes in both lexico-grammar and meaning. In addition, the corpus evidence shows that historically, *baggage* refers to heavy things, carrying negative connotations, but its current metaphorical use as mental burdens appears to reflect modern cultural concerns with emotional well-being. Since *baggage* gains stability in both lexico-grammatical and affective perspectives when it is metaphorically used, it becomes a fixed and culturally shared expression in the community’s linguistic and conceptual knowledge, making it recognized as a metaphoreme (Cameron & Deignan, 2006).

Although a metaphoreme serves as a relatively stable set of language use patterns, it may exhibit a degree of variation and flexibility, reflecting how people within the discourse community currently use lexical items (Cameron & Deignan, 2006). For example, Porto & Romano (2013) identify *ash cloud* as a metaphoreme and also consider its variations in phrasal expressions with similar forms, such as *cloud of ash* and *cloud of ashes*, treating them as metaphoremes and collectively discussing their evaluative meaning when used metaphorically.

In other words, at the metaphoreme level, semantic and pragmatic meaning are strictly limited while their forms, though relatively constrained, are influenced by specific contexts, creating a system that is both stable and adaptable.

Metaphoremes are also found in metaphor research relevant to cancer. Semino et al. (2017a) compare the *fighter* metaphor used by patients, referring to optimistic and active people who keep fighting with the corpus-based Macmillan Dictionary and find that its specific use within their corpus aligns with its general metaphorical explanation in the dictionary. Therefore, they argue that *fighter* metaphor is a metaphoreme, which is used in a specific way in their corpus relevant to cancer patients, framing them positively and empoweringly (Semino et al., 2017a). In another study, Semino & Demjén (2017) analyse cancer-related discourse in the online forum Warped and identify *play the ... (cancer) card* as a group-specific metaphoreme. In this community, the expression is used humorously to exaggerate, break taboos, and reframe distressing experiences, thereby reducing the emotional weight of illness. In addition, the shared use of this metaphoreme fosters interpersonal closeness and strengthens group cohesion. As Semino & Demjén (2017) suggest, such context-specific meanings arise from dynamic links between form, meaning, and function, which cannot be fully explained by conceptual mappings or general metaphorical idiom. In other words, CMT cannot fully account for context-specific uses of metaphor that evolve in such settings, whereas the concept of metaphoreme effectively fills this gap.

Together, these examples demonstrate how the concept of metaphoreme helps capture both the stability and context-dependent variation of metaphor in real discourse, offering deeper insights into how people use metaphor to shape meaning, emotion, and social interaction.

2.3.3 Scenarios

Cameron (2010) suggests that investigating the systematicity of metaphors in discourse begins with examining systematic metaphors and can be further enhanced through the exploration of

metaphor scenarios proposed by Musolff (2006). Musolff (2015) criticizes that Conceptual Metaphor Theory cannot be used to adequately analyse the language patterns and relevant framing evaluation evident in the real-world data, and in response, Musolff (2004) proposes a more specific investigation of metaphor at the level of conceptual structure through scenarios that shape source framing into mini-narratives and are specific in the level of context. Musolff (2004: 13) defines a scenario as ‘an intermediate analytical category between the level of the conceptual domain as a whole and its individual elements’. Semino et al. (2018) also state that metaphor scenarios capture the implication of metaphor patterns in real-world discourse, bridging the gap between discourse-based and cognitive-based approaches to metaphor research.

According to Musolff (2006: 28), metaphors scenarios are

a set of assumptions made by competent members of a discourse community about ‘typical’ aspects of a source-situation, for example, its participants and their roles, the ‘dramatic’ storylines and outcomes, and conventional evaluations of whether they count as successful or unsuccessful, normal or abnormal, permissible or illegitimate, etc.

Musolff (2015: 44) further explains that scenarios ‘combine snippets of encyclopaedic knowledge to arrive at a default conclusion or evaluation that is based on common sense experience’.

Nerlich (2011) suggests that in some respects, metaphor scenarios are comparable to the generic structure of conceptual mappings of the Conceptual Metaphor Theory since they are all relevant to a collection of conceptual structures. However, metaphor scenarios differ in that they integrate narratives, incorporating expectations of usual participants and expected sequences of actions (Nerlich, 2011). In other words, metaphor scenarios can reflect as a sequence of events shaped by deeply rooted sociocultural expectations and values (Cameron et al., 2010). Mulsoff (2006: 36) states that there is a conceptual connection between the discourse level and the sociocultural level and scenarios

enable the speakers to not only apply source to target concepts but to draw on them to build narrative frames for the conceptualization and assessment of sociopolitical issues and to 'spin out' these narratives into emergent discourse traditions that are characteristic of their respective community. The analysis of source scenarios as focal areas of source domains provides a platform to link the conceptual side of metaphor to its usage patterns in socially situated discourse.

In summary, metaphorical scenarios offer inherent information for source concepts, including evaluative perspectives within the discourse community, leading to the development of metaphorical reasoning (Mulsoff, 2015). Specifically, the information refers to the understanding of a particular environment, including participants, roles, possible goals, activities and occurrences and assessments, perspectives, and feelings it may imply (Semino et al., 2018). For example, Semino et al. (2018) considers the JOURNEY scenario through who controls it, the number and type of routes, the presence and identity of companions, the terrain or road condition, and the final destination. This process may not occur at a broad schematic level but within specific sub-domain contexts, where sociocultural judgement can be inferred more precisely (Mulsoff, 2006). For example, in the traditional marriage relationship, a third party, such as a lover is typically seen as having a lower social status and a negative influence on the family structure, implying relational hierarchies and their perceived effects in most linguistic communities (Musolff, 2006). Within the LOVE-MARRIAGE metaphorical scenario for international relations, this default information is embedded in the framing of the Franco-German relationship as a marriage, with the UK described as a third person or intervening presence within the EU family, suggesting the UK's influential yet disruptive role in European affairs (Musolff, 2006).

According to Musolff (2016: 31), scenarios consist of 'a particular set of presuppositions that are chosen for specific argumentative purposes' rather than being randomly drawn from abstract domains. With the help of scenarios, speakers are able to construct 'narrative frames' for the conceptualization and evaluation of public discourses (Musolff, 2006: 36). In other

words, scenarios may function as discourse evaluation strategies, reflecting 'normative assumptions concerning the intentions, states of minds, and emotions of the scenario participants, and concerning the chances of success and social acceptability of the "scenes" they are "enacting"' (Musolff, 2006: 35-36). For example, they can enhance positive self-presentation and negative portrayal of others (Van Dijk, 1995). Van Dijk (1995: 156) states that DOOMSDAY scenarios are common in the description of opposition between Americans and Muslim fundamentalists and Arabs, which frame Americans as us and Muslim fundamentalists and Arabs as others and 'generally intend[ed] to both demonize the Others as well as call to action those of us (and especially the politicians) who are not taking things seriously enough'. Different discourse communities may use scenarios to convey their various judgement and biases toward a particular topic (Musolff, 2006). For example, within the LOVE-MARRIAGE metaphorical scenario, British media often describes the Franco-German partnership in the EU as a marriage in crisis, while German media frames it as a partnership that must be preserved to avoid a breakup. Musolff (2006: 35) also highlights that more specific and detailed metaphorical source scenarios can suggest stronger evaluative leanings since 'scenarios provide a sufficiently rich conceptual structure to be argumentatively and rhetorically exploitable'. Specific argumentative and rhetorical effects can also be achieved by scenarios deviating from their default form, which may be accomplished through intentional inversion or by pairing with opposing evaluations and biases (Musolff, 2016). For example, in EU debates, even if MOTHER scenarios are rarely used and only occasionally convey a female partner or nurturing mother framing, this changed with Merkel's rise in the EU. Her German nickname Mutti (mother) became widely adopted and British commentators used it to mainly critique her leadership style and question the EU's nurturing qualities. This framing challenges traditional expectations, emphasizing the role of 'a single parent, or disciplinarian matron' rather than a nurturing mother image, thereby opposing the 'CARING MOTHER MARRIED TO STRICT FATHER and a NURTURANT NATIONAL LEADER' metaphor that typically symbolizes national leadership (Musolff, 2016: 37). This shift creates a 'strong figure-background effect', with the STRICT FATHER scenario functioning as 'a background against which the diverse uses

of THE MOTHER concept become meaningful, either as confirmation, as an emphatic negation or as a transformation into matron' (Musolff, 2016: 34 & 37).

The focus on scenarios is widely used in the analysis of illness metaphors, with WAR/VIOLENCE and JOURNEY scenarios likely being the two most prominent metaphorical scenarios relevant to this analysis (Nerlich, 2011; Camus, 2016; Semino et al., 2017a, 2017b & 2018; Chow, 2022). One of the framings that the first type of scenario might emphasize through its narrative structure is the suffering of humanity and society. For example, healthcare workers are described as fighting on the front lines against a virus that harms individuals and disrupts social institutions, with measures and systems for disease management serving as weapons to protect the public from the virus (Baş & Efeoğlu-Özcan, 2022). JOURNEY metaphorical scenarios, on the other hand, may imply coexistence with the illness, viewing the experience of illness as a journey, where the disease becomes a companion in life and travel, and different care approaches represent different paths (Semino et al., 2017b).

Changes among different participants can influence the framing of metaphorical scenarios and can be reflected through them. Chow (2022) compares metaphors used for cancer treatment in Chinese and English corpora, finding that although both employed WAR scenarios, the English corpus emphasizes framing cancer treatment as an active battle, granting greater agency to the treatment itself. In contrast, the Chinese corpus tends to focus on protection, framing treatment as a means of shielding organs from illness, with organs viewed as sources of energy to restore normal function, allowing the flow of positive qi(energy) to dispel harmful qi (such as cancer), reflecting the traditional Chinese medicine concept of the opposition between positive and harmful energies (Chow, 2022). Semino et al. (2017b) find that the relationship between cancer patients and their illness can influence the presentation of scenarios. For example, when patients are disempowered, the disease or treatment itself is described as attacking the patient, or the patient is framed as a traveller on a difficult journey, lacking control over the direction or outcome in the VIOLENCE and JOURNEY scenarios, respectively (Semino et al., 2017b). In contrast, when patients are empowered, they are

depicted as strong warriors actively participating in the fight against the disease or as travellers in charge of their journey, receiving support along the way in the two scenarios, respectively (Semino et al., 2017b; see Chapter 5.1).

In conclusion, ‘the scenarios-oriented approach helped us to refine our understanding of the metaphors’ degree of entrenchment in their sociocultural setting and the power to ‘frame’ its discourse’ (Musolff (2016: 133). This approach may not only highlight nuances of metaphorical framing to some extent but also demonstrate how metaphorical scenarios can suggest underlying social values and attitudes, which may in turn shape how discourse communities interpret and respond to health issues.

2.3.4 The Discussion of Three Approaches

As can be shown from Section 2.3.1 to 2.3.3, systematic metaphors, metaphoremes and scenarios can all be used to reflect the framing effects of metaphors. According to Cameron et al. (2010: 145) and Maslen (2016: 90), the systematicity of metaphor use exists on multiple levels, ranging from the linguistic level, focusing on the ‘repeated, coherent connections’ between the topic and the vehicle in systematic metaphors, to broader connections that link linguistic approaches with cognitive models, such as metaphor scenarios involving ‘multiple entailments across large collections of discourse data’.

Cameron et al. (2010:137) suggest that metaphor analysis can begin with the identification of systematic metaphors, analyzing them ‘as ways of “framing” the ideas, attitudes and values of discourse participants’. This process, however, must be grounded in the specific context and supported by a thorough and detailed analysis of the topics under discussion (Cameron et al., 2010). Deignan (2017) also indicates that without delving deep into the specifics of these topics, analysts might be tempted to draw connections and infer meanings based on the metaphorical vehicles alone, which can be misleading. Deignan (2017) provides an example where various metaphoric expressions within *BODY AND BODILY ACTION* vehicle group are

used to describe the topic of *schools* and *education*, which may suggest the systematic metaphor *EDUCATION IS PERSONIFIED AS A PERSON*, or *A SCHOOL IS A PERSON* without the surrounding context. However, when their specific contexts are considered as well, some of these examples do not follow the systematic metaphor, such as ‘... the changing *face* of teacher training’ (Deignan, 2017: 19). In other words, analysing the vehicle items alone may lead to an assumed interconnected meaning derived from these vehicle groups, but in some cases, this may not be justified.

Deignan (2017: 21) suggests that the analysis of framing can be complemented by focusing on ‘any syntagmatic, sequential, or narrative relationships constructed by figurative language in the texts, [such as metaphorical scenarios and metaphoreme] as opposed to the analysis of potential networks of structural correspondences [such as systematic metaphors]’. Cameron et al. (2010) and Maslen (2016) also state that complex scenarios composed of multiple interconnected systematic metaphors. Metaphor scenarios capture the implication of metaphor patterns in real-world discourse, bridging the gap between discourse-based and cognitive-based approaches to metaphor research (Semino et al., 2018).

Musolff (2016) states that in metaphor analysis, the evidence for scenarios is obtained from data points such as the frequency, distribution, and collocation of linguistic metaphors. Deignan (2017) expands on this by pointing out the subjective nature of analysing metaphors, particularly when considering a single use or a small number of uses of a term in one text. To address this, she uses the reference corpus, comparing the use of metaphorical expressions in the target corpus with their metaphorical uses in the reference corpus. For example, in order to analyse the evaluative stance of *every step of the way* in Morgan’s praise of the teacher training scheme, Deignan (2017) examines the metaphorical use of *every step of the way* in the Oxford English Corpus and finds that its ‘basic scenario’ typically conveys difficulty semantically, with three main subgroups: 1) struggles or resistance throughout a difficult path, 2) negative behaviours at every process, and 3) support during tough period (Mulsoff, 2007). Morgan’s usage falls into the third category, emphasizing the support provided by mentors to novice

teachers, aligning with the typical semantic pattern of this metaphor (Deignan, 2017). This examination of citations relevant to metaphorical expressions in the reference corpus, Deignan (2017) argues, provides evidence and deeper insight into the associations and evaluations linked to metaphors. Similarly, metaphoremes can also be analysed more broadly by comparing their uses with the reference corpus, as demonstrated in Section 2.2.2, with a particular focus on lexico-grammatical patterns (Cameron & Deignan, 2006). In conclusion, Deignan (2017) emphasizes the value of examining metaphors in terms of scenarios and metaphoremes, highlighting that such an analysis, especially when combines with analysis from a reference corpus, suggests additional evaluative meanings that are not accessible through structural-mapping analysis such as systematic metaphor analysis.

However, Semino et al. (2018) argue that metaphor scenarios may be too general to capture specific variations in use, which depend on the user, their intent, and the co-text or context. For instance, in the OUTCOME OF BATTLE scenario, expressions vary between conveying hope and empowerment (e.g., ‘still winning that battle’) and highlighting defeat and guilt (e.g., ‘not winning this battle’). While scenarios summarize linguistic metaphors at a general level, they may overlook significant contextual differences, affecting metaphor framing (Semino et al., 2018). Semino et al. (2018) highlight the value of combining corpus-based approaches, such as systematic metaphors and metaphoremes, to explore regular framing patterns. In their analysis of cancer-related metaphors in an online forum, users adopt military titles (e.g., Captain), fostering support and camaraderie. These titles, as metaphoremes, create a systematic metaphor unique to this community: *CANCER PATIENTS CONTRIBUTING TO THE ‘WARPED’ THREAD ARE HIGHLY RANKED MILITARY OFFICIALS*. This example proves that the framing implication of the metaphorical expressions on certain individuals needs to be examined from the context of the metaphorical expressions within the specific speech community. These specific situations may be missed by a relatively general scenario approach, while a discourse-based approach provides an opportunity to delve into these specific cases (Semino et al., 2018).

2.4 Corpus Approaches to Analyse Metaphors

Any linguistic phenomenon that is believed to be widespread can be systematically investigated through the analysis of large-scale natural language data, rather than relying on individual intuition or memory (Hunston, 2022). Corpus linguistics is a methodological approach that supports the analysis of authentic, large-scale language data, offering a more systematic and objective foundation for linguistic research (Sinclair, 1991).

This approach is applicable to the study of metaphor. As discussed in Section 2.1, CMT use constructed or recalled examples to support the theory (Lakoff & Johnson, 1980). These examples have been criticised for lacking systematicity, objectivity, and verifiability, making it difficult to substantiate theoretical claims about the frequency or conventionality (Deignan, 2017; Semino, 2017a). Corpus-based methods offer a way to empirically test such theoretical assumptions. In other words, corpus-based analysis of large quantities of authentic texts enables researchers to find the frequency, linguistic patterns, and contextual functions of metaphorical expressions in real uses, while reducing reliance on intuition and subjective judgment (Charteris-Black, 2004). Such studies typically combine quantitative corpus analysis with qualitative interpretative approaches (Partington et al., 2013).

This hybrid approach, which combines corpus-based analysis with discourse analysis and makes use of relatively small, purpose-built corpora, has been increasingly adopted (Charteris-Black, 2004). It is particularly effective for investigating metaphor use in specific communicative contexts, as relevant corpora typically contain texts from a specific domain. This provides enough data to identify recurring metaphorical trends and patterns and allows researchers to explore both the linguistic patterns and the ideological functions of metaphor within that context (Deignan, 2017). For example, Charteris-Black (2012), in a study of interviews with individuals experiencing depression, identifies a recurring Container metaphor, where depression is either depicted as surrounding the individual or as something repressed within them. In other words, the person is metaphorically constructed both as a container and

as contained. While metaphor types are broadly similar across genders, women tend to use mixed metaphors and imagery of release, flow, and breaking, suggesting a more emotionally expressive narrative style (Charteris-Black, 2012). Similarly, Koteyko et al. (2008) examine metaphorical framing in UK media coverage of MRSA and observe a shift in metaphor use over time. Initially, metaphors tend to personify the bacteria, framing MRSA as a malicious agent and placing responsibility on the virus itself. However, in later stages of the discourse, responsibility is increasingly shifted onto healthcare institutions and professionals, such as through comparisons between hospital hygiene and slaughterhouse standards. These studies demonstrate that corpus-based approaches can show patterns and functions of metaphors in specific social contexts.

In conclusion, corpus-based methods enhance the systematicity of metaphor research, provide empirical support for theoretical claims, and help to illuminate how language functions in specific communicative contexts. Therefore, in my study, I adopted a corpus-based approach to examine the use of metaphor in the context of cancer and Covid-19 prevention.

2.4.1 Concordance Analysis

Hunston (2022) writes that, concordance analysis is a core tool in corpus-assisted discourse studies, which displays a node word within its immediate co-text, allowing researchers to observe how the word is used in natural context. This facilitates the identification of pragmatic patterns, metaphorical uses, and evaluative meanings (Gillings et al., 2023). In other words, as Sinclair (1991) and Hunston (2022) suggest, concordance lines can offer insight into the interaction between language and social structures. For instance, they can show whether a particular group is discursively positioned as agentive or passive, or whether certain expressions are repeated across texts to promote specific ideological stances (Gillings et al., 2023).

As Hunston (2022) emphasizes, concordance analysis is exploratory rather than hypothesis driven. It involves qualitative interpretation of repeated patterns to show subtle discourse functions, such as the evaluative stance embedded in metaphorical framings.

Deignan (2017), in her analysis of the narrative effects constructed by metaphorical mappings, draws on reference corpus data to examine how specific words and phrases are used across a wider range of authentic texts. This approach allows her to identify whether such expressions carry particular narrative or evaluative connotations. For example, in analysing the connotative meaning of *be parachuted in(to)* when used metaphorically, Deignan (2017) examines its concordance lines in the Oxford English Corpus, where the phrase occurs 1,073 times, with a random sample of 500 citations analysed in detail. Among these, 202 were identified as metaphorical uses, most of which describe someone being inserted into an organization or situation from above. Citation analysis reveals that in these metaphorical contexts, the phrase often carries a negative evaluative meaning, suggesting that the individual is imposed upon the setting by an external authority, and may lack legitimacy, contextual understanding, or local support. A similar method is employed by Semino et al. (2017a), who demonstrate how corpus method can be used in the metaphor analysis in the health communication context. In their analysis of the phrase *picked a fight with*, used by a cancer patient to describe the illness, reviewing concordance lines from the reference corpus, the Oxford English Corpus, they show that this expression is typically associated with unprovoked, irrational aggression. This suggests that the speaker conceptualise cancer not simply as a battle, but as an unjust and personal attack requiring retaliation. These studies illustrate how concordance analysis, through the accumulation of citation-based evidence, can uncover typical implicit evaluations associated with metaphorical language use.

Although concordance analysis is a central tool in corpus-assisted discourse studies (CADS), Gillings & Mautner (2024) identify a range of challenges that can hinder its effectiveness. These include the presence of excessive technical jargon, ambiguous referring expressions, lines unrelated to the research question, unclear acronyms, insufficient co-text, missing source

attribution, non-standard syntax, and noise within the corpus. Such issues can make certain concordance lines uninterpretable or misleading and emphasize the fact that concordances are constructed and selective in nature (Gillings & Mautner, 2024). To address these limitations, Gillings & Mautner (2024) propose ten practical recommendations grounded in transparency. They are establishing clear criteria for filtering lines, applying those filters in distinct stages, distinguishing between truly uninterpretable and merely irrelevant data, and retaining excluded lines for possible future analysis. Researchers are also advised to annotate whether co-text expansion was necessary for interpretation, allocate sufficient time for close reading of extended extracts, and avoid presenting concordance lines as results in themselves. Importantly, Gillings & Mautner (2024) caution against selectively highlighting only clear-cut examples, urging researchers to embrace the messiness and ambiguity inherent in natural language data. In other words, the reliability of concordance analysis depends on technical procedures and the researcher's methodological awareness and interpretive judgement.

In my own research, I followed these principles in order to minimise the interpretability challenges associated with concordance analysis. For instance, I attempt to apply transparent and consistent filtering criteria and documented the decision-making. These methodological choices are discussed in detail in Section 4.7.

2.4.2 Collocation analysis

Hunston (2002: 12) defines collocation as 'the statistical tendency of words to co-occur'. As one of the earliest scholars to introduce collocation as a linguistic term, Firth (1957) notes that a word's semantic value is not an inherent property but is shaped by the company it usually keeps. Xiao & McEnery (2006) expand this and observe that frequent co-occurrence with certain words can lead a term to develop an evaluative connotation, which may convey positive, negative, or ironic meanings. Such tendencies are often difficult to identify through intuition or dictionary definitions alone. Instead, they require systematic analysis based on large-scale corpus data, as demonstrated by Louw (1993). For instance, the

verb *cause*, though semantically neutral, frequently co-occurs with negative terms such as *death*, *damage*, and *disease*, resulting in a negative evaluative meaning even in neutral contexts (Xiao & McEnery, 2006). Such connotations are formed through repeated uses across discourse, demonstrating the value of collocation analysis in showing implicit attitudinal meanings embedded in language use.

This evaluative tendency, shown through the analysis of collocational patterns, also appears in metaphor analysis. Deignan & Potter (2004) show that the noun *mouth*, when used metaphorically to describe someone's manner of speaking, tends to appear with negative collocates such as *foul*, *filthy*, and *big*. Collocation analysis implies a negative connotation associated with *mouth* in metaphorical uses. Also, Deignan (2007) highlights that some expressions retain metaphorical and affective associations even when they appear to be used literally. For instance, *well-heeled* literally refers to wearing good shoes but is widely understood as a metaphor for being wealthy, refined, or upper class. As a result, even seemingly literal use of *well-heeled* may imply inferences about affluence or high social status. These examples demonstrate how collocation patterns contribute not only to evaluative meanings but also to the metaphorical framing of concepts, reinforcing the importance of collocation analysis in understanding subtle layers of meaning in discourse.

Recent developments in corpus linguistics expand the application of collocation analysis through tools such as collocation networks, which can show underlying semantic structures across conceptual domains. For instance, Brezina (2018) points out that domains of TIME and MONEY share common collocates such as *spend*, *save*, and *waste*. Such overlap may suggest that both *time* and *money* domains are conceptualised in terms of quantifiability and consumption, indicating a metaphorical mapping between the two. Similarly, the preposition *against* frequently occurs in both WAR and ARGUMENT domains, indicating that both are conceptualised through notions of opposition.

In summary, a word's evaluative meaning is not only determined by its immediate context but may also arise from a long-term history of co-occurrence with collocates that carry emotional or ideological connotations. Collocation analysis can therefore help identify a word's tendential evaluative meaning, which may remain consistent even when the word occurs with less typical or unfamiliar collocates in both metaphorical and literal contexts (Xiao & McEnery, 2006).

2.5 Approaches in My Research

Within the discourse dynamics framework, metaphors are understood as ways of talking about and potentially thinking about one thing in terms of another, where the two things are different, but the similarity can be constructed, which is not objectively given but co-constructed by speakers and listeners during the production and interpretation of metaphor (Cameron et al. 2009). In other words, metaphors emerge through language use, may become stabilized in discourse over time and remain a degree of variability. Metaphors can be used to frame discourse topics, shaping understanding, reasoning, evaluation, and emotional responses (Cameron et al. 2009). This definition of metaphors is followed in my study.

Similes and analogy and other explicit comparisons can also be included with a broad understanding of metaphor and are treated as a type of metaphorical expression in this study. While this study differentiates between metaphorical expressions and similes or analogy in certain contexts, such as in the detailed analysis of specific cases, metaphor is broadly used to refer to the general metaphorical forms in the corpus.

The discourse dynamics framework allows for a multidimensional analysis of metaphor use and its framing functions, ranging from systematic metaphors and metaphoremes at the linguistic level, which refer to metaphorical expressions that recur and gradually become conventionalised in discourse, to metaphor scenarios at the cognitive and social level

(Cameron et al., 2010). Adopting a comprehensive perspective that incorporates all three approaches, is necessary to overcome the limitations of analysing linguistic metaphors from a single angle. Omitting any one of these dimensions may result in a failure to recognise how metaphors in discourse construct viewpoints, express stances, and influence interpretation and evaluation (See Section 2.3.4). Therefore, adopting metaphor scenario, systematic metaphor, and metaphoreme enables me to capture metaphor patterns and functions in discourse in detail. For clarity, in my study, metaphor scenarios are presented in all capital letters without italics while systematic metaphors are presented in all capital letters and italics.

According to the discourse dynamics framework, metaphor analysis begins with the identification of linguistic metaphors, refers to vehicles, followed by the grouping of these vehicles based on semantic similarity, refers to vehicle groups, and the linking of each vehicle group to a corresponding topic. This process results in the formation of a systematic metaphor (Cameron et al., 2010). Vehicle groups are typically presented in fully capitalised italics to indicate shared semantic domains (ibid). Although the process of identifying vehicle groups is included in the analysis (see Section 4.5), the identified vehicles may also contribute to other metaphorical patterns such as metaphoric scenarios in addition to systematic metaphors. To avoid potential confusion between different metaphorical patterns, this study uses words with an initial capital letter (e.g. Journey metaphor) to group metaphorical expressions from the same semantic domain.

After identifying linguistic metaphors in the corpora and grouping them into vehicle groups, I identified metaphorical patterns they construct: systematic metaphors, metaphor scenarios, and metaphoremes. In many cases, systematic metaphors and scenarios co-occur in the same stretch of discourse. My approach to selecting which pattern to present as the most satisfactory account is based on the strength and coherence of the evidence. When only a few linguistic metaphors are found and are too fragmentary to establish a systematic metaphor, but contribute to a coherent narrative element, they are analysed as part of a metaphor scenario. For example, *kick-start* and *switch* in Example 1 & 2 may contribute to a systematic

metaphor *IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS A SHIFT IN MECHANICAL MOVEMENT*, while *overhaul* and *MOT* in Example 3 & 4 may lead to a systematic metaphor *IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS MECHANICAL REPAIR*. Individually, these expressions may not provide sufficient evidence to establish a systematic metaphor. However, when considered together, they form a coherent MECHANICAL MOVEMENT scenario with a narrative structure of activating, adjusting, and maintenance.

Example 1 ... as a *kick-start* moment to be more active and eat more healthily, ... (cancer-Daily Mail-04/01/22).

Example 2 Making sure you get your five portions of fruit and vegetables a day and *switching* to wholegrain foods (cancer-The Times-06/04/20).

Example 3 ... jumped at the chance to *overhaul* their lifestyles (cancer-Daily Mail-12/09/20).

Example 4 ... how to give yourself and your family a cancer *MOT* (cancer-The Sun-28/02/21).

When both a systematic metaphor and a scenario are well supported by the data, I prioritise the systematic metaphor, as it serves as ‘the starting point’ for the analysis of the systematicity of metaphors (Cameron et al., 2010: 135). In other words, systematic metaphors provide the foundational structure for tracing recurring metaphorical patterns across discourse. This is particularly appropriate where the main analytical focus is how a vehicle–topic connection becomes locally and temporarily systematic in the discourse, and where the analysis of its framing function does not primarily depend on a specific set of narrative elements, including participant, their roles, sequences of action and evaluative assumptions.

As discussed in Section 2.3.4, analysis at the level of metaphor scenarios can complement systematic metaphor analysis by examining how narrative relations are constructed (Deignan, 2017; Semino et al., 2018). In cases where the metaphorical pattern emphasizes narrative

structure, I present the scenario as the more analytically appropriate pattern. For example, linguistic metaphors suggesting the RELIGION FAITH scenario can also contribute to the systematic metaphor *IMPLEMENTATION OF COVID-19 PREVENTATIVE MEASURES IS RELIGION* (See Section 5.6). However, focusing only on this systematic metaphor would obscure the narrative elements that frame scientists and politicians as prophets and pious preachers or followers within a belief system. Similarly, the MARTIAL CONTROL scenario, the CIVILIANS UNDER ATTACK scenario, the GROUP-AGAINST-GROUP CONFLICT scenario and the REBELLION AGAINST AUTHORITY scenario are presented as scenarios because they draw on narrative elements, such as who initiates the action, who is positioned as the target or victim, what form of force is used, whether the action is defensive or aggressive, and what is the outcome of a war (See Section 5.2.1 & 5.2.2). If these patterns were analysed only as instances of the systematic metaphor *IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS WAR* and *IMPLEMENTATION OF COVID-19 RESTRICTIVE MEASURES IS WAR*, these differences in participant roles, conflict relations, forms of action and evaluative outcomes would be obscured. In such cases, analysing how linguistic metaphors construct a scenario provides a more comprehensive account of the framing function. A comparable case can be found in the Journey metaphors. The JOURNEY scenario, the DIFFICULT AND DELAYED JOURNEY scenario and the DIRECTIONAL JOURNEY scenario are presented as the more analytically appropriate pattern since their framing functions depend largely on narrative elements such as who controls or leads the journey, whether the journey is shared or accompanied, the condition of the road, the mode or speed of travel, the condition of travellers, the direction of movement, and the final destination (See Section 5.3.1 & 5.3.2). Although linguistic metaphors suggesting these scenarios can also contribute to the systematic metaphors *IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS MOVEMENT*, *IMPLEMENTATION OF COVID-19 PREVENTATIVE MEASURES IS MOVEMENT* and *CHANGES IN COVID-19 RESTRICTIVE MEASURES ARE MOVEMENT*, analysing them as systematic metaphors would obscure the more specific journey-based relations constructed in the data.

There are also cases where systematic metaphors are embedded within metaphor scenarios. For example, the HIDDEN OBSTACLES REMOVAL and PASSIVE CONFINEMENT scenarios each contain at least one systematic metaphor (See Section 5.10). When discussing these cases, I identify the relevant systematic metaphors, but the focus remains on the scenarios themselves. This is because systematic metaphors often interact with other fragmented or limited linguistic metaphors, which provide insufficient evidence to establish a systematic metaphor or scenario on their own to jointly construct a coherent scenario.

Lexical items forming these metaphorical patterns are then analysed through concordance and collocation methods with the help of the reference corpus, which provide cumulative evidence of typical evaluative tendencies. This process allows me to explore how metaphorical patterns are used to frame cancer prevention and Covid-19 prevention. For metaphor scenarios, I further identify narrative elements, which are linguistic components connected through specific relations or sequences to construct a coherent metaphorical narrative.

Chapter 3 Illness, Illness Prevention and Metaphors

This chapter consists of two sections reviewing previous research on metaphors associated with cancer and Covid-19 and how prevention is conceptualised. Section 3.1 reviews previous research on metaphors related to cancer and its prevention, while Section 3.2 reviews studies on metaphors of Covid-19 and its prevention.

3.1 Cancer, Cancer Prevention and Metaphors

Hippocrates compared cancer to a moving crab, leading to the birth of the term cancer today (Rasnik, 2012). Since then, different kinds of metaphors are used to describe cancer, the use of which is affected by various factors, including the type of cancer, the experience of getting the cancer and treatment measures (Jerome & Liaw, 2020).

Research focusing on the metaphorical analysis of cancer discourse has shown that War & Violence metaphors have been among the most dominant metaphorical patterns used to conceptualise this domain (Reisfield & Wilson, 2004; Semino et al., 2017b; Hommerberg, et al., 2020). Within this metaphorical framing, cancer is usually constructed as an enemy to be defeated, the patient is described as a fighter, and the body becomes the battlefield. War & Violence metaphors appear in the discourse of patients discussing their illness, experts' views on cancer and the general public's perception of cancer (Potts & Semino, 2017; Semino et al., 2018; Woodgate & Busolo, 2017). The prevalence of these metaphors can be attributed to their grounding in a basic and widely shared conflict schema, which makes them cognitively accessible and rhetorically effective across contexts (Flusberg et al., 2018). As Flusberg et al. (2018) suggest, such metaphors offer a familiar structure for interpreting difficult and complex experiences and reliably convey an emotional tone of urgency, fear, or danger. For example, both war and cancer are often seen as life-threatening conditions that require strength, endurance, and strategic response. In this sense, the metaphor helps people make sense of cancer as an overwhelming and high-stakes experience. Nevertheless, despite their

widespread use in cancer discourse, War & Violence metaphors have also drawn considerable criticism.

One of the criticisms is that war metaphors moralise illness by framing recovery as a personal victory and, conversely, recurrence or death as a form of failure (Reisfield & Wilson, 2004). Within this framing, patients are portrayed as *fighters* fighting against disease, while survivors are celebrated as *heroes* (Little et al., 2002; Harrington, 2012). Such framing obscures the complex biological, environmental, and social factors that shape illness trajectories, and instead reduces outcomes to questions of willpower or determination, turning medical outcomes into indicators of personal success or failure (Reisfield & Wilson, 2004). As a result, individual responsibility is intensified, and blame is often shifted onto the patient. Those who ultimately fail to improve may be viewed as not having fought hard enough and may therefore experience guilt or be seen as personally at fault (Demjén & Semino, 2016). Moreover, the transition to palliative care or end-of-life support is implicitly construed within this metaphor as a kind of surrender or failure (Reisfield & Wilson, 2004). It can be concluded that War & Violence metaphors implicitly suggest that failure to recover is a consequence of personal inadequacy, which leads to blame attribution and fosters a sense of defeat and moral failure in patients.

War & Violence metaphors have the potential to intensify public perceptions of disease as a threat, which may exert a range of negative emotional effects on patients (Degner et al., 2003; Miller, 2010). As Miller (2010) points out, although terms such as *aggressive* are standard in cancer discourse, their underlying military connotations may evoke unnecessary fear and psychological resistance among patients. This concern is supported by Degner et al.'s (2003) large-scale study of 1,012 women with breast cancer, which suggest that those who conceptualised cancer as an *enemy* and describe their bodies as being *attacked* and *invaded* are more likely to report feelings of helplessness, lack of control, and loss of autonomy. Although many of these patients believe they had to fight, they may lack confidence in their ability to overcome the illness. A three-year follow-up study further shows

that patients who frame their illness as a form of punishment or a hostile *enemy* reported significantly higher levels of depression and anxiety, as well as lower emotional functioning and overall quality of life (Degner et al., 2003). This suggests that while War & Violence metaphors may serve to motivate patients, they can also reinforce feelings of defeat and emotional exhaustion.

Such psychological consequences may be related to the structural disempowerment embedded within War & Violence metaphors. Within such framings, patients are often positioned not as active agents but as passive positions upon which the conflict takes place. Semino et al. (2017b) emphasise that the emotional effects of War & Violence metaphors are relevant to their underlying role assignments: in patients' discourse, cancer is described as *attacking from the inside* or *invading*, while the patient is described as a vulnerable and reactive subject. For instance, some patients in remission described themselves as *time bombs*, expressing a sense of fragility. In addition, War & Violence metaphors are frequently used to characterise the treatment process. Many patients describe chemotherapy or radiotherapy using such metaphors, such as *a hammering* or *being battered*, highlighting the double burden of both fighting disease and enduring aggressive medical interventions. These expressions reinforce a perception of bodily vulnerability and passivity, which exacerbates their perception of physical fragility and passive situation. Semino et al. (2017b) argue that War & Violence metaphors can have disempowering effects since they emphasize the experience of conflict and opposition. It is relevant to Dancygier & Sweetser's (2014: 67) analysis of War & Violence metaphors, which highlight competitive metaphorical structures, where 'at least two parties, consciously acting towards incompatible goals', and only one can succeed. In such contexts, agency is inherently limited to one side, while the other is consequently disempowered. When applied to illness discourse, this kind of structural mapping tends to position patients in disempowered and passive roles, which can increase their psychological and emotional vulnerability. Similarly, Alexandrescu (2014) argues that such metaphors can amplify public perceptions of disease as a serious threat, potentially leading to irrational or counterproductive policy responses.

War & Violence metaphors have been criticised for promoting a worldview that is ‘masculine, power-based, paternalistic and violent’ (Hendricks et al., 2018: 268). By casting cancer as an enemy and patients as fighters, this framing reduces a complex medical and emotional experience into a simplistic moral conflict between us and them, which oversimplifies the ethical and emotional complexity of illness (Le Guin, 2012). This oversimplification can also influence how society understand and respond to cancer. Coleman (2013) argues that War & Violence metaphors may impose the illusion of clarity through presenting cancer in terms of clear victories and defeats. He criticises this language as 'lazy, simplistic jargon' that distorts political thinking and leads to misplaced priorities (Coleman, 2013: 31). Within this mindset, aggressive treatment becomes the default, while prevention and other long-term care strategies may be sidelined (Coleman, 2013). Similarly, Larson (2005) also warns that militaristic language fosters a simple and reactive mindset, limiting problem-solving and delaying more thoughtful responses since such metaphors may prioritise immediate action and opposition.

In response to growing awareness of the limitations of War & Violence metaphors, both academic research and clinical practice have begun to explore and promote alternative metaphorical frameworks (Demjén & Semino, 2016; Semino et al., 2017a). According to Semino et al. (2017a), recent official documents on cancer care in the UK have avoided using War to frame cancer, preferring to use Journey metaphors to describe the cancer experience as a *journey* and the different treatments as *pathways*. This shift reflects a broader reassessment of metaphor choices in public health discourse. Demjén & Semino (2016) introduced the concept of a ‘Metaphor Menu’, designed to offer cancer patients a diverse range of metaphorical resources for expressing and making sense of their experience (<http://wp.lancs.ac.uk/melc/the-metaphor-menu>). The Menu consists of authentic expressions drawn from patients’ language data and other sources, presented with images and quotes. The main concept of the ‘Metaphor Menu’ programme is that metaphor use should respect individual differences, rather than limiting patients to certain fixed metaphors. As the variety

of options in the Menu suggests, patients should be encouraged to choose metaphors that best reflect their personal feelings and perspectives. Demjén & Semino (2016) emphasise that the intervention of metaphors should not replace patients' own language, but instead expand their expressive choices, helping them use metaphor as a tool for emotional support and understanding.

Similarly, Flusberg et al. (2018) suggest that War & Violence metaphors should not be avoided entirely and recommend thoughtful use: people should clarify which aspects of illness resemble war and violent actions and offer alternative metaphors when needed in the discourse. While acknowledging their potential risks, they argue that the effects of War & Violence metaphors depend on the specific communicative context and may lead to both positive and negative outcomes (Flusberg et al., 2018). For instance, war-related language can help draw public attention to the seriousness of a disease, mobilise resources for research, and even offer some patients a sense of strength and direction (ibid). Czechmeister (1994) also highlights the inherently contextual nature of metaphors, noting that metaphors can function as a *double-edged sword*, depending on how they are used in healthcare interactions. Semino et al. (2017a) and Demjén & Semino (2016) further suggest that War & Violence metaphors can also have empowering effects. Some patients actively adopt such metaphors when expressing pride in their recovery, or when seeking to motivate themselves or others. As they suggest, the effectiveness or harm of a metaphor should be judged not by its type, but by the way it is employed in a particular context since 'Different metaphors work differently for different people at different times in different contexts' (Demjén & Semino, 2016: 388; Semino et al., 2017b).

In addition, research by Martin et al. (2024) suggest that War & Violence metaphors may also be effective in motivating preventative behaviour. Their analysis of how women use metaphor to communicate their experiences with BRCA genetic testing shows that within the framing of risk as a *battle*, *disaster*, or *wreckage*, participants express a desire to take control and value the opportunity to pursue preventative strategies rather than being *reactive and having to*

battle. Musso & Wakefield (2009) examine Canadian newspaper articles of cancer risk and prevention and find that War & Violence metaphors place the individual at the centre of the *battle*, encouraging people to *guard* themselves and *aid in the fight*. Similarly, Landau et al. (2018) show that when the metaphors framing health risks are consistent with those describing responses, War & Violence metaphors can effectively increase preventative intentions. For example, framing UV rays as an *enemy assault* and sunscreen as the *defense* or *armor* enhances concern about skin cancer and people's intention to use sun protection. Moreover, the persuasive effectiveness of such metaphors is impacted by characteristics of the recipients (Landau et al., 2018). Specifically, individuals with a strong fear of War & Violence metaphors show greater concern about skin cancer when sunlight is framed as an *enemy*, leading to increased preventative motivation (ibid).

However, numerous studies have shown that War & Violence metaphors can discourage people from engaging in preventative actions (Kline, 1999; Hauser & Schwarz, 2015 & 2020; Woodgate & Busolo, 2017; Landau et al., 2018 & Ho, 2021).

Hauser & Schwarz (2015) argue that War & Violence metaphors may decrease people's intentions to engage in self-limiting preventative behaviours, such as quitting smoking, and reducing alcohol intake, requiring restraint, which is irrelevant to the aggressive framing. Similarly, War & Violence metaphors fail to promote self-enhancing preventative behaviours, such as increasing the intake of high-fibre foods. In a follow-up study of four experiments, Hauser & Schwarz (2020) find that wars or battles are generally perceived as difficult, and reading about someone *battling* cancer can increase the perceived difficulty of cancer treatment. Without clear preventative options, this perception can lead to avoidance or resistance, reducing the likelihood of taking preventative actions. Moreover, War & Violence metaphors imply a tendency to 'yield, give up control, and surrender to the attacker', which possibly increases fatalistic beliefs about cancer (Hauser & Schwarz, 2020: 1699). High levels of cancer fatalism are relevant to lower participation in preventative practices such as screening. Although war framing also involves 'vigilance for monitoring', the studies show that War &

Violence metaphors do not increase participants' intention to seek medical help when imagining potential cancer symptoms (Hauser & Schwarz, 2020: 1699). In other words, such metaphors do not promote alertness and intentions to take preventative measures. Woodgate & Busolo (2017) also find that describing cancer as a war is common among teenagers, who are frequently exposed to these messages through mass media and the message of encouraging people to fight, as conveyed by War & Violence metaphors, can be misleading since it may conflict with efforts to adopt self-limiting preventative behaviours. Landau et al. (2018) identify the risk of *metaphoric misfit*, which occurs when the metaphor used to frame a health risk does not match the framing used for the recommended response. When such inconsistency occurs, the persuasive impact of the metaphor weakens, and in some cases, may even lead to negative outcomes. For example, if UV radiation is metaphorically framed as an *enemy*, but the following sun protection advice is presented in literal description rather than a matching metaphor such as *armor*, the audience may perceive the recommended measures as insufficient to confront the threat, possibly reducing both individuals' concern and intention to take protective actions.

War & Violence metaphors used in breast self-examination discourse to emphasise individual agency, which possibly become oppressive since they may lead to victim-blaming (Kline, 1999). Similarly, Ho (2021) examines online lung cancer awareness campaigns and points out that they frequently adopt militaristic and weapon-based metaphors. For example, cigarettes are compared to guns to highlight their danger; a lung-shaped ashtray filled with cigarette butts symbolises how smoking blackens the lungs; and hospital beds are metaphorically framed as cigarettes to link smoking to death. While such campaigns possibly aim to convey warnings, the emphasis of relevant conceptual themes on smoking as the primary cause of lung cancer may result in the stigmatisation of smokers and provoke fear or disgust towards them.

Apart from metaphors discussed above, other studies have also explored cancer prevention and metaphors beyond the War & Violence framings (Ho, 2021; Spina et al., 2018; Lemmo et al., 2022 & Martin et al., 2024). For instance, Lemmo et al. (2022) analyse fictional narratives

written by young women to identify their understanding of cancer risks and relevant care through metaphors. The study finds that while young women frame illness as internal attack, they tend to frame prevention as a process of continuing monitoring. Illness is frequently metaphorically constructed as a random event, which weakens the perceived link between cancer and personal responsibility, thereby reducing motivation for preventative action. Furthermore, when imagining preventative activities, participants metaphorically describe the waiting room as a *merciless purgatory*, reflecting emotional discomfort and helplessness associated with prevention (Lemmo et al., 2022).

Spina et al. (2018) investigate how Latina women with various degrees of collectivist and familism values respond to metaphorical or literal cancer prevention messages. Participants are randomly assigned to read a message about smear screening that either employs a family metaphor, which presents screening as an act of caring for family or presented the information literally. The study finds that those with stronger collectivist and familism orientations show higher screening intentions when exposed to the metaphor, while these values have no effect under the literal framing. This highlights the persuasive power of culture relevant metaphors in promoting preventative health behaviours.

Martin et al. (2024) find the framing of knowledge obtained from the BRCA genetic testing as power allows women to frame the information of a positive BRCA result as valuable and empowering, enabling them to take control over their health. This framing is especially common among women who have undergone or plan to undergo preventative strategies since it helps transform genetic risk into a source of agency and decision-making. In addition, the metaphor of *releasing or carrying a weight* conveys the psychological burden of cancer risks. For BRCA-positive individuals, preventative strategies are described as a form of release that alleviates uncertainty and anxiety about the future (Martin et al., 2024).

Ho (2019) examines metaphors in online breast cancer campaigns and identifies the framing of breast self-examination as automotive components. She also identifies the combination of

War & Violence metaphors, such as *beat* and *fight* and the image of female superheroes performing breast self-exams, constructing conceptual mappings WOMAN IS A FIGHTER and BREAST CANCER IS AN ENEMY. Such metaphors empower women and encourage them to value themselves.

It can be concluded that metaphors shape how people perceive cancer prevention and influence both the evaluation and implementation of preventative decisions. Among them, War & Violence metaphors receive significant attention. Although their impacts depend on various factors such as how they are used in context and recipient's acceptance of such metaphors, they face considerable criticism and a range of alternative metaphors are identified. Most of relevant research focus either on how metaphors shape individuals' willingness to take cancer preventative measures or on how people use metaphors to communicate and make sense of prevention strategies. However, as far as I am aware, relatively little research examine what metaphors and how they are used in mass media, such as newspaper articles to communicate cancer prevention messages to the public.

3.2 Covid-19, Prevention and Metaphors

It seems that in the discourse on the Covid-19 epidemic War & Violence metaphors played a significant role in the early stage of the epidemic almost all over the world (Neshkovska & Trajkova, 2020; Abdel-Raheem, 2021; Hanne, 2022; Zhang et al., 2022 & Musolff, 2022). According to Neshkovska & Trajkova (2020) and Musolff (2022), in the early days of the pandemic, British media reports and government speeches frequently used military and violent framings to describe Covid-19 pandemic and relevant prevention measures, such as *Blitz*. Hanne (2022) also states that military metaphors are used to describe the epidemic in almost all walks of life, in both spoken and written language. This kind of metaphorical expression may increase public understanding of this global health threat, draw attention to the epidemic, emphasise the responsibility to comply with public policy, and build temporarily calming and uniting effects (Semino, 2021; Hanne, 2022; Musolff, 2022).

However, the wide use of War & Violence metaphors is met with many objections from public voices in the early stage of the pandemic, including journalists: 'Pandemics are not wars: There are better metaphors to describe what's happening right now' (Wilkinson, 2020) and academics (Jaworska, 2020, Semino, 2021 & Hanne, 2022).

In the context of Covid-19 epidemic, the widespread use of War & Violence metaphors leads to high levels of anxiety among the public (Peng & Hu, 2022). For example, Nerlich & Jaspal (2021) analyse the framing of social distancing as the weapon in *The Times* and *The Sun* and find that it present social distancing as a disruptive intrusion into daily life. This framing may reflect a populist discourse style that evoke emotional responses through embedding social distancing within broader battle plan and doomsday narratives, which may lead to resistance among the public. Stratton (2021) suggests that declaring war on the pandemic may contribute to wartime measures, including panic buying of toilet rolls and other daily necessities, out of anxiety about warlike rationing. Another obvious concern is that such metaphors can enhance the status of leaders by legitimising xenophobia, as exemplified by the US President Donald Trump repeatedly referring to the epidemic as the 'China virus' (Hanne, 2022). In other words, with the combination of frequent War framing, it may have generated animosity towards specific ethnic groups and increased the power and control of leaders over the population. Moreover, Semino (2021) argues that military metaphors inhibit self-limiting behaviours that can reduce the risk of infection, such as staying at home, contrary to the unrestrained and positive behaviours they may encourage (Hauser & Schwarz, 2015). This concern is echoed by Sabucedo et al. (2020), who point out that in the absence of a clearly defined endpoint, War & Violence metaphors fail to support long-term, passive strategies such as isolation, which require patience rather than aggression.

In general, the use of War & Violence metaphors has received numerous criticisms. Neshkovska & Trajkova's (2020) study on metaphors used to describe the pandemic demonstrates that in most politicians' speeches, such metaphors appear less and less over

time. Although this observation is based on data from the early stages of the outbreak, more recent research confirms a similar trend. Musolff (2023), focusing on mainstream print and online political discourse in the UK, notes that while UK media and government initially framed Covid-19 prevention in wartime terms, these metaphors largely disappeared from later public discourse. This shift possibly reflects growing awareness that total victory over the virus is unfeasible, requiring long-term strategies of co-existence, making such metaphors less sustainable and less persuasive in the long term (Musolff, 2023).

Wicke & Bolognesi (2020) state that the 'Metaphor Menu' programme proposed by Semino et al. (2017a) can be used to provide alternative metaphors for the widely used war imagery in epidemic discourse. This approach of encouraging a range of different metaphors may help to explain the complexities of the epidemic and its consequences, and 'to reflect different aspects, perspectives, and needs' (Semino, 2021). In response, Olza et al. (2021) propose the #ReframeCOVID initiative, which aims to collect metaphorical frameworks for the epidemic in any language that can be used as an alternative to war metaphors, and to study their use and impacts.

Semino (2021) used data from #ReframeCOVID and focuses on Sports metaphors, Journey metaphors and Natural Disaster metaphors. Sports metaphors, similar to military framings, describe the virus as an opponent and the process of healing as a competition. For example, 'You haven't won the cup yet, but what it does is it tells you that the goalkeeper can be beaten.' (#ReframeCovid Line 31). According to Beattie & Priestley (2021: 7), New Zealand's Prime Minister, Ardern defines herself as 'sports coaches motivating their "team of five million"'. In this framing, the virus becomes the opponent, New Zealanders are the players, and the metaphor works to motivate the public through a sense of collective identity. Burnette & Long (2022) speculate that the Sports metaphors may help to emphasise solidarity and loyalty in response to the epidemic.

Journey metaphor is also a common metaphorical expression used to describe the Covid-19, as for cancer and other diseases (Deng et al., 2022; Neshkovska & Trajkova, 2020). The experience of getting a disease is seen as a path or a dangerous journey through a variety of complex terrains and situations while the virus is a difficulty that hinders the journey (Harrington, 2012; Neshkovska & Trajkova, 2020). According to Semino (2021), Journey metaphors emphasise long, difficult processes with uncertain conclusions. For example, 'Enjoy your holiday, but please with responsibility! The situation was not yet over the hill, the aim was to stabilise in the long term' (#ReframeCovid Line 198). Similarly, in a metaphor analysis of Wuhan residents' Covid-19 experiences, Deng et al. (2022) find that Journey metaphors are mainly used to express the exhausting and uncontrollable nature of illness. Patients describe repeated positive test results as a never-ending and stressful journey, and framed recovery as a path more difficult than any illness they had faced before. In this context, Journey metaphors tend to be disempowering, emphasising vulnerability and the loss of agency. Although not explicitly framed as journeys, related Movement metaphors appear in the description of home isolation among older adults in the UK (Wilding et al., 2023). They identify metaphors such as the Moving Ego, where the self progresses through static time and the Moving Time, where time advances toward the self, capturing altered perceptions of time and life during lockdown.

In addition, Natural Disaster metaphors are common in the epidemic discourse, where the storm and tsunami framings become dominant (Wicke & Bolognesi, 2020; Kremer & Felgenhauer, 2022). For example, 'We consider the Covid-19-tragedy as a tsunami which is moving from east to west along with economic lock-downs.' (Kremer & Felgenhauer, 2022: 6). Words that appear frequently in these two frameworks include *waves*, *storms*, *tsunamis*, *disasters* and *tornadoes*, which seem to be related to the arrival, spread and possible consequences of the epidemic (Wicke & Bolognesi, 2020; Semino, 2021; Kremer & Felgenhauer, 2022). Kremer & Felgenhauer (2022) state that due to the uncontrollable nature of natural disasters, public attention may be diverted away from institutions through the use of natural disaster framing. In addition, Semino (2021: 55) suggests the use of fire imagery, such as 'pandemic ... *ravaging* our city' and 'A few *fire lines* - quarantines and social distancing

measures ...'. In this metaphor, the virus is the *fire*, health care workers are the *firefighters*, the people are *trees* that *fuel* the spread of the *fire*, and the *embers* of the *fire* refer to a situation where the danger has not completely disappeared even though the number of infections has been reduced.

The same emphasis on uncontrollability can be found in Beast or Monster metaphors, such as *ogre*, *zombie* and *bogeyman* (Wicke & Bolognesi, 2020; Kazemian & Hatamzadeh, 2022). In this framing, viruses are wild animals or monsters with specific animal attributes, whose great destructive power can cause harm to people. Wicke & Bolognesi (2020) analyse the Monster metaphor through the corpus approach and suggest that this frame mostly uses nouns and personified way to describe the virus, which conveys strong negative emotional values, such as *devil*, *demon* and *monster*.

When it comes to metaphors related to preventative measures against the Covid-19 virus, a Norwegian newspaper article describes isolation behaviour as the actions of a hedgehog. 'If one is going to be a hero in these times, one should act like a hedgehog. Don't roar like a lion or fight like a giant, but roll up in a ball and wait, hope for better times.' (#ReframeCovid Line 119). On the one hand, the *hedgehog* metaphor encourages people to stay at home rather than go out to reduce the spread of disease (Semino, 2021). On the other hand, this association of the epidemic with cute little animals may convey a lighthearted mood instead of increasing anxiety and despair (Pérez-Sobrinó et al., 2022). *Bubble* metaphors can also be used to convey lightheartedness (Long et al., 2020; Trnka & Davies, 2020; Burnette & Long, 2022). The *bubble* metaphor is widely used in the New Zealand government's expression of lockdown and is also frequently tweeted by New Zealanders about lockdown policies (Trnka & Davies, 2020; Burnette & Long, 2022). For example, President Ardern suggests that New Zealanders 'stay local, in their *bubbles*' (Kearns, 2021). The most common unit of the *bubble* is the family, but it may also include older relatives in the neighbourhood or individual people (ibid). Long et al. (2020) suggest that the vulnerability of the *bubble* reinforces people's determination and responsibility to remain enclosed in order to protect it and the people involved. Furthermore,

Kearns (2021) argues that the *bubble* metaphor gives people a relaxed positive mood, which helps to increase people's agreement with the lockdown measure, and also emphasises the personal element. Similarly, Wilding et al. (2023) interpret the *bubble* metaphor as a positive framing device, highlighting its protective connotations and its role in helping individuals cope with the psychological challenges of isolation. Burnette & Long (2022) examine the use of *bubble* metaphors on Twitter and find that *bubbles* usually appear with pronouns, with the most common being possessive pronouns *my*, *your* and *our*. This indicates strong personal ownership of bubbles in New Zealand and implies personal responsibility, facilitating the practice of personal control. In contrast, the Crime framing is represented by lockdown, which usually refers to the confinement of prisoners in cells (Burnette & Long, 2022). Thus, the implementation of lockdown measures may suggest that people receive punishment for wrongdoing (Bec & Dora, 2020). When other prevention measures such as keeping social distance are introduced, Crime framing is used to describe non-compliance with rules such as 'dodging the lockdown, violating the curfew, flouting warnings' (Bec & Dora, 2020). Burnette & Long (2022) argue that although lockdown points to strong connotations of criminality, its use expresses a neutral or ambiguous stance, usually for conveying information. Also, nearly half of all tweets that refer to lockdown describe it as a situation where lockdown enters a collective, usually a country, such as 'NEW ZEALAND GOES INTO LOCKDOWN', where this personification implies the collective experience and the way it is perceived as a unified object to engage with (Burnette & Long, 2022).

Vaccination is one of the measures to prevent pandemics. Pedrini (2021) investigates metaphorical expressions in four languages in relation to the production of Covid-19 vaccine and find that the most common metaphorical expression is Race metaphors. More specific types of competitions frame different aspects of the search of vaccine. *Hurdles* are used to discuss the difficulties faced by scientists; *relays* reflect the collaboration of researchers around the world to successfully develop a vaccine; *marathons* are compared with sprints to explain the huge amount of time and effort required to develop an effective and safe vaccine

or to highlight the unprecedented pace of development of the Covid-19 vaccine (Pedrini, 2021).

It can be concluded that War & Violence metaphors in Covid-19 discourse receive substantial criticism, including concerns about provoking fear, legitimising xenophobia, and failing to promote sustainable public health behaviours. Although these metaphors still dominate the Covid-19 discourse, their uses appear to be declining. For example, in political speeches, their presence becomes less frequent over time. As the discourse on Covid-19 prevention develops, it seems that a broader range of metaphors, including several novel ones is adopted.

Chapter 4 Methodology

This chapter describes the methodological framework adopted for metaphor identification and analysis in this study. It consists of 7 sections. Section 4.1 outlines the criteria used for corpus construction, the challenges encountered, and the key decisions made during the process. Section 4.2 explains the approach taken to identify metaphors, while Section 4.3 details how the search terms for metaphor identification were determined. Section 4.4 describes the specific procedures followed in the manual identification of metaphors. Section 4.5 focuses on the process of vehicle group coding. Section 4.6 presents the reliability testing conducted to assess the consistency of metaphor identification results. Finally, Section 4.7 introduces the corpus-based approaches employed to carry out both quantitative and qualitative analyses.

4.1 Corpus Construction

Some studies choose to collect data by searching for terms related to the topic from the established and large-scale corpus. For example, Taylor (2018) employs a diachronic corpus linguistic approach to trace the semantic evolution of 'refugees' in the Times Online & Hansard Corpus across decades. She calculates collocates of 'refugees' for each decade, using Mutual Information to statistically measure association strength. The analysis focuses on consistent collocates, those appearing in $\geq 50\%$ of the decades to isolate stable semantic themes. Finally, she examines the concordance lines of these collocates to provide a thematic interpretation of 'refugees' changing uses over time. Similarly, Partington et al. (2013) focus on the similarities and differences in how antisemitism is discussed in the UK press based on the search result of the word 'antisemitism' in two sub-corpora of the Siena-Bologna Modern Diachronic Corpus (the SiBol Corpus), SiBol 1993 and SiBol 2005, containing all articles published by The Times and Sunday Times, the Telegraph and Sunday Telegraph and the Guardian in the year 1993 and 2005. Although this method can be used to study specific topics, Marchi (2022) argues that the conclusions reached through this procedure may be influenced by external criteria or situational representativeness, such as the source and the sampling process of the

corpus, which may not be relevant to the scope of the researcher's study. Therefore, Marchi (2022) suggests that if the study focuses on a specific topic, a better choice would be for the researcher to compile specialised corpora based on the criteria, trying to keep 'the best balance between recall (i.e. including all relevant texts) and precision (i.e. including only texts that are relevant)' (Marchi, 2022: 578). Therefore, in my research, I established my own corpora to answer research questions.

4.1.1 Five Newspapers

Biber et al. (1998) propose that corpora should be representative of the language variety under study. In my case, they need to be representative of cancer prevention and Covid-19 prevention in national UK newspapers' reporting. To achieve the representativeness, texts have to be diverse to cover language variance (Biber, 1993). In my study, I attempt to realise this by covering articles from publications with readerships representing a range of socioeconomic statuses and political ideologies.

The five newspapers selected for this study are The Guardian, The Times, Daily Mail, The Sun, and Metro. All five are written in English, available online, and influential in the UK. According to a 2022 report by Ofcom (the Office of Communications), which regulates the UK communications industries, these newspapers rank among the top five most widely used newspaper sources (print and website/app) for news consumption in the UK. In this sense, they represent the most widely consumed sources of news in the country.

Moreover, these newspapers fall into three categories based on political orientation, readership demographics, and newspaper type: former broadsheet (The Guardian and The Times), mid-market (Daily Mail), and tabloid (The Sun and Metro) (Sowden et al., 2021).

Founded in 1896, Daily Mail is a mid-market newspaper with a right-wing conservative political stance. According to Ofcom (2022) and Henderson et al. (2016), it is the most popular as well as the most influential newspaper in the UK. It falls between quality journalism and popular

newspaper and has a moderate editorial style with the coverage of both social issues and entertainment (Molek-Kozakowska, 2013). Meyer (2010) argues that as a conservative mid-market newspaper, Daily Mail considers itself to represent traditional values of the Midlands. Kitis & Milapedes (1997: 562) suggest that it displays a typical writing style, the 'emotionally charged' language.

The Sun is a national tabloid newspaper that used to be the best-selling newspaper in the UK for 42 years until it was beaten by Daily Mail in 2020 (Wood, 2020). However, the tabloid is 'shared in public places (e.g. on the train or bus) and in the workplace', and thus the actual daily readership is estimated to be twice the circulation (Boykoff & Mansfield, 2008: 2). It is owned by Rupert Murdoch's News International Group and turned from a left-wing broadsheet supporting the Labour party in the 1960s to a hard right tabloid in the 1980s (Berry et al., 2015). Isentyeva (2019) notes that there are several changes in its political stance. According to its election endorsements in England, *The Sun* supported the Labour Party in the 1966 and 1970 general election, endorsed the Conservative Party in the February 1974 general election, and then returned to Labour in the October 1974 election. It then supported the Conservative Party in the elections from 1979 to 1992, switched back to Labour in 1997, 2001 and 2005, returned to the Conservative Party in 2010, 2015, 2017 and 2019, and most recently endorsed Labour again in the 2024 general election. According to Berry et al. (2015), in terms of the content, the Sun has downsized its focus on hard news and political reports, with more coverage of sensational stories, conflicts and scandals with an emphasis on celebrities, scandals and crime.

Published in London in 1999 by the Daily Mail and General Trust plc, Metro is a free newspaper with a high circulation, distributed free of charge from Monday to Friday at certain train stations, underground stations, airports and other public places in the UK. Ofcom (2018) states that Metro has the largest readership among ethnic minorities compared to other newspapers. Hainsworth et al. (2020) suggests that this may be due to the fact that people read free Metro

newspaper to pass the time when using public transport rather than choosing it based on political opinion or price. In other words, Metro has a relatively neutral political profile.

The Guardian was founded by John Edward Taylor in 1821 as The Manchester Guardian and was converted from a weekly to a daily newspaper in 1855 (Walker, 2006). In 1959, it was renamed as The Guardian. As the Guardian website states, its declared principles of upholding truth and independence are well known, as is its claim of a long history of supporting political independence. It usually supports left-wing and radical views, appealing to Labour voters (Baker et al., 2013). As a result, it is more likely to be attractive to the readership with a centre-left political bias (Woods et al., 2012).

The Times was founded by John Walter in 1785. It is a quality broadsheet, covering a wide range of information on politics, economics, culture and other fields around the world. It has a daily circulation of over 420,000 copies and an estimated daily readership of over one million people (Nadin et al., 2020). Furthermore, it is the only daily national broadsheet increasing its paid-for print sales (ibid). The political slant at the Times is commonly described as 'of the right' (Johnson & Ensslin, 2007: 233). It supported the Conservative Party in recent general elections (in 2010, 2015, 2017 and 2019) and did not endorse any political party in the 2024 general election. Given its reputation and influence, it could be considered the representative of the right-wing British broadsheet reasonably.

In conclusion, these five newspapers are among the most widely read and influential in the UK, reflecting a range of political orientations and journalistic styles. Therefore, I select them as the sources for building my corpora, as they collectively provide a broad perspective on how Covid-19 and cancer prevention discourse are constructed in the British press during my data collection period.

All of news articles were collected through the LexisNexis online database. For both corpora, the search period is from the 27th of December, 2019 when pneumonia of an unknown cause

was identified in Wuhan city to the 2nd of February of 2023 when I have established my corpora (The State Council the People's Republic of China, 2020).

4.1.2 Principles of Data Collection

As noted by McEnery & Wilson (2001), the definition of the term corpus should follow these standards: a) it must be built through principled sampling to ensure representativeness, so that the dataset reflects typical patterns within language variety or genre being analysed; b) usually the corpus contains a limited set of text in size, although there are some exceptions, such as the monitor corpora (e.g., the Bank of English), which was updated periodically at regular intervals and therefore contains an open number of texts; c) The corpus typically contains machine-readable texts, enabling researchers to search, retrieve, and annotate linguistic patterns. McEnery & Wilson (2001: 32) concludes that a prototypical corpus should contain 'a finite-sized body of machine-readable text, sampled in order to be maximally representative of the language variety under consideration'. Modern corpora differ greatly in size, sampling process, and the degree and kind of linguistic annotation due to the fact that many linguistic corpora are intentionally created to focus on a series of particular research issues (Stubbs, 2004).

Hunston (2002: 14-15) writes that there are distinctive differences between the general or reference corpora and specialised corpora. A general corpus may contain hundreds of millions of words belonging to different genres and text types. In other words, this type of corpus is created to represent a language or language variant. McEnery & Brookes (2022) write that the construction of specialised corpora depends on the scope and focus of the language study, which may present a specific text type, genre or topic within a particular time frame. Koester (2022) notes that specialized corpora don't necessarily need to be as big as the general corpora to produce trustworthy findings since they are precisely focused and more likely to represent the targeted genre or text type. O'Keeffe et al. (2007: 198) suggest that compared with the larger-scale general corpus, 'specialized lexis and structures are likely to occur with

more regular patterning and distribution' in the specialised corpus with smaller amounts of data.

However, corpus design must also remain practical, since time, funding, and data availability are often limited (Biber et al., 1998). Gabrielatos (2007: 6) highlights the 'tension' between including all potentially relevant texts, which may introduce noise and make the corpus unmanageable, and selecting only the most relevant texts, which risks omitting valuable data. For instance, due to the intensive labour and time commitment of the required preprocessing, McIntyre (2012) restricted his corpus to 13 plays of blockbuster movie dialogue, which contains approximately 300,000 words. Meyer (2002) suggests that decisions about corpus size should be guided by the research purpose and the internal structure of the corpus, rather than by word count alone. For example, smaller corpora of 20,000–200,000 words may be available for analysing frequently occurring pragmatic patterns within spoken language (Vaughan & Clancy, 2013). As McEnery & Brookes (2022) note, since researchers cannot always have access to all relevant texts, specialised corpora typically consist of carefully selected samples that best represent the target domain. To decide which texts are included in the establishment of the corpora, representativeness and balance are two issues of concern (McEnery & Brookes, 2022).

According to Leech (1991: 27), if findings drawn from a corpus can be 'generalized to a larger hypothetical corpus', then it can be considered as a representative of that language variety. Biber (1993: 243) defines the representativeness of the corpus as 'the extent to which a sample includes the full range of variability in a population'. Biber (1993) states that there are two kinds of variability: situational and linguistic. Situational variability is the variety of genres and registers of the target data, i.e. text types or speech situations that will be contained in the corpus while linguistic variability refers to the range of linguistic distributions of the data. Building on this, Egbert et al. (2022) elaborated on these two variables: domain considerations or situational variability, which focuses on what to include and how well the texts reflect the variety of contexts and genres in the target domain, and distribution considerations or

linguistic variability, which relates to linguistic criteria and concerns the extent to which the corpus reflects the quantitative distribution of linguistic features such as vocabulary use and syntactic structures. Biber (1993) suggests that in order to assess whether a sample is suitable for examining variability within the target population, both situational and linguistic variability should be considered. However, there is no precise definition of representativeness, which can only be achieved to a reasonable degree (Sinclair, 2005). Representativeness is always relative to the research purpose, meaning there is no absolutely representative corpus, only one that is representative for a series of particular research questions (McEnery et al., 2006). Similarly, Egbert et al. (2022: 55) note that representativeness should not be viewed as a binary concept but as a 'continuous construct', where a corpus can achieve various degrees of representativeness depending on its design and intended purpose.

Koester (2022) argues that situational variability may be relatively easily attained in cases where the study focuses on a specific genre because all collected texts belong to that genre or text type. By contrast, linguistic representativeness is difficult to ensure since linguistic distributions are unknown at the design stage (Egbert et al., 2022). Biber (1993) also emphasises that situational representativeness, such as genre or register, are external to the corpus and should therefore be established before linguistic ones, taking priority during corpus design.

Relying only on situational representativeness such as genre has received criticism since this approach may overlook linguistic variation within texts (Clear, 1992). In other words, even within the same genre, language use can vary, and if researchers select texts only by genre, these internal differences may be obscured. However, selecting texts based on internal linguistic representativeness, such as word frequency, introduces a problem of circular reasoning (McEnery et al., 2006). As McEnery et al. (2006: 14) note, 'if the distribution of linguistic features is pre-determined when the corpus is designed, there is no point in analysing such a corpus to discover naturally occurring linguistic feature distribution'. For the purposes of my research, I follow the view of McEnery et al. (2006: 14) and select texts for the

construction of the corpus primarily based on the situational representativeness, in order to ensure that ‘their linguistic characteristics are, initially at least, independent of the selection process’. In addition, many studies that examine how specific topics are represented in media discourse have also adopted situational representativeness in their corpus design (Baker et al., 2013; Busso & Tordini, 2022; Zhang et al., 2022). For example, Baker et al. (2013) construct a specialised corpus to analyse the ways Muslims and Islam are represented in the British press and the underlying attitudes expressed, who apply situational representativeness by sampling texts according to newspaper source, time period, and key thematic focus.

McEnery et al. (2006) suggest that the representativeness of a corpus is often achieved through balance. McEnery & Brookes (2022) define balance as the process of specifying which kinds of language or texts should be included and in what proportions they should appear, emphasising that it reflects the internal consistency of a corpus across situational and linguistic variables. In practice, balance is guided by the research purpose and realised through an appropriate sampling framework (McEnery et al., 2006). For example, The Brown family of corpora follows the sampling frame established by Kučera & Francis (1967) and contains about one million words of written English, made up of 500 text samples of roughly 2,000 words each, selected from 4 broad categories of writing, which are further divided into 15 subcategories. According to McEnery & Brookes (2022), the advantage of using such a consistent sampling frame is that it allows systematic comparison across corpora constructed on the same basis, since each corpus contains equivalent proportions of text categories and subcategories. However, they also criticize that this type of balance does not necessarily reflect how those categories occur in real-world language use (McEnery & Brookes, 2022).

Egbert et al. (2022) suggest that two main approaches are typically used in the sampling frame of the corpus design: proportional sampling and equal-sized sampling. In proportional sampling, ‘the sampling fraction in each stratum is made equal to the sampling fraction for the population as a whole’ (Kish, 1965: 68). However, this approach is rarely feasible in corpus linguistics because the actual population proportions are often unknown, which will be

discussed in detail in Section 4.1.3 (Knight & Adolphs, 2022). In contrast, equal-sized sampling refers to dividing the target discourse domain into strata through stratification and ensuring that each identified stratum (text category) contains an equal amount or number of texts, which is usually preferred (Egbert et al., 2022).

However, decisions about which text categories to include and how much each should contribute still rely, at least partly, on the compiler's 'intuition and best estimates' (McEnery et al., 2006: 17). According to Knight & Adolphs (2022: 23), representativeness and balance 'are not precisely definable and attainable goals' and should therefore be regarded as theoretical ideals that are difficult to fully achieve in practice.

For example, the British National Corpus (BNC 1994) aims to capture as many aspects of language use as possible in both written and spoken British English and represent the British English as a whole and has become a model for subsequent corpus projects (Davies, 2015). The written component was compiled according to three criteria: domain, including 9 context types, time, covering the years 1960 to 1993; and medium, including journals and newspapers (Clancy, 2022). The spoken component, about 10 percent of the corpus, was collected through demographic and context-governed sampling (Clancy, 2022). However, the BNC 1994 has also been criticised for its lack of representativeness due to problems with balance. Otlogetswe (2004) questions BNC 1994's balance between written and spoken language, noting that the 90-to-10 ratio does not reflect the reality of human communication, where spoken interaction is the dominant mode. From this perspective, the corpus overrepresents written texts and underrepresents spoken language, raising doubts about its overall balance. Love (2020) also points out that the demographically sampled part of the spoken component (BNC1994DS) does not use strict stratified sampling. Only the main recorders are randomly selected, while other participants are chosen opportunistically, making it difficult to achieve balanced representation across social groups. In addition, male speakers are overrepresented compared with females, the 25–59 age group is disproportionately large, and speakers from England significantly outnumber those from Scotland, Wales, and Northern Ireland. Thus, while the

BNC 1994 has served as a foundational and influential model for corpus construction, it also demonstrates that complete representativeness remains an ideal rather than a practical reality. As Hunston (2002: 23) points out, 'a statement about evidence in a corpus is a statement about that corpus, not about the language or register of which the corpus is a sample'.

4.1.3 Issue of Sampling 1: Availability of Newspaper Sources

When determining the sampling frame, I encountered two issues, both related to the availability of newspaper sources:

1. Newspaper articles were not evenly distributed across sources. For example, the number of articles retrieved from Metro was the lowest for both the 'cancer prevention' and 'Covid-19 prevention' query terms.

2. There was a significant difference in the total number of newspaper articles retrieved using query terms 'cancer prevention' and 'Covid-19 prevention' within the same time frame. When searching 'cancer prevention' in the LexisNexis database, I obtained a total of 1,080 articles across the five newspapers, whereas the search for 'Covid-19 prevention' yielded 3,431 articles. Although these were not the final query terms, as manual inspection of the texts retrieved from 'cancer prevention' and 'Covid-19 prevention' revealed excessive noise (see Section 4.1.6), this substantial difference in the overall number of relevant texts was consistently observed throughout the data collection process.

Under this circumstance, it seems that randomly equal-sized sampling from both topics and five newspapers may affect the representativeness of the corpus since such an approach would not reflect the actual distribution of data availability across topics and sources. According to McEnery & Brookes (2022), maintaining an equal sample size across categories ensures comparability and internal balance, as each corpus constructed under the same sampling frame contains equivalent proportions of text categories and subcategories. However,

they also criticize that such balance does not necessarily represent the real-world distribution of the variables that the corpus is intended to model (McEnery & Brookes, 2022).

According to McEnery et al. (2006: 17), proportional sampling, which includes each stratum in proportion to its real-world frequency, provides a more accurate reflection of natural language use, ensuring that ‘the corpus is maximally representative of the language or language variety it is supposed to represent’. However, in practice, this is difficult to achieve, as determining the true proportions of language production and reception across different genres or modes is unrealistic (McEnery et al., 2006; McEnery & Brookes, 2022). For example, it is almost impossible to establish the actual proportion of spoken language, such as conversation, to written language, such as newspaper articles, in the overall language population (McEnery & Brookes, 2022). As Knight & Adolphs (2022) point out, corpus builders often do not have full access to, or even knowledge of, all relevant texts no matter how clearly those texts are defined. Therefore, most corpora can only be viewed as samples of all possible candidate texts. Egbert et al. (2022) further argue that equal-sized sampling is often more appropriate for most corpus linguistic research questions than proportional sampling, since it ensures sufficient coverage of each well-defined stratum for further analysis. The issue of proportionality is therefore not crucial, since corpus linguists are usually less concerned with reproducing real-world language proportions (Egbert et al, 2022). Hunston (2022) discussed a similar problem encountered during the building process of the International Corpus of English (ICE corpus), which aims to cover English varieties from 13 countries/regions. For instance, certain specific countries/regions have fewer ‘popular science’ texts published in English. Nevertheless, to maintain comparability, which refers to comparing roughly the same texts in two languages, but more generally, comparing two sets of data, representativeness is relatively less prioritized to some extent (Hunston, 2022). Therefore, ICE corpus still requires an equal number of specific types of texts to be sampled in the same time frame for each country/region's sub-corpus (Hunston, 2022). This approach of extracting an equal number of texts from each subcategory has also been adopted in other corpus-based studies. For example, Isentyeva (2020), in her corpus-assisted discourse study of British newspapers, samples 100 texts from

each of 5 newspapers for every sub corpus to ensure balance across sources. Similarly, in Hyland & Jiang's (2016) corpus of academic writing, each sub corpus contains 30 texts drawn equally from 5 journals, ensuring that no single journal's writing style dominates the others.

Beyond extracting an identical number of texts from each subcategory, equal-sized sampling can also take other forms. For example, Hunston (2022) proposes a hypothetical corpus task designed to study the themes of the US presidential election in order to illustrate different approaches to achieve balance. The task involves collecting articles published in six relevant major newspapers over the course of one year, and five design options are proposed: 1) collecting all relevant newspapers; 2) selecting an identical quantity of tokens from every newspaper; 3) selecting an identical number of articles from every newspaper; 4) selecting the equal percentage of articles from the total in each newspaper; 5) selecting a certain number of articles according to the proportion of readers of each newspaper. Among these, options 2 and 3 represent forms of equal-sized sampling, where each source contributes the same amount of linguistic data, either in terms of tokens or texts. As McEnery & Brookes (2022) emphasise, the most important consideration in corpus design is that it should be constructed in a way that best serves the specific objectives of the study. In other words, the choice of different options depends on different purposes. According to Hunston (2022), if the focus of the study is on the viewpoints conveyed by the newspapers on the themes, option 3 is a suitable option, with option 3 being an alternative to option 1 if the researcher's management scope is taken into account. If the focus of the study is on comparing the newspapers with each other, option 2 may be the best choice.

In my research, the central research objective is to analyse how metaphors frame the two themes, cancer prevention and Covid-19 prevention in British newspapers. Therefore, following Hunston's option 3, an identical number of articles was selected from each of the five newspapers for each theme. This design maintains comparability across sub corpora by applying consistent sampling criteria. Despite the smaller overall number of available

cancer-related texts, this method ensures methodological consistency and enables the comparison of linguistic and metaphorical patterns across the two topics.

4.1.4 Issue of Sampling 2: The Length of Texts

A further issue in the sampling process concerns variation in text length. In my study, articles from *The Sun* and *Metro* are noticeably shorter than those from the other newspapers in both sub corpora. This raises the question of how to balance the number of tokens across different newspapers during corpus construction.

Hunston (2022) notes that equal-sized sampling by article count can introduce imbalance when text lengths vary substantially across sources. If some newspapers' articles are longer than others, this sampling choice may include more text from relatively longer newspapers, which may affect the balance of the corpus since it may tend to reflect the style of the newspaper containing relatively more tokens. Similarly, Clancy (2022) points out that overly long texts can create skew in small corpora, while overly small or narrowly focused corpora can undermine representativeness. Although increasing corpus size is a common way to mitigate such imbalance, Biber (1990, 1993) argues that as long as a corpus adequately covers the range of linguistic variation, even a relatively small corpus can still be considered representative. In other words, even if a sub corpus contains relatively fewer tokens, it can remain representative provided it contains sufficient linguistic diversity to reflect the variation of the target language. Supporting this view, Oakey (2009) compares fixed collocational patterns in two corpora consisting of research articles from 8 academic disciplines, one comprising 4,000 research articles (500 from each of eight disciplines) and another containing 4,000,000 tokens (500,000 from each of the same disciplines) and finds that the most frequent fixed collocational patterns are largely similar in both versions. This finding suggests that frequent linguistic patterns tend to occur regardless of differences in text length or the number of communicative acts in the academic writing corpus. His study, however, is based on academic writing, a genre that is different from newspaper language.

More broadly, there is no single standard for what constitutes an ideal corpus size or text length sufficient to capture linguistic variation (McEnery et al., 2006; Hunston, 2022). Biber (1993) notes that a corpus of around 1,000,000 words may be enough for covering grammatical varieties. Similarly, Leech (2003) proposes that a similar size is suitable for comparative studies between language varieties. However, Egbert et al. (2022) demonstrate that the required sample size varies depending on the linguistic feature and register being examined: for instance, their results suggest that around 38.51 texts may be enough for analysing high-frequency features such as prepositions, approximately 422 texts may be needed for features such as adverbs, while rare and highly variable features such as group nouns may require thousands of texts to achieve reliable results.

It can be concluded that there is no fixed or universal ideal scale capable of covering all linguistic variation. Corpus construction should make a balance between scale and representativeness, flexibly adapting to the research objectives while maintaining methodological transparency (Clancy, 2022). In practice, some corpora exhibit substantial differences in text length across their sub corpora, such as BNC 1994, ICE and the Global Web-based English Corpus (GloWbE). For example, Davies & Fuchs (2015) explain the representativeness of GloWbE, which aims to capture the use of World Englishes in online communication. The corpus includes texts from 20 English-speaking countries, with a total of about 1.9 billion words. The United States and the United Kingdom have the largest sub corpora (about 386 million words each), while smaller ones, such as Tanzania (around 35 million words) and Ghana (around 39 million words), contain far fewer words. Despite these differences in sub corpus size, GloWbE attempts to maintain representativeness by applying a consistent sampling frame within each country: approximately 60% of texts are taken from informal blogs and 40% from other more formal genres. This approach ensures that each national sub corpus adequately captures the range of language varieties used in that country's online discourse, achieving representativeness.

In conclusion, although variations in text length may affect the balance of a corpus and potentially influence the exploration of linguistic features such as metaphors, there is no clear criterion for determining how much textual data is sufficient to capture the full extent of linguistic variation. Therefore, I did not adjust the sampling frame of my corpora to address this issue but continued to choose to sample the same amount of text in the same time frame to maintain comparability. In terms of representativeness, this approach may appear to lower the standards. However, as Hunston (2002: 28) argues, it is difficult to predict the level of representativeness of a corpus when the 'whole' corpus is unknown.

4.1.5 Sampling Decisions in My Research

After deciding to extract an equal number of newspaper articles from five newspapers within the same time frame, the next step was to determine the overall corpus size, that is, how many articles should be sampled from each newspaper. As discussed earlier, there is no universally accepted standard for corpus size, as there is no single fixed rule for other aspects of corpus design (McEnery & Brookes, 2022).

Reppen (2022) notes that, for most corpus-based studies, corpus size is determined by a balance between representativeness and practicality, constrained by time and resources. While large-scale corpora may seem ideal for comprehensive coverage, they can also be difficult to manage since their size may make manual inspection or interpretation impractical (McEnery & Hardie, 2012). In contrast, smaller corpora allow researchers to achieve higher accuracy and deeper qualitative insight (McEnery & Brookes, 2022). Similarly, Baker (2006) also suggests that a smaller, more manageable corpus enables researchers to examine a greater proportion of linguistic uses in detail and to explore the context more thoroughly and effectively.

The Brown Corpus provides an example of a small but representative corpus, which contains 500 texts and aims to represent contemporary American English (Davies, 2015). Its limited size

makes it possible to achieve 100% metadata accuracy, which is often unattainable in much larger corpora. Moreover, the small scale of the Brown Corpus allows manual examination of linguistic phenomena. For example, all 121 instances of *for* as a conjunction can be individually checked for tagging accuracy (Davies, 2015). Similar principles guide later corpora such as the Lancaster-Oslo-Bergen Corpus (LOB) and the Australian Corpus of English (ACE), all of which follow the Brown sampling framework of the Brown Corpus to ensure comparability across varieties of English (Weisser, 2022).

In recent corpus-assisted discourse studies, smaller-scale, topic-specific corpora are also common. For example, Islentyeva & Abdel Kafi (2021) compile a monolingual and monogeneric corpus of 500 British newspaper articles published between 2016 and 2018, consisting of 100 articles from each of 5 newspapers. The dataset is balanced by text type, with approximately half being news reports and the other half being evenly divided between editorials and opinion pieces. Similarly, Malik et al. (2021) ensure temporal and regional consistency by randomly sampling 100 news records per day for each region.

Some studies focusing on metaphors in healthcare discourse choose to have smaller datasets. For instance, Kania (2022) analyses a random sample of 100 articles, 25 each from tabloids and broadsheets before and after the naming of Covid-19 virus. Ho (2021) examines 100 advertisements in total, 50 for breast cancer and 50 for lung cancer collected from the online advertising archives *Coloribus* and *Ads of the World*.

Following these precedents, my study adopts a manageable and balanced sampling frame, selecting 100 newspaper articles from each of the five British newspapers for each topic, cancer prevention and Covid-19 prevention. This design attempts to ensure the balance of sources and comparability of themes while maintaining a corpus size suitable for both qualitative and quantitative analysis.

After determining the number of texts to be sampled, the next step was to decide how to select the sampling units from the domain to be included in the corpus.

Marchi (2018: 179) & Marchi (2022) argues that when building a corpus, the ideal is ‘collecting the complete output of a source of data for a continuous stretch of time’ since it allows the researcher to investigate the weight and distribution of texts related to a particular topic for the whole source and the impact of the time on the topic under review. However, since my study does not involve diachronic analysis and focuses on the most frequent linguistic patterns, this decision was not followed in my research.

Egbert et al. (2022: 59) note that, when all other things being equal, random sampling is ‘always preferable’ because it avoids selective factors that can distort the data. By contrast, non-random or purposive sampling, though sometimes principled, may introduce selection bias and limit the representativeness of the corpus (Egbert et al., 2022). Following this reasoning, my study adopts a random sampling approach to minimise potential bias. Specifically, for each sub corpus, every fifth article retrieved from the database using the relevant query terms (See Section 4.1.6) was included in the corpus.

Overall, I made every effort to enhance the representativeness, balance and comparativeness of the corpus used in this study, although it is challenging to assert that they are entirely representative of topics of cancer prevention and Covid-19 prevention. As McEnery et al. (2006: 64) observe, ‘Corpus building is of necessity a marriage of perfection and pragmatism’. In other words, while the ideal goal is to achieve a corpus that is fully representative, practical constraints may require pragmatic decisions.

4.1.6 Identification of Query Terms

To collect relevant news articles on a certain topic, a suitable set of query terms needs to be selected (Partington et al., 2013; Baker et al., 2013; Taylor, 2018). One way to get the data is to

search only for the core query terms that are most relevant to the topic, which in many cases are the words that represent the topic. For example, in order to analyse how metaphor constructs anti-Americanism in the US, UK and Italian newspapers, Partington et al. (2013) establish the corpora which contain all news articles mentioning the word 'anti-Americanism' in 13 US, UK and Italian newspapers from 1999 to 2007. Similarly, Partington et al. (2013) collect all news articles through query terms 'anti-Semit*' or 'antisemit*' from 18 UK newspapers using Lexis Nexis to establish the corpus. In my case, however, core query terms, such as 'cancer/covid prevent*' cannot yield enough news articles. For example, Metro has only 12 news articles mentioning 'cancer prevent*' while the Times, with the most search results, has only 93 reporting. Therefore, the query terms need to be expanded to gather enough highly relevant texts.

Another method of obtaining query terms is the relative query term relevance (RQTR) method (Gabrielatos, 2007). The RQTR method developed by Gabrielatos (2007) is designed to construct a corpus for the ESRC-funded project *Discourses of Refugees and Asylum Seekers in the UK Press 1996–2006*. Baker et al. (2013) later publish research based on this project, making use of the corpus constructed through this method. It employs a mathematical way to calculate the relevance. First, a set of (at least two) core query terms (CQ) is selected to act as the seed and a list of keywords is created by collecting all texts containing these query terms over a continuous period of time (usually one month). The relevance of the keywords is then calculated using the RQTR score to determine if they are able to be additional query terms as candidate terms (T). RQTR is calculated by 1) dividing the number of texts obtained by searching with CQ and candidate terms together by the number of texts returned using candidate terms (T) only, to obtain the QTR score, i.e., $QTR = CQ \& T / T$; 2) comparing the QTR score with the baseline score, which is the lowest QTR score for CQ to get the RQTR score, following the formula: $RQTR = (QTR - B) * 100 / B$; 3) If the RQTR score of T is positive, the candidate term can be included in the query terms; if the RQTR score of T is negative, the candidate term is excluded since it brings too much noise (Gabrielatos, 2007). This approach, although useful in less ambiguous topics, such as autism (Karaminis et al., 2022). However, in

my case, this approach does not work since even the most salient potential query terms, 'cancer prevent*' and 'covid prevent*', generate too much noise. For example, only 45 of news articles mentioning the prevention of cancer and cancer preventative measures once or more after a manual check of all 93 Times newspaper articles retrieved from the query term 'cancer prevent*'. Most of the noise is focused on the prevention of cancer recurrence or death, the protection of cancer pills against other diseases or only mentioning the name of the relevant organization or activity, such as the Charity Prevent Breast Cancer, Scottish Cancer Prevention Network and Cervical Cancer Prevention Week, the latter two of which basically appear in the text that contains the query term less than twice.

To address these limitations, my study combines Gabrielatos's (2007) RQTR method with elements of semi-manual data collection approach proposed by Busso & Tordini (2022). In their study of Italian media discourse on Covid-19, Busso & Tordini (2022) retrieve documents using keyword queries, which are core query terms 'coronavirus / Covid / Covid-19 + Italia / crisi / Fase 1 / Fase 2' and 'coronavirus / Covid / Covid-19 + Italy / crisis / Phase 1 / Phase 2'. All automatically retrieved results are then manually examined to exclude irrelevant, duplicated, or superficially related texts. They emphasise that 'such a controlled data retrieval' is essential for ensuring the quality of the corpus, arguing that a smaller but cleaner corpus offers greater analytical value than a larger one containing excessive noise or irrelevant texts (Busso & Tordini, 2022: 5).

Although my approach did not fully follow either of these two methods, it drew upon both. Specifically, it basically followed the main process of Gabrielatos's (2007) RQTR framework by using the results of initial searches to generate additional query terms. However, inspired by Busso & Tordini (2022), the evaluation of these additional terms in my approach was carried out manually by the researcher, rather than through mathematical computation. In other words, my study adopted a semi-manual approach that integrated automated retrieval with researcher-led evaluation. As Baker et al. (2013: 28) note, query terms are developed through

‘a mixture of introspection, the reading of articles and some trial and error’, a process that also characterises the approach taken in this study.

The specific steps are: 1) The researcher carefully reviews the text obtained by using core query terms; 2) After careful review, a series of candidate query terms most relevant to the topic are obtained through introspection; 3) Using candidate query terms to get new texts; 4) Observe whether most of new texts is relevant to the topic to determine whether and how to use these candidate query terms. As Baker et al. (2013) acknowledge, the RQTR method may result in: 1) the omission of articles related to the topic; 2) the inclusion of a small number of articles unrelated to the topic in the corpus due to the possible multiple meanings of the query terms; 3) the inclusion of articles containing query terms, whereas they are not the focus. Similar challenges also arose in my semi-manual approach, along with the additional drawback of being time-consuming. However, this method attempts to ensure that the collected texts are relatively highly relevant to the intended themes.

Following Baker et al. (2013), my first query term for the cancer corpus was ‘cancer prevent*’. Then, through the careful reading of a number of articles containing ‘cancer prevent*’, more query terms were added: ‘vaccine*’, ‘screening*’, ‘risk*’, ‘smear test*’, ‘mammogram*’, ‘awareness cancer*’ and ‘jab’. For the text retrieved from ‘prevent*’ and ‘predict*’, the noise basically focused on the prevention of cancer recurrence and death. Therefore, they were limited to be ‘prevent* NOT return*, recurrence* & death*’. After examining the text from the ‘vaccine*’ and ‘jab*’ search, I determined the query term to be ‘vaccine*’ or ‘jab*’ NOT ‘covid, epidemic, corona, immunotherapy* & Immunisations*’ since most of the noise related to Covid-19 vaccines and the description of immune vaccine, which was used to treat the cancer rather than prevention. ‘Screen’, a screening program for cancer prevention, was also included in the query term, resulting in the inclusion of search results for TV/film screen. Therefore, the query term was ‘screen* NOT TV & film’. Finally, in the text containing ‘risk*’, the noise was on the prevention of cancer recurrence and death to improve the chance of survival, enabling me to determine the query term ‘risk* NOT return *, death*, recurrence* & survival*’. Thus, for

the cancer prevention corpus, query terms were: prevent/protect* NOT return*, recurrence* & death*, 'vaccine*' or 'jab*' NOT 'covid, epidemic, corona, immunotherapy* & Immunisations*', 'screen* NOT TV&film', 'risk* NOT return*, death*, recurrence* & survival*', 'smear test*', 'mammogram*' and 'awareness cancer*' all of which needed to be searched with the word 'cancer'.

For the Covid-19 prevention corpus, my initial query term was 'Covid-19 prevent*'. Similar to query terms for the cancer prevention corpus, noise focused on the prevention of death and severity of the virus. Thus, query terms were 'prevent* NOT severe & death*'. In addition, in texts retrieved from 'vaccine*', description of the vaccine's prevention of long or severe Covid and death accounted for most of the noise, leading my query term to be 'vaccine* NOT long/death/severe'. Finally, 'lockdown*', 'self-isolation*', 'mask*', 'quarantine*', 'stay-at-home*', 'social distance*' and 'sanitise*' as specific preventative measures against the epidemic could basically recall highly relevant texts after checking. Therefore, for the Covid-19 prevention corpus, query terms were: 'prevent*' or 'protect*' NOT 'severe* & death*', 'vaccine* NOT long/death*/severe*', 'lockdown*', 'self-isolation*', 'mask*', 'quarantine*', 'stay-at-home*', 'social distance*' and 'sanitise*', all of which needed to be connected with covid/epidemic/coronavirus.

Finally, following Jaworska & Kinloch (2018), texts containing query terms more than once (in my study, the frequency is two times at least) were included in my corpus in order to collect news articles with relatively high relevance to the theme.

Then, the cleaning needs to be done. The default metadata, such as byline, author, classification were deleted but the main part, i.e. body, was kept. Other basic information about the article (headline, publication date, newspaper) was recorded in Microsoft Excel. Headlines were viewed to find duplicate items, which were replaced by new text meeting the standard.

After following these steps, my corpus contains 1,000 articles and 666,140 tokens, with cancer prevention sub corpus containing 331,747 tokens and Covid-19 prevention sub corpus containing 334,393 tokens (See Table 4.1).

Topic	British Newspaper	Tokens	Percent
Cancer Prevention	The Guardian	83,937	25.30%
	The Times	78,689	23.72%
	Daily Mail	71,266	21.48%
	The Sun	60,874	18.35%
	Metro	36,981	11.15%
Total		331,747	
Covid-19 Prevention	The Guardian	83,340	24.92%
	The Times	66,347	19.84%
	Daily Mail	75,144	22.47%
	The Sun	57,982	17.34%
	Metro	51,580	15.43%
Total		334,393	
Total		666,140	

Table 4.1 Number and Distributions of Tokens in Cancer Prevention Corpus and Covid-19 Prevention Corpus

To illustrate the chronological distribution of the sampled data, all newspaper articles published between 27th December 2019 and 2nd February 2023 were divided into approximately six-month periods. This overall timespan of about three years and one month was thus segmented into six periods, with the final period extending slightly longer than the others, covering seven months and six days. The distribution of articles across these periods is shown in Figures 4.1.6a and 4.1.6b.

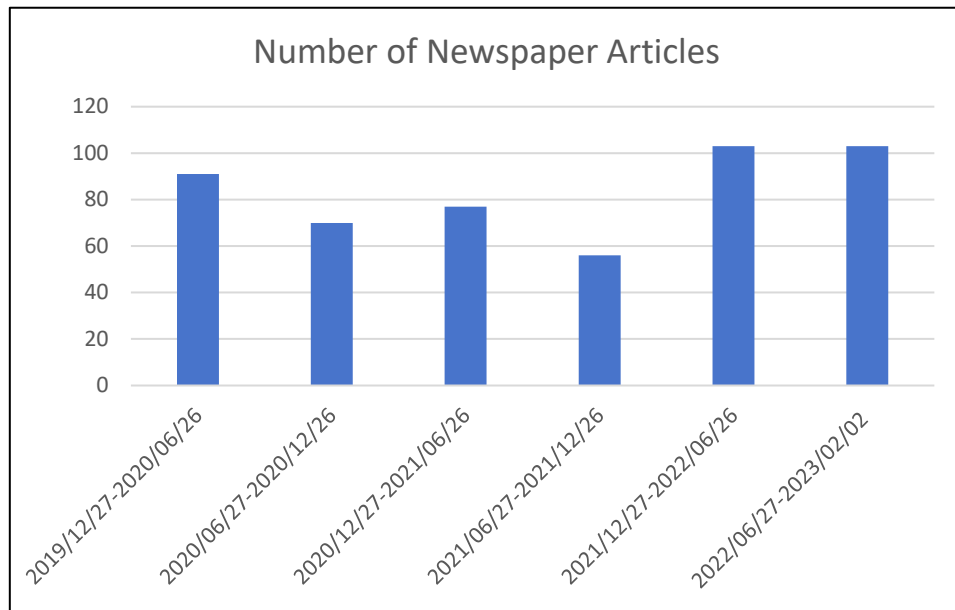


Figure 4.1.6a Number of newspaper articles in the cancer prevention corpus across approximately six-month periods

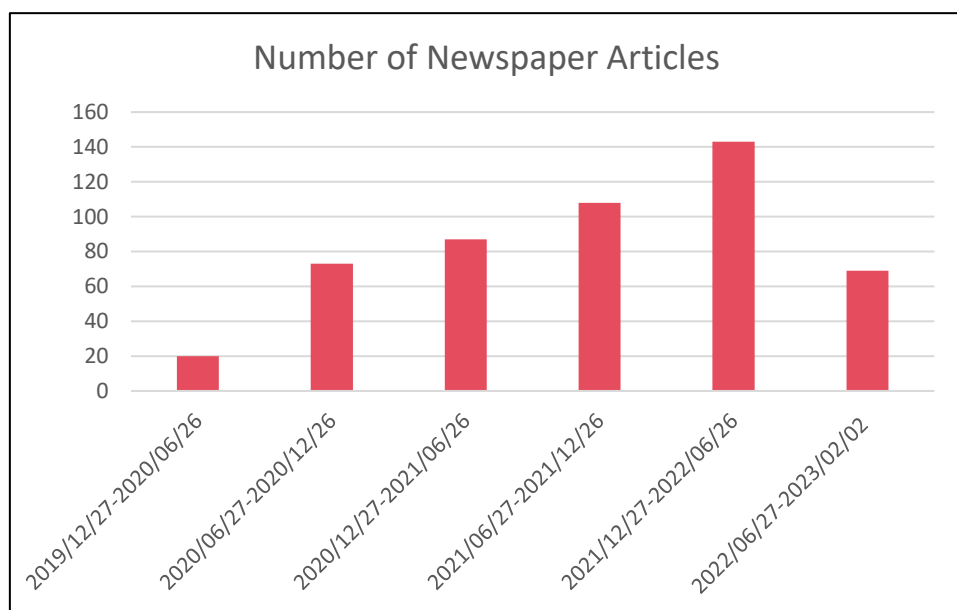


Figure 4.1.6b Number of newspaper articles in the Covid-19 prevention corpus across approximately six-month periods

To provide a clearer picture of the temporal distribution of the data, Figures 4.1.6a and 4.1.6b show the number of articles included in each corpus across six chronological periods. The cancer prevention corpus is relatively more balanced than the Covid-19 prevention corpus. The number of cancer-related articles ranges from 56 to 103 across periods, indicating some

fluctuation, with a lower concentration in the second half of 2021 and a higher concentration in the final two periods.

The Covid-19 prevention corpus shows a more uneven chronological distribution. In particular, the earliest period contains substantially fewer articles than the later periods, and the final period also includes fewer articles than the peak phases of coverage. This unevenness partly reflects the sampling procedure itself. Articles were retrieved from LexisNexis in chronological order and sampled systematically by selecting every fifth article until 100 articles had been collected from each newspaper. As a result, the temporal coverage of the sampled data was influenced by the density of relevant retrieved articles over time. Where prevention-related Covid-19 articles were especially numerous in particular phases of the pandemic, the sample could reach the target number more quickly, which may have increased the representation of some periods relative to others. In this sense, the final corpus does not represent an evenly stratified sample across time, but a systematically sampled subset of chronologically ordered retrieval results.

Also, this unevenness might be historically understandable given the development of the pandemic. In the earliest phase, media reporting was heavily focused on the emergence and spread of the virus, immediate crisis developments, and uncertainty about the disease, rather than on the discourse of prevention. As the pandemic developed, prevention-related discourse became more established and diversified, with sustained attention to measures such as lockdowns, social distancing, self-isolation, face coverings and vaccination. By contrast, in the final period, Covid-19 prevention appears to have become less salient as a distinct news topic, partly because vaccination had already been widely rolled out, many legal restrictions had been lifted, and public discourse had increasingly shifted from emergency prevention to longer-term management and 'living with Covid', as reflected, for example, in the UK Government's COVID-19 Response: Living with COVID-19, published in February 2022.

Overall, the chronological distribution of the two corpora is not fully even, particularly in the Covid-19 corpus, and this should be kept in mind when interpreting the findings. At the same time, the observed unevenness might not be arbitrary but partly reflects the historical development of the two health topics in UK newspaper discourse.

4.2 Metaphor Identification

A rigorous approach to metaphor identification is necessary in metaphor research because each researcher's intuition for identifying metaphors may be different and research that relies on intuition is proved unsatisfactory (Gwyn, 1999). In other words, a metaphor identification method that relies only on intuition can lead to confusion and great disagreement among researchers. Therefore, a systematic approach to metaphor identification is needed.

Though corpus methodologies certainly smooth the way for the researcher – enabling him/her to process large quantities of data in a reasonably short period of time, and providing him/her with computational tools that make it much easier to retrieve meaningful patterns and compute statistics – the identification of metaphors within corpora is a complex task, and a close reading of at least part of the texts is always required.

According to Tissari (2016) and Nacey et al. (2019a), metaphor identification in linguistic data can broadly be divided into 4 major approaches.

1. Manual identification relies on close reading of the whole text by analysts. Researchers apply operational definitions or standardized procedures of metaphor identification such as the Metaphor Identification Procedure (MIP/MIPVU/VIP) (Cameron, 2003; Pragglejaz Group 2007; Steen et al., 2010a).

2. Search for metaphor signalling forms focuses on expressions that explicitly mark figurative comparison, such as tuning devices (e.g. *imagine* and *kind of*) that indicate a metaphorical expression (Cameron and Deignan 2003).

3. Source-domain–based searches start from lexical items that represent a particular metaphor source domain (Charteris-Black, 2004). Researchers first identify source-domain vocabulary through a close reading of sample texts and then search for these expressions in larger corpora to explore whether they are used metaphorically across contexts.

4. Target-domain–based searches begin with lexical items related to a target concept and investigate which source domains are used to describe it. For example, Stefanowitsch (2006) examines concordances of target-domain words such as *anger* and *fear* to identify metaphorical expressions in the surrounding context.

All four approaches are commonly applied using corpus linguistic methods to facilitate systematic analysis. The following section will discuss these four principal processes of metaphor identification in greater detail.

4.2.1 Manual Metaphor Identification Approach

In metaphor research, three principal procedures have been developed for the systematic identification of metaphorical expressions: the Metaphor Identification Procedure (MIP) (Pragglejaz group, 2007), the Metaphor Identification Procedure VU (MIPVU) (Steen et al., 2010a) and the Vehicle Identification Procedure (VIP) (Cameron, 2003).

4.2.1.1 MIP and MIPVU

MIP is proposed by Pragglejaz Group (2007), which is composed of a group of metaphor scholars, namely Peter Crisp, Ray Gibbs, Alan Cienki, Graham Low, Gerard Steen, Lynne

Cameron, Elena Semino, Joe Grady, Alice Deignan, and Zoltán Kövecses. The initials of these researchers' names form the name of the group. The MIP contains a set of instructions designed to find linguistic metaphors in discourse. The operation of MIP is shown below (Pragglejaz, 2007: 3):

1. Read the entire text–discourse to establish a general understanding of the meaning.
2. Determine the lexical units in the text–discourse.
3. (a) For each lexical unit in the text, establish its meaning in context, that is, how it applies to an entity, relation, or attribute in the situation evoked by the text (contextual meaning). Take into account what comes before and after the lexical unit.

(b) For each lexical unit, determine if it has a more basic contemporary meaning in other contexts than the one in the given context. For our purposes, basic meanings tend to be

- More concrete (what they evoke is easier to imagine, see, hear, feel, smell, and taste);
- Related to bodily action;
- More precise (as opposed to vague);
- Historically older;

Basic meanings are not necessarily the most frequent meanings of the lexical unit.

(c) If the lexical unit has a more basic current–contemporary meaning in other contexts than the given context, decide whether the contextual meaning contrasts with the basic meaning but can be understood in comparison with it.

4. If yes, mark the lexical unit as metaphorical.

According to Pragglejaz Group (2007), MIP is not related to mapping and metaphoric processing. This decision makes MIP replicable. Steen et al. (2010a) state that it is easier for analysts to identify whether a word contains metaphorical features than to determine its conceptual domain since a word's metaphoricity is more likely to achieve consensus than the metaphorical concept it implies. Moreover, focusing on linguistic features allows researchers to 'remain agnostic about conceptual structures' (Steen et al., 2010a: 9). In addition to this,

Steen (2007: 331) also praises MIP for its ability to cover various aspects of metaphor research, including 'direct or indirect language use, presence or absence of signalling, restriction or extension across discourse units, and implicitness or explicitness of source and target domain'.

The limitations of MIP are also acknowledged. Firstly, its process requires a binary decision, that is, yes or no. This binary decision for metaphor identification is accused of being contrary to the commonly held view that metaphor is a matter of degree (Littlemore & Low, 2006). Furthermore, Pragglejaz Group (2007) recognizes that words that are not marked as metaphorical are not equivalent to the situation that they are literally used due to the fact that they may imply metonymic, hyperbolic or other figurative meaning, which is not concentrated on by MIP.

MIPVU is an expanded and revised version of MIP and VU is made up of the initials of the developer's university, the Vrije Universiteit Amsterdam (Steen et al., 2010a). The MIPVU is detailed below (Steen et al., 2010a: 25):

1. Find metaphor-related words (MRWs) by examining the text on a word-by-word basis.
2. When a word is used indirectly and that use may potentially be explained by some form of cross-domain mapping from a more basic meaning of that word, mark the word as metaphorically used (MRW).
3. When a word is used directly and its use may potentially be explained by some form of cross-domain mapping to a more basic referent or topic in the text, mark the word as direct metaphor (MRW, direct).
4. When words are used for the purpose of lexico-grammatical substitution, such as third person personal pronouns, or when ellipsis occurs where words may be seen as missing, as in some forms of co-ordination, and when a direct or indirect meaning is conveyed by those substitutions or ellipses that may potentially be explained by some form of cross-domain mapping from a more basic meaning, referent, or topic, insert a code for implicit metaphor (MRW, implicit).

5. When a word functions as a signal that a cross-domain mapping may be at play, mark it as a metaphor again (MFlag).
6. When a word is a new-formation coined, examine the distinct words that are its independent parts according to steps 2 through 5.

MIVU and MIP have several main differences. Firstly, the MIP also diverges from the MIPVU when it comes to interpreting the lexical unit. According to Pragglejaz Group (2007), lemmas are regarded as lexical units and grammatical categories of words may be ignored in MIP. In MIPVU, word classes are focused on since they ‘have the closest connections with conceptual and referential classes like entities, processes, and attributes’, the neglect of which may lead to the shift of ‘the basis of comparison’ (Steen et al., 2010a: 16 & 35). In other words, an individual word with its grammatical category is considered as the unit of the analysis in MIPVU and when a word has multiple grammatical classes in the dictionary, the more basic underlying meaning conveyed by the word within its word class is used in comparison with its contextual meaning to determine whether it is a metaphor. For example, the analysis of the basic meaning of ‘shift’ as a noun shall be irrelevant to the meaning of ‘shift’ as a verb. MIPVU also extends metaphor identification to MRWs that contain underlying cross-domain mappings: indirect metaphors, direct metaphors, implicit metaphors, and metaphor flags. To accommodate ambiguity in metaphor analysis, MIPVU introduces the principle ‘When In Doubt, Leave It In (WIDLII)’ and encourages collaborative discussion among analysts.

This type of manual analysis can also be integrated with corpus-based approaches to identify all possible metaphors within a dataset, as demonstrated by the VU Amsterdam Metaphor Corpus (Krennmayr & Steen, 2017). The construction of this corpus follows MIPVU and involves the manual annotation of nearly 200,000 lexical units. Four trained annotators examine every word in the corpus and judge, according to the MIPVU guidelines, whether each lexical unit should be coded as metaphor-related. To ensure high reliability, the project incorporates several quality-control mechanisms, including cross-checking between annotators, group discussions to resolve disagreement and potential bias, and systematic troubleshooting

to address recurrent annotation errors. Although corpus tools are used to organize and manage the data, the actual identification process remains mainly manual.

4.2.1.2 VIP

While MIP and MIPVU focus primarily on the word level, VIP proposed by Cameron (2003) extends the scope of metaphor identification to segments of discourse of varying length. Cameron (2003) suggests that metaphors often do not only exist in single words alone but may be realised through phrases or longer sequences of language. She therefore introduces the concept of vehicle terms, referring to words or groups of words that carry metaphorical meaning within discourse. As Cameron & Maslen (2010: 105b) explain,

The further reduction to word level built into the Pragglejaz group procedure is not theoretically valid in the discourse dynamics framework because neither language nor metaphor is seen to work only at word level. Sometimes individual words may be used metaphorically but often a group of words are used together metaphorically. By allowing metaphor vehicle terms to be words or phrases, the identification procedure and the theoretical framework fit validly together.

Similarly, Maslen (2016: 93) notes that under the framework of discourse dynamic system, 'multiple associations can be active at once, processing would not take place exclusively at word level'.

Cameron's VIP (2003) is grounded in two main principles: incongruity and transfer. According to the principle of incongruity, a word or phrase is considered metaphorical when its contextual meaning contrasts with its more basic or conventional meaning. The principle of transfer refers to the understanding of a word or phrase's contextual meaning in terms of its basic meaning. In other words, meaning is transferred from one conceptual domain to another. Only when both principles are fulfilled is an expression regarded as metaphorical.

In practice, researchers read through the dataset line by line, identifying words or phrases that satisfy these two principles and marking them as vehicle terms. Importantly, metaphor identification also involves analysing discourse context of vehicles to explore attitudes and values it expresses (Cameron et al., 2010). As Low et al. (2008: 6) observe, 'MIP is particularly suited to quantitative work and reliability checking, but VIP is good at handling phraseological aspects of metaphor'.

According to Cameron & Maslen (2010b), one of the main difficulties lies in determining the boundaries of the vehicle term. They suggest that researchers can 'start from the most clearly incongruous or contrasting word and work outwards' to determine the full extent of the metaphorical unit (Cameron & Maslen, 2010b: 108). In addition, to enhance validity and consistency, researchers may consult large scale corpora or corpus-based dictionaries to verify the basic meanings of words and to minimise subjectivity and cross-checking and discussion among annotators are also essential to ensure reliability (Cameron & Maslen, 2010b).

However, the manner in which VIP defines the scope of metaphor identification may lead to the difficulty in achieving cross-corpus comparability of vehicle-term frequencies. In other words, compared with MIP and MIPVU, VIP possibly appears to have weaker replicability and methodological consistency. Therefore, while I agree with Cameron & Maslen (2010b: 105) that 'sometimes individual words may be used metaphorically but often a group of words are used together metaphorically', in order to keep systematicity and comparability, my study adopts a primarily word-level aspect to metaphor identification.

4.2.1.3 Limitations and Decisions

MIP, MIPVU, and VIP all require researchers to read entire texts closely and identify metaphors. This approach can lead to high accuracy and permit a detailed understanding of meaning in discourse context. However, it is time-consuming and therefore impractical for studies

involving large corpora or a limited number of researchers. This constraint applies to my study, which comprises 1,000 articles and a total of 673,068 tokens.

To address this issue, a corpus-based approach needs to be employed to accelerate metaphor identification. Corpus methodologies enable faster analysis of large datasets, enhance replicability, and provide quantitative insights into linguistic patterns (Hardie, 2015).

Nevertheless, this does not imply that MIP or MIPVU are excluded. Rather, after retrieving concordance lines that are likely to contain domain-specific metaphors, a modified metaphor identification process, based on the principles of MIP and MIPVU, is applied to determine metaphorical uses. The detailed procedure adopted in this study will be presented in Section 4.4.

4.2.2 Metaphor Signals

According to Goatly (1997) lexical items such as *like*, *as*, *some kind of*, *something*, and *symbolically* often function as markers signalling metaphorical expressions. Krennmayr (2011: 60) defines lexical metaphor signals as ‘words which alert the language user to the fact that some form of contrast or comparison is at play’.

Following this view, Steen (2015) argues that the presence of a source domain in discourse can sometimes be detected through metaphor signals and other cotextual cues, a principle also incorporated into the MIPVU procedure. For example, the main refinement introduced in MIPVU from MIP is the addition of novel compounds and lexical markers signalling metaphorical use (Steen et al., 2010a).

In spoken discourse, Cameron & Deignan (2003) introduce the notion of tuning devices, words or phrases that frequently co-occur with metaphors. The core function of tuning device is to guide listeners toward the speaker’s intended figurative interpretation, including alerting the

hearer that a metaphorical reading is required, indicating the nature of the mapping between the topic and the vehicle and softening the semantic mismatch between the metaphor and its referent. Tuning devices covered in their study include *just*, *like*, and *sort of*, *actually*, *almost*, *imagine*, *kind of*, *a little*, *really*, *so to speak*, *in a way*, *if you like*, and *as it were*.

Reijnierse et al. (2018) similarly observe that lexical signals such as *like* and *as* are often used in top-down corpus searches to locate potentially metaphorical expressions, which are then examined in context for metaphorical meaning. However, as Nacey et al. (2019a) point out, this approach also presents limitations: since such lexical forms are highly specific, instances may occur infrequently in natural data, requiring very large corpora to obtain sufficient examples for analysis.

4.2.3 Source-domain–based Searches

The source-domain–based approach, often referred to as a top-down method, begins with the investigation of a specific source domain that the researcher aims to examine (Tissari, 2016; Nacey et al., 2019a). In this approach, a list of lemmas related to the chosen source domain is first compiled. Each lemma is then checked in a dictionary to verify that it possesses a basic sense corresponding to the intended source domain. These lemmas are subsequently searched across the corpus for relevant concordance lines. Researchers then determine whether these instances are used metaphorically, based on contextual interpretation. Finally, the retrieved data are analysed in terms of frequency, distribution, and collocational patterns, providing insights into how the chosen source domain is linguistically realised within the corpus (Koller, 2002; Charteris-Black, 2004).

In some cases, the compilation of a list of lemmas is guided by researchers' experiential or anecdotal observations of language use. For instance, in her study of mergers and acquisitions discourse, Koller (2002) identifies two salient source domains, *war* and *marriage* as central to

the conceptualisation of corporate mergers based on anecdotal evidence from relevant texts. She then compiles a list of 48 representing the two source domains. With the help of concordance programme, these lemmas are then searched across a corpus of 162 mergers and acquisitions articles to retrieve their occurrences in context, which are subsequently examined manually to determine whether the lemmas are employed metaphorically within their textual contexts.

In other cases, metaphor identification begins with a relatively small sample serving as the foundation for a broader corpus-based analysis, a strategy often referred to as the 'small corpus / large corpus approach' (Nacey et al., 2019a: 63). In this approach, researchers first conduct a close manual reading of a limited subset of texts to identify all metaphorical expressions. Linguistic metaphors identified in this stage are then used as search terms for retrieval in a much larger corpus.

A well-known application of this approach is Charteris-Black's (2004) study, which examines metaphor use in political and sports discourse. He begins by analysing a small sample of 100 sports articles to identify lemmas relevant to the source domain of *war* and compiles a list. This lexicon is then used for large-scale searches to determine how frequently sport is metaphorically characterised as *war*. This method demonstrates how qualitative insights from small-scale manual analysis can inform quantitative corpus searches.

However, this approach has received criticism. Berber Sardinha (2012) systematically evaluates the practice of reading a sample of corpus texts to identify metaphors before searching for them across the full corpus. Using all possible combinations of sample sizes in a fully hand-annotated corpus, he calculates recall rates and shows that reading approximately 30% of the corpus retrieves half of all metaphor types, whereas adding more texts yields progressively smaller gains. In other words, while this metaphor identification approach provides high precision at the first stage, it proves less efficient for capturing metaphorical

expressions across larger datasets. Also, Demmen et al. (2015: 209) argue that ‘this method only enables researchers to find further instances of previously identified expressions’.

The use of additional corpus tools can improve accuracy and facilitate the identification of a wider range of metaphors (Koller et al., 2008; Demmen et al., 2015; Semino et al., 2017a). For example, Demmen et al. (2015) introduce the UCREL Semantic Analysis System (USAS), an automatic semantic annotation tool embedded into the Wmatrix software (Rayson et al., 2004; Rayson, 2008), which assigns each word or phrase to one or more semantic categories. According to Koller et al. (2008: 143), ‘a semantic annotation approach represents a valuable additional tool for researchers interested in analysing the use and function of metaphor in naturally occurring discourse on a large scale’. Semino et al. (2017a) adopt an enhanced approach that integrates USAS semantic annotation to extend and scale up metaphor identification across the corpus. These manually identified metaphors were then matched with corresponding USAS semantic tags in Wmatrix, which had automatically annotated the entire corpus. These tags are then used to perform large-scale searches across the entire corpus, since the full dataset is also automatically tagged with USAS tags. To overcome the limitation of Wmatrix’s default setting, which searches only the first-choice semantic tag assigned to each word, the researchers also implement broadsweep searching. This allows them to retrieve all instances where a relevant semantic tag appears anywhere in a word’s list of possible tags. According to Koller et al. (2008), this approach enables the discovery of a wide and open-ended range of potential metaphorical expressions in large datasets, without being limited to predefined or fixed lists of lexical items.

4.2.4 Target-domain-based Searches

Another approach is the bottom-up method, starting from the target domain. This involves searching for target-domain lexis and identifying the metaphors that co-occur with it (Tissari, 2003; Stefanowitsch, 2007). For example, Tissari (2016) investigates metaphors of *hope* across four corpora, reading all concordance lines containing *hope* to determine whether it is

metaphorically conceptualised. This method is named by Stefanowitsch (2007: 66) as Metaphorical Pattern Analysis (MPA), where a metaphorical pattern is defined as 'a multi-word expression from a given source domain (SD) into which one or more specific lexical items from a given target domain (TD) have been inserted'. Although according to the definition, Stefanowitsch (2007: 66) focuses on 'a multi-word expression'. In practice, the patterns identified are not always multi-words. Stefanowitsch (2007) himself acknowledges that even a single word from the source domain can constitute a metaphorical expression. For instance, in his study of *anger*, expressions such as *savage/fierce anger* are accepted as metaphorical patterns, despite containing only one lexical item from the source domain AGGRESSIVE ANIMAL BEHAVIOR (Stefanowitsch, 2007). Thus, it can be concluded that based on Stefanowitsch's approach (2007), to analyse a target domain, the analyst first chooses one or more relevant lexical items and then identify metaphorical expressions of a source domain in the retrieved concordances from a corpus.

Following MPA method, studies use the vocabulary from the target domain in the first step of analysis, and then manually check the concordances to find out the metaphorical expressions related to the topic (Llopis & López, 2010; Partington et al., 2013; Isentyeva, 2019; Šarić, 2020). For example, in order to investigate how the British media use metaphors to talk about Europe, Isentyeva (2019) searches the target domain lemma *Europe* in her corpus and looks at all the expanding concordances to manually analyse the relevant metaphorical expressions and classify them based on different source domains. Similarly, to conduct a quantitative analysis of metaphors associated with the target domain of *economy*, Llopis & López, (2010) search for 22 relevant key words from the finance field to identify metaphors. A similar approach is also adopted by Semino et al. (2017a) to complement their metaphor identification procedure. For example, they extract concordance lines containing the main literal references to healthcare professionals in the patient data, such as nurse, doctor, and consultant in order to analyse how patients and professionals metaphorically construct their mutual relationships. In addition, they also retrieve target-domain semantic tags, such as those associated with the semantic field of sadness, to identify metaphorical expressions of grief and bereavement. Ding et al.

(2010) state that based on the MPA method, the vocabulary used for searching is usually nouns from the target domain, and not all metaphorical expressions follow metaphorical patterns, which leads to the fact that this method may not be able to search all metaphors in the corpus or even in a specific target domain.

Although the enhanced source-domain-based approach using Wmatrix and USAS tools can improve the efficiency of metaphor identification, the scale of my dataset and the practical constraints of conducting the analysis independently within a limited timeframe make this method unsuitable for my study. Therefore, I decided to first identify lexical items related to the target domain and then examine their concordance lines to manually determine the presence of topic-relevant metaphors. The identification process follows a modified version of MIP and MIPVU.

4.3 Metaphor Identification Procedure Adapted in My Research

This section will introduce the metaphor identification procedure used in my research in detail, which is modified based on MIP and MIPVU.

4.3.1 The Reference Dictionary

Both MIP and MIPVU rely on the dictionary to identify lexical unit, establishing basic sense and contextual meanings (Pragglejaz, 2007; Steen et al., 2010a). Both methods emphasize the importance of using a dictionary to identify words used metaphorically since it allows analysts to shift from relying on intuition and personal biases towards a relatively objective way, thereby ideally enhancing the reliability (Krennmayr, 2008; Dorst & Reijnierse, 2015). They both mainly refer to the Macmillan English Dictionary for Advanced Learners (MEDAL) (Rundell & Fox, 2002), a learner's dictionary since it is corpus-based, emphasizes contemporary English and shows an awareness of metaphorical expressions (Pragglejaz, 2007). MIPVU compares approximately 100 lexical units in MEDAL and the Longman Dictionary of Contemporary

English (LDOCE) to determine an explicit choice between them and decides to follow MIP's idea, choosing MEDAL as the first dictionary, supplemented by LDOCE and Oxford English Dictionary for doubtful situation since there are 'no essential or systematic difference' (Steen et al., 2010a: 186). However, Steen et al. (2010a: 186) admit that relying only on comparison of 100 lexical units to determine dictionary choice is 'somewhat arbitrarily'.

MacArthur (2015) criticizes the reliability of the dictionary consulted. For example, MacArthur (2015) explores whether speaking verbs, such as *say*, *contradict*, *tell*, *argue*, *talk* and *speak* in a feedback discussion on a written assignment are metaphorically used and she intuitively thinks that the uses of all speaking verbs are metaphors since speaking and written language are distinct and have different forms. However, following the identification process of MIP and MIPVU, after consulting the MEDAL, a learner's dictionary, MacArthur (2015) suggests that *say* and *contradict* are not metaphors while *tell* and *argue* are on the boundary of being metaphorically used since their basic meanings may imply physical transfer. Only *talk* and *speak* fit her hypothesis, participating in the metaphorical use of framing written texts as acts of speaking (MacArthur, 2015). MacArthur (2015: 134) states that a learner's dictionary cannot provide metaphor researchers with an appropriate basic meaning of a word to compare with its contextual meaning to determine whether it has been used metaphorically, since its basic senses are 'metaphorically-expressed, pedagogically-oriented definitions, aimed at non-native speakers of English'. For example, to distinguish between the verbs *say* and *tell*, which both describe acts of speaking, and to avoid confusion among learners, a learner's dictionary links *tell* with other verbs used in ditransitive constructions that more directly imply an action of transfer (MacArthur, 2015).

In response to the controversy over the use of the learner's dictionary, Dorst & Reijnierse (2015) propose that although the choice of different dictionaries will lead to different results of metaphor identification of lexical units, concerning the previously mentioned speaking verbs, the absence of a clear distinction between speaking and writing meaning is a systematic pattern present in all five dictionaries they examined. In other words, in some situation, there

is no significant differences between the learner's dictionary and the dictionary for native speakers in identifying metaphorical uses. This broad, general and conflated description of meanings may suggest that all these speaking verbs are used for general communication, without distinguishing between any form, whether written or oral (Dorst & Reijnierse, 2015). Similarly, Deignan (2015a) conducts a manual analysis of a random selection of 1000 citations of *say* to determine its basic meaning using corpus data from the BNC 1994, whose result shows the difficulty in distinguishing whether *say* specifically refers to speaking or writing. Consequently, a more logical interpretation is that *say* implies communication in a general sense, not limited to any specific medium (Deignan, 2015a). Furthermore, Dorst & Reijnierse (2015) also note that speaking verbs may lack any communicative function or rhetorical effect relevant to the framing effects of metaphors, and thus are not usually considered metaphorical, even though their metaphorical origins are recognized. Deignan (2015a) finds that the top ten frequent collocations of *say* largely overlap with the ten most common words in the BNC 1994, indicating that *say* lacks lexical collocates. Therefore, Deignan (2015a) also agrees that *say* is almost delexicalized, and not a good candidate for metaphor. In conclusion, the example of metaphor identification of speaking verbs criticized by MacArthur (2015) seems not to serve as evidence that the learner's dictionary is unsuitable for metaphor research. Moreover, it may imply that, in certain cases of metaphor analysis, there is no significant difference between using the learner's dictionary and using the native speakers' dictionary. Deignan (2015a) highlights the advantages of using the learner's dictionary. Compared to corpus-based concordance analysis, the learner's dictionary, which is based on a thorough corpus analysis, saves metaphor analysts time in establishing the basic meaning of lexical units. It includes the meanings, collocations, grammatical patterns, connotations, style, and register of the most common words in the specific language, which might not be extensively discussed in native speaker dictionaries due to their targeted audience and purpose (Deignan, 2015a). Therefore, the dictionary used in my research follows the guideline of MIP and MIPVU is the learner's dictionary (Pragglejaz, 2007; Steen et al., 2010a). Given that MEDAL, the first dictionary in both metaphor identification procedure was suspended from

use, a similar online corpus-based learner's dictionary, LDOCE, which is the second choice for MIPVU, is utilized as the reference dictionary in my research (Steen et al., 2010a).

When establishing basic meaning of lexical units, MIP uses the Shorter Oxford English Dictionary on Historical Principles to refer to etymology, which is one of the criteria for metaphor identification (Pragglejaz, 2007). However, Steen et al. (2010a) state that physical meaning is not necessarily older than abstract meaning and etymology has little relevance to contemporary use of language. Therefore, in MIPVU, etymology is excluded from contemporary metaphor identification procedures (Steen et al., 2010a). According to Cameron (1999), the goal and approach of a research influence the determination of criteria for metaphor identification. For example, if the research focuses on the metaphors in Shakespeare's works, the etymology of lexical units in the native speaker dictionary values since it provides the non-contemporary uses of metaphors (Dorst & Reijnierse, 2015). Since I focus on the contemporary use of metaphors of cancer and Covid-19 prevention, etymology is not considered in my research as a criterion for the identification of linguistic metaphors.

With regard to part-of-speech distinctions in establishing basic meanings, my study follows the decision adopted in the MIP (Pragglejaz Group, 2007). Specifically, this approach allows part-of-speech boundaries to be crossed in cases where different word classes share a common base form. For example, when establishing the basic meaning of *drive* in 'a new vaccination *drive*', I did not consider the basic meaning of *drive* as a noun listed in the dictionary. Instead, its basic meaning was determined with reference to *drive* sharing the same base form as a verb, whose basic sense relates to physical movement. Following the MIP procedure, *drive* in this example is therefore analysed as a metaphorical expression.

4.3.2 Decisions on Lexical Units

According to Pragglejaz (2007), the first step of the metaphor identification procedure is to identify lexical units within the text. The main criterion of deciding boundaries of lexical units is

the decomposability, referring to whether a multiword unit can be comprehended by examining the meanings of its individual components, or if it must be perceived as a unified whole (Gibbs, et al., 1989; Pragglejaz, 2007). Deignan (2015b) suggests that the transition from ordinary collocations to more structured sequences, such as idioms, extending to phrasal verbs and polywords is gradual and there is no clear boundary or specific point where the analyst can definitively separate single lexical units from combinations of words that often appear together. Using a dictionary as a standard for making relevant decisions helps ensure a replicable and consistent approach (Deignan, 2015b). Steen (2016: 79) criticize that although MIP provides the analyst with more freedom to identify metaphors, it is 'operationally minimal' since it fails to provide clear guidelines for determining what constitutes a lexical unit. MIPVU follows the terminology proposed by MIP: lexical unit and made some further interpretations of the identification and boundaries of lexical units (Steen et al., 2010a). It adopts a corpus-based approach and mainly follows the practices from the BNC 1994 when identifying what constitutes a lexical unit with the exception of phrasal verbs, some compounds, and some proper names, including words assigned an independent Part-Of-Speech (POS) tag and all polywords are considered individual lexical units (Steen et al., 2010a). In conclusion, although there are some different treatments for multiword expressions, both MIP and MIPVU agree to treat most single words as lexical units, which is followed in my study. Next I will discuss in detail how I treat multiword expressions in my research, including polyword, phrasal verb, proper noun, compound and idiom.

4.3.2.1 Polyword

Both MIP and MIPVU agree that polywords are treated as a lexical unit since it lacks variability and manifest as a cohesive unit within the text (Nattinger & DeCarrico, 1992). In other words, a polyword cannot be semantically decomposed and its semantic meaning is not the sum of the meanings of the words composing it (Pragglejaz Group, 2007). According to the guideline of MIPVU, the BNC website provides a finite list of polywords and the analyst should consult the list for identification (Steen et al., 2010a). Expressions listed in *the List of Multiwords and Associated Tags in BNC2* (<http://www.natcorp.ox.ac.uk/docs/multiwd.htm>) and tagged as

multiwords by the POS tagger are to be identified as polywords, thus counted as single lexical units (Nacey et al., 2019b). In my research, I decided to consider polyword units as individual lexical units and refer to *the List of Multiwords and Associated Tags in BNC2* to identify polywords.

4.3.2.2 Phrasal Verbs

Phrasal verbs are verbal expressions consisting of a verb and one or two particles that are typically adverbial and appears as more than one word, such as *work out*. Steen et al. (2010a: 28) state that they serve as linguistic units that indicate ‘one action, process, state, or relation’ in the referential aspect of discourse. Pragglejaz (2007) suggests that most phrasal verbs cannot be semantically analysed by breaking them down into their component parts without losing their intended meaning and thus are considered as single lexical units. Although Pragglejaz (2007) acknowledge that there are also some ambiguities where the relationship between the meaning of a phrasal verb and its components is more evident, such as *eat up*, phrasal verbs are considered as single lexical units since they commonly possess non-decomposable meanings (Pragglejaz, 2007).

The problem of the phrasal verb is its identification. MIP consults the dictionary and treats all multiword expression with the phrasal verb tag as the phrasal verb (Pragglejaz, 2007). Steen et al. (2010a) criticize that this approach does not show the difference between phrasal verbs and prepositional verbs and verbs with post-attached adverbs, the latter two shall be analysed as separate lexical units since the dictionary usually tags them as phrasal verbs. In order to distinguish between simple phrasal verbs and prepositional verbs, MIPVU summarizes a list of criteria, as is shown in Figure 4.3.2.2. Concerning complex phrasal verbs, MIPVU follows the dictionary and treats them as individual units.

Tests for deciding between phrasal/prepositional verbs

In prepositional verbs:

- The preposition and following noun can be moved to the front of the sentence, which is not possible with phrasal verb particles (e.g. *Up into the sky she looked* but not **Up the information she looked*).
- An adverb can be inserted before the preposition (e.g. *She ran quickly down the hill* but not **She ran viciously down her best friends*).
- The preposition can be moved to the front of a *wh*-word (e.g. *Up which hill did he run?* but not **Up which bill did he run?*).

In phrasal verbs:

- The adverbial particle can be placed before or after the noun phrase acting as object of the verb, which is not possible for the prepositional verbs (e.g. *She looked the information up* but not **She looked his face at*).
- If the noun phrase is replaced by a pronoun, the pronoun has to be placed in front of the particle (e.g. *The dentist took all my teeth out* > *The dentist took them out* but not *She went through the gate* > **She went it through*).

Figure 4.3.2.2 Tests for deciding between phrasal/prepositional verbs (Steen et al., 2010a: 30)

However, I argue that this procedure may be somewhat problematic as well. For example, *look after* might be considered as phrasal verb in light of its semantic non-decomposability but based on the above standard, it is more likely to be categorized as a prepositional verb. According to Deignan (2015b) and Nacey et al. (2019b), the most important criteria for the identification of lexical units should be consistency and replicability. Given the purpose and scale of my study, I decided to refer to the labels automatically assigned by LDOCE to identify phrasal verbs and consider them as single lexical units.

4.3.2.3 Proper Nouns

In the practice of MIP, a proper noun is treated as a lexical unit (Pragglejaz, 2007). According to MIPVU, most proper names are analysed word by word, except for those are 'bestowed on public entities' and some represent titles with the primary stress on the first word and secondary stress on the second word in the dictionary, such as ' *pulitzer* ', *prize* (Steen et al., 2010a: 32). In other words, under the MIPVU guideline, proper nouns that can be considered

as a single lexical unit must be listed in the dictionary and composed of two or more elements, with the primary stress on the first component. If these conditions are not met, they are analysed separately. Under these standards, the *Labour Party* is noted as a proper noun, while *Boris Johnson* is analysed word by word (Steen et al., 2019). In my research, I followed the MIP approach, treating proper nouns as a single lexical unit since it is semantically non-decomposable. For the identification of proper nouns, I adopt a more inclusive approach, considering items that consist of two or more components, appear in LDOCE, and start with a capital letter as proper nouns since 'all these types (proper nouns) are frequently marked orthographically with initial capitalization' (Allerton, 1987: 61).

4.3.2.4 Compound

According to MIPVU, compounds, including one word, two hyphenated words and two separate words are usually considered as single lexical units since 'they have a unitary, single conceptual and referential function in discourse, where they designate distinct entities, attributes, or relations' except novel compounds (Steen et al., 2010b: 775). Components of novel compounds may trigger two associated concepts and form a referential link between them, and thus they should be analysed as their constituent parts and in other words, two lexical units (Giegerich, 2004; Steen et al., 2010b; Benczes, 2013). One method that can be used to distinguish conventionalized and novel metaphors is to look up the reference dictionary since novel compounds usually do not appear in the dictionary and the absence may indicate 'their absence from the mental lexicon of the idealized contemporary language user' (Steen et al., 2010a; Steen et al., 2010b: 775). Therefore, in my research, compounds that appear in the dictionary were considered as a single lexical unit.

4.3.2.5 Idiom

Pragglejaz (2007: 27) states that based on the decomposability, each component of idioms is treated as a single lexical unit since 'people can find metaphoricity at the level of word' and most idioms offer some level of decomposability, which is followed by MIPVU (Steen et al.,

2010a). However, Steen et al. (2010a) also acknowledge that idioms, various in form, transparency and fixedness usually contain clauses and sentences, requiring the analyst to determine if they should be noted as a single lexical unit or a text consisting of several lexical units. Based on the idiom principle proposed by Sinclair (1991: 110), 'a language user has available to him or her a large number of semi-preconstructed phrases that constitute single choices, even though they might appear to be analysable into segments' and thus, idiomatic expressions are 'fixed phrases simplifying the production of language' (Steen et al., 2010a). Similarly, Nattinger & DeCarrico (1992: 33) define idioms as 'complex bits of frozen syntax, whose meanings cannot be derived from the meaning of their constituents'. According to these descriptions, idioms are typically seen as non-decomposable. However, some research points out that the compositionality of idioms is a matter of degree (Gibbs & Nayak, 1989; Nunberg et al., 1994; MacArthur, 2024). Gibbs & Nayak (1989: 100) propose Idiom Decomposability Hypothesis and state that 'syntactic behaviour of idioms is determined, to a large extent, but (by) speakers' assumptions about the way in which parts of idioms contribute to their figurative interpretations as a whole'. According to MacArthur (2024), idioms vary widely from the relatively opaque, such as *use one's head* to those whose meanings are not deducible from their individual words, such as *kick the bucket*. Nunberg et al. (1994) categorize English idioms into two types: Idiomatically Combining Expressions (ICEs) and Idiomatic Phrases (IPs). ICEs, such as *pull strings* are made up of word-level units contributing to the idiom's overall meaning, with *pull* implying *use* and *strings* suggesting *personal connections*. IPs are syntactically and semantically indivisible, implying that the whole phrase is lexically stored with its idiomatic meaning, without its meaning distributed among individual parts (Nunberg et al., 1994). MacArthur (2024) states that it is challenging to consider the metaphoricity of semantically non-transparent or non-decomposable idioms, since metaphors inherently involve the transfer of meaning across source and target domains. The difference between these two types of idioms may be related to syntactic flexibility, with ICEs exhibiting some level of syntactic flexibility, while IPs appear to be syntactically fixed (Gibbs & Nayak, 1989; Nunberg et al., 1994). In other words, idioms whose semantic meanings are not the sum of their parts tend to have restricted uses, showing little variation while idioms that can be broken down

semantically demonstrate more syntactic versatility. However, a clear and precise criterion for differentiation is lacking since the range of idiom phrases spans a spectrum of analysability (Gibbs & Nayak, 1989). That is, decomposability of idioms is not a binary decision but a concept that it may exist on a continuum. Thus, Wray (2002: 57) suggests that idioms are more 'fluid' than 'set' and emphasize the complexities in determining whether components of idioms are active or not from the perspective of language users. Moon (1998) points out that the interpretation of decomposability of idioms is largely related to the researcher's definition of what constitutes an idiom. The ability to semantically analyse idioms may vary among language users, suggesting that perceptions of an idiom's decomposability are subjective and different based on individual user interpretation (Nayak & Gibbs, 1990; Grant & Bauer, 2004). Considering the difficulty in distinguishing the decomposability of idioms, to ensure replicable and consistent research, I decided to follow the approach of MIP and MIPVU by treating each component of an idiom as a separate lexical item. However, a flexible approach is adopted when using corpus tools to identify the slant and judgement of idiomatic expressions.

4.3.3 Creativity of Metaphors

According to Littlemore et al. (2023), creativity in metaphors can offer new perspectives on the discourses and social practices, and usually convey relatively strong evaluation and emotion. At the word level, there is a spectrum of conventionality, from metaphorical expressions conventional enough to be listed in the dictionary, such as *marathon* describing the enduring challenges to 'one-off' creative metaphor, such as *spiritual inoculation* to imply long-term benefits of the virus to the society (Pérez-Sobrino et al., 2022: 130). In fact, most metaphors are in the middle and it is widely acknowledged that a distinct boundary between conventional and creative metaphors does not exist (Vega Moreno, 2007).

It brings at least three questions: how to identify creative metaphors, how to determine lexical units of creative metaphors and how to identify the contextual meanings of creative metaphors (Nacey et al., 2019a).

4.3.3.1 Identification of Creative Metaphors

Steen et al. (2010a) propose two methods to determine whether a metaphor is conventionalized enough. The first method strictly consults dictionaries and if a metaphor is not listed, it is considered a creative metaphor since the dictionaries are limited in scope and cannot provide a detailed definition and example for every meaning across all possible contexts and only the central, typical and widely known senses are included. (Deignan, 2015b; Nacey et al., 2019a). In other words, dictionary 'captures an important level of the experience of language users' and offers a relatively reliable standard rather than intuition (Steen et al., 2010a: 49). For example, the contextual meaning of *mine* in 'journalists are *mining* this rich new vein of material' is not codified in the dictionary, and thus can be marked as a creative metaphor (Nacey et al., 2019a). The second approach involves examining a corpus for a higher level of refinement and deciding on a cut-off point to distinguish between conventional and creative metaphors for research purposes (Cameron & Deignan, 2006; Steen et al., 2010a). For example, in order to identify the creativity of *outskirts* in *outskirts of the forest*, Steen et al. (2010a) search for *outskirts* in the BNC-World corpus and find that in a random selection of 50 citations out of a total of 600 occurrences, *outskirts* is used metaphorically only twice and neither instance is related to forests. Therefore, *outskirts of the forest* is considered a creative metaphor. Deignan (2005: 40) gives the specific criteria and considers 'any sense of a word that appears less than once in every thousand citations of the word' to be creative or novel. Littlemore et al. (2023) use another method to identify creative metaphors in the workplace, first excluding all metaphorical instances familiar to both researchers as conventional and then searching the BNC 1994 and the internet, with metaphors not found in these searches primarily treated as creative uses. Finally, the result underwent reliability testing by two coders, starting with collaborative work on a small data set, followed by separate analysis and subsequent discussion. Although the process may vary, 'what is important is an awareness of the restrictions that come with using this framework' (Steen et al., 2010a: 49). In my study, trying to avoid the biases of intuitive preconceptions and considering the scale of my research,

I used the dictionary approach, with the non-existence of the contextual meaning listed in the reference dictionary as a standard to identify creative metaphors. In Example 5, although *firebreak* has an entry in LDOCE, its contextual meaning is not included. Therefore, it is considered as a creative metaphor. The identification of contextual meaning is detailed below in Section 4.4.3.3.

Example 5 A *firebreak*, if necessary, is a good idea (Covid-19-The Guardian- 07/09/21).

4.3.3.2 Lexical Boundaries of Creative Metaphors

Determining the lexical boundary for a creative metaphor involving a single word is straightforward, simply treating it as an individual lexical unit such as *firebreak* describing lockdown. However, for creative metaphors presented as multiword expressions or phrases, focusing only on the word-level might be problematic. For example, when analysing *climbing your way out of a deep, dark hole* in Example 6, if I follow the decision on lexical units mentioned previously, even if *climb*, *out*, *way*, *deep*, *dark* and *hole* will be identified as metaphors, they will be vehicle grouped and analysed separately, leading to the lack of the holistic metaphorical meaning that emerges from the combined use of these words.

Example 6 After all, there is something uniquely dispiriting about *climbing your way out of a deep, dark hole*, only to find yourself abruptly *thrust back* where you began, as if in some hellish version of *Snakes and Ladders* (Covid-19-Daily Mail-10/09/20).

Littlemore et al. (2023) adopt Cameron's (2010: 80) method for identifying metaphors, categorizing metaphors based on the meaning unit instead of concentrating on single lexical items since it focuses on 'interconnectedness' of metaphors 'across stretches of discourse'. Pérez-Sobrino et al. (2022), while not explicitly defining lexical units, clearly extend their focus beyond the lexical stage in practice, as seen in examples they discuss, *don't roar like a lion or fight like a giant*. Thus, in my research, I extended the unit of analysis in identification of

creative metaphors to the level of units of meaning and ‘text spans of any length were identified as a single (creative) metaphor if they were coherent’ (Littlemore et al., 2023: 15).

4.3.3.3 Contextual Meaning of Creative Metaphors

According to Steen et al. (2010a), both the contextual meaning and more basic meaning of conventional metaphors can be found in the dictionary while the contextual meaning of creative metaphors is not listed.

On the one hand, the contextual meaning of creative metaphors can be obtained by examining their uses in the reference corpus. For instance, *firebreak* in Example 4 appears 6,311 times in the enTenTen21 corpus. Out of a random selection of 100 citations, 16 instances of *firebreak* are used metaphorically, with 14 citations related to the topic of Covid-19. The contextual meanings in these cases all refer to restrictive behaviours aimed at preventing the spread of the Covid-19 virus, such as lockdowns and isolation, which can also be the contextual meaning of *firebreak* in Example 5.

On the other hand, some creative metaphors do not appear in the reference corpus, or even if they do, they are used literally or are irrelevant to the topic. In such cases, their contextual meanings are inferred through my intuition and understanding of the topic. For instance, I searched for the creative metaphor *the lead jockey in a horse race throw away his crop a few furlongs from the finish* shown in Example 7 in the enTenTen21 corpus and found no occurrences. By breaking this long metaphor into three shorter creative metaphors, including *the lead jockey in a horse race*, *throw away (his) crop*, and *a few furlongs from the finish*, and searching for their uses in the enTenTen21 corpus, I found examples of their metaphorical use, none of which are related to the healthcare topic. Therefore, it might not be possible to obtain their contextual meanings from the reference corpus. Based on my knowledge of Boris Johnson's announcement of Covid-19 restrictive rules to stop the spread of the virus, I

determined the contextual meaning of this creative metaphor to be disobeying restrictive guidelines before the arrival of vaccines.

Example 7 As much as Prime Minister Boris Johnson's little illustrative *stories* annoy me, I'll join him for one - why would the lead jockey in a horse race throw away his crop a few furlongs from the finish. He wouldn't. Stop squabbling, be patient, follow the rules... (Covid-19-Metro-01/12/20).

4.3.4 Extended Metaphors

Pérez-Sobrinho et al. (2022) note that from a textual perspective, the creativity of metaphors is also shown in their patterns of use, such as extended metaphor. Semino et al. (2017a: 281) define this as 'the occurrence of several words in close proximity that express the same metaphorical comparison'. In other words, when several closely occurring words are used together, conveying the same metaphorical comparison and come from the same source domain, an extended metaphor is established. For example, in Example 8, *devastating* and *hammered* are from the same War & Violence vehicle group, both relevant to the topic of implementing restrictive rules.

Example 8 Kate Nicholls, chief executive of UK Hospitality, said the ultra-strict rules are devastating businesses that have already been hammered by *rolling* lockdowns (Covid-19-The Sun-08/07/21).

Semino (2002) counts various metaphorically used expressions linking to the same vehicle within a clause as one linguistic metaphor. Thus, in Example 8, *devastating* and *hammered* may be counted as single instance of the linguistic metaphor. However, there could be issues in calculating the frequency of lexical groupings across different metaphor types. In my research, to maximize the replicability of the study, I separately calculated the occurrence frequencies of

different metaphorical words from the same vehicle group within the same sentence. However, I will consider the linguistic expressions of extended metaphors in the qualitative analysis.

4.3.5 Domain-specific Metaphors

For the purposes of my study, I only identify domain-specific metaphors. For example, the term *slash* in '*slashing* the quarantine period', although considered a metaphor, is not included in my study because its theme is related to the duration of quarantine rather than the concept of quarantine itself.

In addition, to maintain clarity in the presentation of examples, metaphors that are directly relevant to the discussion are shown in italic and underlined, while other domain-related metaphors, which may be analysed in different sections are shown in italics only to avoid visual clutter.

Appendices A and B present a marked-up sample text from the cancer prevention corpus and the Covid-19 prevention corpus, respectively, illustrating how the metaphor identification procedure described in this section was applied.

4.4 Search Terms for Metaphor Identification

Generally speaking, in research using the MPA method, the lexical items from a specific target domain are often the most indicative words related to the topic, such as the search term anti-Americanism in the metaphor analysis of anti-Americanism in newspaper (Partington et al., 2013). However, even if a specialized corpus is built specifically for a particular topic, there may still be some variations in its topic (Philip, 2012). Although the corpora used in my study are intended to have specific themes, cancer prevention and Covid-19 prevention, similar challenges arise. This is also evident from the process of determining the query terms used to compile the corpora, which likely reflects different preventative measures and areas of focus

associated with each disease. Philip (2012) states that the researcher cannot assume in advance which vocabulary and topics are most prevalent in the data and therefore, identification of the words that are utilized is necessary, which can be accomplished through corpus methods. This step, aims at determining the search terms, primarily relies on the frequency list, since it shows the aboutness of the corpus (Gillings et al., 2023).

This section first discusses dispersion, which may affect the reliability of using frequency to determine search terms, and then outlines in detail the method used to identify search terms in my study.

4.4.1 Dispersion

Rayson (2019) suggest that a word might be considered key if it appears with high frequency in a specific section of a corpus. In other words, words may exhibit clustering and uneven distribution throughout the corpus, indicating an uneven dispersion. This phenomenon may arise when a specific word or phrase in a limited number of texts is used frequently enough to elevate it to a high ranking on the frequency wordlist or identify it as a key term. According to Gillings et al. (2023), the risk of analysing such words is that it may lead the researcher to make assumptions that it is representative of the corpus, even though in fact it may originate from a smaller amount of text. For example, Mautner & Learmonth (2020) focus on the collocation of *manager* and *leader* and find that they frequently collocate with *focal*. However, it does not imply that this expression dominates the discourse community, as the analysis of their citations shows that they appear frequently in only three articles (ibid). Therefore, it is crucial to examine the range or dispersion of a key word.

Sketch Engine provides a simple method for examining the dispersion in a corpus. For example, Figure 4.4.1 illustrates the distribution of the word *UKHSA* (UK Health Security Agency) in the Covid-19 prevention corpus. The distribution is represented by a bar graph. According to Figure 4.4.1, *UKHSA* appears in only 9 texts out of 500 and its frequency is mostly concentrated

at 1-2 occurrences. Words that appear with such frequency, although distinctive, cannot represent the themes of the corpus.

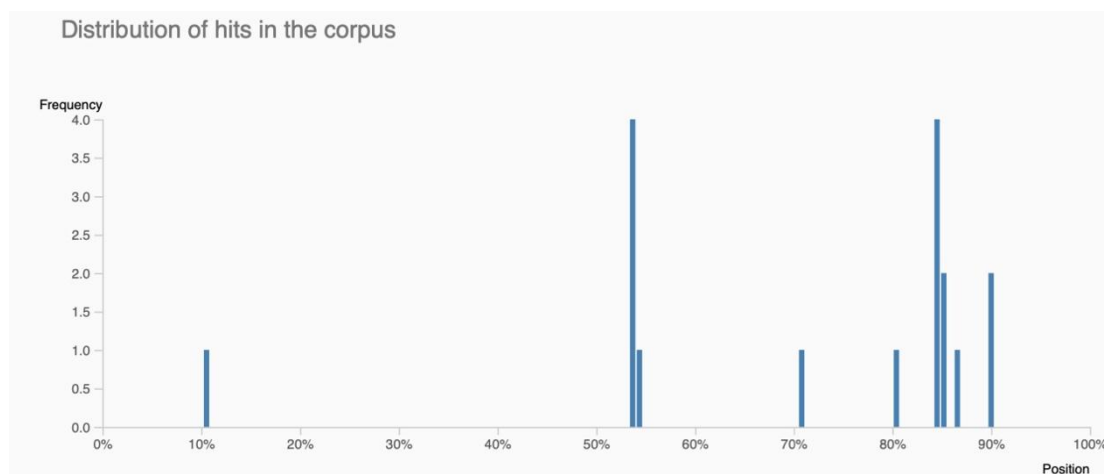


Figure 4.4.1 Distribution of *UKHSA* in Covid-19 prevention corpus using Sketch Engine

Although this simple method of visualizing dispersion exists in Sketch Engine, Gillings (2023) notes that advanced dispersion metrics, such as Juilland's *sD* (Juilland et al., 1970) and *DPnorm* (Gries, 2008) shall be applied to intuitively and efficiently compare different words. Juilland's *sD*, recognized as a reliable lexical dispersion measure has been extensively used in various projects and considered 'the most reliable of the various dispersion coefficients that are available' (Leech et al., 2001: 18 & Biber et al., 2016). Juilland's *D* dispersion metrics, although originally used in Spanish and French studies, have also been widely used in English lexical studies, such as the establishment of Frequency Dictionary of Contemporary American English (Davies & Gardner, 2010) and the new Academic Vocabulary List (Gardner & Davies, 2014). However, Juilland's *D* received criticism for its reliability. Its first step is to divide the corpus into several parts of equal size and investigate the dispersion across these parts, which is criticized for its ignorance of 'more meaningful ways' of division, such as distribution of texts (Gries, 2008; Biber et al., 2016: 440). Furthermore, according to Gries (2008: 412), another issue of Juilland's *D* is that 'some measures' ranges are dependent on the number of corpus parts', which may lead to a decline in the value as the number of corpus parts increases. In his research, the value retrieved from Juilland's *D* is even negative, which should have been

between 0 to 1, suggesting its unreliability (Gries, 2008). To address these limitations, Gries (2008) proposes DPnorm to identify the dispersion of lexical items, which offers a direct and straightforward way to explore the difference between the actual distribution of a word and the expected proportions. Also, DPnorm takes the natural texts of a corpus into consideration and division of the corpus into equal-sized parts is not necessary (Gries, 2008). Finally, Biber et al. (2016) and McGrath & Liardét (2022) state that DPnorm tends to provide a significantly more dependable assessment of dispersion for corpora of any size and the value of DPnorm is more stable at 0-1, although it does not really have a valid range of 0-1. The closer the DPnorm value is to 1, the items are more unevenly distributed in the corpus (Gries, 2008). Therefore, the value of DPnorm at 0.95 is considered in the frequency wordlist, which is realised by Lancxbox 6.0.

4.4.2 Identification of Search Terms

Due to the size of the corpora in my study, search terms of the potential target domain and topics need to be recognized to narrow down the research scope for identifying metaphorical expressions closely associated with the identified search terms and topics within the corpus.

According to Gillings et al. (2023), the examination of the raw frequency of words in a text is a necessary preliminary process for analysis since it serves as a foundation for gaining a deeper understanding of the corpus and identifying areas of focus for future searches and analyses. Deignan et al. (2019) state that using a frequency list as a starting point for identifying search terms for metaphor analysis allows researchers to focus on the most frequently occurring lexical items in the corpus. This enables a 'principled' selection of lemmas for detailed qualitative analysis and ensures that the investigation is grounded in authentic linguistic evidence (Deignan et al., 2019: 21). Stefanowitsch (2007) also agrees that frequency list tends to be fruitful when dealing with a sizable collection of representative and relatively focused texts. Therefore, to obtain the frequency wordlist in each corpus, the Wordlist function in Sketch Engine Tool is used in my research as a starting point, with the setting being lemma.

This step is essential as ‘no theory of metaphor can foresee which word forms will be used more often metaphorically’ (Sardinha, 2008: 128).

When checking frequencies, compared with the raw frequency, relative or normalised frequency is more useful as it takes into account the size of the corpus being analysed (Gillings et al., 2023).

Baker et al. (2013) aim to investigate how Muslims are represented in the British press. Their corpus is very large, consisting of approximately 143 million tokens collected from newspaper articles containing over 40 query terms related to Islam. During their initial exploration, they notice that, apart from the query terms themselves, a group of non-query content types also occur with high frequency, such as *terror*. Since the individual frequencies of 4 word forms of *terror* (*terror*, *terrorism*, *terrorist* and *terrorists*) average around 40,000, Baker et al. (2013: 52) state that it may be useful to explore other non-query content words with comparable or greater frequencies (40,000 and above) that are most likely to relate to the main topics in the corpus and are ‘salient to the discourses surrounding the query terms’. Baker et al. (2013) use their self-built corpus of almost 143 million words, therefore an occurrence of 40,000 is roughly equivalent to a relative frequency of 27.97 occurrences per million words.

In my research, I use Sketch Engine tool to generate two frequency wordlists. Following Baker et al. (2013), I consider all the lemma beyond the cut-off point. Applying the same normalised frequency threshold to my data corresponds to words appearing 94 times in the cancer prevention corpus (334,393 tokens) and 93 times in the Covid-19 prevention corpus (331,747 tokens). Although they include only content words, which will be discussed later and focus on word types rather than lemmas, the number of items obtained under this criterion in my corpora makes subsequent manual metaphor identification almost impossible.

Given the significant difference in the size of the corpus between Baker et al.’s (2013) study and my own study (their corpus has over 400 times the number of tokens in each of my

corpora), and for the sake of manageability, I set the cut-off point at the relative frequency of 500 times per million tokens. This cut-off point corresponds to approximately 166 occurrences in the cancer prevention sub corpus (331,747 tokens) and 169 occurrences in the Covid-19 prevention sub corpus (334,393 tokens). I also apply a DPnorm dispersion cut-off of 0.95, excluding all words with values above this threshold. These standards provide the frequency wordlist of 237 lemmas in cancer prevention corpus and 276 lemmas in Covid-19 prevention corpus.

The primary observation from two frequency wordlists in my study is that function words such as *the*, *a*, *I*, and *of* tend to occur more frequently than content words. According to Philip (2012), while analyzing thematic content, structure words are relatively less valuable since metaphors require content, and therefore structure words can be removed manually to focus on content words. Deignan & Semino (2010) also agrees that compared with grammar or function words, lexical or content words convey more meanings and tend to be more informative. Therefore, using a stoplist is useful to prevent confusion and ensure that attention is focused on the topic of the corpus. Cantos (2011: 148) defines the stoplist as 'a filter module that takes out certain commonly occurring words based on the hypothesis that they appear frequently in all texts or corpora and that their appearance contributes nothing, or very little, to explaining the content or topic of a text or corpora'. In Baker et al.'s (2013) research, only nouns, adjectives, and verbs but not adverbs are included as content words in the analysis since they have a broad range of meanings and functions that are too diverse to be clearly associated with a particular topic, which is followed in my research. Some words have multiple uses, such as *last* which can be a noun, adjective, adverb, and verb. In such cases, their concordances are examined to determine their primary usage. For instance, *last* is mainly used as an adjective and verb in my corpora, and thus, is retained in this step. Furthermore, Baker et al. (2013: 51) state that some content words are also too general to indicate a topic, including general lexical verbs (e.g. *come*, *say*, *take*), lexical markers of modality (e.g. *think*, *want*, *need*) and general adjectives (e.g. *good*, *little*, *new*). In other words, certain content words, despite carrying meanings, are commonly present in all texts and therefore do not

specifically point to the topic. Considering that my objective was to identify items that can represent the topic, content words mentioned in the study of Baker et al. (2013: 51) were excluded from my study.

In addition, I also followed Deignan et al. (2023)'s method, the New General Service List (NGSL) proposed by Brezina & Gablasova (2015) was used to remove structure words and some content words.

West (1953) collected and analysed over 2.5 million words of text and developed a list of approximately 2000 high-frequency words, The General Service List (GSL), which are considered to account for most of the vocabulary in different types of texts. However, Richards (1974) criticize that the GSL may not accurately reflect current vocabulary since it was compiled based on a corpus of texts from the 1930s and may be out of date. Its combination of objective and subjective criteria in determining which words should be included has also been questioned (Gilner & Morales, 2008). To address these limitations, Brezina & Gablasova (2015: 18) developed NGSL, using a 'transparent compilation' corpus-driven approach based on quantitative criteria. The NGSL consists of 2,500 general high-frequency words that occur widely across different types of texts and was designed to reflect more current patterns of language use (Brezina & Gablasova, 2015).

According to Deignan et al. (2023: 117), 'a cut-off point to define 'general words'' is needed since including the full list of NGSL would cover 'a large proportion of our word lists, including some types that we could see, through manual inspection, were topic-specific'. Following Deignan et al. (2023), the cut-off at the top 200 words of the NGSL was set to. Their decision was informed by Stubbs (2001: 42), who notes that, across corpora, the most frequent words tend to be function words, followed by a small set of high-frequency content words, such as '*think, know, time, people, two, see, way, first, new, say, man, little, good*'. Deignan et al. (2023) compare these items with their positions in the NGSL and find that most of them fall within the top 100, with a small number extending to ranks 105–174. On this basis, they establish a

cut-off at the top 200 words of the NGSL 'to capture the notion of general, non-topic-specific words in an as accurate and replicable way as possible' (Deignan et al., 2023: 117).

In addition, I also delete certain words: 1) *cent* and *per* as they only collocate with each other and are commonly used to refer to changes in medical cases; 2) Titles before name including *mr.* for addressing men, *doctor/dr.* for doctoral titles, *professor/prof.* for professorial titles, and titles like *chief*, *secretary*, *prime*, and *minister/PM*; 3) Words related to time such as *yesterday*; 4) Personal names like *Boris* and *Johnson*. However, this approach has two drawbacks. Firstly, some words that are very common but strongly related to the topic are excluded. For instance, in Covid-19 prevention corpus, *child* and *home* ranking 169 and 158 respectively in NGSL are deleted, whose concordances indicate the relation to lockdown policy and vaccination. Similarly, in the cancer prevention corpus, *woman/women*, which ranks 198 in the NGSL, is also excluded, whose concordances refers to gender-specific cancer risks, screening practices, and targeted prevention campaigns. Furthermore, there are still some words that do not specifically point to the topic, such as *suggest* (297) and *expect* (278).

After these procedures, 88 search terms in the cancer prevention corpus and 101 search terms in the Covid-19 prevention corpus were identified that can direct to the topic, as listed in Appendices C & D. The frequency column in these appendices shows the number of occurrences of each search term in the relevant corpus. For search terms with more than 500 citations, a random sample of 500 citations was examined; where fewer than 500 citations were available, all citations were examined. In total, 26,683 citations were examined in the cancer prevention corpus, and 29,334 citations were examined in the Covid-19 prevention corpus. This procedure was used to determine whether the citations retrieved by these topic-related search terms contained topic-relevant linguistic metaphors.

4.5 Vehicle Group Coding

According to Cameron et al. (2010), after identifying linguistic metaphors, the next step is to group metaphor vehicles before working on the identification of topics. Cameron et al. (2010) suggest that such sequence is due to the fact that topics are not always directly mentioned in discourse, making their identification an integral part of the analytical process. Moreover, it may force us to focus on the metaphor itself instead of the broader context of the discourse, which makes determining the semantic meaning of the vehicle grouping more objective, ensuring that the analysis is based on actual language used rather than any predetermined meanings (Cameron et al., 2010). Maslen (2010 & 2016) also states that the vehicle grouping step may help the analyst identify any potentially recurring patterns and themes within the data set through the variation of type frequencies.

Following Cameron's approach of groupings of metaphor vehicles, analysts 'work through the metaphors vehicles grouping them together on the basis of the semantics of the basic meaning of the metaphor vehicle' and 'work inductively from the data' (Cameron et al., 2010: 118 & 120). Following this procedure, in order to establish how metaphors are used to frame cancer and Covid-19 prevention, I gathered vehicle terms that shared the same or a very similar semantic meaning to establish vehicle groupings.

Once I grouped the vehicle terms, the groups were assigned labels which covered all the vehicle terms within the same group and 'should remain as specific as possible', and 'abstract and generalised (labels) beyond the evidence in the data' should be avoided to prevent from 'being over-inclusive or over-interpretive' (Cameron et al., 2010: 119). Maslen (2016) also states that labels for vehicle groups should be closely relevant to the text. In other words, if abstract and generalised labels are assigned to vehicle groups, they may imply meanings that are not supported by the data. Cameron's guidance is that the label should accurately represent all the vehicles in the group and ideally be exclusive to them (Cameron et al., 2010). However, in practice, these principles are not easy to follow.

Cameron et al. (2010: 120) describe the grouping of metaphor vehicles as a flexible and interpretive process, which is not about finding a single 'right answer'. Instead, it requires the analyst to make decisions to group vehicles based on the available evidence. As the analysis progresses, initial groupings remain open to revision. The grouping can make changes with the addition of each new vehicle items, including splitting, adapting, or re-labelling the existing groups or giving one vehicle term into two groups. This recursive process is conducted based on the 'principled flexibility' defined by Cameron (2007b: 205), where decisions about the range of each grouping and the selection of appropriate labels are continually refined. For instance, in my research, I initially collected terms like *Nazi Germany*, *Blitz*, *lightning*, *Stasi*, etc., into the War & Violence vehicle group. However, considering the closer connection of these examples with war, particularly World War II & the Cold War, I further subdivided this group from the War & Violence group. I then chose World War II & the Cold War as the label since it is most suitable for capturing the fundamental meaning shared by all the vehicle terms in this group.

Apart from forming new groups for metaphor vehicles in discourse data, Cameron et al. (2010) propose that an alternative approach is using pre-existing groupings from other studies although it may carry the risk of oversimplifying or misrepresenting the unique characteristics of the data since these pre-defined categories were created for different contexts. Cameron's approach to addressing this issue is that if pre-existing groupings from other studies seem not to match the focused data, the analyst should either avoid using them or use them as a basis for adjusting subsequent groupings (Cameron et al., 2010). However, different studies may categorize the same vehicle term under various labels. For example, when dealing with the same *wave* metaphors about the same Covid-19 theme, Neagu (2022) places them under the Moving Water label, whereas Baş & Efeoğlu-Özcan (2022) consider them part of Sea group. This variation between studies shows the risk of inconsistent labelling in vehicle term grouping. Therefore, in my research, I adopted a cautious approach through reviewing the groupings and labels used in previous studies and then only selectively choosing the most relevant and suitable labels. Also, in terms of labels for grouping, Cameron et al. (2010) suggest that they

should be chosen from the linguistic evidence from the data as much as possible. For example, if the vehicle term *feeling* is used in an emotional context, it may be categorized under a group labelled Feeling or similar, instead of a more abstract category such as Perception (Cameron et al., 2010). Thus, in my study, the choice of label also took into account the linguistic data within the discourse present in each group.

As Cameron et al. (2010) suggest, similar to metaphor identification, the reliability of grouping needs to be considered since the grouping process is dynamic and iterative and evolves through collaborative and reflective analysis (Maslen, 2016). This evolution needs the evaluation of each decision, critically assessing the quality and limitations of discourse evidence and thorough discussions and cross-checks with co-raters are essential for ensuring the highest degree of reliability in categorization (Cameron et al., 2010). Although this approach tries to achieve a reliable analysis outcome as far as possible, it is interpretative and the reliance on imagination and creativity may lead to overlap and blurred boundaries (Cameron et al., 2010; Maslen, 2016). Cameron (2007b) states that analysts using a discourse approach to analysing metaphor must recognize that creating finite and precise groups to consistently and reliably categorize each linguistic metaphor is not possible. In my research, the reliability testing of vehicle grouping will be conducted at the same time as the reliability testing of metaphor identification, which will be discussed in the section 4.6.

Once I identified the vehicle terms and grouped them based on their basic meanings, following Cameron et al. (2010), I explored the broader context of each metaphor term to analyse the topics they addressed. Maslen (2016) proposes that the dynamic nature of discourses lead the topic of metaphors to evolve constantly, making the identification of specific topic to each metaphor vehicle difficult. Cameron et al. (2010: 128)'s solution to this issue is instead of giving specific topics to each vehicle, 'the use of a refined set of topics related to a project's particular research questions', called 'Key Discourse Topics' is more efficient. For example, in the study of Cameron et al. (2010), after close reading of the data, a set of broad topics for the Perception and Communication of Terrorist Risk study are focused, including: 1. terrorism; 2.

communication; 3. responses to terrorism; 4. society and social groups; and 5. topics irrelevant to the research.

For the purposes of my research, during the metaphor identification process, metaphors not relevant to the theme are excluded, leading to the fact that the fifth topic shown up in the study of Cameron et al. (2010) does not appear at this stage. According to Cameron et al. (2009: 74), when vehicle grouping metaphors, each linguistic metaphor should be coded 'by constructing and using a limited set of 'key discourse topics' relevant to the research topic and research questions'. Following this approach, a set of key discourse topics are identified in my research: 1. Implementation of Covid-19/cancer preventative measures and 2. Changes in Covid-19/cancer preventative measures. Therefore, if the topic was relevant to the implementation of measures, it was labelled as 1. If the topic was relevant to the changes to the measures, including the introduction, relaxation, tightening, modification and end of existing preventative strategies, it was labelled as 2.

My identification of topics was also inspired by insights from previous studies. Hauser & Schwartz (2015 & 2020) focus on two themes in cancer prevention measures: self-bolstering and self-limiting behaviours and suggest that different cancer prevention measures can influence people's perceptions through varying metaphorical framings. For example, compared to self-bolstering behaviours, enemy framing decreases people's intentions to adopt self-limiting measures, while imbalance framing increases intentions for self-bolstering behaviours. In other words, the type of cancer prevention measure may affect its metaphorical framing. Similarly, I categorize prevention measures into proactive and restrictive measures.

The definitions and categorizations of proactive and restrictive measures for cancer prevention appear to be unclear. Hauser & Schwartz (2015: 68) reference 11 cancer prevention recommendations suggested by the World Cancer Research Fund & the American Institute for Cancer Research, which identify which behaviours are self-bolstering or self-limiting, as shown in Figure 4.5.

Prevention recommendation (American Institute for Cancer Research, 2012)	Engagement or limitation?
Be as lean as possible without becoming underweight.	Engage
Be physically active for at least 30 min every day.	Engage
Avoid sugary drinks. Limit consumption of energy-dense foods.	Limit
Eat more of a variety of vegetables, fruits, whole grains, and legumes such as beans.	Engage
Limit consumption of red meats (such as beef, pork, and lamb) and avoid processed meats.	Limit
If consumed at all, limit alcoholic drinks to 2 for men and 1 for women a day.	Limit
Limit consumption of salty foods and foods processed with salt (sodium).	Limit
Do not use supplements to protect against cancer.	Limit
It is best for mothers to breastfeed exclusively for up to 6 months and then add other liquids and foods.	—
After treatment, cancer survivors should follow the recommendations for cancer prevention.	—
And always remember, do not smoke or chew tobacco.	Limit

Figure 4.5 11 cancer prevention recommendations suggested by World Cancer Research Fund & the American Institute for Cancer Research (2007) cited in Hauser & Schwartz (2015: 68)

However, different studies seem to have various perspectives on the categorization. For example, Kane-Diallo et al. (2018) classify behaviours related to diet control for weight loss as restrictive behaviours, which, according to Figure 4.5, might lean more towards the engaging

group. Heuckmann & Asshoff (2014) adopt a more general definition, encompassing any changes to lifestyle choices within proactive behaviours. When it comes to Covid-19 measures, Wang et al. (2020) differentiate them into restrictive measures implemented by governments, violation of which may lead to legal consequences, such as stay-at-home rules, and elective protective measures, such as ventilation and disinfection.

Based on the conclusions drawn by Hauser & Schwartz (2015) and a summary of the various classifications discussed above, the definition adopted in my research to identify the topic of restrictive and proactive preventative measures is as follows: Restrictive preventative measures are defined as limitations imposed on freedom or pleasurable activities that are likely enforced by authority, potentially leading to legal consequences if violated or not adhered to; Proactive measures emphasize personal choice, involving behaviours that result from individual effort and active participation. When both types of measures are involved and it is unclear which type of preventative measure is predominant, the topic of this linguistic metaphor is labelled as General.

Based on this definition, three key discourse topics of both corpora were identified: a. Restrictive measures; b. Proactive measures and c. General.

Within the cancer prevention corpus, preventative measures labelled as the topic of restrictive measures (a) include: control over diet or intake, suspension of the use of carcinogenic devices and dietary components, non-smoking, and avoiding sunlight. The topic of proactive measures (b) includes: screening, all tests aimed at determining cancer risk, vaccines, exercise, weight loss, dietary intake, research or education to raise awareness, taking preventative treatments or surgery, applying sunscreen, and reducing pollution. The topic of general measures (c) includes: prevention as a whole, government initiatives, and components in organisms that prevent cancer. For some strategies that contain both proactive and restrictive aspects, such as dietary lifestyle choices and vegan diets, they were classified as proactive measures since

changes like these focused more on personal choice and behaviour improvement, emphasizing individual initiative and self-management.

When it comes to Covid-19 prevention corpus, the topic of restrictive measures (a) includes: lockdown, curfews, public gathering restrictions, mask wearing, self-isolation, work from home, testing, quarantine, keep school closed, travel restrictions, keep social distance, vaccine passports, border rules, government measures which are largely restrictive, such as Plan B measures and three tier system. The topic of proactive measures (b) includes: vaccine, disinfection, ventilation, tracking system and the use of other non-mandatory devices to prevent the Covid virus. The topic of general measures (c) includes: prevention as a general, public health advice, general Covid laws/rules, and biological mechanisms that can prevent infection such as immunity, antibody production, and natural bodily defences that can prevent infection.

Vaccine, testing, and mask-wearing are to some extent borderline as they can transition from being voluntary to mandatory or encouraged but not enforced actions over different periods, which makes them potentially both proactive and restrictive measures. In my research, mask-wearing is considered restrictive since it is both physically and psychologically restrictive, involving an infringement on personal freedoms and a removal of individuality (Palcu et al., 2022). In addition, during the Covid-19 pandemic in the UK, non-compliance with mask-wearing regulations could result in legal penalties, including fines and restrictions on participation in certain public and social activities (UK Government, 2021). Mask-wearing therefore also functioned as a restrictive measure in a legal sense.

When testing and vaccination were mandated in the context, they were categorized as restrictive measures, such as:

Example 9 ... the Government was considering making it a legal requirement for NHS and care home staff to have the jab ... the move could backfire and see workers quit rather than agree to have the jab (Covid-19-Daily Mail-16/06/21).

However, in cases where testing and vaccination were not mandatory, or where their mandatory status was not explicitly stated, references to testing and vaccination were classified as proactive measures in this study. This decision is based on the UK context, where, except in specific situations such as international travel, schools and NHS staff, testing and vaccination were predominantly described as guidance or advice rather than legal requirements. They were therefore treated as proactive rather than restrictive measures (GOV.UK, 2022a, 2022b).

It can be concluded that the topics in cancer prevention and Covid-19 prevention corpus were organised as follows:

1. Implementation of preventative measures:

1a. Implementation of restrictive measures

1b. Implementation of proactive measures

1c. Implementation of general measures

2. Changes in preventative measures:

2a. Changes in restrictive measures

2b. Changes in proactive measures

2c. Changes in general measures

When labelling systematic metaphors, I took into account the hierarchical organisation of the topics. That is, I considered whether the vehicle groups forming a coherent systematic metaphor were concentrated within one specific subtopic or distributed across several related subtopics. If most of the relevant vehicle groups were associated with the same specific

subtopic, this subtopic was included in the label for the systematic metaphor, as *in CHANGES IN COVID-19 RESTRICTIVE MEASURES ARE MECHANICS*. However, if the vehicle groups were distributed across several subtopics under the same broader topic, the broader topic was used in the label instead. For example, since relevant vehicles concerned the subtopic of implementation of restrictive, proactive, and general measures, the systematic metaphor was labelled at the broader level, as *in IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS SUPERNATURAL*.

4.6 Reliability Testing

According to the Pragglejaz Group (2007), the reliability of metaphor identification results needs to be carefully considered to detect potential biases among different analysts. In other words, the results from metaphor identification can only be deemed dependable if they have significant consensus among at least two coders. Often, in order to validate the reliability of a researcher's process of metaphor identification, a second or even multiple metaphor researchers need to independently replicate the initial researcher's task, followed by a comparison of their findings (Pragglejaz Group, 2007).

One method to assess outcomes involves comparing the percentage of agreement among researchers (Cameron, 2003; Nacey et al., 2019a). More specifically, two or more researchers identify the presence of metaphors in each lexical unit of a text based on the same predetermined criteria, and their identification results are then compared in a quantitative manner. However, Nacey et al. (2019a) critique this evaluation method, arguing that it does not fully capture the accuracy and reliability of the research. Most words in research are non-metaphorical, as non-metaphorical language is used more frequently than metaphorical language in practical language use although metaphorical expressions are ubiquitous in language (Nacey et al., 2019a). Therefore, it possibly leads to a high percentage of agreement even with non-professional evaluators when calculating consistency percentages (Nacey et al., 2019a). Therefore, a high percentage of agreement does not necessarily mean that the

research results are accurate and reliable, as this could be due to the high frequency of non-metaphorical language causing the high percentage to be less significant. It is believed that more sophisticated statistical measures may provide a more nuanced understanding of agreement levels among researchers, including considerations of agreement occurring by chance (Pragglejaz Group, 2007; Nacey et al., 2019a). Therefore, in assessing research quality, a more diverse set of methods should be considered, rather than only relying on the percentage of agreement.

The kappa value test is an extensively used statistics measure of reliability (Pragglejaz Group 2007; Steen et al., 2010a; Nacey et al., 2019c). It is typical for Fleiss' Kappa to be used when the goal is to determine the level of agreement among three or more researchers (Steen, 2007). On the other hand, both Fleiss' Kappa and Cohen's Kappa are commonly employed when evaluating the agreement between two researchers (Pragglejaz Group 2007; Steen, 2007). By calculating the kappa value, inter-rater agreement can be measured more accurately because it adjusts for the amount of agreement that could occur by chance, which simple percentage agreement does not account for (Nacey et al., 2019a). In other words, kappa value is able to adjust for chance and enhance the reliability by ensuring that the observed agreement among researchers is not due to chance but is indicative of a systematic alignment in the metaphor identification methods. In addition, according to Pragglejaz group (2007), even in the presence of significant discrepancies among researchers, there is still consensus on a set of core cases, while differing opinions may exist regarding a group of more borderline cases. Thus, some words within a text might consistently be identified as metaphorical by all analysts, while the identification of others might lack consistency. kappa value approach may emphasize the differences among words used metaphorically, rather than the differences between analysts (Pragglejaz group, 2007). In other words, kappa value approach not only considers overall consistency, but also pays attention to each individual case, especially those borderline ones.

Researchers who present kappa values need to clarify how they interpret the extent of agreement, which usually follow the previous argument (Nacey et al., 2019a). The interpretation of Kappa may be to some extent challenging due to the varying thresholds set by different researchers for adequate performance. Markert & Nissim (2003 & 2007) suggest that a Cohen's Kappa value of 0.80 or above is considered good and reliable, a value between 0.60 and 0.80 is deemed somewhat dependable, and any value under 0.60 lacks reliability, McHugh (2012) proposed a breakdown for interpreting kappa values as follows: a score from 0 to 0.20 indicates no agreement; 0.21 to 0.39 suggests minimal agreement; 0.40 to 0.59 is indicative of weak agreement; 0.60 to 0.79 signifies moderate agreement; 0.80 to 0.90 indicates strong agreement, and anything over 0.90 is seen as near perfect agreement. In terms of various metaphor identification procedures, agreement reports demonstrate that a kappa value greater than 0.6 is reliable (Pragglejaz Group, 2007; Steen et al., 2010a). In the work of Pragglejaz Group (2007), kappa values of 0.62 for conversation texts and 0.72 for news texts are obtained, employing MIP for metaphor identification. Meanwhile, Steen et al. (2010a) observe that kappa values associated with metaphors identified through MIPVU fluctuate from 0.70 to 0.96 across different text genres. Even with the presence of varying interpretations, it is widely accepted that a kappa value above 0.8 signifies a strong agreement amongst different raters, and this is the standard that will be adhered to in my research for assessing the overall reliability of the metaphor identification process.

Moreover, Nacey et al. (2019a) suggest that the 95% confidence interval (CI) for the kappa value should be included in addition to the kappa value itself. They suggest that a single kappa value represents the agreement between two researchers for a specific sample, for example, the first 5,000 words. However, if the researchers repeat the task with another 5,000 words, it's likely they would come to a different kappa value (Nacey et al., 2019a). In other words, to ascertain the degree to which they generally agree about metaphoricity and find 'true' kappa, a large or infinite number of metaphor identification analyses are theoretically necessary (Nacey et al., 2019a: 58). Thus, avoid this impractical task, Nacey et al. (2019a) recommend the CI, which provides a range within which the 'true' kappa probably falls with 95% certainty.

A co-rater was invited for the inter-rater reliability for metaphor identification. The co-rater is an experienced metaphor researcher who has published work involving the application of MIP and/or MIPVU. She was provided with a simplified version of the metaphor identification decisions adopted in this study, as detailed in Section 4.3, and was asked to apply these guidelines to identify metaphorical and non-metaphorical expressions in the sample text. A sample text containing 1,927 tokens was randomly selected from the Covid-19 prevention corpus. The co-rater and I independently annotated each token in the selected sample as either metaphorical or non-metaphorical. In line with the analytical decisions made in this study, similes and other explicit comparative expressions were also identified as metaphorical (see Section 2.5). After annotation, the two sets of results were collected and compared. Since only two raters were involved, Cohen's Kappa was used as the appropriate statistic to assess inter-rater reliability.

Inter-rater agreement was evaluated with Cohen's Kappa and its 95 % CI using the VassarStats Kappa Calculator (<http://vassarstats.net/kappa.html>), which allows online and free computation. In the resulting 2×2 contingency table,

a = 1886 (both raters judged not metaphor),

b = 8 (I judged not metaphor, co-rater judged metaphor),

c = 5 (I judged metaphor, co-rater judged not metaphor), and

d = 34 (both judged metaphor).

Based on these counts, the observed kappa value = 0.8361, with a 95 % CI of 0.7473 – 0.9249. According to the interpretation guidelines of Landis & Koch (1977), this indicates substantial to almost-perfect agreement between the two raters, suggesting that the metaphor identification procedure is applied consistently and reliably.

4.7 Corpus Analysis

This section introduces the reference corpus and the collocation measures used in my research. Both are employed in the concordance and collocation analyses to identify systematic metaphors, metaphorical scenarios, and metaphoremes with their particular evaluations or consequences. The detailed procedure will be explained later. Also, the significant test to determine whether the observed frequency differences are reliable is also included in this section.

4.7.1 Reference Corpus

In this study, I employed EnTenTen21 as the reference corpus. This choice is justified on several grounds. First, EnTenTen21 contains approximately 52 billion words and represents the corpus of written English covering a wide range of ‘genres, topics, text types, and web sources’ (Florescu & Ohniwa, 2025: 5). Its scale and diversity ensure broad coverage of lexical and stylistic variation, making it a reliable baseline for examining how particular lexical items are used and evaluated across global English discourse. Second, EnTenTen21 is integrated into the Sketch Engine tool, which provides a transparent and reproducible methodological environment for concordance and collocation analysis. In addition, during compilation, non-linguistic or repetitive materials are removed using the jusText tool, which retains only text that appears in full sentences and excludes structural components such as headers, footers, and boilerplate content (Jakubíček et al., 2013). This ensures that the remaining data consists primarily of authentic linguistic material. Finally, compared with older reference corpora such as the BNC 1994, EnTenTen21 offers advantages in recency, capturing linguistic uses between October 2021 and January 2022 (Pennarola, 2024). This temporal frame may be necessary for a study dealing with health discourse around contemporary issues such as Covid-19, where vocabulary and metaphorical framings have evolved rapidly. Therefore, EnTenTen21 is chosen as the reference corpus in my study.

4.7.2 Collocation Measure

Although there are various ways to measure the significance of collocation measure, by far the most common statistical formulae used in corpus linguistics include the mutual information (MI), t-score and logdice value (Ellis et al., 2008; Gries & Ellis, 2015; Gablasova et al., 2017). González Fernández & Schmitt (2015: 96) state that 'it is not clear which of these (or other) measures is the best to use in research, and to date, the selection of one or another seems to be somewhat arbitrary.' In other words, the choice of collocation measure should be based on the specific research objectives.

Hunston (2022) writes that the t-score is a measure of the strength of collocation. When measuring the significance of collocations using the t-score, the size of the corpus is important, as it takes into account the number of occurrences (Hunston, 2002). This means that the larger the corpus, the more significant the collocations with higher co-occurrence frequencies will be, since the t-score is not calculated based on a standardized scale. Therefore, when comparing the significance of collocations across corpora of different sizes, the t-score cannot be used reliably (Hunston, 2002). Although in my research, collocation analysis is primarily used to test my hypotheses regarding metaphor use and its evaluation in context through the analysis of a reference corpus, comparing the collocations of the same lexis across my two corpora is also employed to analyse similarities or differences in lexical-grammatical patterns. Thus, the t-score is not chosen in my study.

Öksüz et al. (2021: 61) claim that the MI score is a 'field-standard measure for calculating collocational strength', coherence and significant co-occurrence, which calculates the ratio between the collocation frequency and the expected frequency of the random co-occurrence of the two words in a collocation (Ellis et al., 2008; Wolter & Yamashita, 2015). Although this calculation method makes the MI score relatively less affected by corpus size, allowing it to be compared across corpora of different sizes, the statistical formula based on random co-occurrence has received criticism since 'it assumes no structural properties of language, which is, by definition, not accurate' (Öksüz et al., 2021: 61). The MI score prioritizes low-frequency word pairs, and since it ignores the overall frequency of word pairs, it has been

criticized for potentially assigning artificially high scores to low-frequency combinations that are likely to be rare by nature (Bestgen & Granger, 2014; Gries & Ellis, 2015). Additionally, Gries & Ellis (2015) state that another shortcoming of the MI score is that it lacks a theoretical range of minimum and maximum values, which makes interpreting MI scores across different corpora challenging.

Gablasova et al. (2017) note that logdice value can be an alternative statistical measure since it tends to identify the strength of association between two words, not necessarily focusing on 'rare combinations', and 'rely(ing) on the shake-the-box, random distribution model of language' (Öksüz et al., 2021: 62). Additionally, the logdice measure has a maximum value of 14, making it easier to interpret compared to the MI score (Öksüz et al., 2021). Therefore, in my research, the logdice value was chosen to measure the significance of association in collocations, which is embedded in the Sketch Engine tool. All collocation analyses are conducted within a ± 5 -word span from the node word.

Due to the scale of my study, I chose to examine 10 most significant collocates according to the logdice value, which has proven effective in most cases. However, in one exceptional case, *MOT*, this method led to limited and uninformative results. Its 10 most significant collocates are *bon*, *mot*, *clé*, *juste*, *servicing*, *Summ*, *bons*, *tester*, *Def* and *Jezebel*. Most of them are semantically relevant to its uses in French and specific terms and are not related to the literal meaning of regularly having a car inspected or serviced. To address this, I expanded the scope and examined the top 100 most frequent collocates instead. In all other cases, the standard threshold and the selection of 10 most significant collocates were consistently applied.

4.7.3 Significance Test

Significance tests help determine the likelihood that observed results occur simply by random chance, especially when comparing differences between two relative frequencies (Semino et al., 2017a). Egbert & Schnur (2018: 167) conclude that the significance of quantitative study

refers to 'how likely it is that results from a corpus occurred by chance alone'. According to Egbert & Schnur (2018), if the target corpus can represent a specific discourse community, conclusions drawn from quantitative methods that use inferential statistics, including the comparison of group means and the relationships between variables can be generalized to the entire discourse community. This means that it might provide a general discourse pattern for the field, rather than being limited to just the target corpus.

In corpus linguistics, tests commonly used to assess significance include the Chi-square test and the log-likelihood (LL) test (Biber & Jones, 2009). Kurtz & Mayo (1979: 366) criticize Chi-square test since it 'may be correctly used only if all N observations are made independently'. Wallis (2013) suggest that it refers to the situation that each sample should be randomly selected from the whole, and the choice of each sample member should be independent of others. In other words, to ensure the validity of the test, each unit needs to be the sampling unit. According to Bestgen (2017: 37), it is nearly impossible in corpus linguistics since 'the unit analysed is often a word, or sometimes a sentence, while the sampling unit used to construct the corpus is a text (or an extract from a text)'. According to Bestgen (2017), to compare the significance of the differences in the same word or two words with different frequencies between two corpora of different sizes, the analyst needs to generate a wordlist for each corpus that includes the frequencies of all words across the texts.

However, in my research, if I want to compare the significance of the frequency of vehicle groups in two corpora, I may need to count the number of each vehicle group in every text. Given the research span, I used the LL test to calculate significance since it can reflect the statistical significance of rare occurrences, which refers to 'unusual frequency' (Dunning, 1993; Scott, 1997: 236). Compared with the Chi-square test, LL test is considered to provide more reliable results when sample sizes are small (Dunning, 1993). In addition, the log-likelihood (LL) test has been applied in previous corpus-based metaphor studies (Semino et al., 2017a). Semino et al. (2017a) use a log-likelihood test for uniformity in their quantitative analysis of how Violence metaphors are distributed across participant groups. For example, they use the

LL test to decide whether the differences in the use of Violence metaphors between patients, carers or professionals are statistically significant in online data, and also to examine the significance of differences of the use of Violence metaphors among three groups between the online and interview datasets. Therefore, the LL test was used in my study to test the significance of quantitative differences.

The LL test is calculated using a Log-likelihood and effect size calculator (<https://ucrel.lancs.ac.uk/llwizard.html>). According to Fisher (1950), although the standard for a p-value used to reject the null hypothesis is not unique, typically a p-value less than 0.05 (5% significance) is used to support the rejection of the null value. More stringent criteria can also be considered since 'If P is between .1 and .9 there is certainly no reason to suspect the hypothesis tested. If it is below .02 it is strongly indicated that the hypothesis fails to account for the whole of the facts. We shall not often be astray if we draw a conventional line at .05' (Fisher, 1950: 80). In Semino's research (2017a), a higher cut-off of LL value at 15.13 ($p < 0.0001$) is used for keyword calculation. However, stricter cut-off values are chosen due to the fact that the large size of their corpus and higher frequencies can more easily lead to higher significance values (Semino, 2017a). In my research, given the size of my corpus, I use 6.63 as the threshold for the LL value with $p < 0.01$ to measure significance since usually in this case there is a 99% chance of non-randomness, and the result may be significant (Semino et al., 2017a)

4.7.4 Number of Concordance Lines Sampled

In corpus-assisted discourse studies, reading concordance lines is a fundamental analytical strategy and an essential step in verifying corpus evidence (Jaworska & Kinloch, 2018). To reduce concerns about cherry-picking or selective interpretation, researchers may display multiple text examples in the form of concordance lines (Anthony, 2018). Baker (2018) emphasises that researchers should aim for total accountability by using randomly sampled concordance lines drawn from across the corpus.

There is, however, no fixed or universally applicable number of concordance lines that must be examined. For example, Deignan (2017) randomly selects 500 citations in the Oxford English Corpus for each linguistic metaphors she focusses on, while Semino et al. (2017a) do not specify an exact number of concordance lines but also employ extensive concordance reading as part of their metaphor analysis. Mitchell (2022) analyses a random sample of 400 concordance lines from below-the-line comments on online news articles containing the phrases *climate change* or *global warming*, drawn from *The Guardian* and *The Daily Mail* between 2014 and 2019, in order to examine how commenters with different political positions construct these terms.

Considering the scope and scale of this study, a random sample of 200 concordance lines was selected for close reading for each lexical item for evaluative interpretation. This decision was motivated by the fact that the analysis involved nearly 500 lexical items, making the examination of larger concordance lines (e.g. 500 randomly selected citations per item) impractical.

By contrast, no such restriction was applied in the collocation analysis. For each lexical item, collocational patterns were examined across all available citations, and the 10 most statistically significant collocates were analysed.

4.7.5 Concordance and Collocation Analysis

After establishing the statistical operationalisation, this section details how I conducted corpus analyses of the linguistic vehicles that constitute systematic metaphors, metaphorical scenarios, and metaphoremes. The ways in which previous studies have employed concordance and collocation analyses to explore the possible semantic tendencies of metaphors were discussed in Sections 2.4.1 and 2.4.2. In what follows, I present an example in detail to illustrate this analytical process.

Wall of defence as shown in Example 10, was identified as a domain-specific metaphor belonging to the War & Violence vehicle group, relevant to the topic of implementing proactive preventative behaviours.

Example 10 Health Secretary Sajid Javid said: "Our phenomenal vaccination programme has saved countless lives and *built a wall of defence* which has allowed us to learn to live with Covid." (Covid-19-The Sun-21/03/22).

In the enTenTen21 corpus, *wall* appears 7,732,456 times, with its 10 most significant collocates being *Street, Journal, wall, brick, ceiling, stone, floor, hang, mount, and against*. These collocates appear to be neutral, reflecting mainly literal spatial or material meanings. However, even when collocates are literal, their connotations may still be transferable into metaphorical contexts. In a random sample of 200 citations, *wall* refers to proper nouns, such as *Wall Street* in 33 cases and is used metaphorically in 24 citations and literally in 143 citations. Its metaphorical uses often refer to the side or boundary of something, as in:

i. Check the inside walls and especially the bottom of the skimmer (s) for hairline cracks ... (PoolForum, 2006).

Similarly, *defence* occurs 1,686,029 times in the enTenTen21 corpus, with its 10 most significant collocates being *Ministry, Force, defence, Minister, missile, minister, Secretary, aerospace, ministry, and counsel*. These collocates also appear to lack specific evaluative connotations. Among its 200 randomly selected citations, *defence* is used metaphorically in 108 instances, mostly related to sports or legal discourse, which seems to have neutral meanings. For example:

ii. ..., including the fact that the defence is entitled to interview witnesses (icty.org, 2004).

iii. ..., and the importance of tactics and player positioning over the field (barging if necessary), which makes it challenging to break strong defences (en.wikipedia.org, n.d.).

Overall, both *wall* and *defence* generally convey neutral meaning.

In my corpus, *wall of defence* appears together, as shown in Example 10. To further explore its evaluative meaning, I examined its connotations in the reference corpus. The phrase occurs 279 times in the enTenTen21 corpus, with its 10 most significant collocates being *impregnable*, *impenetrable*, *circumscribe*, *jab*, *encroachment*, *Scot*, *crumble*, *widen*, *bolster*, and *booster*. About half of these collocates, *impregnable*, *impenetrable*, *encroachment*, *bolster*, and *booster* express ideas of strength, protection and resistance against intrusion. This may suggest that *wall of defence* is typically used to construct a metaphorical image of a strong and reinforced barrier, emphasising resilience and collective protection.

In a random sample of 200 citations, concordance analysis shows that all instances of *wall of defence* are used metaphorically. Concordance analysis further shows that the phrase is associated with the theme of vaccination, as illustrated below:

iv. "..., and now every single test and every single *jab* puts another brick in our wall of defence." (itv.com, 2021)

No such connection is found with other Covid-19 preventative measures, suggesting that *wall of defence* is a metaphorical representation linked to vaccination, framing it as a protective barrier against the spread of disease.

The above example illustrates how I use concordance and collocation analyses to examine the connotations of metaphors. The same analytical steps are applied to each linguistic vehicle constructing a vehicle group identified in this study.

4.7.6 Summary

This chapter discusses the methodological issues encountered in the construction of the corpora and the analytical decisions made in response to these challenges. It reviews approaches to manual metaphor identification adopted in previous studies and explains how domain-specific metaphors were identified in the corpora used in this study, including a detailed account of the metaphor identification procedure. In addition, the chapter outlines how corpus tools were employed to conduct metaphor analysis and describes the practical steps involved.

Chapter 5 Findings

This chapter presents both quantitative and qualitative analyses of the data. I begin with the quantitative findings to provide an overview of the distribution of linguistic metaphors across vehicle groups. A qualitative analysis is then conducted for each vehicle group, focusing on the systematic metaphors, metaphorical scenarios, and metaphoremes to which the linguistic vehicles contribute, as well as their associated evaluative judgements. The numbers in brackets after the linguistic metaphors represent observed frequencies, while the absence of numbers indicates a single occurrence.

5.1 Quantitative Findings

Following the procedures described in Sections 4.2–4.6, 786 linguistic metaphors were identified in the cancer prevention corpus, and 998 linguistic metaphors were identified in the Covid-19 prevention corpus. These are listed in Appendices E & F.

Then, as discussed in Section 4.5, identified metaphors were categorised into different vehicle groups, following Cameron's steps based on the principle that 'the label should cover all the vehicles included in the set and, as far as possible, only those' to find the emergence of systematicity of metaphors (2010: 124). This process resulted in 13 vehicle groups for cancer prevention corpus and 15 vehicle groups for Covid-19 prevention corpus, as illustrated in Table 5.1.

Cancer Prevention				Covid-19 Prevention			
Vehicle Group	RF	NF	Pct.	Vehicle Group	RF	NF	Pct.
War & Violence	390	1175.59	49.62	War & Violence	402	1202.18	40.28
Journey	198	596.84	25.19	Journey	280	837.34	28.06
Mechanics	51	153.73	6.49	Mechanics	59	176.44	5.91

Performance	30	90.43	3.82	Performance	39	116.63	3.91
Religion & Supernatural	19	57.27	2.42	(Un)Openness	31	92.71	3.11
Gaming	18	54.26	2.29	Container	27	80.74	2.71
Sense	16	48.23	2.04	Religion & Supernatural	27	80.74	2.71
Actions	15	45.22	1.91	Politics	24	71.77	2.40
Barrier	11	33.16	1.40	Sense	24	71.77	2.40
Other	11	33.16	1.40	Gaming	19	56.82	1.90
(Un)Openness	10	30.14	1.27	Actions	18	53.83	1.80
Cleaning	10	30.14	1.27	Other	16	47.85	1.60
Clothing	7	21.10	0.89	Barrier	15	44.86	1.50
				Crime & Prison	14	41.87	1.40
				Clothing	3	8.97	0.30
Total	786	2369.28	100	Total	998	2984.51	100

Table 5.1 Raw frequency, normalised frequency (per million words) and percentage of metaphors in two corpora

Table 5.1 shows the raw frequency, normalised frequency (per million) and percentage of each vehicle group in two corpora, whose all figures have been rounded to two decimal places. Vehicle groups that are extremely infrequent, specifically those containing fewer than three vehicle metaphors, are not listed as separate groups but are categorized under the Other category since very low-frequency groups may have too few instances to sufficiently indicate metaphor patterns. For the purposes of my research, which is to explore the primary metaphors for cancer and Covid-19 prevention, these very low-frequency groups have been excluded.

It can be concluded from Table 5.1 that the domain-specific metaphors identified in the Covid-19 prevention corpus are more numerous than those in the cancer prevention corpus and dominant metaphors in both corpora are similar, with the four most frequently occurring vehicle groups being the same. The comparison between two corpora was conducted using the LL test to determine the statistical significance of frequency differences (see Section 4.7.3).

The difference in the total number of domain-specific metaphors identified between the two corpora is statistically significant ($LL = 23.60, p < 0.01$). In both corpora, War & Violence metaphors are the most frequent, with no statistically significant differences between them ($LL \text{ value} = 0.10, p < 0.01$). Journey group, another frequently appearing domain in health discourse and evidence from the normalized frequency (per million) and the percentage of each vehicle group indicates that Journey metaphors are more commonly used in Covid-19 prevention discourse. The LL test shows a statistically significant difference between the two corpora ($LL \text{ value} = 13.49, p < 0.01$). The other two relatively frequent metaphor groups, Mechanics and Performance rank third and fourth in both corpora, and no statistically significant difference is found in their frequencies (Mechanics: $LL = 0.52, p < 0.01$; Performance: $LL = 1.11, p < 0.01$).

No statistically significant differences can be observed in the frequencies of the following vehicle groups between the two corpora: Religion & Supernatural ($LL = 1.34, p < 0.01$), Gaming ($LL = 0.02, p < 0.01$), Sense ($LL = 1.15, p < 0.01$), Actions ($LL = 0.25, p < 0.01$), Barrier ($LL = 0.59, p < 0.01$), and Clothing ($LL = 1.68, p < 0.01$). The only exception is the (Un)Openness group ($LL = 11.12, p < 0.01$), which occurs significantly more frequently in the Covid-19 prevention corpus than in the cancer prevention corpus. In addition, Cleaning metaphors are unique to the cancer prevention corpus, while the Covid-19 prevention corpus contains a greater number of unique vehicle groups, such as Container, Politics and Crime & Prison. It can be concluded that compared to cancer prevention, Covid-19 prevention discourse has more metaphor types, displaying more patterns of creativity.

Table 5.2 and 5.3 show the distribution of metaphor topics in cancer and Covid-19 Prevention Corpus.

Cancer prevention	RF	NF	%
The implementation of restrictive measures	180	542.58	22.90
Changes in restrictive measures	4	12.06	0.51
The implementation of proactive measures	488	1471.00	62.09
Changes in proactive measures	36	108.52	4.58
The implementation of general measures	75	226.08	9.54
Changes in general measures	3	9.04	0.38
Total	786	2369.28	100

Table 5.2 Raw frequency, normalised frequency (per million words) and percentage of metaphorical topics in cancer prevention corpus

Covid-19 prevention	RF	NF	Pct.
The implementation of restrictive measures	495	1480.29	49.60
Changes in restrictive measures	169	505.39	16.93
The implementation of proactive measures	214	639.97	21.44
Changes in proactive measures	7	20.93	0.70
The implementation of general measures	104	311.01	10.42
Changes in general measures	9	26.91	0.90
Total	998	2984.51	100

Table 5.3 Raw frequency, normalised frequency (per million words) and percentage of metaphorical topics in Covid-19 prevention corpus

It can be concluded that metaphors in the Covid-19 prevention corpus are statistically significantly more frequently associated with the implementation of restrictive measures (LL = 150.37, $p < 0.01$), which account for 49.60% of all metaphorical topics in Covid-19 prevention, compared with 22.90% in the cancer prevention corpus. This difference is also evident in the topic of changes in restrictive measures, which is statistically significant (LL = 200.48, $p < 0.01$), representing 16.93% in the Covid-19 prevention corpus and only 0.51% in the cancer prevention corpus.

Conversely, statistically significant differences are also observed in the topic of the implementation of proactive measures, which occurs more frequently in the cancer prevention corpus (LL = 112.03, $p < 0.01$), accounting for 62.09% of metaphorical topics compared with 21.44% in the Covid-19 prevention corpus. A further significant difference is found in the topic of changes in proactive measures (LL = 21.63, $p < 0.01$).

The topics of the implementation of general measures and changes in general measures show no statistically significant differences between the two corpora (LL = 4.49, $p < 0.01$; LL = 3.09, $p < 0.01$ respectively), although some minor variation in frequency is observable.

It can be concluded that metaphors in the cancer prevention corpus are more frequently used to frame proactive measures while metaphors in the Covid-19 prevention corpus are more likely to be associated with restrictive measures. Although these differences may likely be attributed to the broader variety of proactive measures available for cancer prevention and the more restrictive measures for Covid-19 prevention, this contrast also highlights the different primary prevention approaches for the two diseases.

After the quantitative identification and grouping of linguistic metaphors, the analysis moved to qualitative interpretation. At this stage, the qualitative analysis focused on the linguistic vehicles that constructed systematic metaphors, scenarios and metaphoremes. That is,

topic-relevant metaphors that did not form consistent metaphorical patterns were excluded from this process. In total, 157 distinct vehicle types were examined in the cancer prevention corpus, and 262 distinct vehicle types were examined in the Covid-19 prevention corpus.

For each vehicle type, I conducted a close reading of a random sample of 200 concordance lines where available. Where fewer than 200 concordance lines were available, all available lines were examined. The same procedure was also applied to idiomatic expressions, which were treated as whole expressions at the qualitative interpretation stage. In addition, for most vehicle types, I examined the 10 most statistically significant collocates associated with that vehicle type. There were two exceptions to this collocation procedure: MOT and idiomatic expressions, as discussed below. This procedure was used to identify the evaluative connotations of each vehicle and to determine how it contributed to recurring metaphorical patterns within the relevant vehicle group.

Collocation analysis was used primarily as supporting evidence for interpreting the evaluative connotations of each vehicle type. In most cases, the collocate lists themselves were sufficient to indicate the typical connotative tendencies of a vehicle. However, where a collocate was ambiguous or where the collocation pair required contextual clarification, for example when a statistically significant collocate refers to a proper noun, the concordance lines for that collocation pair were checked. In such cases, the purpose was not to conduct a separate concordance-based analysis of every collocational pair, but to clarify how the vehicle and collocate were used together in context. Usually, the first page of concordance results, containing 20 citations, was sufficient for this clarification.

In most cases, I examined the 10 most statistically significant collocates of each linguistic vehicle. There were two exceptions to this collocation procedure. The first exception was *MOT*, discussed in Section 4.7.2. For this vehicle, the 100 most statistically significant collocates were examined. The second exception was idiomatic expressions, as discussed in Section 4.3.2.5. These were ‘kick the can down the road’, ‘bury ... head in the sand’ and ‘sweep under the

carpet’ in the cancer prevention corpus and ‘drag ... feet’ in the Covid-19 prevention corpus. Although each component of an idiom was treated as a separate lexical item during the identification stage, idioms were interpreted as whole expressions when corpus tools were used to identify connotations. This is because the evaluative meaning of an idiom may not be fully recoverable from its individual lexical components alone. Appendices G & H show the 10 most statistically significant collocates of vehicle types. Collocates are listed in descending order of logDice value. Some rows are left blank because the relevant linguistic metaphors are creative expressions and therefore occur too infrequently in the reference corpus to generate reliable collocation results.

5.2 War & Violence Metaphors

In both corpora, War & Violence metaphors are the most frequently used to describe both diseases. According to the meanings of linguistic metaphors, I identified several metaphorical themes related to both cancer and Covid-19 prevention, which I have grouped into categories: Violent Action, Protection and Defence, Strategy and Tactics, and Results (see Table 5.4). In the case of Covid-19 prevention, in addition to these categories, I also identified World War II & the Cold War and Other types. As shown in Table 5.4, the Covid-19 prevention corpus contains more types and greater lexical diversity in its use of War & Violence metaphors.

	War & Violence Metaphors for Cancer Prevention	War & Violence Metaphors for Covid-19 Prevention	Examples
Types of War & Violence Metaphors	Metaphors	Metaphors	

Violent Action	cut (93), campaign (53), jab (39), eliminate (19), slash (19), target(ed) (18), fight (13), aim (10), struggle (8), hit (7), revolutionary (7), combat (5), revolution (5), cut out (3), fight off (3), cut down (2), punch (2), reap (2), resistance (2), attack (2), slam (2), blast (2), shot, crackdown, nail, battle, wreck, fight back, hit out, harm, destroy, crusade, devastating, weapon, double-edged sword	jab (122), shot (31), fight (22), campaign (11), struggl(e/ing) (11), target(ed/ing) (9), damag(e/ing) (8), aim (6), combat (6), break (6), cripple (5), hit (5), cut (5), harm (5), battle (5), eliminate (5), weapon (4), devastating (4), crush (4), fight off (4), wreck (4), fight back (2), fierce (2), ruin (2), revolt (2), slash (2), crackdown (2), slap (2), assault (2), sledgehammer (2), bash, attack, tear up, rebellion, hit out, chop, brutally, self-immolation, reap, split, hurt, painful, kill, bite, aggressive, wield, hammer, explosion, collapse, crushing blow, crumble, grapple, army, arm, blast, beat, clobber, hit back	HOW THE SPICE, ALONG WITH CHAMOMILE TEA AND POMEGRANATE, IS THE LATEST <u>WEAPON</u> IN THE <u>FIGHT</u> AGAINST DISEASE (Originally Capitalised) (cancer-Daily Mail-06/02/20). They have been delivered by the most extraordinary <u>army</u> of vaccinators who <i>jabbed</i> like there's no tomorrow... (Covid-19-Metro-15/02/21-1).
Protection & Defence	defence (7), guardian (3), secure (2), safeguard, guard	defence (7), shield (5), guard (3), fortress (3), defend (2), fortify (2), wall of defence (2), indefensible, bastion, line of defence, defender	That is how we protect people from Covid - that is our primary <u>line of defence</u> (Covid-19-The Times-04/01/23-1).

Strategy & Tactics	monitor (21), intervention (12), deploy (4), mission (3), surveillance (3), mobilise, hunt	monitor (9), surveillance (6), march (2), deploy (2), nuclear, deterrent, mission	It's a huge proportion and yet we are simply not <u>mobilising</u> our health and care systems in a way that bears any resemblance to that evidence, she said (cancer-The Times-24/01/23).
Results	retreat, defeat	victory (3), retreat (3), surrender (2), conquer, triumph, defeat	Speaking at a historic No 10 press conference, Mr Johnson said it was too early to declare <u>victory</u> 'because the virus is not going away' (Covid-19-Daily Mail-22/02/22-2).
World War II & the Cold War		lightning (2), blitz (2), Stasi, Stasi-dominated East Germany, Nazi Germany, bullies	The Met commissioner should remind her overzealous officers we live in Britain, not <u>Stasi-dominated East Germany</u> (Covid-19-Daily Mail-21/10/20).

Other		battlefield, endgame, furlough, hostile, warring	... people can decide for themselves when and where to wear masks, Britons are now condemned to split into two <u>hostile</u> tribes (Covid-19-Daily Mail-06/07/21).
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Table 5.4 War & Violence Metaphors for Cancer Prevention and Covid-19 Prevention

Citation analysis of War & Violence metaphors in Table 5.4 shows the existence of a common metaphor in both corpora: WAR scenario. For example:

Example 11 ... can help to improve our immunity and ability to fight back against infection.' (cancer-Daily Mail-24/11/20).

Example 12 ..., uses fewer resources and might be easy to deploy in future.' (cancer-Daily Mail-23/03/21-2).

Example 13 Professor Luke O'Neill believes face coverings are a *key* weapon in the country's battle against the virus ... (Covid-19-The Sun-26/05/20-2).

Example 14 ... to fight off the Omicron variant we need Britain-wide action (Covid-19-The Times-11/12/21).

Many linguistic metaphors construct a common WAR metaphor: there is a *fight/battle* against the disease; *weapons* need to be *deployed*; war preparations are made, expressed through metaphors such as *mobilise* and *army*; defensive measures are prepared *guard* and *line of*

defence; counterattacks: *fight off* and *fight back* and the potential outcomes of war and violent actions: *defeat*.

According to Semino (2008) and Flusberg et al. (2018), War metaphors may evoke fear, dramatize events, enhance the sense of conflict and aggression, and emphasize the adversarial relationship between illness and humans. Also, it may evoke the concept of ‘fighting spirit’, which refers to optimism, determination, active engagement in treatment, and efforts to maintain normalcy despite cancer (Greer & Moorey, 1997). However, Salmon & Hall (2003) point out that Violence metaphors, which may convey a ‘fighting spirit’ can also reflect emotional suppression, potentially diminishing patients’ ability to express themselves and leaving them feeling isolated on psychological and emotional levels. Despite this controversy, it is possible that certain war and violence metaphors in my corpora may instead suggest the positive role of fostering a ‘fighting spirit’, as illustrated by *fight back* in Example 11.

I searched for the 10 most significant collocates of *fight back* in the enTenTen21 corpus. These are *against*, *oppressor*, *powerless*, *vow*, *tear*, *invader*, *bully*, *horde*, *resist* and *tyranny*. Apart from *powerless*, which conveys a sense of inability, and *tear*, which carries relatively neutral connotations, the remaining collocates reflect determination, resistance, and proactive agency. Collocation analysis of *fight back* shows that it tends to frame illness-preventative measures in terms of determined effort and resistance, which may have an encouraging effect. In this sense, it may align with the encouraging aspects of the concept of ‘fighting spirit’.

5.2.1 Cancer Prevention

Most of the linguistic vehicles about cancer prevention point to WAR scenario. Some War & Violence metaphors construct a MARTIAL CONTROL scenario where the government or cancer preventative measures, and the public may be positioned as opposing forces, as exemplified in Examples 15–17.

Example 15 Those women could then be targeted for regular surveillance, risk-reducing surgery or therapeutics, potentially preventing thousands of people a year from getting cancer (cancer-The Times- 02/02/22).

Example 16 The Government recently launched a national crusade to create a slimmer, fitter Britain, ... (cancer-Daily Mail-12/09/20).

Example 17 As ever, screening is a double-edged sword (cancer-The Times-31/01/23).

In the above examples, individuals are positioned as passive targets. *Crusade* appears 262,425 times in the enTenTen21 corpus. In its random 200 examples, 133 are used literally, referring to historical military expeditions initiated by European powers in the medieval period. Among the 67 metaphorical uses, *crusade* conveys the meaning of attempts to solve certain problems. Among them, 47 citations refer to efforts made in pursuit of a positive ideology. For example,

v. ... stresses her enthusiasm for tennis and her crusade for equality during a briefing... (Voice of the Zarks, 2014).

It can be concluded that when *crusade* is metaphorically used, it often implies a purposefully motivated struggle aimed at achieving positive change. Díaz-Peralta (2018) suggests that the use of *crusade* metaphor, combined with the positioning of the government as the grammatical subject, may evoke associations with authoritarian rule. Collocation analysis of *crusade* potentially provides supporting evidence for this association. Its 10 most significant collocates are *crusade*, *inquisition*, *Albigensian*, *Campus*, *Castles*, *burning*, *evangelistic*, *Constantinople*, *Indiana* and *jihad*. *Inquisition*, *Albigensian* and *burning* carry semantic tendencies of war and persecution, which may evoke associations with extremist discourse. Although these collocates are related to the literal meaning of *crusade*, their connotations may be transferred to its metaphorical usage. *Double-edged sword* in Example 17, while implying the potential harm of cancer preventative measures to individuals, also emphasizes their

benefits. It can be concluded that within this metaphor, although an oppositional relationship is present, there is no strong emphasis on direct attacks against individuals or the harm upon them.

5.2.2 Covid-19 Prevention

In the Covid-19 prevention corpus, many metaphors construct a WAR scenario. The co-text information of relevant metaphors may suggest the evaluation of this metaphor. For example, *key* in ‘*key weapon* in the country’s *battle* against the virus’ in Example 13 may suggest the importance of Covid-19 preventative measures. There are also instances in which this metaphor is evaluated negatively, such as the use of *fortress* shown in Figure 5.2.2.

1	doc#3	1d see crippling isolation.</s><s>Under siege from the Delta variant, Fortress Australia is collapsing.</s><s>Despite being told the country's zero-
2	doc#3	or dealing with the virus, it turns out we were sold a pup.</s><s>The fortress was a house of cards.</s><s>Whichever way you dice it, the country
3	doc#4	is seeing by far the highest cases of its pandemic, as its zero-Covid fortress crumbles in the face of Omicron.</s><s>Its Covid-19 death rate, hov

Figure 5.2.2 All citations of topic-relevant *fortress* in Covid-19 prevention corpus

Fortress appears 388,793 times in the enTenTen21 corpus. Its 10 most significant collocates are *B-17*, *Flying*, *fortress*, *solitude*, *dwarf*, *impregnable*, *Louisbourg*, *Maximus*, *medieval* and *castle*. Citation analysis of these collocates shows that in addition to *dwarf*, which refers to a game and *Maximus*, which refers to a character in the Transformers media franchise, the remaining collocates emphasize strength and protection. The first 2 collocates, *flying* and *B-17*, are relevant to the Boeing B-17 Flying Fortress, a heavy bomber aircraft in the United States while *Louisbourg*, refers to a military defended fortress. Although these collocates are closely linked to the literal meaning of *fortress*, its connotative meaning may be extended to metaphorical contexts. However, the co-text metaphor surrounding *fortress* in my corpus as shown in Figure 5.2.2, *collapse*, *house of cards* and *crumble* extends the metaphor and may show a negative evaluation: The fortress, originally intended to provide solid protection, proved to be fragile and ultimately broke apart. The comparison of its connotation and co-textual realization may even be ironic.

Many metaphors construct a CIVILIANS UNDER ATTACK scenario where there is an opposition between people and the preventative measures, particularly relevant to restrictions. In this metaphor, people are typically constructed as the attacked party, whereas restrictive measures are constructed as the attacking force. For example:

Example 18 Worst of all, masks are an unwelcome *barrier* to social interaction, an assault on our very humanity (Covid-19-Daily Mail-28/01/22-1).

Example 19 Tory MPs and mayors are rightly furious at the dearth of evidence to justify the crippling crackdowns (Covid-19-Daily Mail-21/10/20).

Preventative measures become agents capable of carrying out violent actions such as *assault* and *crippling crackdown* while the public is positioned as the recipient of these acts of violence. *Assault* appears 1,734,502 times in the enTenTen21 corpus and its 10 most significant collocates are *sexual, sexually, rifle, aggravate, rape, harassment, weapon, assault, robbery* and *victim*. These collocates indicate a strong semantic association of *assault* with physical violence and criminality, which may emphasize the harm that restrictions can cause to people. In Example 18, the co-text metaphorical expression, *an unwelcome barrier* may further reinforce this framing by describing restrictive measures as forces that isolate individuals and undermine human interaction.

In Example 19, *crackdown* refers to lockdown. It shows up 156,150 times in the enTenTen21 corpus and its 10 most frequent collocates are *Tiananmen, dissent, brutal, pro-democracy, protester, dissident, violent, anti-government, demonstrator* and *intensify*. These collocates shows a semantic and ideological association with state violence and authoritarian suppression. Combined with the evaluative adjective *crippling*, it further emphasizes the harm caused and may suggest that Covid-19 restrictions are associated with authoritarian overreach.

There are also metaphors from the World War II & the Cold War category that are used to emphasize the harm preventative measures can do to individuals. For example,

Example 20 The Met commissioner should remind her overzealous officers we live in Britain, not Stasi-dominated East Germany (Covid-19-Daily Mail-21/10/20).

Example 20 compares the Police's enforcement of Covid-related restrictions to *Stasi-dominated East Germany*. Stasi appears 17132 times in the enTenTen21 corpus, and its 10 most significant collocates are *Stasi*, *Mielke*, *KGB*, *MfS*, *Staatssicherheit*, *Eldredge*, *GDR*, *Gestapo*, *Wiesler* and *informer*, indicating its strong semantic association with secret policing, surveillance, and state control. The metaphor therefore frames the implementation of restrictive measures as characteristic of a totalitarian surveillance state, suggesting a loss of personal freedom and excessive government intrusion.

Linguistic vehicles relevant to this metaphor also reflect people's active resistance to preventative measures. For example,

Example 21 BRITONS appear to be hitting back at Covid rules, ... (Covid-19-Daily Mail-30/07/20).

In this metaphor, the Covid-19 preventative strategies involved are predominantly restrictive measures, as shown above, with a small number of examples relating to proactive measures. For example:

Example 22 As we enter the third wave of the Covid-19 pandemic, we are rushing towards a dangerous new phase in which *hygiene theatre* can do even more damage than it has (Covid-19-The Guardian-12/07/21-2).

Example 23 Hotez said that getting the bivalent booster shot is the one of the most important things people can do to protect themselves against Covid (Covid-19-The Guardian-23/12/22).

Example 24 If the *game-changing jab* - which is up to 90 per cent effective - is *backed* by regulators ... (Covid-19-Daily Mail-24/11/20).

Shot appears 67 times in the Covid-19 prevention corpus and in 61 citations, *shot* is used metaphorically to refer to the Covid-19 vaccine. Among these, 13 citations convey a connotation that emphasises vaccine effectiveness, as illustrated in Example 23, while the remaining 48 citations display no clear evaluative orientation. Similarly, *jab* occurs 411 times in the Covid-19 prevention corpus. Of these, 375 citations use *jab* metaphorically to denote the Covid-19 vaccine. A citation analysis of a randomly selected sample of 200 examples shows that *jab* conveys the connotation that emphasises effectiveness in 41 citations, as shown in Example 24. 8 citations express dissatisfaction associated with compulsory vaccination, as illustrated in Example 9. According to the definitions of restrictive and proactive measures detailed in Section 4.5, instances in which vaccination is framed as compulsory are categorised as restrictive measures. The remaining citations show no salient evaluative tendency.

Example 9 ... the Government was considering making it a legal requirement for NHS and care home staff to have the jab ... the *move* could *backfire* and see workers quit rather than agree to have the jab (Covid-19-Daily Mail-16/06/21).

Concordance analyses were conducted for *shot* and *jab* using the enTenTen21 corpus. *Jab* occurs 194,321 times in this corpus. In a randomly selected sample of 200 citations, *jab* is metaphorically used to refer to the Covid-19 vaccine in 44 examples. Among these, 3 citations convey a positive evaluation by emphasising vaccine effectiveness, while 4 express connotations associated with compulsory vaccination and the perceived infringement of individual rights. The remaining examples show no salient evaluative tendency.

Shot appears 4,590,145 times in the enTenTen21 corpus. In the randomly selected sample of 200 citations, *shot* is metaphorically used to denote the Covid-19 vaccine in 7 examples. Of these, 2 emphasise vaccine effectiveness, while 3 display no clear semantic orientation. In the remaining 2 examples, *shot* carries a relatively negative semantic connotation, either questioning the effectiveness of the vaccine or questioning whether vaccination functions as a tool of power, which resonates with vaccine scepticism associated with *shot* in online Covid-19 discourse (Semino et al., 2025). For example:

vi. I took the Pfizer *shot*, it's not really a vaccine they tell us now, ... (Bulldog Barks and Bytes Forum, 2021).

vii. "I must return to the issue of 'top up vaccines' (booster *shots*), and it is this whole narrative which I fear will be exploited and used to gain unparalleled power over us (Monomakhos, n.d.).

It can be concluded that, although this scenario is also associated with proactive measures, the framing of restrictive and proactive measures used to prevent Covid-19 may differ. Compared with proactive measures, restrictive strategies appear to be framed as more harmful.

There are also some linguistic vehicles pointing to the GROUP-AGAINST-GROUP CONFLICT scenario where different individuals become opponents. They are all relevant to Covid-19 restrictive preventative measures. For example:

Example 25 Now we are about to be cut adrift into a world of *warring factions*, where mask-wearers may be *viewed* as individuals who aren't prepared to live with Covid and who remain permanently fearful of it (Covid-19-Daily Mail-06/07/21).

Example 26 For thanks to Boris Johnson's decree yesterday that face masks will no longer be mandatory on public transport, in shops or pubs and bars etc, and that people can decide for

themselves when and where to wear masks, Britons are now condemned to split into two hostile tribes (Covid-19-Daily Mail-06/07/21).

Example 27 Masks are part of the bitter political *divide*, the new Brexit and Remain battlefield (Covid-19-Daily Mail-28/01/22-1).

In this scenario, preventative measures such as mask-wearing become a *battlefield*, and people are divided into two groups: those who follow the measures and those who do not accept the measures, who are *warring* and *hostile tribes* in this conflict.

In Example 27, the juxtaposition of ‘the bitter political *divide*’ and ‘the new Brexit and Remain *battlefield*’ implies that preventative measures such as wearing masks are not just about medical advice. In this metaphor, the opposing sides seem to be different political parties, suggesting that the adoption of Covid-19 preventative strategies may be related to political choices. In the view of Flakerud (2020) and Mellon et al. (2021), restrictive measures such as mask-wearing may go beyond being merely medical preventative measures and have become symbols: left-leaning political parties tend to trust science and medicine and are more willing to follow restrictive measures that may cause economic sacrifices to reduce infections, while right-leaning parties may tend to reject what they perceive as the dictates of experts and view compliance with restrictive measures, such as wearing masks, as cowardly submission to tyranny.

Some War & Violence metaphors construct a REBELLION AGAINST AUTHORITY scenario, highlighting internal disagreements within the government regarding Covid-19 restrictions. For example:

Example 28 Boris Johnson is promising Tory MPs all kinds of concessions to *head off* a revolt over the latest Covid restrictions (Covid-19-Daily Mail-01/12/20).

Revolt appears 338,415 times in the enTenTen21 corpus. Its 10 most frequent collocates are *revolt*, *peasant*, *Peasants*, *slave*, *Arab*, *suppress*, *Maccabean*, *Pueblo*, *quell*, *rebellion* and *uprising*, align with historical or violent conflicts, often involving oppressed groups rising against authoritative regimes. Although they are all relevant to the literal meaning of *revolt*, its connotation may be transferable to its metaphorical use. In such cases, *revolt* conveys active resistance while also emphasizing division, potentially framing intra-party disagreement as a challenge to authority. This may suggest disunity and chaotic perspectives within the leadership regarding restrictive strategies.

5.2.3 Summary

The analysis of linguistic metaphors across both cancer and Covid-19 prevention corpora shows the same WAR scenario. In the cancer prevention corpus, although some War & Violence metaphors are used to position the government or cancer preventive measures in opposition to the public, they do not strongly emphasise actual harm caused by cancer preventive measures to individuals. In the Covid-19 prevention discourse, restrictive strategies are often associated with violence, framing the public as victims and the government or preventative measures as the agents. Moreover, War & Violence metaphors also reveal internal divisions, with opposition emerging not only from the public but also within the government itself.

5.3 Journey Metaphors

According to Semino et al. (2017a), compared with Violence metaphors, Journey metaphors appear to be more preferred for describing the cancer experience in official documents in recent years. For example, in the 2015–20 Cancer Strategy for England report, violent lexis such as *war* or *battle* are avoided, and Journey metaphors are used to describe the cancer experience since Journey metaphors tend to evoke non-adversarial framing and avoid the

implication that failing to recover is a personal failure, which is often suggested by Violence metaphors (Semino et al., 2017a).

In Semino et al. (2017a)'s research, 4 movement-related metaphors are later grouped under the umbrella term of the Journey vehicle group: the Movement, Location, Direction, and Journey semantic groups. In other words, Semino et al. (2017a) adopt a rather inclusive approach in their categorization, grouping nearly all movement-related metaphors under Journey metaphors, even though some might be more closely related to the Movement and Location labels rather than to the concept of a journey. In my research, not all movement-related metaphors are classified as Journey metaphors, since some have relatively low semantic relevance to the concept of a journey, such as *skip*. Therefore, in my study, I categorize lexis that are more closely related to hand movements or vertical movement under the Actions vehicle group. In other aspects, I follow their study and classify other movement-related lexis as Journey metaphors. Based on different semantic themes, I further divide these journey metaphors into five categories: Moving Forward or Progressing, Directional Movement, Backward Movement, Path, and Other, as shown in Table 5.5. Although, semantically, Moving Forward or Progressing and Backward Movement could be considered part of Directional Movement, I have separated them into distinct categories in my research. This allows for a more detailed analysis of the differences between them. The Moving Forward or Progressing group includes all lexis related to forward motion, the Backward Movement group includes all lexis related to backward motion, while the Directional Movement label is used for the lexis whose movements do not specify a particular direction.

	Journey Metaphors for Cancer Prevention	Journey Metaphors for Covid-19 Prevention	Examples
Types of Journey Metaphors	Metaphors	Metaphors	

Moving Forward or Progressing	step (28), approach (10), progress (10), further (8), advance (8), pave (6), pioneer (3), forward (3), reach (2), lead (2), move along, fast, mile, stepping stone, step up, far, slog, follow	step (18), approach (16), further (14), reach (6), milestone (6), rolling (6), ahead (5), forward (4), pave (2), far (2), swift, swiftly, faster, hurtle, set out, venture, halfway, step up, speed up	... <u>advances</u> in screening and vaccination (cancer-The Times-22/01/20). ... have now been convinced of the need to <u>step up</u> restrictions (Covid-19-The Sun-24/01/21).
Directional Movement	go (10), move (10), direction (2), uphill, shift, move away, go away, fall behind, turn, halt	move (30), go (12), roadmap (11), movement (6), shift (2), round (2), direction (2), plot a map, head off, headlong, rush, give way, exit, diverge, departure, lag, stray	The ideal answer is probably to <u>move away</u> from both (sugar and artificial sweeteners), ... (cancer-The Times-25/03/22). ..., there's little evidence that authorities are willing to <u>diverge</u> from the <u>path</u> they are currently on (Covid-19-The Guardian-29/11/22-2).
Backward Movement		return (5), back (2), get back (2), come back, turn around, backtrack	The <u>backtracking</u> over vaccine passports is just dumbfounding (Covid-19-The

			Sun-14/09/21).
Path	way (33), access (18), track (6), pathway (6), route (4), path (3), landmark (2), short cut, journey, accessible	way (33), path (17), access (9), route (3), long, hard and desperate road, accessible, terminus, track, road, landmark, journey	If you're already applying it (suncream), you're on the right <u>track</u> (cancer-The Sun-12/08/22-1).
Other	green light (2), position (2), footprint, stance	place (18), pace (6), stay (4), remain (2), slow, stroll-out, stagger, sluggish, drag, feet	Bowel screening gets <u>green light</u> to resume (cancer-Metro-12/10/20) .

Table 5.5 Journey Metaphors for Cancer Prevention and Covid-19 Prevention

As can be seen from Table 5.5, there is a statistically significant difference in the total number of Journey metaphors between the two corpora (See Section 5.1). Journey metaphors for Covid-19 prevention appear to exhibit significantly more types compared to those for cancer prevention, particularly in the Directional Movement, Backward Movement, and Other groups. Specifically, in the Backward Movement group, the cancer prevention corpus contains no lexis, whereas the Covid-19 prevention corpus has 6 different lexes.

5.3.1 Cancer Prevention

In the cancer prevention corpus, many metaphors construct a JOURNEY scenario, as exemplified in Examples 29–35. The narrative elements of this scenario are that the journey is guided and accompanied, as shown by *follow*, *journey* and *lead*; that it requires effort, as shown by *steps* and *go the extra mile*; that the condition of the journey is difficult, as suggested by *uphill slog*; that it involves progress and achievement, as indicated by *landmark*

and *go a long way*, and that the destination of the journey is improved health and reduced cancer risk.

In Example 29-30, Journey metaphors, by sharing a path that others can follow, suggests that individuals in this journey are not alone.

Example 29 ... she had the BRCA2 gene, which increased her risk of breast cancer ... she knew other women must be suffering like her, and let fans follow her journey as she had an elective double mastectomy and reconstructive surgery in 2012 (cancer-The Sun-12/07/22).

Example 30 [Drinking upper limits] ... let science lead the way (cancer-The Guardian-19/01/23-2).

Some Journey metaphors represent health prevention as a process that involves effort and progress. For example:

Example 31 ... this can empower you to take preventive steps for your own health (cancer-The Guardian-04/09/22).

Example 32 If you want to go the extra mile, mouthwash once a day is a bonus (cancer-The Sun-27/09/22-3).

Although the idiomatic expression *go the extra mile* is treated as consisting of multiple different lexical units according to my criteria for decisions on identifying lexical items, I still conducted the corpus analysis by examining the expression as a whole to capture its connotative meaning. I searched for the 10 most significant collocates of *go the extra mile* in the enTenTen21 corpus, which are *willingness*, *willing (Willing)*, *DR650SE*, *approachable*, *floral*, *can-do*, *Leyen*, *courteous*, *knowledgable* and *LVHN*. Among them, *willingness*, *willing (Willing)* and *can-do* convey the concept of voluntary and positive action, probably emphasizing that

taking preventative measures depends on personal choice and motivation. In this framing, individuals are conceptualised as travellers who can advance depending on their own actions, implying that improving one's health requires persistence and voluntary commitment.

Some metaphors convey positive evaluation of the progress of cancer prevention measures.

For example,

Example 33 Seeing population-wide genetic testing become a reality in the UK would be a landmark decision (cancer-The Times-17/07/20).

Example 34 Cutting back on these things may not stop you from getting cancer, but it could go a long way in reducing the chances (cancer-The Sun-05/01/22).

In Example 33, cancer preventative strategy is described as a *landmark*. Landmark appears 783,157 times in the enTenTen21 corpus, and its 10 most significant collocates are *historic, iconic, landmark, designate, preservation, famous, historical, ruling, Supreme* and *architectural*. Among these, 6 collocates, *historic, iconic, famous, historical, ruling* and *Supreme* emphasize importance and recognition, suggesting that *landmark* highlights the significant achievement. Although its collocates may be more closely tied to its literal meaning, its connotation may be transferable. Similarly, 10 most significant collocates of *go a long way* are *toward, alleviating, helping, towards, ensuring, easing, preventing, boosting, determining* and *improving* in the enTenTen21 corpus. Apart from *toward* and *towards*, other collocates refer to beneficial results. I also checked 200 random citations of *go a long way*, which appears 133,148 times in the enTenTen21 corpus, and found that 191 of the examples are metaphorically used. A small number of metaphorically used examples emphasize the extensive efforts required to achieve a goal. For example:

viii. With your patent lack of diplomacy it's clear you'll go a long way (scriptshadow, 2013)!

Many of the other citations emphasize significant progress has already been made or is expected to be made soon. For example:

ix. I lean towards thinking that intrinsic motivation + carrots (rather than sticks) go a long way and that it is appropriate to apply "the stick" in a similar manner as you would apply hot sauce to a dish (Zerner, 2013).

Thus, it can be concluded that citation analysis of *go a long way* may suggest significant the progress of cancer preventative measures.

Some metaphors are used to express the difficulty of cancer prevention. For example,

Example 35 It [raising awareness of cancer prevention among men] is, he says, an uphill slog (cancer-The Times-15/06/21).

I conducted a collocation analysis of *slog*, and its 10 most significant collocates are *slog*, *uphill*, *sexp*, *Zil*, *mud*, *scree*, *Kneser*, *joyless*, *tedious* and *muck*. In addition to *sexp*, *Zil* and *Kneser* referring to software terms, other collocates all refer to the challenging nature of the literal journey. In addition, I also checked the collocation of *uphill slog* since they have significant association and its 10 most significant collocates are *Balz*, *gruelling*, *relentless*, *Dem*, *exhausting*, *downhill*, *slippery*, *steep*, *steady* and *Pass*. Apart from *steady*, the vast majority of adjective collocates suggest the difficulty and continuous effort required. Therefore, this extended metaphor might emphasize the challenges faced and numerous demands that may be required.

There is also a set of Journey metaphors used to construct a COMPETING scenario. For example:

Example 36 We want to see the government step up and commit to eliminating cervical cancer in the UK,” said Samantha Dixon, chief executive of Jo’s Cervical Cancer Trust. “Other countries are much further along the path to ending this cancer and we do not want the UK to fall behind (cancer-The Guardian-23/01/23).

Example 37 Estonia has led the way in using DNA tests in their health system and they've had some amazing results using preventative medicine (cancer-Metro-12/06/20).

Example 38 ... and no member state is on track to reach the *target* of halting the rise in obesity by 2025, ... (cancer-The Guardian-03/05/22).

Example 36-38 constructs a vivid metaphorical scenario: the UK and other countries embark on a journey to the same destination on the same road and although no one has yet reached the end of the journey, some participants are ahead while others may be lagging behind, which is not desirable among its citizens.

5.3.2 Covid-19 Prevention

Journey metaphors for Covid-19 prevention seem to mainly convey two opposing scenarios. The first, DIFFICULT AND DELAYED JOURNEY scenario, frames the destination of the journey as the prevention of the disease. The second, DIRECTIONAL JOURNEY scenario, frames the destination of the journey as the return to everyday life through the modification or lifting of restrictive measures.

Within the DIFFICULT AND DELAYED JOURNEY scenario, Covid-19 preventative measures are presented as a journey towards the prevention of the disease. The condition of the journey is difficult, as shown by *long, hard and desperate road*, while the state of movement of the travellers is negatively evaluated through expressions such as *stray* and *drag ... feet*. Although some progress is recognised, such as *milestone*, the movement remains slow or insufficiently

urgent such as *sluggish*, *speed up* and *stroll-out*. Examples 39–42 relate to restrictive measures while Examples 43–45 relate to proactive measures.

Example 39 For these damning reasons, Boris Johnson must not stray down that monstrously dangerous path [imposing the lockdown] (Covid-19-Daily Mail-21/10/20).

Example 40 ..., businesses would 'rejoice in the news' after a 'long, hard and desperate road' (Covid-19-Metro-08/02/22).

Example 41 Sir Desmond Swayne, a former minister, said that the move [mandatory wearing of masks] was "madness" ... (Covid-19-The Times-04/01/23-3).

Example 42 The Government itself has been dragging its feet on the issue [wearing a mask] (Covid-19-The Sun-26/05/20-2).

In the enTenTen21 corpus, *stray* occurs 348,737 times. Among 200 randomly examined examples, 58 refer to literal physical movement, while the remaining 142 show metaphorical uses. As an adjective or noun in 46 citations, *stray* often denotes randomness or a lack of central focus whereas as a verb it implies a shift away from an established course in the other 96 citations, as shown below.

x. Consider this an open thread for any stray thoughts ... (hoopinblog, 2010).

xi. ... I was straying away from who I was as a whole person (mtv, n.d.).

Collocation analysis shows that its 10 most significant collocates are *cat*, *bullet*, *capacitance*, *feral*, *Cheryl*, *dog*, *Dogs*, *stray*, *kitten* and *Dog*, half of which are directly related to animals that are not managed and move freely in the wild. Since these 10 collocates are associated with *stray* in its adjective or noun forms, I extended the analysis by examining its 10 most significant

collocates when *stray* is used as a verb. Nearly half of them, *offside*, *far* and *afield*, and *off-topic*, which may be more relevant to its metaphorical meaning, possibly convey a sense of moving away from the norm or expected direction without supervision or control. Thus, it can imply that the connotation of *stray* when used metaphorically may highlight a lack of organization and failure to meet expectations.

The idiomatic expression *drag ... feet* appears 39,309 times in the enTenTen 21 corpus. Collocation analysis shows that its 10 most significant collocates are *foot*, *feet*, *wearily*, *hind*, *procrastinate*, *leaden*, *stirrup*, *dawdle*, *unceremoniously* and *aerodynamic*. Most of these are semantically associated with slowness, heaviness, or resistance to movement, reinforcing the connotation of delay or reluctance to act. It can be concluded that *drag its feet* in Example 39 may be used to highlight the long delay of the implementation of restrictions.

Co-textual expressions of Journey metaphors in Example 39-41 also possibly show negative evaluations about restrictive measures, such as *monstrously dangerous*, *long*, *hard* and *desperate* and *madness*.

There are also Journey metaphors about proactive measures constructing this metaphor. For example:

Example 43 NHS chief Sir Simon Stevens hailed the 'extraordinary team effort', adding: '*Hitting this milestone* just ten weeks after the NHS made history by delivering the first Covid vaccination outside a trial is a remarkable shared achievement.' (Covid-19-Metro-15/02/21-1).

Example 44 And it emerged millions of patients will soon be able to book their booster *jabs* in advance as the *sluggish* rollout of third doses finally *speeds up* (Covid-19-Daily Mail-05/11/21).

Example 45 If the lockdowns work, the country still has months of uncertainty and lockdowns ahead of it while the vaccine *stroll-out* continues (Covid-19-The Guardian-16/07/21-2).

I conducted the collocation analysis of *milestone* in the enTenTen21 corpus. Its 10 most significant collocates are *milestone*, *celebrate*, *developmental*, *mark*, *reach*, *achieve*, *achievement*, *deliverable*, *significant* and *anniversary*, some of which may be relevant to the literal meaning of *milestone*. All these collocates are related to achieving progress and accomplishments. It may suggest *milestone* when used metaphorically convey the connotation of highlighting the achievement.

Journey metaphors in Example 44 construct an extended picture: the vaccination is described as a slow-moving journey which is now picking up pace. Although *speed up* is used to describe a positive change, *sluggish* probably emphasize the slow progress of vaccination. Collocation analysis of *sluggish* may prove it, with its 5 most significant collocates, *unresponsive*, *lethargic*, *bloated*, *digestion* and *sluggish*, implying slowness and inefficiency. In Example 45, the term *stroll-out* may appear to be a deliberate pun on the more standard word *roll-out*, probably sarcastically altering *roll-out* to *stroll-out* to highlight that the vaccination programme is not progressing with the expected urgency. *Stroll-out* only appeared 8 times in the enTenTen21 corpus. I then conducted the collocation analysis of *stroll out* in the enTenTen21 corpus for larger evidence. Its 10 most significant collocates are *A-checklist*, *Brazen*, *armful*, *Ugg*, *nonchalantly*, *thieve*, *Maxx*, *leisurely*, *pier* and *casually*. Citation analysis shows that *A-checklist* and *Ugg* refers to websites advertising Ugg boots while every concordance line of *Brazen*, *armful*, *thieve* and *Maxx* is related to a news headline about thieves stealing merchandise from a TJMaxx store. In addition to these, collocates such as *nonchalantly*, *leisurely* and *casually* all seem to point towards a relaxed and unhurried manner. Since *stroll out* is not considered as a phrasal verb according to LDOCE, I also checked the 10 most significant collocates of *stroll* in the enTenTen21 corpus, which are *leisurely*, *Lance*, *promenade*, *boardwalk*, *casually*, *beach*, *pleasant*, *street*, *lane* and *relaxing*, which may strengthen a peaceful activity with no urgency. In the context of distributing vaccination in response to the disease, this metaphor potentially serves as an implicit form of criticism, highlighting the slow progress.

Some linguistic vehicles construct a DIRECTIONAL JOURNEY scenario: there is a *road* or *path* whose destination is a return to everyday life through the lifting of restrictive measures; the *direction* moving *forward* or *back(ward)* is the gradual lifting of these measures; each lifting of a restriction measure is a *milestone* and this journey may also involve danger or uncertainty, as suggested by *venture* and *headlong rush*. For example:

Example 46 ... no additional measures were necessary... Ruling out further restrictions for now, he said: "I think the way forward for the country as a whole is to continue with the path that we're on (Covid-19-The Times-04/01/22).

Example 47 The government's promise that all children will be back to school after the summer holidays is a step in the right direction (Covid-19-The Guardian-05/08/20).

Example 48 Last night hospitality groups hailed the end of *jab* passports... The Scottish Beer and Pub Association said: "It [the end of *jab* passports] marks an important milestone in the road to recovery for pubs." (Covid-19-The Sun-23/02/22-2).

Example 49 So we all need to get behind the end of Plan B restrictions and be willing to venture back towards life as we know it (Covid-19-The Sun-23/01/22).

Example 50 Teaching unions *branded* the changes a headlong rush as cases of the virus are still high in schools ... (Covid-19-Daily Mail-22/02/22-1).

Positive evaluative adjective *right* in the co-text of Journey metaphor in Example 47 demonstrates a favourable view of the lifting of restrictive measures. This framing is further emphasized by the co-text information of other Journey metaphors in my corpus related to the removal of restrictive measures, such as *foundational*, *praise*, *sensible* and *hail*.

Examples 49-50 represent the very few metaphors used to describe the possible dangers of lifting restrictions.

Collocation analysis of *venture* shows that its 10 most significant collocates are *afield, forth, territory, farther, dare, beaten, guess, outdoors, uncharted* and *into*. Most collocates convey the implication of exploring unknown territory, which suggests that the metaphorical use of *venture* is often associated with stepping into uncertainty. However, its co-text in Example 40, *be willing to* may convey an attitude of readiness and willingness to face challenges.

Headlong rush appears 2,780 times in the enTenTen21 corpus. Its 10 most significant collocates are *two-voice, OVO, well-nigh, industrialize, perdition, precipice, self-destruction, impetuous, urbanisation* and *precipitous*. Half of its collocates, *perdition, precipice, self-destruction, impetuous* and *precipitous* highlighting danger, rashness, and loss of control. Since *rush headlong* instead of *headlong rush* is considered an idiom in the LDOCE, the collocation analysis of *rush* and *headlong* are conducted respectively to further my assumption. Half of 10 most significant collocates of *rush* denote urgency and intensity, which are *adrenaline, hospital, Gold, gold* and *hour* while more than half of 10 most significant collocates of *headlong* emphasise speed, instability and potential disaster, which are *plunge, hurtle, careen, tumble, precipice* and *abyss*. Thus, it can be concluded that in Example 50, *headlong rush* may highlight that the lifting is swift and poorly considered and implicitly warning of potential danger.

Although *headlong rush* in Example 50 is used to criticize the lifting of restrictions, this is one of the very limited examples of negative evaluation and most metaphors related to lifting Covid-19 restrictions are framed positively, often implying a willingness to embrace challenges, as demonstrated in Example 49.

Backward Movement metaphors, which appear exclusively in the Covid-19 prevention corpus, consistently point toward a JOURNEY INTERRUPTED AND REVERSED scenario, mainly relevant

to restrictive measures. The mini-narrative is a journey where the intended destination is the lifting of preventative measures, but due to unforeseen circumstances, there is a reversal of direction, moving away from that goal and back toward previous measures. For example,

Example 51 The last thing any of us want to see is a return to lockdowns, especially as we look forward to Christmas (Covid-19-The Sun-14/09/21).

Example 52 The backtracking over vaccine passports is just dumbfounding (Covid-19-The Sun-14/09/21).

Example 53 He said the new *package* would be onerous for many but insisted it was by no means a return to the full lockdown of March (Covid-19-Daily Mail-23/09/20).

As can be seen from Examples 51-53, although these metaphorical expressions used to construct this scenario themselves may convey neutral meanings, the context in which these metaphors are used suggests an evaluation of this scenario. Expressions that are used to describe these metaphors and their co-textual expression, *the last thing*, *dumbfounding* and *by no means*, expressing frustration and rejection of the idea of returning to restrictive measures. These metaphors may imply that progress away from restrictions is expected, while any movement backwards is viewed as undesirable.

5.3.3 Summary

In cancer prevention corpus, JOURNEY scenario provide encouragement through emphasizing fellow travellers or guides, as well as giving people more agency, and recognizing and positively evaluating progress. The negative framing, on the other hand, focuses on the difficulties of the process. Journey metaphors in the Covid-19 prevention corpus construct two dominant scenarios. The first positions the goal of the journey as Covid-19 disease prevention. The second, DIRECTIONAL JOURNEY scenario centres on the transition away from restrictive

measures, with the ultimate goal being a return to normal life. Journey metaphors relevant to the first one mainly imply the difficulty of the journey, the lack of clear decisions of restrictions, and the slow progress of proactive measures. The co-textual information surrounding Journey metaphors related to the second metaphor may reflect a desire to return to normality, even though such efforts involve a certain level of risk. The co-text information of Backward Movement metaphors, which suggests a JOURNEY INTERRUPTED AND REVERSED scenario possibly indicate that the reversal of progress toward normality is undesirable.

5.4 Mechanics Metaphors

Table 5.6 shows all Mechanics metaphors about cancer prevention and Covid-19 prevention. It can be observed from the comparison that although the number of topic-related Mechanics metaphors in the two corpora is not significantly different, as shown in Section 5.1, the range of lexis in the Covid-19 prevention corpus is notably richer than in the cancer prevention corpus (cancer prevention: 14 & Covid-19 prevention: 23).

	Metaphors	Examples
Mechanics Metaphors for Cancer Prevention	tool (10), reverse (9), switch (8), drive (7), overhaul (5), launch (3), MOT (2), switch off, trigger, kick-start, restore, automatic, cycle, toolkit	After this winter, especially, when we have spent more time than usual indoors, it's really important to give yourself an <u>MOT</u> (cancer-The Sun-22/03/21). We want to support our customers to make a simple <u>switch</u> to protect their skin with higher SPF (cancer-The Guardian-12/07/22).
Mechanics Metaphors for Covid-19 Prevention	drive (11), U-turn (8), tool (7), brake (5), backfire (3), circuit breaker (3), emergency	There are signs the pace of the programme is speeding up after ministers were under pressure to <u>turbo-charge</u> the rollout (Covid-19-Daily Mail-05/11/21).

	brake (2), trigger (2), on-off (2), traffic light (2), launch (2), driver, fatigue, dismantle, indicator, handbrake, cycle, seatbelt, switch, failsafe, reverse gear, reverse, turbo-charge	..., called for a <u>circuit-breaker</u> because Tier Three households were not complying completely with the guidance (Covid-19-Daily Mail-31/10/20).
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Table 5.6 Mechanics Metaphors for Cancer Prevention and Covid-19 Prevention

Citation analysis of Mechanics metaphors in Table 5.6 shows that many linguistic metaphors about cancer prevention suggest a MECHANICAL MOVEMENT scenario while linguistic metaphors about cancer prevention Covid-19 prevention suggest a systematic metaphor: *CHANGES IN COVID-19 RESTRICTIVE MEASURES ARE MECHANICS*.

In a MECHANICAL MOVEMENT scenario about cancer prevention, most linguistic metaphors are relevant to the topic of cancer proactive measures and narrative content are the activation of machinery, such as *kick-start* in Example 1; the adjustment of mechanical settings, such as *switch*; and the inspection and maintenance of machines, such as *overhaul* and *MOT* in Example 3 & 4. Most relevant linguistic metaphors are associated with mechanical adjustment or transformation, as shown below.

Example 1 I hope that people can use this as a *kick-start* moment to be more active and eat more healthily, ... (cancer-Daily Mail-04/01/22).

Example 3 ... jumped at the chance to *overhaul* their lifestyles (cancer-Daily Mail-12/09/20).

In Example 1 & 3, preventative measures are described as mechanical operations. *Kick-start* appears 50,309 times in the enTenTen21 corpus, and its 10 most significant collocates are

stalled, kick-start, moribund, metabolism, career, CSIRO, craze, renaissance, flagging and *footrest*, with *CSIRO* referring to an Australian Government agency. Among these, 4 collocates, *stalled, moribund, renaissance* and *flagging* are associated with entities lacking momentum or energy, implying a need for activation. *Overhaul* appears 351,448 times in the enTenTen21 corpus, and its 10 most significant collocates are *MRO, overhaul, undergo, Repair, repair, sweeping, shipyard, maintenance, radical* and *major*, with *MRO* referring to Maintenance, repair and operations. Among these, 3 adjectives, *sweeping, radical* and *major* emphasize a sense of thoroughness, while *MRO, shipyard* and *maintenance* imply structural reform, suggesting that *overhaul* carries connotations of comprehensive and structural change.

A linguistic metaphor involved in this scenario also frames healthcare checking as vehicle maintenance. For example,

Example 4 Here, Dr Kayat reveals how to give yourself and your family a cancer MOT (cancer-The Sun-28/02/21).

MOT has 111,873 occurrences in the enTenTen21 corpus, and its 10 most significant collocates are *bon, mot, clé, juste, servicing, Summ, bons, tester, Def* and *Jezebel*. Citation analysis shows that among the top 10 collocates, only *serving* and *tester* is semantically relevant to the concept of vehicle safety testing of *MOT*. Other collocates such as *Bon, mot, clé, juste*, and *bons* are components of French phrases, while *Summ* and *Def* appear in legal documents, and *Jezebel* is associated with a Wikipedia user's signature. To minimize such noise, I extended the collocation analysis by examining the 100 most significant collocates and applied citation analysis to exclude those clearly associated with unrelated contexts. The remaining semantically relevant collocates include terms related to vehicle testing and inspection, such as *tester, testing, retest, roadworthy* and *roadworthiness*; vehicle documentation and registration, such as *V5, V5C, logbook, reg* and *DVLA*; inspection authorities and regulatory bodies, such as *VOSA* and *DVSA*; certification and validity, such as *certificate, cert, expiry, expire, valid* and *exempt*; and maintenance or repair, such as *servicing, garage, repair, tyre,*

gearbox, cambelt and *technician*. These patterns suggest that *MOT* is associated with a regulated system of vehicle inspection, certification, maintenance and compliance, and may therefore highlight the periodic and regulatory nature of MOT inspections. Thus, *MOT* may emphasize the significance of regular monitoring to preserve health and safety of cancer preventative measures.

It can be concluded that the MECHANICAL MOVEMENT scenario may emphasize that implementing proactive preventative measures requires a systematic shift and may also imply the importance of conducting regular checks.

Most of the linguistic vehicles that constitute the systematic metaphor *CHANGES IN COVID-19 RESTRICTIVE MEASURES ARE MECHANICS* are related to the semantics of halting or stopping movement, such as *circuit breaker, emergency brake, handbrake, brake, and failsafe*. These terms are predominantly used to describe restrictive behaviours, as exemplified below.

Example 54 Professor Dominic Harrison, director of public health at Blackburn with Darwen council, called for a circuit-breaker because Tier Three households were not complying completely' with the guidance (Covid-19-Daily Mail-31/10/20).

Example 55 But the emergency brake plan - to be discussed by national and regional leaders today - came as thousands of German holidaymakers flocked to Majorca for early Easter holidays (Covid-19-Metro-22/03/21).

Example 56 Yes, *slamming* on the brakes would for some of us just mean a few more weeks twiddling our thumbs until normality was permitted to resume (Covid-19-Daily Mail-09/06/21).

Isolation is described as *circuit breaker, emergency brake* and *brake* in Example 54-56. *Circuit breaker* appears 36,808 times in the enTenTen21 corpus. Citation analysis of its 200 randomly selected examples shows that in 185 examples, *circuit breaker* is used literally, referring to a

safety device to protect electrical systems. In the remaining 15 examples, it is used metaphorically. Across all of these metaphorical uses, the term conveys the idea of a precautionary measure taken to prevent further harm. For example,

xii. When my body was confronted with the painful overload caused by my injuries, its protective circuit breaker prevented further damage to the inner "self," the core of my "being" (sawka, n.d.).

Similarly, *emergency brake* appears 10,083 times in the enTenTen21 corpus. Among its randomly selected 200 examples, it conveys the literal meaning of a device used for emergency stopping in vehicles in 183 examples. Of the remaining 17 metaphorical uses, it conveys the idea of a precautionary measure taken to avoid imminent and potential danger in 14 examples, while the other 3 refer to sudden and unexpected changes. For example,

xiii. Decc now proposes to include an " emergency brake " mechanism which would close the RHI scheme down as payments approached pre-set levels (Duncan renewables, n.d.).

xiv. Life just happens and it is like you are driving on such high speed and then you have to take an emergency brake," said Maribe (TUKO, n.d.).

Therefore, this systematic metaphor may be used to frame Covid-19 restrictive measures as mechanisms for avoiding further danger.

This systematic metaphor also highlights changes and their impacts. For example,

Example 57 In an extraordinary U-turn, Mr Johnson dropped a back to work' push and told millions of office staff they should now work from home until the spring (Covid-19-Daily Mail-23/09/20).

Example 58 Whether ministers do go into "reverse gear" - as Prof Leitch put it - remains to be seen in the next week or two (Covid-19-The Sun-01/09/21).

Example 59 ..., especially after the Government and the science' performed a 180-degree reverse *ferret* initially claiming they provided no protection, ... (Covid-19-Daily Mail-28/01/22-1).

Example 9 ... the Government was considering making it a legal requirement for NHS and care home staff to have the *jab* ... the *move* could backfire ... (Covid-19-Daily Mail-16/06/21).

U-turn can be classified as a metaphor vehicle belonging either to the Backward Movement group or to the Mechanics group. According to the LDOCE, its basic meaning is 'a turn that you make in a car, on a bicycle, etc., so that you go back in the direction you came from'. In this study, I discuss it as part of the Mechanics metaphors, as it describes policy reversal as a mechanical shift in direction. *U-turn* appears 52,606 times in the enTenTen21 corpus. Citation analysis of its 200 randomly selected examples shows that *U-turn* in 85 cases is used literally to describe a change in a vehicle's direction. In the remaining 115 instances, *U-turn* is used metaphorically to refer to a radical shift from a previously held position. Among these metaphorical uses, 18 describe such changes as leading to positive outcomes. For example,

xv. So what were these key strategic changes that helped bring about an end to the war and should we consider them a strategic rearrangement or a complete U-turn (KCL, 2021).

In the other 11 citations, its meaning appears to focus only on the notion of change. For example,

xvi. Her life takes a U-turn when she gets to know about her daughter (Hotdeals360, 2020).

In the remaining 86 examples, *U-turn* tends to convey a rapid and dramatic shift in stance, often implying indecisiveness attitudes, and frequently associated with negative consequences:

xvii. ... why the European *U-turn* will aggravate the international turmoil and make the world more insecure for all citizens (European Network Against Arms Trade, 2019).

Therefore, *U-turn* may be used to highlight the government's lack of consistency in implementing restrictions.

In Example 58, *reverse gear* refers to the reimposition of previously relaxed restrictions. It appears 6,371 times in the enTenTen21 corpus. Citation analysis of its 200 randomly selected examples shows that in 174 instances, it carries its literal meaning, referring to a mechanism in a vehicle used for backward movement. In the remaining 26 cases, it is used metaphorically. Among these, 3 examples use *reverse gear* metaphorically to describe the escape from an unfavourable situation. For example:

xviii. And anything that did not feel good, I just put myself into *reverse gear*, and got the hell out of there, and immediately moved on to what felt better" (ZaKaiRan, 2021).

Additionally, it is metaphorically used 4 times to describe actions moving in the opposite direction. For example,

xix. Most of the time it's pretty successful at this, but when Mercury is in *reverse gear*, the thinking mind seems to fall flat on its face (Bitstream, 2002).

In the remaining 19 citations, *reverse gear* is used metaphorically to describe an unwanted regression from previously achieved progress. For example:

xx. "We must be seen to be doing what will consolidate our gains in the electoral process, not what will obviously put us in *reverse gear*." (Legit, 2021).

Reverse gear is used to highlight changes in restrictive measures, and it implicitly suggests a reversal of previous progress, describing such changes as a backward step.

Although both collocation and citation analysis of *reverse* do not indicate any specific evaluative orientation, the expression *reverse ferret* is considered a technical term, used to describe a situation in which a person adopts a strongly opposing stance on the same issue within a short period of time, while maintaining an equally firm tone in both positions (Roland, 2008).

Backfire appears 116,650 times in the enTenTen21 corpus, and its 10 most significant collocates are *spectacularly, backfire, horribly, badly, ploy, prank, disastrously, tactic, Tu-22M* and *sputter*, among which *Tu-22M* refers to Russian Tu-22M Backfire bombers. Half of the collocates, *horribly, badly, prank* and *disastrously* convey meanings related to negative outcomes. Therefore, the term *backfire* may suggest a negative evaluative tendency, implicitly carrying the implication of undesirable consequences.

It can be concluded that *CHANGES IN COVID-19 RESTRICTIVE MEASURES ARE MECHANICS* metaphor frame restrictive measures as tools for preventing harm while also highlighting the unstable and inconsistent nature of the policies and their possible drawbacks.

5.5 Performance Metaphors

Table 5.7 shows Performance metaphors about cancer prevention and Covid-19 prevention. As can be seen from Table 5.7, the four most frequent Performance metaphor vehicles related to both topics are the same.

	Metaphors	Examples
Performance Metaphors for Cancer Prevention	role (11), play (9), perform (5), stage (2), villain, performance, tightrope	It says instead that the foods you eat are more likely to <u>play</u> a <u>role</u> in disease risk, and - you guessed it - a healthy balanced diet is best (cancer-The Sun-05/01/22).
Performance Metaphors for Covid-19 Prevention	stage (9), role (7), play (5), perform (5), theatre (5), performance (4), fiasco (2), a TV game show, juggle	Boris Johnson admitted the test and trace system needs improvement' after its <u>performance</u> slumped to a new low (Covid-19-Daily Mail-23/10/20).

Table 5.7 Performance Metaphors for Cancer Prevention and Covid-19 Prevention

Citation analysis of Performance metaphors about cancer prevention shows that they can be best summarized as a systematic metaphor: *IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS ENGAGED IN A PERFORMANCE*. For example,

Example 60 "Cruciferous vegetables such as cabbage, kale, broccoli and watercress are thought to play an important role in cancer prevention," reveals Marilia, ... (cancer-The Sun-31/07/22).

Example 61 Everything is in flux, our health balanced on a tightrope - which is why a lot comes down to risk and probabilities. (cancer-The Guardian-16/07/21).

Neither citation nor collocation analysis of the metaphor vehicles *play*, *role*, *play ... role*, and *perform* shows any particularly distinctive evaluation.

Tightrope appears 30,174 times in the enTenTen21 corpus. I randomly sampled 200 concordance lines from this corpus. Within its 66 examples, *tightrope* is literally used while it is

metaphorically used in other 134 citations. Citation analysis of its metaphorical example shows that it conveys the meaning of carefully navigating a balance among several, often opposing, elements, where a loss of balance can lead to significant danger. For example,

xxi. The 1979 season finished with mixed feelings as, spending all season on a financial tightrope, ... (Guilherme, 2017).

The systematic metaphor *IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS ENGAGED IN A PERFORMANCE* may suggest the difficulty and complexity of health management, although this framing is evident in only one metaphor vehicle.

A similar systematic metaphor appears in the Covid-19 prevention corpus: *IMPLEMENTATION OF COVID-19 PREVENTATIVE MEASURES IS ENGAGED IN A PERFORMANCE*. For example,

Example 62 And we learned yesterday that the performance of Test and Protect is far worse than we had previously been led to believe (Covid-19-The Sun-11/11/20).

Example 63 As we enter the third wave of the Covid-19 pandemic, we are rushing towards a dangerous new phase in which hygiene theatre can do even more damage than it has (Covid-19-The Guardian-12/07/21-2).

Example 64 Distancing Holyrood from Westminster's processes, Mr Swinney - whose number-juggling resembled a TV game show ... (Covid-19-The Guardian-05/01/22).

Hygiene theatre appears 32 times in the enTenTen21 corpus. Citation analysis of *hygiene theatre* in the enTenTen21 corpus shows that all of its concordance lines are metaphorically used and relevant to Covid-19 preventative measures. In every instance, it conveys the connotation of hygiene actions that are taken to create a sense of safety but may have little or no actual impact on reducing the risk of infection. For example,

xxii. Additionally, the term "hygiene theatre" has been used to describe the sanitation measures many public facilities have been using to make them appear safe (uwimprint, n.d.).

While the term *theatre* can evoke war or medical imagery, such as *theatre of war* or *operating theatre*, in this context, *hygiene theatre* most likely develops from the semantics of theatre as performance, referring to public health measures that are performative rather than substantively effective. Since it has a fixed lexico-grammatical structure and a restricted semantic preference, it may be an instance of a metaphoreme.

Juggle appears 157,719 times in the enTenTen21 corpus, and its 10 most significant collocates are *juggling*, *motherhood*, *unicycle*, *juggler* and *childcare* excluding collocates that are clearly relevant to proper nouns. Citation analysis shows that these collocates consistently appear in contexts related to balancing multiple tasks or responsibilities, suggesting that *juggle* possibly carries connotations of calculated coordination. In Example 64, *juggle* is extended by *a TV game show*. By describing the presentation of numbers related to Covid-19 prevention as part of a game show, the metaphor may suggest that preventative measures are performative.

It can be concluded that the systematic metaphor *IMPLEMENTATION OF COVID-19 PREVENTATIVE MEASURES IS ENGAGED IN A PERFORMANCE* may emphasize the performative nature of preventative measures, suggesting that they function primarily as displays rather than having effects on disease control.

5.6 Religion & Supernatural Metaphors

Table 5.8 shows identified domain-related Religion & Supernatural metaphors. As observed in Table 5.8, the range of lexical expressions used in the Covid-19 prevention corpus is considerably broader than in the cancer prevention corpus (cancer prevention: 10, Covid-19 prevention: 20).

	Metaphors	Examples
Religion & Supernatural Metaphors for Cancer Prevention	myth (6), panacea (4), faith (2), wizardry, silver bullet, holy grail, curse, doom, star, lucky star	So I hope the latest technological <u>wizardry</u> I'm testing doesn't stick it to my entire belief system... (cancer-Metro-12/06/20).
Religion & Supernatural Metaphors for Covid-19 Prevention	nightmare (4), faith (2), sacrifice (2), doom (2), myth (2), panacea, silver bullet, magic bullet, believer, piously, sinister, doctrine, preach, miraculous, dogma, prophet, demonisation, zealot, magic spell, saga	But Labour went on the <i>attack</i> over the government's decision to puts its <u>faith</u> in vaccines by axing most Covid restrictions, including mask-wearing, from July 19. (Covid-19-Metro-08/07/21).

Table 5.8 Religion & Supernatural Metaphors for Cancer Prevention and Covid-19 Prevention

My citation analysis of Religion & Supernatural metaphors in cancer prevention corpus led me to construct the systematic metaphor *IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS SUPERNATURAL*, which is relevant to 3 lexes of Religion & Supernatural metaphors, as the most satisfactory account. Citation analysis also shows that this systematic metaphor is relevant to the topic of cancer proactive and restrictive measures as well as cancer prevention in general, without displaying any particular bias. For example,

Example 65 Stevens argues that joining up care to prevent illness is the "holy grail" of health systems in every rich country (cancer-The Times-03/04/21).

Example 66 ... highlighting that HPV vaccination isn't the absolute panacea for cervical cancer prevention, ... (cancer-The Guardian-22/01/20).

Example 67 ... I think it's important that people experiment with changing their caffeine habits and see what improves,"... It won't be a silver bullet for everyone (cancer-The Guardian-14/05/22).

The term *holy grail* appears 81,947 times in the enTenTen21 corpus. From a random selection of 200 concordance lines, *holy grail* is used metaphorically in 121 instances. In all metaphorical uses, the term conveys the idea of a long-standing aspiration toward an achievement or goal that is critically important and difficult to attain. Among these 121 instances, 68 examples highlight a goal that is deeply desired but perceived as almost impossible to achieve. For example,

xxiii. There are far too many factors involved in each and every individual's day-to-day life to unequivocally state that this or that product offers guaranteed "holy grail" results (FITPROF, n.d.).

53 examples portray an extremely challenging but ultimately attainable accomplishment. For example,

xxiv. We even attempted the holy grail of water rockets: parachute deployment systems (thehowzone, n.d.).

This semantic tendency suggests that the metaphorical use of *holy grail* possibly implies a sense of difficulty and the perception that the goal remains out of reach, even when the goal is theoretically achievable. Camus (2009), in the study on metaphors related to cancer treatment, also identified the use of *holy grail*, noting that by attributing heroic qualities to cancer prevention and likening its significance to a major archaeological discovery, the metaphor emphasizes the critical importance of prevention. However, she also points out that this framing carries the risk of setting expectations that are excessively high or elusive, implying

that certain aspects of cancer prevention may be perceived as overly ambitious or even unattainable (ibid).

Although all citations of *panacea* and *silver bullet* in cancer prevention corpus and *panacea* and *silver bullet* in the Covid-19 prevention corpus contain negation in their surrounding co-text, these examples still evoke the mapping between preventative measures and these linguistic vehicles. Therefore, based on this structural mapping relationship, I include these instances as part of the construction of the systematic metaphor *IMPLEMENTATION OF CANCER/COVID-19 PREVENTATIVE MEASURES IS SUPERNATURAL*.

Silver bullet appears 31,118 times in the enTenTen21 corpus. Citation analysis of 200 randomly selected examples shows that it is used literally to refer to an actual silver-coloured bullet in 5 instances. In 34 instances, it is used as the name of entities, such as the name of a band. In the remaining 161 instances, *silver bullet* is used metaphorically, conveying the meaning of a perfect solution to a complex problem. Citation analysis further shows that *silver bullet* exhibits a relatively fixed grammatical pattern when it is used metaphorically. In 69 examples, the expression occurs in the form *a + silver bullet*, including 4 instances where it appears as *a + adjective + silver bullet*. In 64 of these cases, there is a tendency to convey a denial of the existence of a perfect solution. This interpretation is sometimes reinforced by the presence of negative lexical items appearing in the immediate context of *a + silver bullet*. For example,

xxv. The Bush administration brokered a plan to freeze resets while Treasury officials privately admitted that the scheme is not a "*silver bullet*" ... (henryckliu, n.d.).

Sometimes, negation is expressed more flexibly. For example,

xxvi. Today's revival of the national missile defense program runs the risk of seeming to congressional budget-makers like a *silver bullet*, or *panacea*, for the future (ndol, n.d.).

In this case, the phrase *runs the risk* may imply that viewing missile defense as a *silver bullet* carries risks. Although the negation is not expressed through explicit negative words, it is potentially conveyed through the warning about potential misperception.

In other cases, the negation appears in a broader context:

xxvii. ..., has previously described drug testing in schools as a "*silver bullet*" solution to the epidemic of substance abuse among our youth. We also believe that implementation of drug testing should await scientific evidence and we have neither (Drugsense, 2005).

48 instances involve the structure directly expressing negation of *silver bullet*, *no + silver bullet*, including 2 cases of *no single silver bullet* and 2 cases of *no + noun + or + silver bullet*.

In 26 instances, the expression appears in the form of *the + silver bullet*, including 5 cases where it is presented as *the + adjective + silver bullet*. In 23 of these examples, *silver bullet* conveys the semantic implication that no perfect solution exists. Sometimes, this interpretation is reinforced by direct negation appearing in the surrounding context:

xxviii. I tried to explain the nature of the crisis that was unfolding but no one wanted to hear that fighting corruption was not the *silver bullet* (The Elephant, 2019).

In some cases, negation is expressed more subtly:

xxix. While advances in marketing technology can help you discover, track and engage customers in new ways, don't be fooled into thinking martech is the *silver bullet* for all your marketing needs (CMO Australia, n.d.).

Or appears in more distant context:

xxx. Where are the silver bullet ideas; the ones that preclude exposing this country to the same vulnerability being experienced by other countries. ... The reason why there are no "silver bullet" ideas is because they have none (Otago Daily Times, 2020).

Among the remaining 18 examples that do not contain the fixed structures discussed above, 16 also convey the semantic notion that a perfect solution is unattainable or cannot be fully trusted. For example,

xxxi. It is the combination of the many methods and not just one silver bullet that will address the campus peer to peer issue (house.gov, 2005).

It can be concluded that expressions involving *silver bullet* often carry a semantic prosody suggesting that a perfect solution either does not exist or cannot be relied upon. This negation can be conveyed through negative expressions, such as *no*, or implicitly through evaluative expressions that critique such assumptions, such as *runs the risk* or *fool*.

Similarly, *panacea* appears 50,448 times in the enTenTen21 corpus. Among 200 randomly selected examples, it is used literally in 18 instances, referring to a remedy capable of curing all diseases. In 34 instances, *panacea* is used as the name of entities. In the remaining 148 instances, *panacea* is used metaphorically, referring to an ideal solution that is expected to solve all problems. 89 instances involve the phrase *a + panacea*, with 10 instances involving *a + adjective + panacea*. Of these, 78 examples convey the idea that no single solution can solve all problems. For example,

xxxii. Unity is not a panacea and it will initially create more problems than it solves (Fr. Stephen Freeman, 2010).

Panacea appears in the structure of *the + panacea* in 24 instances, with 5 instances involving *the + adjective + panacea*. Among these, 17 examples express negation toward the idea of a perfect solution.

xxxiii. Also, he left Valdivia out of the squad and Matías Fernández is injured, and while I don't think a "classic number 10" is the panacea, ... (sonicyouth, 2006).

15 instances use *no + panacea* to deny that something serves as a perfect solution to everything.

Among the remaining 20 examples that do not involve relatively fixed structures mentioned above, 14 instances express a negation toward the concept of *panacea*.

xxxiv. Nuclear power not panacea for energy supply, ... (United Nations, 2006).

Similar to *silver bullet*, *panacea* when used metaphorically, tends to convey a semantic tendency suggesting that a perfect, all-encompassing solution is either unrealistic or unattainable.

This is similar to Sinclair's (2004) findings regarding the lexico-grammatical pattern of *naked eye* when used metaphorically. Citation analysis of its 151 occurrences in The Bank of English corpus shows that the word immediately to the left of *naked eye* is almost always the definite article *the*, with only a few exceptions where possessive adjectives such as *your* or *our* appear, or where the article is omitted in specific technical contexts. The second word to the left is predominantly a preposition, typically *with* or *to*. The third word to the left is more flexible but often involves verbs related to visibility, such as *see* or *view*, indicating a semantic preference for visibility. However, when examining the fourth word to the left and the broader co-text, expressions surrounding *naked eye* often exhibit a semantic prosody of difficulty. This sense of difficulty is indirectly conveyed through modal verbs such as *can* and *could*, through negation

such as *not* or *invisible*, and through descriptors of faintness, such as *small* or *faint* (ibid). My analysis of *silver bullet* and *panacea* shows a similar pattern: both exhibit relatively structural consistency and semantic regularity. In both form and meaning, their uses tend to develop around a clear semantic core, reflecting systematic pattern.

It can be concluded that the systematic metaphor *IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS SUPERNATURAL* describes cancer prevention as an idealised but ultimately unattainable goal.

Citation analysis suggests that there is a systematic metaphor *IMPLEMENTATION OF COVID-19 PREVENTATIVE MEASURES IS SUPERNATURAL* in Covid-19 prevention corpus. In addition to the previously discussed vehicles *silver bullet* and *panacea*, as well as *magic bullet* vehicle with similar connotations, which may convey the idea of an ideal but difficult to achieve solution, several other metaphorical expressions also contribute to this systematic metaphor. For example,

Example 68 We cannot stay *trapped* in this society-ravaging nightmare a second longer than necessary (Covid-19-Daily Mail-09/06/21).

Example 69 ... is a '*further step* in allowing children and young people a return to a more normal experience in school after many, many months of sacrifice' (Covid-19-Metro-11/02/22-2).

Example 70 ..., also described the new restrictions as a bit sinister (Covid-19-The Guardian-27/01/21).

In Example 68-70, restrictions are described as *nightmare*, *sacrifice* and *sinister*. *Nightmare* and *sinister* suggest negative affective evaluations, potentially implying that the experience of restrictions is distressing or threatening. In Example 68, *nightmare* is further extended by

another metaphor *trapped*: restrictions are unpleasant experiences that feel inescapable. *Sacrifice* appears 1,638,946 times in the enTenTen21 corpus. Among its 200 randomly selected examples, it is used literally in 46 instances, referring to the act of offering something in a religious context. In the remaining 154 instances, *sacrifice* is used metaphorically, mainly referring to the act of giving up something important or personally valuable:

xxxv. ..., as he had "sacrificed his career to take care of the [sic] their child and allow [the wife] to further her own career" (Rienzo, 2017).

It can be inferred that *sacrifice* highlights the personal costs or losses people endure as a result of restrictive measures. Therefore, in addition to conveying the meaning of an ideal but unrealistic solution, this systematic metaphor may describe Covid-19 restrictions as emotionally burdensome and personally costly experiences.

Several metaphors for proactive interventions also contribute to constructing this systematic metaphor. However, the available evidence is very limited and relates only to 2 linguistic vehicles. For example,

Example 71 FASTER booster *jabs*, a wonder pill and plunging infection rates delivered a triple boost last night in the *fight* against Covid (Covid-19-Daily Mail-06/11/21).

Example 72 So miraculous has the *rollout* been that Health Secretary Matt Hancock declared on Friday that the crucial link between infection, serious illness and death had been *broken* (Covid-19-Daily Mail-09/06/21).

The term *wonder pill* appears 221 times in the enTenTen21 corpus. Similar to previously discussed *silver bullet* and *panacea* metaphors, *wonder pill* frequently occurs in forms such as *a + (adjective) + wonder pill*, *the + (adjective) + wonder pill*, and *no + wonder pill*. Citation analysis shows that *wonder pill* is used literally in 165 cases, referring to the pill that could cure

diseases that are difficult to treat. In the remaining 56 instances, it is used metaphorically, referring to a solution to an impossible or extremely difficult problem. For example:

xxxvi. Believe me, if someone came up with a " wonder pill " that would turn black people white, even to this day, they'd be a billionaire in a month (Steven Barnes, 2006).

In 53 of these metaphorical cases, *wonder pill* is used in contexts that deny the existence of such perfect solutions. However, Example 71 differs from this main semantic pattern. In this case, *wonder pill* is not used to express scepticism, but rather as hopeful developments. The use of *fight* here further extends the metaphor, suggesting a broader war framing in which proactive measures are described as participants of resistance against the virus. *Miraculous* in Example 72 is used to positively evaluate the achievement of proactive health measures. It can be concluded that this *SUPERNATURAL* systematic metaphor is primarily used to highlight the effectiveness and positive outcomes of proactive interventions.

In the Covid-19 prevention corpus, there are many linguistic metaphors about restrictions suggesting a RELIGION FAITH scenario, in which preventative measures and their advocates are described through religious narrative. This metaphorical mini-narrative involves several components: the presence of sacred figures such as *prophets*; the existence of doctrinal content, such as *dogma* and *doctrine*; the act of *preaching*; and the public reception of teachings such as *piously*, *zealot*, and *believer*.

Example 73 The *shroud-waving* prophets of doom on the Sage scientific panel, insulated in their taxpayer-funded academic *bubbles* from life's *bleak* realities, ... (Covid-19-Daily Mail-09/06/21).

Example 74 Tragically, their [vaccine] stunning success risks being *bled out* in a slow *agony* of scientific dogma, official monomania and ministerial *paranoia* (Covid-19-Daily Mail-09/06/21).

Example 75 The video clearly shows Nicola Sturgeon isn't practising what she *preaches* on face masks (Covid-19-The Guardian-17/04/22).

Example 76 When restrictions were eased last year, Labour MPs insisted *piously* on wearing masks in the Commons, ... (Covid-19-Daily Mail-28/01/22-1).

Example 77 Lockdown *zealots* are unwilling to give up control any time soon, if ever (Covid-19-Daily Mail-28/01/22-1).

Example 78 RAPID antigen tests are set to become a major part ... as the Taoiseach stated he was "a strong *believer*" in the kits (Covid-19-The Sun-06/12/21).

In this metaphorical scenario, scientific advisors are described as *prophets*, and other metaphors such as *shroud-waving*, *doom*, *bubble*, and *bleak* in Example 73 extends this scenario by portraying them as apocalyptic religious figures, detached from the suffering of real life. Government leaders are positioned as messengers, *piously preaching* their views, represented metaphorically as *dogma*. In Example 74, metaphorical expressions such as *bled out* and *agony* further develop this scenario by suggesting its harmful consequences. This RELIGION FAITH scenario seems to present preventative measures as disconnected from real-world concerns, damaging, and uncritically upheld by political leaders.

5.7 Gaming Metaphors

Table 5.9 shows all Gaming metaphors about cancer prevention and Covid-19 prevention. As can be observed from the comparison of the two sets of linguistic vehicles in Table 5.9, Gaming metaphors related to Covid-19 prevention contain a greater number of creative expressions, such as *Snakes and Ladders*, *Monopoly*, and *hide-and-seek*.

	Metaphors	Examples
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Gaming Metaphors for Cancer Prevention	odds of (10), game (3), win (3), winning the world's craziest lottery, the shitty jackpot, one piece of that puzzle	"People don't actually realise what the recommendations, and also the risks are, so the guidelines are just <u>one piece of that puzzle</u> and [alcohol consumption] won't change much if it's not well communicated." (cancer-The Guardian-19/01/23-3).
Gaming Metaphors for Covid-19 Prevention	race (4), hurdle (3), gamble (2), game (2), kick off, Snakes and Ladders, house of cards, dice, monopoly, hide-and-seek, playmate, prize	After all, there is something uniquely dispiriting about <u>climbing your way out of a deep, dark hole</u> , only to find yourself abruptly <i>thrust back</i> where you began, as if in some hellish version of <u>Snakes and Ladders</u> (Covid-19-Daily Mail-10/09/20).

Table 5.9 Gaming Metaphors for Cancer Prevention and Covid-19 Prevention

Citation analysis of Gaming metaphors led to the construction of the systematic metaphor *IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS GAMBLING*, which provides the most satisfactory explanatory account. However, it must be acknowledged that the linguistic evidence composing this systematic metaphor is very limited, with only 2 closely relevant linguistic vehicles. For example,

Example 79 A study suggests that people who do just two-and-a-half hours of moderate exercise a week have lower odds of getting seven types of cancer (cancer-Daily Mail-27/12/19).

Example 80 Out of all the mutations happening in your body every single day, in any one person's lifetime they may develop one, maybe two cancers. That's like winning the world's craziest lottery, the shitty jackpot (cancer-The Times-04/08/20).

I searched for *odds of* in the enTenTen21 corpus. It appears 165,616 times, and its 10 most significant collocates are *happening, bookmaker, jackpot, slim, lottery, survival, Powerball, adjusted, lotto* and *bookie*. Some of these collocates, *jackpot, lottery, Powerball* and *lotto* are related to the lexical set of chance-based games. Some collocates, *bookmaker, slim* and *bookie* are related to probability-based games. It can be concluded that although *odds of* primarily refers to a calculated statistical probability, it possibly evokes the semantic fields of both chance and calculated risk. Thus, while collocation analysis does not imply pure randomness, it may suggest that *odds of* metaphorically describes health outcomes as probabilistic events, which can be estimated and managed but never fully predicted or controlled. Although these collocates mainly relate to the literal meaning of *odds of*, their connotation may be transferable.

Lottery appears 513,362 times in the enTenTen21 corpus, and its 10 most significant collocates are *lottery, Heritage, lotto, ticket, jackpot, Fund, postcode, winning, Powerball* and *gambling*. Among these, several collocates, *lottery, lotto, powerball* and *gambling* clearly point to chance-based games. Similarly, the 10 most significant collocates of *Jackpot* are *jackpot, lotto, progressive, Powerball, Progressive, Mega, EuroMillion, lottery, slot* and *payout*. Collocates such as *lotto, Powerball, EuroMillion* and *lottery* refer to gambling games that are entirely determined by luck. In Example 80, developing cancer is described as winning a grand prize in a game of chance, which may suggest that the onset of cancer is determined by random luck.

It can be concluded that the systematic metaphor *IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS GAMBLING* frames cancer prevention results as a domain governed by risk calculation without full control, where prevention represents an attempt to manage probabilities in a game whose outcome cannot be guaranteed.

Citation analysis of Gaming metaphors about Covid-19 prevention suggests a systematic metaphor relevant to restrictive measures: *CHANGES IN COVID-19 RESTRICTIVE MEASURES ARE A GAME*. For example,

Example 81 Or do we bear psychological scars, like the children playing *hide-and-seek* who have been told too many times "come out now, wherever you are!" by a petulant *playmate*, only to find it was a big fat trick (Covid-19-The Times-17/02/22).

Example 6 After all, there is something uniquely dispiriting about *climbing your way out of a deep, dark hole*, only to find yourself abruptly *thrust back* where you began, as if in some hellish version of *Snakes and Ladders* (Covid-19-Daily Mail-10/09/20).

In Example 81, the situation of repeated lockdowns and reopening is metaphorically described as a game of *hide-and-seek*, capturing the alternating phases of concealment and exposure experienced by the public. The mention of a *playmate* may implicitly suggest frustration or mistrust between those giving and following instructions. This extended metaphor possibly conveys emotional fatigue and scepticism within the restrictive prevention discourse. In Example 6, the extended metaphor constructs a picture: individuals are players of Snakes and Ladders, referring to restrictions; players climb upward, referring to moving towards the end of restrictions and pulled back to the starting point, causing all previous progress to vanish. This metaphor illustrates the regressive movement of restrictions and appears to position individuals as powerless, unable to determine their own direction or control their place.

It can be concluded that the systematic metaphor *CHANGES IN COVID-19 RESTRICTIVE MEASURES ARE A GAME* may highlight the inconsistency of restrictive measures.

5.8 Sense Metaphors

Table 5.10 presents Sense metaphors about cancer prevention and Covid-19 prevention. Although all vehicles are related to senses, they show different trends. Sense metaphor about cancer prevention are mostly related to the sense of sound while Covid-19 prevention metaphors are mostly related to the sense of vision.

	Metaphors	Examples
Sense Metaphors for Cancer prevention	wake-up call (6), hail (3), spell, whisper, alarm, bell, noise, resonance, awaken	These projections should serve as a <u>wake-up call</u> to the government about the state of our nation's health, ... (cancer-The Guardian-19/05/22).
Sense Metaphors for Covid-19 prevention	dark (9), light (3), tunnel (3), blind (2), bright (2), blink, bleakness, darkness, spell, spell out	..., said scrapping free Covid tests would mean " <u>driving blind</u> " into the next phase of the pandemic (Covid-19-The Sun-22/02/22-2).

Table 5.10 Sense Metaphors for Cancer Prevention and Covid-19 Prevention

Many linguistic metaphors about cancer prevention suggest a systematic metaphor: *IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS ALERTNESS TO SOUND*. For example,

Example 82 The work helps explain why so many non-smokers develop lung cancer and is a "wake-up call" about the damaging impact of pollution on human health (cancer-The Guardian-10/09/22).

Example 83 "Slowly I am becoming awakened more and more to everything and with that comes learning about things [cancer vaccination] ... (cancer-The Sun-31/01/20).

Example 84 If ignored, these whispers can turn into the alarm bells of serious disease [bowel cancer] as we age (cancer-The Times-09/01/21).

Wake-up call appears 45,533 times in the enTenTen21 corpus and its most significant collocate is *sobering*, suggests a process of gaining awareness or enlightenment. In addition to *sobering*, the other 10 most significant collocates are *wake-up*, *much-need*, *KSFR*, *5am*, *complacent*, *clarion*, *policymaker*, *heed* and *long-overdue*, among which, *much-need*, *heed* and *long-overdue* may further suggest urgency and responsiveness.

Alarm appears 1,258,098 times in the enTenTen21 corpus, and its 10 most significant collocates of alarm are *alarm*, *clock*, *bell*, *false*, *smoke*, *burglar*, *fire*, *Clock*, *audible* and *trigger*, most of which relate to the function of alarms as devices that produce audible warnings in response to danger. Although these collocates are mainly relevant to its literal meaning, their connotation may be transferable to its metaphorical use. Therefore, *alarm* may imply the notion of an urgent call for action.

It can be concluded that the systematic metaphor *IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS ALERTNESS TO SOUND* highlights the urgency of swift reaction to warning signals.

In Covid-19 prevention corpus, many Sense metaphors suggest a systematic metaphor: *IMPLEMENTATION OF COVID-19 RESTRICTIVE MEASURES IS DARKNESS*. For example,

Example 85 In the summer of 2020 we emerged, *blinking*, from the *depths* of lockdown and wondering if the world would ever be the same again (Covid-19-The Times-08/10/22).

Example 86 And he warned of "*dark* days ahead" if the Scottish Government does not make a change (Covid-19-The Sun-04/09/20).

Example 87 A Tier 5 lockdown is to be imposed in Ireland from tomorrow after a 70 per cent surge in Covid cases last week ..., said there was 'light at the end of this tunnel' with 10,000 vaccine doses due to be rolled out next week (Covid-19-Metro-23/12/20).

Example 88 He said on Thursday: "With increasing numbers of people vaccinated and boosted, and thanks to the hard work and efforts of everyone across Wales, we are confident that coronavirus rates are falling, and we can look forward to brighter times ahead (Covid-19-The Guardian-10/02/22).

In Example 85, *blink* and *depth* work together to construct an extended metaphor: lockdown is a dark and deep space, from which people emerge blinking, unable to immediately adjust to the light. The lockdown period is described as *dark days* in Example 86, possibly emphasizing the discomfort experience of lockdown. Similarly, restrictions are described as the *tunnel* in Example 87 and the exit from restrictions is described as *light*. Given my decision to treat each component of an idiomatic expression as a separate lexical unit, *light* and *tunnel* were analysed independently (see Section 4.4.2). Since both collocation and citation analysis of *light* and *tunnel* show any notable semantic tendencies, I then conduct the corpus analysis of the idiom *light at the end of the tunnel*. *Light at the end of the tunnel* appears 24,651 times in the enTenTen21 corpus. Citation analysis of its 200 randomly selected examples shows that in 108 instances, the idiom highlights hardship and difficulty ahead of the sign of resolution. For example,

xxxvii. Be warned: Just like the myth, Rebele-Henry's tale of Raya and Sarah is unbelievably difficult. They do actually go through hell before there is even a hint of light at the end of the tunnel, and they *drag* you right along with them (Kontis, 2019).

Thus, *light at the end of the tunnel* may imply that restrictions are experienced as a prolonged and difficult ordeal.

It can be concluded that *IMPLEMENTATION OF COVID-19 RESTRICTIVE MEASURES IS DARKNESS*, which contrasts restrictions with lifting restrictions as darkness and light, may suggest the difficult and burdensome experience associated with restrictive measures.

5.9 Clothing Metaphors

Table 5.11 shows Clothing metaphors in two corpora.

	Metaphors	Examples
Clothing Metaphors for Cancer prevention	tailored (4), one size fits all/one-size-fits-all (2), fit	..., which decreases your risk of developing womb cancer by about 20 per cent. But it's not <u>one size fits all</u> (cancer-The Times-03/02/22).
Clothing Metaphors for Covid-19 prevention	one-size-fits-all, patchwork, fit	She said: "The <u>patchwork</u> of rules did nothing to prevent the spread of Covid but did immense damage to the economies of its countries (Covid-19-The Sun-23/02/22-1).

Table 5.11 Clothing Metaphors for Cancer Prevention and Covid-19 Prevention

Citation analysis shows that linguistic metaphors shown in Table 5.11 are probably best expressed by the systematic metaphor *IMPLEMENTATION OF CANCER PROACTIVE MEASURES IS CLOTHING* and *IMPLEMENTATION OF COVID-19 RESTRICTIVE MEASURES IS CLOTHING*. Clothing metaphors for Cancer prevention and Covid-19 prevention demonstrate a certain degree of similarity, not only because they share much of the same lexis but also because their framing emphasizes the importance of adaptability and individualization. For example,

Example 89 However, the one-size-fits-all approach no longer works, Professor Gilbert suggested, raising the idea of completely stopping mammograms for women at low-risk of breast cancer (cancer-Daily Mail-31/01/22).

Example 90 Dr Simon Vincent, director of research at Breast Cancer Now, who hosted the symposium, said: We welcome a more tailored approach to breast screening ... (cancer-Daily Mail-31/01/22).

Example 91 ...said the rules were no longer fit for purpose in a highly vaccinated population' (Covid-19-Daily Mail-07/01/22-1).

Example 92 The health commission urged local authorities to "rectify simplified, one-size-fits-all" measures for Covid prevention, ... (Covid-19-The Times-08/12/22).

One-size-fits-all appears 49,995 times in the enTenTen21 corpus, of which 200 were randomly sampled. Among them, only in 2 examples, *one-size-fits-all* is used literally, referring to the clothing fit and size, while in the other 198 examples, it is used metaphorically. Citation analysis of *one-size-fits-all* shows that it consistently conveys the same semantic pattern when used metaphorically suggesting the application of a single approach to address all related issues. For example,

xxxviii. Urban centres are complex systems and simple 'one-size-fits-all' policy responses will not be enough (Archer, 2013).

Also, in 172 out of the 198 metaphorical examples, the context of *one-size-fits-all* contains negation or words conveying negative semantic patterns. For example,

xxxix. There is no one-size-fits-all solution, so organizations need to think about how employee choice weaves into the employee experience (ICF Next, n.d.).

Thus, the connotation of *one-size-fits-all* may suggest a critique or scepticism regarding the effectiveness of a generalized or uniform approach.

Both *tailored* and *fit* in Example 90 and 91 emphasise the importance of adjusting the design of preventative measures to reflect individual or contextual variation, suggesting that effective cancer prevention requires flexibility rather than uniformity.

In summary, Clothing metaphors used in both cancer and Covid-19 prevention may highlight the broad and uniform nature of prevention strategies.

5.10 HIDDEN OBSTACLES REMOVAL Scenario & PASSIVE CONFINEMENT Scenario

In this section, I will detail two identified scenarios related to Actions, (Un)Openness, and Barrier metaphors found in both corpora, as well as Crime and Container metaphors unique to the Covid-19 prevention corpus. Both scenarios address the difficulties of illness prevention. Although the general composition of the metaphor groups forming these scenarios is similar to some extent, they seem to convey distinct scenarios.

HIDDEN OBSTACLES REMOVAL Scenario		
Vehicle Group	Metaphors	Example
Actions	kick (3), down (3), bury	..., as health leaders accused ministers of " <u>kicking</u> the <i>can</i> <u>down</u> the <i>road</i> " when it comes to tackling the obesity crisis (cancer-The Guardian-19/05/22).
(Un)Openness	remove (4), unravel, uncover	
<i>Barrier</i>	barrier (6), push (3)	We do need to, in every way we can, <u>remove</u> <u>barriers</u> that currently exist for people accessing the screening we already have (cancer-The Guardian-07/04/21).

Table 5.12 Metaphors constructing the HIDDEN OBSTACLES REMOVAL Scenario

While the (Un)Openness metaphors can form the systematic metaphor *CHANGES IN CANCER PREVENTATIVE MEASURES ARE MAKING THE INVISIBLE VISIBLE*, the scenario approach enables a broader interpretation of how these and other vehicle groups interact to frame cancer preventative measures. In the HIDDEN OBSTACLES REMOVAL scenario, some of metaphors from different groups, Actions, (Un)Openness, and Barrier group combine to form a coherent narrative: barriers exist within the cancer prevention process, which may be hidden or obscured and must be removed to enable further progress. For example,

Example 93 Ministers mustn't keep kicking the *can down* the *road* when it comes to tackling the obesity crisis - delaying measures that will lead to healthier food options (cancer-The Guardian-19/05/22).

Example 94 Data from private cancer treatment provider GenesisCare and Prostate Cancer Research shows that 49 per cent of men 'bury their *head* in the *sand*' when it comes to health-related matters, ... (cancer-Metro-23/02/22).

Example 95 We do need to, in every way we can, remove barriers that currently exist for people accessing the screening we already have (cancer-The Guardian-07/04/21).

Kick the can down the road appears 6,405 times in the enTenTen21 corpus. Its 10 most significant collocates are *debt-limit*, *half-measure*, *do-nothing*, *prevaricate*, *Eurogroup*, *stopgap*, *Sunak*, *QE*, *Lawmaker* and *band-aid*. Half of these collocates, *debt-limit*, *half-measure*, *do-nothing*, *prevaricate* and *stopgap* indicate temporary solutions. Additionally, in Example 93, the government is described as the agent of action, which may imply government inaction.

Beyond emphasizing the government's role, the metaphors relevant to this scenario also assign agencies to individuals, such as Example 94. *Bury ... head in the sand* appears 4,161 times in the enTenTen21 corpus, whose 10 most significant collocates are *ostrich*, *bury*, *ostrich-like*, *Bury*, *self-delusion*, *proverbial*, *pretend*, *shirk*, *platitude* and *tantamount*. In

addition to *shirk*, *platitude* and *tantamount*, other collocates are relevant to the connotation of deliberate avoidance. This metaphor possibly highlights individual's responsibility in addressing issues related to cancer prevention.

Overall, the HIDDEN OBSTACLES REMOVAL scenario for cancer prevention assigns agency to both the government and individuals, emphasizing that both contribute to the persistence of obstacles.

In Covid-19 prevention corpus, citation analysis of (Un)Openness, Barrier, Container and Crime & Prison metaphors, the latter 2 of which are unique to the Covid-19 prevention corpus, can suggest several separate systematic metaphors: *IMPLEMENTATION OF COVID-19 RESTRICTIVE MEASURES IS A CLOSED CONTAINER*, *IMPLEMENTATION OF COVID-19 RESTRICTIVE MEASURES IS PRISON* and *IMPLEMENTATION OF COVID-19 RESTRICTIVE MEASURES IS BARRIER*. However, these metaphor groups can also operate together, and in combination with certain linguistic vehicles from the Actions group, which on their own are too limited to suggest a systematic metaphor or a scenario, they construct a broader PASSIVE CONFINEMENT scenario. It contains a mini-narrative: *trapped*, *put* and *shackled* with *chains*, *cowering* in *bubbles*, *glass case*, *lead-lined bunkers* and *prison*, waiting for the *cell door* to be *unlocked*, as shown in Table 5.13.

PASSIVE CONFINEMENT Scenario		
Vehicle Group	Metaphors	Example
Actions	cower, throw off, put	"The people won't be <u>blocked</u> at home any more (Covid-19-The Guardian-09/12/22).
(Un)Openness	lock (13), unlock (8), lock up	
Barrier	trap, obstruct, block, stuck	All remaining restrictions should end on June 21, though there have been calls from

Crime & Prison	clampdown (3), cell door (2), arrest (2), shackle (2), prison (2), chain, punish, internment	businesses and some of the PM's Conservative MPs to <u>unlock</u> even sooner (Covid-19-Metro-11/05/21).
Container	bubble (6), lead-lined bunkers, glass case, cocoon	

Table 5.13 Metaphors Suggesting the PASSIVE CONFINEMENT Scenario

Example 96 ... if people are effectively trapped in their household bubbles? (Covid-19-Daily Mail-10/09/20)

Example 97 ... seem to want us to cower indefinitely in lead-lined bunkers (Covid-19-Daily Mail-09/06/21).

Example 98 Instead of the cell door being unlocked to reward our immense sacrifices, ministers plan to shackle us further (Covid-19-Daily Mail-09/06/21).

Example 99 It [Isolation] was prison all over again (Covid-19-Daily Mail-11/01/22-1).

Example 100 ... the country could finally - mercifully - throw off its fatiguing Covid chains (Covid-19-Daily Mail-09/06/21).

Trap appears 1,503,050 times in the enTenTen21 corpus, with its 10 most significant collocates being *trap*, *fall*, *booby*, *inside*, *bait*, *hunting*, *traps*, *lure*, *cage* and *hunt*. Although these collocates may be closely tied to the literal meaning of *trap*, their connotations are transferable. All these collocates highlight powerlessness and passiveness.

Cower appears 51,298 times in the enTenTen21 corpus. Its 10 most significant collocates are *cringe, whimper, cower, frightened, fear, tremble, terrify, fright, flinch* and *grovel*, conveying fear and submission. It may suggest that compliance with restrictions is driven by fear, possibly highlighting the entailment that people are forced into passive compliance with restrictive measures.

Metaphors in Example 98-100 are primarily related to Crime & Prison metaphors. In the narrative constructed by Crime metaphors, accepting restrictive measures is described as being in prison, the restrictions described as shackles or chains and the place of confinement is represented as a cell. *Prison* appears 2,788,811 times in the enTenTen21 corpus. Its 10 most significant collocates are *sentence, inmate, prison, prisoner, jail, guard, escape, federal, convict* and *camp*, emphasizing punishment and control. Crime & Prison metaphors possibly amplify their perceived oppressiveness.

It can be concluded that the PASSIVE CONFINEMENT scenario highlights the connotation of restriction and confinement, depicting individuals as powerless and passive subjects of external authority.

5.11 Cleaning Metaphors

Cleaning metaphors appear to be unique within the cancer prevention corpus. As shown in Table 5.14, by comparing preventative actions to mundane, everyday cleaning tasks, such metaphors may normalize cancer prevention and describe it as a non-threatening part of self-care.

	Metaphors	Examples
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Cleaning Metaphors for Cancer Prevention	spring clean, clear up, wield that duster from room to room, dust has gathered behind the sofa, wipe out, once-over, shine, brush, carpet, sweep	THIS year more than most, it's not just our homes that need a spring clean. ... our bodies could also do with a <u>once-over</u> (cancer-The Sun-31/01/20).
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Table 5.14 Cleaning Metaphors for Cancer Prevention

Citation analysis of linguistic metaphors of the Cleaning vehicle group shows a possible main systematic metaphor *IMPLEMENTATION OF CANCER PROACTIVE MEASURES IS PRACTICE OF CLEANING*. Most of relevant metaphors are creatively used, whose contextual meanings are not listed in the reference dictionary. For example,

Example 101 The broadest vaccine yet that could clear up persistent HPV infections and reduce the risk of women developing cervical cancer is to be tested in a clinical trial (cancer-The Guardian-03/01/20).

Example 102 THIS year more than most, it's not just our homes that need a spring clean. ... our bodies could also do with a once-over. So just as you'd wield that duster from room to room, why not make your health shine too? "It's always a shock to see how much dust has gathered behind the sofa," explains GP Dr Philippa Kaye (cancer-The Sun-31/01/20).

Example 103 Spring cleaning your health could boost your mind and body as lockdown lifts in the UK." (cancer-The Sun-31/01/20).

I searched *once-over* in the enTenTen21 corpus, which shows up 5,985 times. Its 10 most significant collocates are *twice-over*, *cursory*, *once-over*, *copyedit*, *thorough*, *duster*, *disdainful*, *copy-edit*, *appreciative* and *undisguised*. Among these, *twice-over*, *copyedit*, *thorough* and *copy-edit* may suggest a careful and meticulous process of inspection.

Spring clean appears 13,114 times in the enTenTen21 corpus. After excluding collocates that refer to proper nouns, the most 10 significant remaining collocates are *declutter*, *anti-litter*, *decluttering*, and *de-clutter*, which point to a semantic domain of removing unnecessary or harmful elements. In Example 103, a health check-up is metaphorically described as a *spring clean*, suggesting that maintaining health involves a process of cleansing and the proactive removal of harmful elements.

In Example 102, the creative metaphor *wield that duster from room to room* and *dust has gathered behind the sofa* describe individuals as active agents who take control of their health by removing bad and unhealthy habits. The spatial movement *from room to room* possibly evokes thoroughness, implying that prevention should be comprehensive rather than selective. *Dust has gathered behind the sofa* metaphor introduces the idea of unnoticed accumulation.

In conclusion, the systematic metaphor *IMPLEMENTATION OF CANCER PROACTIVE MEASURES IS PRACTICE OF CLEANING* often appears in creative forms. They commonly depict cancer preventative proactive actions as processes of cleansing, emphasizing the removal of harmful elements.

5.12 Politics Metaphors

Table 5.15 shows all domain-related Politics metaphors. They exist only in the Covid-19 prevention corpus and are all relevant to restrictive measures.

	Metaphors	Examples
Politics Metaphors for Covid-19 Prevention	regime (15), tyranny (3), anarchy (2), dictator, totalitarian dictatorship, police state, tsar	Travel firms and airlines welcomed the return to the pre-Omicron testing <u>regime</u> (Covid-19-The Sun-06/01/22-2).

Table 5.15 Politics Metaphors for Covid-19 Prevention

Citation analysis of Politics metaphors shows that they may construct a systematic metaphor: *IMPLEMENTATION OF COVID-19 RESTRICTIVE MEASURES IS OPPRESSIVE GOVERNANCE*. For example,

Example 104 However, scientists and others have raised concerns, arguing that shortening the self-isolation regime could increase the likelihood of Covid spread, ... (Covid-19-The Guardian-22/12/21-1).

Example 105 Wallace founded the San Angelo Freedom Defenders, a group dedicated to opposing perceived "Covid tyranny " (Covid-19-The Times-30/08/21).

Example 106 Adaptive dictators alter policy for their own ends, ditching *doctrine* (Covid-19-The Times-24/01/23).

Example 107 Conservative MPs warned against the *return* of the "dystopian" and "*nanny state*" measures that were introduced during the pandemic (Covid-19-The Times-04/01/23-3).

Example 108 ... people are beginning to feel that society is being turned into a police state albeit to save lives (Covid-19-Daily Mail-20/03/21).

In the above examples, Covid-19 restrictions are described as *dystopian*, a *regime*, and a form of *tyranny*; the government who implements restrictive measures is described as *dictators*, while society is depicted as a *police state*. *Regime* appears 1,912,363 times in the enTenTen21 corpus. Its 10 most significant collocates, Assad, communist, authoritarian, Iranian, totalitarian, Syrian, Nazi, Saddam, repressive and overthrow, which are associated with connotations of political control and authoritarianism. *Tyranny* shows up 212,051 times in the enTenTen21 corpus, whose 10 most significant collocates are *oppression*, *tyranny*, *despotism*, *dictatorship*,

injustice, anarchy, tyrant, liberate, overthrow and *oligarchy*, relevant to a semantic domain of authoritarian rule. *Dictator* appears 285,915 times in the enTenTen21 corpus. Its 10 most significant collocates, *Pinochet, benevolent, Saddam, Hussein, Mussolini, overthrow, brutal, dictator, Augusto*, and *tyrant* are all related to dictatorship and the abuse of power. *Dystopian* appears 76,827 times in the enTenTen21 corpus. After excluding collocates associated with proper nouns, its 10 most significant remaining collocates are *utopian, post-apocalyptic, sci-fi, near-future, cyberpunk, futuristic*, and *Utopian*, which are relevant to imagined features. Among them, *post-apocalyptic* and *cyberpunk* may convey connotations of social collapse and information control or surveillance. Therefore, *dystopian* may suggest that the restrictions are perceived as oppressive or dehumanizing measures. *Police state* appears 50,559 times in the enTenTen21 corpus. Most of its 10 most significant collocates, *totalitarian, militarize, Orwellian, fascist, Anti-Capitalism, repressive, harshness, Indymedia, authoritarian*, and *tyrannical* indicate semantic associations with excessive surveillance and suppression of freedoms. Even though the most significant collocates of these lexical items primarily relate to their literal meanings, their connotations may still be transferable.

It can be concluded that the systematic metaphor *IMPLEMENTATION OF COVID-19 RESTRICTIVE MEASURES IS OPPRESSIVE GOVERNANCE* frame restrictive measures as authoritarian control, emphasizing loss of personal freedom and oppressiveness.

Chapter 6 Discussion

Through the analysis of systematic metaphors, metaphoremes, and metaphorical scenarios, I have attempted to describe the framing of cancer prevention and Covid-19 prevention in five UK newspapers, Daily Mail, The Sun, Metro, The Guardian, and The Times over a period of approximately three years (from 27th of December, 2019 to 2nd of February, 2023). Three analytical angles illustrate the framing implications of metaphors for cancer prevention and Covid-19 prevention. In this chapter, I will discuss the findings presented in the previous chapter to answer my research questions:

1. Which metaphors are predominantly used to describe cancer prevention and how do they frame cancer prevention?
2. Which metaphors are predominantly used to describe covid-19 prevention and how do they frame covid-19 prevention?
3. What are the similarities or differences between the metaphors of cancer and Covid-19 prevention and their framing strategies?

Answers to Research Questions 1 and 2 have already been covered in the Findings chapter (See Chapter 5). While Chapter 4 includes a comparison of different metaphor vehicles used in cancer prevention and Covid-19 prevention within the same vehicle group, its analysis remains limited to individual vehicle groups. This chapter will delve deeper into Research Question 3, exploring framing patterns across different vehicle groups.

This chapter consists of 7 sections. Section 6.1 focuses on War & Violence metaphors and Journey metaphors, the most frequently used metaphor vehicles in both corpora, and examines their potentially empowering and disempowering functions. Section 6.2 focuses on

creative metaphors, which appear more frequently in the Covid-19 prevention discourse than in the cancer prevention corpus, particularly in relation to restrictive measures. Section 6.3 explores similar metaphorical framings shared across the two corpora, emphasizing the systematic nature of illness-preventative strategies while also questioning the efficacy of illness-preventative measures, through a critique of their standardized approach that overlooks individual differences. Section 6.4 discusses the distribution of agencies across different metaphor vehicles in each corpus. Section 6.5 examines a metaphorical framing identified exclusively in the cancer prevention corpus, which frames cancer prevention as a probabilistic process. Section 6.6 discusses Covid-19-specific framings, emphasizing the unpredictability of restrictive measures and how preventative actions are framed as disconnected from practical realities. Finally, Section 6.7 concludes the chapter and summarizes the key findings.

6.1 War & Violence and Journey Metaphors

This section will focus on the framings and functions of War & Violence and Journey metaphors.

6.1.1 War & Violence Metaphors

As discussed in the literature review (See Section 3.1 & 3.2), War & Violence metaphors in illness discourse are controversial for various reasons. In cancer discourse, these metaphors recently appear to be possibly consciously avoided and are often suggested to be replaced by alternative metaphors, such as ecological metaphors, to reduce negative connotations (Annas, 1995; Demmen et al., 2015; Semino et al., 2017b). Similar debates surround War metaphors in Covid-19 discourse, where concerns about their psychological and social implications have been raised (Hanne, 2022). There is also some recent evidence that their use may be decreasing, for example, in political discourses (Neshkovska & Trajkova, 2020).

However, quantitative findings show that in my dataset, in both the cancer prevention corpus and the Covid-19 prevention corpus, War & Violence metaphors remain the most frequently used. The WAR scenario is widely present in both corpora. This may be because, as Flusberg et al. (2018) point out, the 'War on X' frame draws on familiar schematic structures, such as adversaries, strategic planning, and high-stakes conflict, which offer a clear cognitive framework for understanding complex and abstract issues and are common across many areas of public discourse. For example, in the field of health management, there is often a clearly defined opponent, such as a disease, strategic planning around how to allocate personnel and resources, and coordinated efforts to eliminate or control the threat.

Nevertheless, the War framing can become problematic when the patient is positioned as the fighter who must win or lose the battle, as this risks implying blame or moral failure in the case of illness or death (Hendricks et al., 2018). In contrast, when this framing shifts the focus to the collective fight led by institutions and the government, it can help evoke a sense of unity among the public and encourage demands for effective collective responses (Hanne, 2022). As Hanne (2022: 90) notes, such framings can 'offer a curiously comforting sense of collective agency in relation to a situation in which it was very easy to feel helpless'.

This familiarity with War & Violence metaphors may be explained by the fact that people process conventional metaphors more quickly and with less cognitive effort than creative ones (Bowdle & Gentner, 2005). While creative metaphors require deliberate comparison and active interpretation, conventional metaphors can be understood through automatic categorization (ibid). Since War & Violence metaphors are deeply entrenched in healthcare discourse, they are processed with ease and are therefore especially effective in communication (Wicke & Bolognesi, 2020). In addition, these metaphors evoke strong emotional responses, capturing attention and creating a sense of urgency, which makes them suitable for certain fields of public discourse, such as illness management (Flusberg et al., 2018).

In conclusion, although War & Violence metaphors are conventional and thus processed with ease, their emotional and moral associations ensure that they can evoke strong affective responses and a sense of urgency. In this way, these metaphors can facilitate quick comprehension and attract attention, which may explain their continued dominance in public health communication.

By framing disease prevention as an active struggle, WAR scenario may imply a sense of agency and encouraging, inspiring individuals to take actions, such as *fight off* and *battle* (See Section 5.2). Many previous studies on Covid-19 discourse have examined the prevalence of War & Violence metaphors in constructing this metaphor (Wicke & Bolognesi, 2020; Kazemian & Hatamzadeh, 2022; Hanne, 2022; Musolff, 2022 & 2023). In the Covid-19 corpus, in addition to this metaphor, I identified a CIVILIANS UNDER ATTACK scenario, which becomes especially salient in reporting on restrictions. For example,

Example 9 Worst of all, masks are an unwelcome *barrier* to social interaction, an *assault* on our very humanity (Covid-19-Daily Mail-28/01/22-1).

Example 109 He added: "We know the restrictions imposed by the SNP are having a *devastating* impact on businesses (Covid-19-Daily Mail-21/10/20).

The government is described as an agent causing harm to the public, while individuals are cast as those who suffer from it. These narrative elements possibly contribute to the evaluative stance of resentment and loss of trust toward governmental authority. This possible evaluation may stem from the restrictive nature of the measures, which limit individual freedoms, and is further intensified by cumulative public frustration (Hanne, 2022). According to Nerlich & Jaspal (2021), War framing between preventative measures and virus about Covid-19 restrictions serves to construct a sense of collective responsibility and coordinated action. However, they resonate less with the public's lived experiences of exhaustion and psychological strain (Wicke & Bolognesi, 2020). When the crisis becomes prolonged and

political leaders fail to meet the expectations evoked by wartime rhetoric, such as decisive leadership and a clear path to victory, the unifying function of War & Violence metaphors weakens, potentially giving rise to negative perceptions of government action (Hanne, 2022). As confidence in central authority diminished, the metaphorical narrative of internal resistance began to emerge. For example,

Example 21 BRITONS appear to be hitting back at Covid rules, (Covid-19-Daily Mail-30/07/20).

This metaphor positions the government or its restrictive measures as the source of harm, while the public is depicted as fighting back in response.

A small group of examples contributing to this metaphor focuses on proactive measures. For example,

Example 22 As we enter the third wave of the Covid-19 pandemic, we are rushing towards a dangerous new phase in which *hygiene theatre* can do even more damage than it has (Covid-19-The Guardian-12/07/21-2).

Example 23 Hotez said that getting the bivalent booster shot is the one of the most important things people can do to protect themselves against Covid (Covid-19-The Guardian-23/12/22).

Example 24 If the *game-changing jab* - which is up to 90 per cent effective - is *backed* by regulators ... (Covid-19-Daily Mail-24/11/20).

Semino et al. (2025) retrieve all English tweets containing MMR together with vaccine and its variations between January 2008 and December 2022, and on this basis construct the Twitter MMR corpus. They examine all concordances in the Twitter MMR corpus containing *shot* co-occurring with 'flu', 'vaccine', and 'covid' respectively. Their analysis shows that, in

comparison with the Pre-pandemic period, during the Pandemic period, *shot* is more frequently used to suggest that some vaccines represent inferior medical interventions with weaker protective effects, establishing a contrast with ‘vaccine’, which conveys defence and prevention. Building on this study, Demjén et al. (2025) investigate the use of *jab* in the same corpus, which is a common colloquial term in the UK. Based on a qualitative analysis of 50% of the *jab** concordance sample, they find that in 18% of cases *jab* functions similarly to *shot*, contributing to the delegitimization of vaccines by implying reduced efficacy.

Although differences in data type between newspaper discourse in the present study and Twitter data in the MMR corpus may lead to variation in observed patterns, some parallels can nevertheless be identified. In the Covid-19 prevention corpus, *jab* is observed to be juxtaposed with ‘vaccine’, linking Covid-19 vaccines to other established vaccines and implicitly suggesting that they may previously have been perceived as qualitatively different from other vaccines. For example,

Example 110 ... at the London School of Hygiene and Tropical Medicine, [experts] said Covid vaccines should be viewed in the same light as other *jabs* (Covid-19-Daily Mail-02/07/21-2).

Moreover, as detailed in Section 5.2.2, a citation analysis of 200 randomly selected examples of *shot* in the reference corpus shows that when *shot* is used to refer to Covid-19 vaccines, it may convey the implication that Covid vaccination is a weaker or less reliable medical measure.

Semino et al. (2025) and Demjén et al. (2025) suggest that such sceptical framings may stem from public misunderstandings or incomplete understandings of what constitutes a vaccine. In particular, they argue that negative public responses may arise from a tendency to interpret vaccines only in terms of the complete prevention of infection, rather than also recognizing their role in reducing disease severity. On this basis, both studies caution against the unreflective use of *shot* and *jab* as substitutes for vaccine in public health communication.

Interestingly, War & Violence metaphors from the Covid-19 prevention corpus also shows metaphors relevant to conflict within groups. One such pattern is the GROUP-AGAINST-GROUP CONFLICT scenario, in which individuals are metaphorically positioned as adversaries. For example,

Example 25 Now we are about to be cut adrift into a world of *warring factions*, where mask-wearers may be viewed as individuals who aren't prepared to live with Covid and who remain permanently fearful of it (Covid-19-Daily Mail-06/07/21).

Another is the REBELLION AGAINST AUTHORITY scenario, highlighting internal contradiction within leadership. For example,

Example 28 Boris Johnson is promising Tory MPs all kinds of concessions to *head off a revolt* over the latest Covid restrictions (Covid-19-Daily Mail-01/12/20).

These metaphors frame the pandemic response as a multi-front conflict with internal tensions.

A further comparison of War & Violence metaphors across the two corpora reveals that explicit references to World War II and the Cold War appear only in the Covid-19 prevention corpus. This finding aligns with findings by Charteris-Black (2021) and Hanne (2022), who both observe the presence of World War II & the Cold War metaphors in British pandemic discourse. As Musolff (2023) and Hanne (2022) demonstrate, such metaphors, particularly the evocation of the Blitz spirit, stem from Britain's collective memory of standing alone against the Nazi threat. They construct an emotionally resonant narrative of national unity, heroic resistance, and collective sacrifice, which also function as symbolic reassurance during a time of uncertainty (ibid). Nerlich & Jaspal (2021) argue that the effectiveness of such metaphors depends on shared cultural memory and public trust. While some examples may carry a critical tone, they tend to express discontent with leadership in a restrained and implicit manner

(Musolff, 2022). However, in my dataset, most War & Violence metaphors relevant to World War II & the Cold War emphasize oppression, surveillance, and loss of freedom under lockdown and other preventative policies. For example,

Example 20 The Met commissioner should remind her overzealous officers we live in Britain, not Stasi-dominated East Germany (Covid-19-Daily Mail-21/10/20).

Example 111 However, did Tory Marcus Fysh - who compared the introduction of vaccine passes to Nazi Germany - get elected to represent the people of Yeovil with his bigoted views? (Covid-19-Metro-16/12/21).

Building on this previous work, my corpus-based analysis extends the discussion by examining how such metaphors appear across a wider range of media texts. Although a relatively small number of instances were identified, these examples suggest that, in addition to constructing narratives of unity, resilience, and collective sacrifice, War & Violence metaphors associated with World War II and the Cold War can also be used to highlight surveillance and restrictions on personal freedom. While both Nazi Germany and the Stasi regime are historical enemies of the UK, their appearance in these examples does not focus on wartime alliances or resistance but instead casts the British government and police as domestic agents of repression, implying that restrictive measures themselves represent the main danger. In the Covid-19 context, linking restrictions with oppressive power may thus express negative feelings about governmental overreach, reflecting dissatisfaction with policy.

These findings highlight the dual functions of War & Violence metaphors in health discourse. In both the cancer and Covid-19 prevention corpora, such metaphors may be used to mobilize action by framing illness as an external enemy and individuals as active participants. However, in the Covid-19 prevention corpus, these metaphors are used to frame government-imposed restrictions as sources of harm, repression, and agency loss. References to Nazi Germany and

the Stasi draw on culturally resonant memories of totalitarianism to express distrust and protest. This shift possibly reflects the public sentiment and distrust towards the government.

6.1.2 Journey Metaphors

Journey metaphors, another common metaphor in illness discourse, are often compared to and proposed as alternatives to War & Violence metaphors (Nie et al., 2016; Demjén & Semino, 2016; Liu et al., 2024). In my dataset, Journey metaphors are the second most frequent after War & Violence metaphors in both corpora. This high frequency may be attributed to the widespread use of Journey metaphors in English, such as the mapping between the Journey and life experience domains (Lakoff & Johnson, 1980). Additionally, it may be due to their effectiveness in conveying the abstract, complex, and subjective experiences associated with illness-related topics.

JOURNEY and DIFFICULT AND DELAYED JOURNEY scenario are observed in cancer prevention and Covid-19 prevention corpus. A key similarity is that both scenarios emphasize the difficulty of the journey. For example,

Example 35 It [raising awareness of cancer prevention among men] is, he says, an uphill slog (cancer-The Times-15/06/21).

Example 40 ..., holiday firms have been *lobbying* the government to *open up* ... businesses would 'rejoice in the news' after a 'long, hard and desperate road' (Covid-19-Metro-08/02/22).

This pattern accords with Semino et al. (2017b) and Coll-Florit & Climent (2022), who show that Journey metaphors are not always empowering and their framing depends on how they are used in context. When Journey metaphors convey images of difficulty, barriers, or misdirection, they can evoke feelings of uncertainty and helplessness. In my data, Journey metaphors often emphasize difficulties and distant progressional milestones, highlighting how

prevention is framed as a long and arduous process. Instead of fostering a sense of manageable progress, such framing may lead to emotional fatigue or disengagement.

There is a distinction between these two metaphors. DIFFICULT AND DELAYED JOURNEY scenario is framed as an undesirable route, which can be observed from their used in the context. JOURNEY scenario describes the journey towards prevention as an expected goal. For example,

Example 112 The warning by Cancer Research UK came days after the NHS said there was a chance of eliminating the cancer after advances in screening and vaccination (cancer-The Times-22/01/20).

Example 39 For these damning reasons, Boris Johnson must not stray down that monstrously dangerous path [imposing the lockdown] (Covid-19-Daily Mail-21/10/20).

In the cancer prevention corpus, some Journey metaphors also highlight shared progression by presenting companions or guides along the way (See Section 5.3.1). For example,

Example 29 ... she had the BRCA2 gene, which increased her risk of breast cancer ... she knew other women must be suffering like her, and let fans follow her journey as she had an elective double mastectomy and reconstructive surgery in 2012 (cancer-The Sun-12/07/22).

Example 30 [Drinking upper limits] ... let science lead the way (cancer-The Guardian-19/01/23-2).

This pattern is consistent with findings by Semino et al. (2017b), who show that cancer patients use Journey metaphors to express a sense of collective solidarity and mutual encouragement. In Covid-19 prevention, however, such framing is absent. This may suggest

that, compared to Covid-19 prevention, Journey metaphors in cancer prevention discourse tend to show structured support.

In addition, my study finds that within the JOURNEY scenario, individuals are positioned as active agents whose progress requires personal effort. For example,

Example 32 If you want to go the extra mile, mouthwash once a day is a bonus (cancer-The Sun-27/09/22-3).

Coll-Florit & Climent's (2022) also observe the same finding and compare them with War & Violence metaphors highlighting agency. They suggest that such Journey metaphors may not evoke the same intense fighting spirit associated with War & Violence metaphors, they emphasize determination and sustained effort without carrying the negative emotional connotations.

The DIRECTIONAL JOURNEY scenario can be identified in Covid-19 discourse. For example,

Example 47 The government's promise that all children will be back to school after the summer holidays is a step in the right direction (Covid-19-The Guardian-05/08/20).

Example 48 Last night hospitality groups hailed the end of *jab* passports... The Scottish Beer and Pub Association said: "It [the end of *jab* passports] marks an important milestone in the road to recovery for pubs." (Covid-19-The Sun-23/02/22-2).

By framing the end of restrictions and the return to normal life as the ideal destination, the metaphor emphasizes that this is the goal people want to achieve. It is realized through the use of Journey metaphors and their surrounding co-text that position normality as the endpoint of the movement (Nerlich & Jaspal, 2023). This type of framing downplays the

positive function of restrictions. Restrictive measures intended to protect are portrayed as an unexpected route and their removal is depicted as both necessary and desirable.

In Covid-19 prevention discourse, backward movement Journey metaphors are mainly used to describe re-implementation of restrictive measures through the JOURNEY INTERRUPTED AND REVERSED scenario. For example,

Example 53 He said the new *package* would be onerous for many but insisted it was by no means a return to the full lockdown of March (Covid-19-Daily Mail-23/09/20).

Such metaphors may be employed to express scepticism and criticism toward the reintroduction of restrictive measures, as realized through linguistic expressions in the context, such as *the last thing*, *dumbfounding*, and *by no means* (See Section 5.3). The JOURNEY INTERRUPTED AND REVERSED scenario further reinforces the framing of the lifting of restrictions and the return to normal life as the ideal and final destination. Also, it reflects the frequent changes in Covid-19 preventative measures, which may lead to public confusion and debate over the most appropriate course of action.

Charteris-Black (2005: 199) argues that ‘journeys imply some type of planned progress and assume a conscious agent who will follow a fixed path toward an imagined goal. Journeys are therefore inherently purposeful.’ In summary, Journey metaphors may typically carry a sense of direction and purpose. If this sense of direction is lost, uncertainty and helplessness can increase, undermining agency. This observation aligns with Coll-Florit et al. (2021), who found that Journey metaphors can reinforce disempowerment when they imply a lack of direction and control. It may be due to the fact that individuals struggle to adapt to constantly shifting rules and expectations, feeling uncertain about their roles in prevention (Williams et al., 2021). Wright et al. (2022) add that such inconsistencies may cause fatigue and scepticism: when restrictions are frequently changed, individuals may doubt the measures’ legitimacy and to suspect political motives rather than scientific rationale. However, Coll-Florit & Climent (2022)

also point out that in journey-relevant narratives, such as taking the wrong path or backtracking occur. Although these deviations are often accompanied by negative emotions, they also suggest the possibility of correction and reorientation, thereby offering a degree of psychological resilience (Coll-Florit & Climent, 2022).

6.1.3 Effects of War & Violence and Journey Metaphors

The findings suggest that War & Violence metaphors and Journey metaphors exhibit a diversity in their forms and functions. Both types play a dual role in health discourse, potentially influencing public perceptions of disease prevention in different ways. Specifically, they both can give individuals agency or emphasize passivity and weakness of individuals.

However, the effects of these metaphors are not inherently fixed—they depend on how they are framed and the context in which they are used. Semino et al. (2017b), in their study of cancer discourse across different discourse communities, found that Violence metaphors are not always negative, nor are Journey metaphors always positive. Instead, their impact should be assessed based on how they function in specific situations and whether they contribute to empowerment or disempowerment (Semino et al., 2017b). My study builds on this perspective by comparing disease prevention discourses across different illnesses, demonstrating how the use of metaphors shapes their effects.

6.2 Creative Metaphors

In the context of Covid-19, War & Violence and Journey metaphors appear more creative than those found in the cancer prevention corpus, with much focused on restrictive measures. This pattern extends to other metaphor types as well (see Section 5.1).

One reason for the heightened metaphorical creativity in Covid-19 prevention discourse lies in the characteristics of restrictive policies, which are inherently novel and controversial. Unlike

long-standing cancer preventative measures, these measures may lack established linguistic frames and therefore require new modes of conceptualization.

As Turner & Littlemore (2023: 2) suggest, while conventional metaphors are usually effective for expressing shared or familiar aspects of experience, more 'idiosyncratic' and emotionally charged experiences are more likely to be conveyed through creative or personalized metaphors. Restrictive measures being both unfamiliar and potentially disruptive, thus attract metaphorical creativity.

Some forms of metaphorical creativity stem from the innovative use of deeply entrenched source domains, such as War & Violence and Journey metaphors. These domains have been conventionally employed in English to conceptualize illness experiences. As Lakoff & Johnson (1980) suggest, even highly novel metaphors must draw upon conventional conceptual mappings in order to remain intelligible to audiences. This process possibly occurs at a high level of abstraction (Littlemore et al., 2023). As Littlemore et al. (2023) observe, creative expression necessarily builds upon an underlying framework of convention, which serves as a reference point for meaning-making. This conventional baseline, though not always deliberately chosen by the speaker or writer, must be sufficiently familiar to the audience to enable successful interpretation of the metaphor. This may explain why commonly used illness metaphors, such as War & Violence and Journey appear more creatively employed in the Covid-19 prevention corpus than in cancer prevention discourse.

In addition, the rise in metaphorical creativity may reflect public dissatisfaction with restrictive measures that limit personal freedom. Fuoli et al. (2022) find that metaphorical evaluations tend to be more negative than non-metaphorical ones, a trend observed across both conventional and creative metaphors. Building on this finding, Littlemore et al. (2023) examine metaphor uses in interviews with civil servants and identify the association between creatively used metaphors and negative evaluations. They suggest that this may be due to the nature of the discourse examined, which centred on emotionally charged personal experiences. It can be

concluded that metaphorical creativity is linked to the expression of negative or complex evaluations, particularly in contexts marked by emotional intensity and subjective interpretation.

Similarly, in my data, strong emotional reactions tend to be associated with the use of creative metaphors, which allow speakers to express criticism or resistance. Rather than indicating a systematic tendency, this pattern may simply reflect the way strong feelings encourage more creative language uses. Compared with long-standing cancer prevention measures or proactive Covid-19 strategies, restrictive interventions are more likely to evoke frustration and anxiety, which in turn can prompt the use of more creative metaphorical framings.

6.3 Similarities

In this section, I will discuss the similarities that I identified in how cancer prevention measures and Covid-19 prevention measures are framed.

6.3.1 Similarity - Mechanics Metaphors and Systematic Action

Mechanics metaphors in both corpora possibly share a common underlying framing: they construct preventative action as systematic actions to prevent potential harm.

For instance, the systematic metaphor *CHANGES IN COVID-19 RESTRICTIVE MEASURES ARE MECHANICS* frames restrictions as mechanisms designed to avert further danger.

Example 54 ... called for a circuit-breaker because Tier Three households were not complying completely' with the guidance (Covid-19-Daily Mail-31/10/20).

Similarly, in the cancer prevention corpus, the MECHANICAL MOVEMENT scenario also emphasizes the framing of managed maintenance and check-ups. For example,

Example 4 Here, Dr Kayat reveals how to give yourself and your family a cancer *MOT* (cancer-The Sun-28/02/21).

These examples suggest that across both datasets, illness prevention is metaphorically described as a series of systematic and structured actions.

This finding aligns with insights from Hanne & Hawken (2007), who suggest that Driving metaphors can be a productive source domain for conceptualizing illness prevention. The examples they provide show some similarity to the Mechanics metaphors identified in my research—for instance, framing health check-ups as equivalent to taking a car in for regular maintenance. They note that maintaining health and driving safely require attention to systematic actions, such as obeying rules and scheduling regular checks (Hanne & Hawken, 2007). While acknowledging that certain outcomes lie beyond individual control, such as mechanical failure or road hazards, this framing highlights how long-term outcomes are shaped by structured decisions (ibid). It can be concluded that this metaphorical framing promotes a view of prevention as embedded in systems of control and organization. Hanne & Hawken (2007) further suggest that such metaphors may hold communicative advantages over more emotionally charged alternatives, such as Military metaphors since they offer a more mundane, familiar, and perhaps less intimidating model for engaging with preventative health behaviours.

6.3.2 Similarity - Clothing and Supernatural Metaphors and the Critique of Uniform Preventative Strategies

In both corpora, Clothing metaphors seem to be used to question the validity of prevention strategies by highlighting concerns about inflexibility and lack of individual tailoring of interventions, such as the systematic metaphor *IMPLEMENTATION OF CANCER PROACTIVE*

MEASURES IS CLOTHING and *IMPLEMENTATION OF COVID-19 RESTRICTIVE MEASURES IS CLOTHING*. For example,

Example 89 However, the one-size-fits-all' approach no longer works, ... raising the idea of completely stopping mammograms for women at low-risk of breast cancer (cancer-Daily Mail-31/01/22).

Example 90 ...: We welcome a more tailored approach to breast screening ... (cancer-Daily Mail-31/01/22).

Example 91 ...said the rules were no longer fit for purpose in a highly vaccinated population' (Covid-19-Daily Mail-07/01/22-1).

Example 92 The health commission urged local authorities to "rectify simplified, one-size-fits-all" measures for Covid prevention, ... (Covid-19-The Times-08/12/22).

These Clothing metaphors are used to criticize the lack of individualization in public health prevention strategies, thereby criticizing their effectiveness.

In the analyses of metaphor in UK and Spanish cancer treatment discourse, Camus (2009 & 2016) also identifies *GARMENT* source domain, primarily used to emphasize individualization, precision, and scientific advancement. For example,

'This significant and strategic project is aimed squarely at providing the *first step towards tailored* cancer therapy' (as cited in Camus, 2016: 126).

In her research, Garment metaphor presents emerging treatments as customized interventions designed to fit the patient's genetic profile, thus avoiding the indiscriminate side effects associated with conventional therapies. Camus (2009 & 2016) also notes that compared with

CANCER IS WAR metaphor, Garment metaphor is less dehumanizing and, when referencing the progress, often reflects a more positive stance.

In my findings, Clothing metaphors are used in both corpora to critique the lack of individualization in illness prevention, rather than emphasizing the positive aspects of cancer management progress. This difference may reflect the view that, compared to cancer treatment, cancer prevention is still seen as a population-based approach, rather than a medical practice that can be actively tailored and controlled by individuals. It may also be partly influenced by the temporal context of Camus's corpora. Although she does not specify the exact time frame of data collection in detail, it is likely that much of her material stems from the early 2000s, a period that coincided with the rapid rise of targeted therapies. Many of her examples present Garment metaphor in contrasts between traditional therapies and personalised medicine. In this context, Garment metaphor is mostly relevant to scientific innovation and optimism.

The systematic metaphor *IMPLEMENTATION OF CANCER/COVID-19 PREVENTATIVE MEASURES IS SUPERNATURAL* also possibly shows public scepticism. For example,

Example 65 Stevens argues that joining up care to prevent illness is the "holy grail" of health systems in every rich country (cancer-The Times-03/04/21).

Example 67 ... changing their caffeine habits and see what improves ... It won't be a silver bullet for everyone (cancer-The Guardian-14/05/22).

Example 113 Masks are not a panacea (Covid-19-The Times-04/01/23-3).

Example 114 With typical buccaneering optimism, Boris *threw* the *kitchen sink* at the development and production of such a magic bullet serum, ... (Covid-19-Daily Mail-09/06/21).

These metaphors frequently co-occur with negation structures, possibly implying that expecting a single measure to universally solve complex health problems is misleading.

It can be concluded that metaphorical framings possibly express doubt about the effectiveness of illness prevention measures across the two corpora by criticizing the lack of individualization in preventative methods.

6.4 Agency

This section will examine the distribution of agency among the various metaphor vehicles identified in each corpus.

6.4.1 Cancer Prevention

In the cancer prevention corpus, agency is assigned to the government and individuals.

Some linguistic vehicles from the systematic metaphor *IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS ALERTNESS TO SOUND* and a HIDDEN OBSTACLES REMOVAL scenario are used to highlight the role of government in the promotion and implementation of cancer preventative measures. For example,

Example 115 These projections should serve as a wake-up call to the government about the state of our nation's health, said Michelle Mitchell, the chief executive of CRUK (cancer-The Guardian-19/05/22).

Example 93 Ministers mustn't keep kicking the can down the road when it comes to tackling the obesity crisis - delaying measures that will lead to healthier food options (cancer-The Guardian-19/05/22).

The idiomatic expression *kick the can down the road* occurs three times in the cancer prevention corpus, and in each case, it is used to emphasize governmental responsibility. These metaphors suggest that challenges remain within cancer preventative strategies, which draw attention to institutional responsibility. According to Brawley (2017), the government must engage in proactive governance, including legislation, regulation, and public policies that promote healthier lifestyles, to ensure effective cancer prevention. If these responsibilities are not fulfilled, it may be seen as governmental negligence or failure (Brawley, 2017).

Some metaphors related to cancer prevention position individuals as agents, emphasizing their active roles and providing them with the ability to control their health outcomes. For example,

Example 102 our bodies could also do with a once-over. So just as you'd wield that duster from room to room, why not make your health shine too? "It's always a shock to see how much dust has gathered behind the sofa," ... (cancer-The Sun-31/01/20).

The systematic metaphor *IMPLEMENTATION OF CANCER PROACTIVE MEASURES IS PRACTICE OF CLEANING* frames health checks as routine, manageable tasks. By presenting preventative action as a familiar domestic chore, this metaphor makes the concept of cancer prevention more tangible and manageable.

Demjén (2016) notes that humour empowers individuals to discuss fearful and sensitive aspects of their experiences in a socially acceptable and emotionally manageable way. Although this systematic metaphor is not obviously humorous, its light tone contributes to a less formal and more approachable communication style. This is consistent with the findings of Pérez-Sobrino et al. (2022), who suggest that light metaphors help convey serious health messages without provoking excessive anxiety, making cancer prevention discourse less intimidating while still emphasizing its importance.

In addition, I found that some metaphors emphasize the role of individuals in the cancer preventative system. Although they give agency to individuals, they possibly shift the responsibility for failed cancer prevention onto individuals by assigning blame, suggesting that inaction is a personal failure. It is mostly relevant to some linguistic evidence from the HIDDEN OBSTACLES REMOVAL scenario and *PRACTICE OF CLEANING* metaphor. For example,

Example 94 Data from private cancer treatment provider GenesisCare and Prostate Cancer Research shows that 49 per cent of men 'bury their *head* in the *sand*' when it comes to health-related matters, ... (cancer-Metro-23/02/22).

Example 116 ... there is so much swept under the carpet, with the over-30s still reluctant to discuss or acknowledge mental health and other health problems (cancer-The Times-15/06/21).

These two linguistic metaphors relate to health check-ups, a broader context of preventative engagement and frame non-engagement as a deliberate choice, potentially positioning individuals as negligent or irresponsible. Hegarty & Golden (2008) argue that if an individual's failure to engage in prevention is attributed to factors beyond their control, they are more likely to receive sympathy. However, when inaction is perceived as within one's control, it may lead to hostility and blame (ibid). Similarly, Kline (1999), in the analysis of breast self-examination campaigns, found that by emphasizing the authority of breast self-examinations and creating a negative identity for women who do not engage in them, such messaging can create an oppressive power dynamic. Women who do not participate in prevention are then defined as noncompliant, and their lack of engagement is viewed as deviant behaviour. As a result, higher cancer mortality rates may be attributed to individual failure (ibid).

In summary, the cancer prevention corpus constructs agency is distributed across both institutional and individual levels. Some vehicles from *IMPLEMENTATION OF CANCER*

PREVENTATIVE MEASURES IS ALERTNESS TO SOUND metaphor and the HIDDEN OBSTACLES REMOVAL scenario highlights governmental responsibility, calling for proactive governance and structural support. Several vehicles constructing the systematic metaphor *IMPLEMENTATION OF CANCER PROACTIVE MEASURES IS PRACTICE OF CLEANING* and the HIDDEN OBSTACLES REMOVAL scenario underscore the role of individuals in shaping their own health outcomes. However, in cancer prevention discourse, metaphors that highlight individual responsibility may also place responsibility or blame on them, making individuals feel personally accountable for their health outcomes, even when broader structural barriers exist. Kline (1999) argues that non-participation in cancer prevention cannot be attributed only to individual choices; rather, it is often influenced by multiple factors, such as negative past experiences or a lack of useful guidance.

6.4.2 Covid-19 Prevention

In the Covid-19 prevention corpus, metaphors related to agencies are mostly associated with restrictions and predominantly imply a loss of individual control. One metaphor that exemplifies this is the PASSIVE CONFINEMENT scenario. For example,

Example 96 ..., if people are effectively trapped in their household bubbles? (Covid-19-Daily Mail, 10/09/20).

Example 98 Instead of the cell door being unlocked to reward our immense sacrifices, ministers plan to shackle us further (Covid-19-Daily Mail-09/06/21).

Example 99 It [isolation] was prison all over again (Covid-19-Daily Mail-11/01/22-1).

Example 100 ... suggested the country could finally - mercifully - throw off its fatiguing Covid chains (Covid-19-Daily Mail-09/06/21).

The PASSIVE CONFINEMENT scenario is primarily structured through a Crime & Prison metaphor, and incorporates elements from Actions, (Un)Openness, Barrier and Container metaphors. Most Crime & Prison metaphors, aligned with the Container metaphor, constructs the individual's condition as one of incarceration within a sealed and inaccessible space, emphasizing the physical enclosure and the loss of access to public or shared spaces, with no possibility of exit. The Barrier metaphor highlights obstructed movement and the presence of constraining invisible boundaries. Actions metaphors are primarily used to emphasize the role of external forces that exert control over individuals. The (Un)Openness metaphor seems intended to capture both the experience of constraint and release. Together, these vehicle groups seem to construct an embodied scenario of the implementation of restrictions, in which individuals are positioned as passive subjects of confinement, implying the loss of agency while the government assumes the role of a controlling authority. The evaluative stance conveyed by this scenario is predominantly negative since it highlights feelings of oppression and loss of freedom associated with restrictive preventative measures.

Within the Containment metaphor group, the *bubble* metaphor is the most frequently occurring and largely dominates the group. Charteris-Black (2021) notes that when used in the Covid-19 context, it may imply limited agency. He suggests that the 'fragility and expandability' of bubble metaphor contributes to framing activities within a confined space as a choice rather than an imposition, which suggests a certain degree of freedom (Charteris-Black, 2021: 189). In other words, bubble 'has the advantage of inviting a degree of negotiation between agents' (Charteris-Black, 2021: 190). In practice, social bubbles, despite operating within limits, preserve some forms of social interaction and reflect certain degree of agency given to individuals, allowing individuals to maintain relational contact in a constrained yet negotiated environment (Long et al. 2020; Burnette & Long, 2022). However, Charteris-Black (2021) also notes that Confinement metaphors, such as *bubble* in pandemic-related public discourse can carry either positive or negative connotations, depending on whether they draw on the source domain of imprisonment, emphasising coercion and loss of freedom or public safety, which frames restrictions as protective and justified measures. In Example 101, its co-textual

metaphor *trap* frame restrictions as confining conditions imposed on individuals, emphasising passivity and constraint. It can be concluded that *bubble* metaphor can convey a negative sense of lost agency, which is realised by its co-textual information.

Corpus analysis shows that Crime & Prison metaphors such as *prison* imply the connotation of punishment (See Section 5.10). In other words, these metaphors possibly suggest that restrictions are disciplinary acts.

Although the PASSIVE CONFINEMENT scenario highlights the loss of agency of individuals, its metaphorical concretisation of the complex emotion aspects of lockdown experience may still have positive functions. Littlemore & Turner (2020) examine metaphor use in communication about pregnancy loss and find that metaphors give concrete form to abstract emotional experiences such as grief. By representing grief as a tangible entity, metaphors allow individuals to acknowledge, understand, and ultimately regain a sense of autonomy and control (Littlemore & Turner, 2020). Similarly, the PASSIVE CONFINEMENT scenario may enable individuals to articulate, reify, and make sense of their emotions of restrictions. By framing lockdown through metaphors such as *shackles*, *prison*, and *chains*, this scenario expresses experiences of lockdown in a more concrete form, allowing difficult emotional responses to be expressed within a familiar metaphorical framework. In other words, while this metaphoric scenario highlights confinement and powerlessness, its use of concrete and embodied framing may offer individuals a discursive means of engaging with and making sense of their experience.

In sum, the PASSIVE CONFINEMENT scenario construct individuals as occupying a passive and constrained position. This may be achieved either through the framing of the metaphor itself or through its surrounding co-text. Although the overall scenario highlights diminished agency, it also enables the complex emotional experience of restriction to be expressed through familiar and concrete metaphorical language.

Another metaphorical framing that emphasizes the loss of personal freedom, and the sense of imposed oppression is the systematic metaphor *IMPLEMENTATION OF COVID-19 RESTRICTIVE MEASURES IS OPPRESSIVE GOVERNANCE*. This metaphor is exclusively observed in the Covid-19 prevention corpus (see Section 5.12). For example,

Example 108 ... people are beginning to feel that society is being turned into a police state albeit to save lives (Covid-19-Daily Mail-20/03/21).

Example 117 Yet the Government's own Covid tsar in Manchester says the NHS there can cope' (Covid-19-Daily Mail-21/10/20).

Through this systematic metaphor, restrictive policies are metaphorically associated with state power and surveillance. While the goal of saving lives is acknowledged in the surrounding co-text, the metaphor highlights enforcement, oversight, and hierarchical control. Although governments may exercise emergency powers during public health crises, the *OPPRESSIVE GOVERNANCE* systematic metaphor potentially highlight the excessive infringements on civil liberties. Such framings resonate with wider legal critiques of the unprecedented scale of executive authority exercised during the pandemic. For instance, Wagner (2022) notes that the rapid expansion of executive power in the UK under Covid-19 legislation enabled sweeping legal changes with minimal parliamentary oversight. The emergence of this metaphor within Covid-19 restriction discourse potentially reflects societal anxieties about democratic accountability and the safeguarding of individual freedoms.

The *IMPLEMENTATION OF COVID-19 RESTRICTIVE MEASURES IS DARKNESS* systematic metaphor possibly also imply the limited agency in the context of Covid-19 restrictions. For example,

Example 6 After all, there is something uniquely dispiriting about climbing your way out of a deep, dark hole, only to find yourself abruptly *thrust back* where you began, as if in some hellish version of *Snakes and Ladders* (Covid-19-Daily Mail-10/09/20).

Example 87 A Tier 5 lockdown is to be imposed in Ireland from tomorrow after a 70 per cent surge in Covid cases last week ..., said there was '*light*' at the end of this tunnel' with 10,000 vaccine doses due to be rolled out next week (Covid-19-Metro-23/12/20).

This metaphor constructs the experience of restrictions as an environment of darkness that constrains action through enclosure and forced pathing. It often co-occurs with Container metaphors. Expressions such as *hole* and *tunnel* evoke a spatial and sensory scenario in which the boundaries are fixed and the exits are limited, thereby restricting movement and positioning the individual as being subject to external control. In summary, the Darkness framing introduces perceptual opacity, while the Container framing provides a structural sense of limitation. Their co-occurrence constructs a physically enclosed three-dimensional environment, possibly further reinforcing the constrained agency. This pattern appears consistent with observations by Charteris-Black (2012), who notes that Darkness metaphors often function through overlap with Container metaphors, as many dark spaces are also enclosed and bounded physical environments.

In addition, the metaphorical contrast between *dark* and *light* may suggest differing representations of restrictive measures and proactive interventions such as vaccination. While restrictions are associated with the framing of darkness and enclosure, vaccination is positioned as a potential source of light, possibly signalling transition or resolution.

In conclusion, the PASSIVE CONFINEMENT scenario highlights the embodied experience of being confined within sealed or bounded spaces. The OPPRESSIVE GOVERNANCE metaphor draws on the experience of authority, emphasising enforced control and loss of autonomy. The DARKNESS systematic metaphor evokes a spatial environment characterised by perceptual and

physical limitations. As Charteris-Black (2012) observes, metaphors grounded in embodied experience can emphasise the physical nature and multidimensional intensity of negative emotional states. In the context of lockdown, such metaphors operate across multiple sensory channels to construct an immersive experiential space, invoking full-bodied experiences of enclosure, sensory obstruction, and imposed stillness.

6.4.3 Summary

Agency is framed differently across the two corpora. In cancer prevention discourse, metaphors distribute agencies across both institutional and individual actors. Some metaphors relevant to *ALERTNESS TO SOUND* and *HIDDEN OBSTACLES REMOVAL* emphasise governmental responsibility, while some linguistic vehicles suggesting *PRACTICE OF CLEANING* systematic metaphor and the *HIDDEN OBSTACLES REMOVAL* scenario position individuals as active agents capable of managing their own health. However, some metaphors risk individualising responsibility, potentially framing inaction as personal failure.

In contrast, Covid-19 prevention discourse tends to construct agency as mainly absent or diminished. The *PASSIVE CONFINEMENT* scenario frame individuals as passive subjects under externally imposed restrictions. The *OPPRESSIVE GOVERNANCE* draws on themes of state surveillance and enforcement, highlighting tensions around civil liberties. Similarly, the *DARKNESS* metaphor evokes a confined, disoriented space shaped by sensory and spatial limitation.

In addition, the way metaphors construct agency depends not only on their inherent structure but also on the discursive context in which they appear.

6.5 Cancer Prevention - Risk and Fatalism

In the cancer prevention corpus, one metaphorical framing found exclusively in this dataset frame cancer prevention as a probabilistic system, realized by the systematic metaphor *IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS GAMBLING* (see Section 5.7). For example,

Example 79 A study suggests that people who do just two-and-a-half hours of moderate exercise a week have lower odds of getting seven types of cancer (Covid-19-Daily Mail-27/12/19).

This scenario highlights statistical likelihoods and positions individuals as players in a probabilistic system, implying lifestyle choices cannot fully eliminate the risk of developing cancer. This finding aligns with findings from Krieger et al. (2010), who examined Gambling metaphors in cancer management discourse. Their study found that although Gambling metaphors may facilitate public understanding of complex concepts such as calculated statistics, they also risk emphasizing unpredictability and lack of control, particularly when the scientific principles behind are not explicitly explained (Krieger et al., 2010).

Applied to cancer prevention, the *IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS GAMBLING* metaphor may acknowledge the limits of prevention, recognizing that even adherence to recommended health behaviours cannot fully guarantee immunity from cancer. However, when this framing emphasises uncertainty rather than calculable probability, it may encourage fatalistic interpretations, leading individuals to perceive their health outcomes as governed more by luck than by agency (Powe & Finnie, 2003; Hauser & Schwarz, 2020). People who hold strong fatalistic beliefs often feel that if they are meant to get cancer, no amount of effort will prevent it (ibid). Research has shown that high levels of cancer fatalism are associated with lower participation in cancer prevention and early detection practices, such as screening tests and smear tests (Conrad et al., 1996 & Chavez et al., 1997). In sum, *GAMBLING* metaphor in cancer prevention discourse foreground uncertainty, potentially discouraging engagement in preventative practices.

The absence of a *GAMBLING* framing in the Covid-19 prevention corpus may be attributed to the nature of its prevention. Cancer prevention narratives often focus on long-term probabilistic risk, where preventative behaviours such as diet, smoking cessation, or exercise are associated with statistical odds of developing cancer over time (Hauser & Schwarz, 2015). This may lead to cancer prevention to be framed as a form of risk modification.

Although Covid-19 preventative measures, such as mask-wearing, social distancing, and vaccination are, similar to cancer prevention, aimed at reducing probabilistic risk, the underlying mechanisms of infectious diseases, such as viral transmission, are comparatively more transparent and immediate than the uncertainties often associated with cancer prevention, such as genetic predisposition (Washer, 2004; Nerlich, 2011). As a result, metaphors in discourse related to infectious diseases such as Covid-19 are more likely to focus on control rather than chance (Washer, 2004; Nerlich, 2011).

6.6 Framings Specific to Covid-19 Prevention

In this section, I will discuss the framing only found in the Covid-19 prevention corpus.

6.6.1 Policy Unpredictability

CHANGES IN COVID-19 RESTRICTIVE MEASURES ARE MECHANICS and *CHANGES IN COVID-19 RESTRICTIVE MEASURES ARE A GAME* systematic metaphor highlight the unpredictable nature of shifting public health measures. For example,

Example 54 In an extraordinary *U-turn*, Mr Johnson dropped a back to work' push and told millions of office staff they should now work from home until the spring (Covid-19-Daily Mail, 23/09/20).

Example 81 Or do we bear psychological scars, like the children playing *hide-and-seek* who have been told too many times "come out now, wherever you are!" by a petulant *playmate*, only to find it was a big fat trick (Covid-19-The Times-17/02/22).

By portraying restrictions as mechanical shifts or as part of a game in which rules appear to change without warning, these metaphors frame Covid-19 measures as unpredictable and constantly shifting actions. As previously discussed in relation to Journey metaphors (see Section 6.1.2), the coexistence of two opposing destinations implies instability and frequent changes in direction, *MECHANICS* and *GAME* metaphor possibly also contribute to the construction of restrictions as inconsistent and therefore difficult to anticipate.

This framing of unpredictability may potentially lead to the reduced trust and compliance among individuals. The cross-national survey data of Petherick et al. (2021) show a general decline in compliance with restrictive measures over time. This behavioural trend, referred to as pandemic fatigue, is particularly evident in contexts where rules change frequently or are perceived as ambiguous or inconsistent. Similarly, Williams et al. (2021), drawing on qualitative data from UK participants, identify that perceptions of inconsistent rules can undermine public compliance by making it more difficult for individuals to interpret and follow evolving regulations. Their study further suggests that when guidance appears to shift without clear justification, some individuals may begin to question the coherence and credibility of the decision-making processes behind such measures (Williams et al., 2021).

6.6.2 Disconnected from Reality

The systematic metaphor *IMPLEMENTATION OF COVID-19 PREVENTATIVE MEASURES IS ENGAGED IN A PERFORMANCE* and RELIGION FAITH scenario corpus constructs preventative measures as detached from practical reality, a metaphorical framing identified exclusively in the Covid-19 prevention corpus. The systematic metaphor *IMPLEMENTATION OF COVID-19*

PREVENTATIVE MEASURES IS ENGAGED IN A PERFORMANCE frames Covid-19 prevention as performative and primarily symbolic in function, designed for display. For example,

Example 63 As we enter the third wave of the Covid-19 pandemic, we are rushing towards a dangerous new phase in which hygiene theatre can do even more damage than it has (Covid-19-The Guardian-12/07/21-2).

Example 64 Distancing Holyrood from Westminster's processes, Mr Swinney - whose number-juggling resembled a TV game show - ... (Covid-19-The Sun-05/01/22).

This finding aligns with the observations made by Nerlich & Jaspal (2023), who identify that certain public health measures, such as mask mandates and vaccine passports are objectified through the familiar concept of performance. By describing these interventions as part of a detached 'Covid theatre', they are portrayed as having limited scientific efficacy and as being maintained for the sake of appearances (ibid). Similarly, my analysis finds that metaphors grounded in theatre and performance frequently function to question the authenticity and credibility of Covid-19 preventative measures. For example, corpus analysis of *hygiene theatre* suggests that the expression carries connotations of performativity rather than substantive effectiveness (See Section 5.5). As Nerlich & Jaspal (2023) caution, by representing preventative measures as performative acts, this metaphorical framing possibly risks undermining the perceived legitimacy of public health strategies and fuelling doubts about their scientific value. In this way, by describing preventative actions as performative acts, this framing potentially weakening the perceived legitimacy of public health strategies and fuelling doubts about their substantive value.

At the level of the metaphoreme, I identified *hygiene theatre* as a metaphoreme, since corpus analysis shows that it exhibits relatively fixed linguistic patterns and is commonly used to construct Covid-19 preventative measures as largely performative actions, with minimal practical effect on disease transmission. In other words, it contributes directly to the

evaluative stance constructed within the broader metaphorical frame by framing certain actions as performative rather than genuinely effective. This observation supports Deignan's (2017) argument that a corpus-based metaphoreme approach can reveal evaluative meanings that may not be evident in analyses focusing solely on individual metaphor vehicle terms.

The RELIGION FAITH scenario is also relevant to different topics and may emphasise the detachment of restrictions from real-world concerns. For example,

Example 73 The *shroud-waving prophets* of *doom* on the Sage scientific panel, insulated in their taxpayer-funded academic *bubbles* from life's *bleak* realities, are clamouring for the population to remain under intrusive constraint (Covid-19-Daily Mail-09/06/21).

Example 74 Tragically, their [vaccine] stunning success risks being *bled out* in a slow *agony* of scientific *dogma*, official monomania and ministerial *paranoia* (Covid-19-Daily Mail-09/06/21).

In the RELIGION FAITH scenario, the mini-narrative portrays scientists and politicians who support preventative measures as *prophets* producing *dogma* and *zealots* or *believers piously preach* on relevant measures within a belief system of Covid-19 prevention. The evaluative stance expressed through this scenario is potentially critical: it frames scientists as religious preachers and political leaders as their followers, suggesting that compliance with prevention is based on belief rather than empirical evidence. This metaphorical framing distances preventative measures from practical considerations and convey scepticism towards the scientific and political authorities promoting the measures, reinforcing the perception that prevention is detached from practical, real-world concerns and are instead driven by ideological conviction.

This pattern resonates with findings by Atanasova & Koteyko (2017) and Augé (2024), whose studies, although focused on climate science and environmentalism, identify similar uses of Religion metaphors as a form of critique. In their analyses, environmentalism is often framed

as a false religion, where climate science is portrayed as a system grounded in belief and fear rather than empirical validation, and environmentalists or scientists are associated with imagery of exaggerated prophecy. Such framing challenges the legitimacy of climate science by associating it with faith rather than reason (Atanasova & Koteyko, 2017; Augé, 2024).

6.7 Summary

This study provides an analysis of the metaphorical frameworks used to describe cancer and Covid-19 prevention in UK newspapers. By comparing systematic metaphors, metaphoremes, and metaphorical scenarios in the two corpora, the study highlights both shared and divergent metaphorical strategies employed in the communication of health prevention strategies to answer research questions.

The findings emphasize that the effects of metaphors are not inherent or fixed. For example, War & Violence metaphors and Journey metaphors can either position individuals as active agents or highlight the passivity. It depends on the context in which they are used.

This study highlights that certain conventional metaphors, such as War & Violence and Journey metaphors recur frequently across both cancer and Covid-19 prevention discourses. This pattern proves the idea that some metaphorical frameworks are universal, shaped by shared sociocultural contexts and embodied human experiences.

The study also shows different ways in which agency is constructed within each discourse. In cancer prevention, metaphors distribute agency across both institutional and individual actors, encouraging proactive engagement while also holding individuals accountable. In contrast, Covid-19 prevention metaphors mainly imply the weakening and the absence of agency through emphasizing external control. These divergent constructions of agency may reflect the situational differences between the two types of prevention: cancer prevention as a long-term,

individual-focused procedure while the urgent, top-down interventions necessitated by the Covid-19 pandemic.

In addition, both cancer and Covid-19 prevention measures are often questioned, but the ways in which they are challenged have similarities and differences. Metaphorical frameworks may express doubt about the effectiveness of preventative measures by criticizing the lack of individualization. The cancer prevention discourse highlights the probabilistic nature, which may foster fatalism and potentially lead individuals to adopt a negative attitude toward participation. In contrast, Covid-19 prevention metaphors emphasize the unpredictability and constant changes, potentially increasing distrust and social fatigue. Finally, metaphors about Covid-19 prevention portray preventative measures as detached symbolic acts. Such metaphors may further intensify scepticism about the effectiveness.

Chapter 7 Conclusion

In this chapter, I summarise the main findings of the study and relate them to the research questions outlined in Chapter 1. I then discuss the implications of these findings, consider the limitations of the study, and conclude by offering suggestions for future research.

7.1 Summary of My findings

This thesis examines how cancer prevention and Covid-19 prevention are metaphorically framed in 1,000 articles (500 on cancer prevention and 500 on Covid-19 prevention) published in five British newspapers, The Guardian, The Times, Daily Mail, The Sun, and Metro over an approximately three-year period (27th December 2019 to 2nd February 2023).

This thesis reviews and discusses potential issues affecting corpus representativeness, balance, and comparability in corpus construction. It also examines the procedures for identifying core and additional query terms, evaluates their applicability to the present study, and explains how multiple methods were combined to determine appropriate query terms. On this basis, two self-compiled corpora were constructed, with efforts made to ensure that they are balanced and representative of the topics of cancer prevention and Covid-19 prevention.

Following corpus construction, an adapted metaphor identification procedure was applied to identify topic-related linguistic metaphors in both corpora. Reliability testing of metaphor identification reached an almost-perfect level of agreement, indicating the effectiveness of the adapted procedure. The identified linguistic metaphors were then grouped semantically into vehicle groups, resulting in 13 vehicle groups for the cancer prevention corpus and 15 for the Covid-19 prevention corpus. These results provide the empirical basis for addressing all three research questions.

Chapter 5 provides a quantitative overview of linguistic metaphors and their organisation into metaphorical patterns across the two corpora, while Chapter 6 explores how these patterns frame and evaluate cancer prevention and Covid-19 prevention, identifying key similarities and differences.

The findings of this study are consistent with previous research in showing that both cancer prevention and Covid-19 prevention are extensively discussed through metaphors. Across the two corpora, the four most frequently used vehicle groups, War & Violence, Journey, Mechanics, and Performance are shared, while each corpus also displays its own topic-specific vehicle groups. In addition, metaphors in the cancer prevention corpus are more often used to describe proactive measures, whereas metaphors in the Covid-19 prevention corpus are more likely to be associated with restrictive measures. On this basis, the study provides an initial answer to the first and second research questions concerning which metaphors are predominantly used to describe cancer prevention and Covid-19 prevention.

Qualitative analysis of the linguistic data shows that metaphor patterns in both corpora give rise to both positive and negative framings of cancer prevention and Covid-19 prevention. For example, metaphor patterns constructed from Mechanics metaphors in both corpora, such as the systematic metaphor *CHANGES IN COVID-19 RESTRICTIVE MEASURES ARE MECHANICS* and the MECHANICAL MOVEMENT scenario, appear to share an underlying framing that presents preventative action as a set of systematic procedures aimed at preventing potential harm. Clothing metaphors in both corpora are used to question the validity of prevention strategies, emphasising inflexibility and a lack of individual tailoring.

In addition, topic-specific framings are observed in each corpus. In the Covid-19 prevention corpus, systematic metaphors such as *CHANGES IN COVID-19 RESTRICTIVE MEASURES ARE MECHANICS* and *CHANGES IN COVID-19 RESTRICTIVE MEASURES ARE A GAME* portray restrictive measures as unstable and subject to frequent change, while the metaphoreme *hygiene theatre* casts preventative practices as symbolic displays with limited effectiveness in

controlling transmission. By contrast, the systematic metaphor *IMPLEMENTATION OF CANCER PREVENTATIVE MEASURES IS GAMBLING* tends to frame prevention in terms of uncertainty and likelihood.

The analysis also reveals differences in the construction of agency across the two corpora. In cancer prevention discourse, metaphors allocate agency to both institutions and individuals, although some metaphors risk individualising responsibility and possibly treating inaction as personal failure. In contrast, Covid-19 prevention discourse tends to construct agency as reduced or absent. Moreover, even metaphors drawn from the same vehicle group and addressing the same topic may produce different framings. For instance, War & Violence and Journey metaphors can either attribute agency to individuals or emphasise passivity and vulnerability, demonstrating considerable variation in form and function. The empowering or disempowering effects of metaphor thus depend on how metaphors are constructed and the contexts in which they are used.

On this basis, the study provides a fuller answer to the first two research questions and addresses the third research question by explaining how metaphors frame cancer and Covid-19 prevention and by identifying key similarities and differences between the two domains.

Overall, the interaction of metaphor patterns across levels reveals similarities and differences in the framing and evaluation of cancer and Covid-19 prevention. This thesis contributes to research on metaphor in illness prevention by examining how preventative measures are represented through metaphors in British newspaper articles.

7.2 Implications

7.2.1 Theoretical Implications

At a theoretical level, this study further confirms the applicability of existing frameworks for metaphor analysis. Drawing on Cameron's discourse dynamics framework, the analysis identifies metaphor patterns at multiple levels, traces the systematicity of metaphor use, and examines their framing effects. Rather than relying on abstract conceptual domains, the study focuses on metaphor as it emerges in discourse and shows that Cameron's framework is applicable to the analysis of systematic metaphor patterns across texts. A multi-level analytical approach allows for the identification of a broader range of metaphor patterns and their framing implications. Linguistic vehicles from the same vehicle grouping may, for instance, contribute to different forms of metaphorical organisation, including systematic metaphors, metaphoremes, and metaphor scenarios.

Overall, this study tests the applicability of established theoretical frameworks and demonstrates how metaphor operates to express ideological positioning in discourse on illness prevention.

7.2.2 Methodological Implications

In constructing the corpora, this study examines and tests established corpus design principles in corpus linguistics by building two corpora representing specific registers. The corpus compilation process draws on existing concepts and methods, including sampling frameworks, and situational and linguistic variability (Biber, 1993). In the present study, corpus design decisions were primarily guided by situational variability, including newspaper source, time period, and key themes, and the rationale for these decisions has been explicitly discussed.

To ensure an acceptable level of balance, appropriate sampling decisions were required. Sections 4.1.3–4.1.5 discuss commonly adopted sampling practices and the main challenges encountered in corpus construction, including uneven distribution of newspaper articles across sources, substantial variation in article counts within the same time frame, and considerable

differences in article length. The solutions adopted to address these issues have been outlined in detail.

With regard to the selection of query terms for data retrieval, this study evaluated the applicability of Gabrielatos's (2007) RQTR method to the relatively broad research topics examined here. While the RQTR method has been shown to be effective for more specific and less ambiguous topics, it proved less suitable in the present study, as even highly salient candidate terms such as cancer prevention and Covid-19 prevention generated a large amount of irrelevant material. To address this issue, elements of the semi-manual data collection approach proposed by Busso and Tordini (2022) were incorporated. Specifically, the overall logic of the RQTR framework was retained, with initial searches used to generate additional query terms, while the evaluation and selection of these additional terms was conducted manually. Although time-consuming, this approach ensured that the retrieved texts were highly relevant to the research focus.

Finally, this research has outlined the metaphor identification procedure adapted in this study, explaining each analytical step, the rationale behind decisions, and the way these decisions were operationalised. By doing so, the study provides a transparent and replicable research procedure.

7.3 Limitations

As discussed in Section 7.2.2, decisions regarding corpus compilation in the present study were primarily guided by situational variability, rather than by linguistic criteria. In other words, linguistic variability was not used as a controlling principle in the selection of texts for the corpus. This decision reflects a common challenge in corpus design, as linguistic variability is often difficult to determine prior to corpus construction.

To address this methodological issue, Biber (1993: 256) proposes that corpus compilation should proceed ‘in a cyclical fashion’ in order to test and refine linguistic variability. Specifically, he suggests that researchers first develop a pilot corpus to identify salient linguistic features and then inform subsequent sampling decisions (Biber, 1993).

This procedure was not adopted in the present study due to limitations of time and research scope. Consequently, the representativeness of the corpora may have been further improved through a pilot-stage, linguistically informed sampling process.

A further limitation concerns the chronological distribution of the corpora. As mentioned in Section 4.1.6, although the collected newspaper data were divided into approximately six-month periods, the distribution of sampled articles across these periods is not fully even, particularly in the Covid-19 prevention corpus. This unevenness may partly reflect the historical development and changing salience of the two topics in UK newspaper discourse, but it may also be related to the sampling procedure itself. Articles were retrieved from LexisNexis in chronological order and sampled systematically by selecting every fifth article until the target number had been reached. As a result, the final corpora do not constitute evenly stratified temporal samples, and some periods are more heavily represented than others. This limitation must be acknowledged when interpreting the findings, as it suggests that observed diachronic variations may not purely stem from shifts in discourse. Instead, they could be a consequence of the sampling method.

7.4 Suggestions for Future Research

This thesis has examined how cancer and Covid-19 preventative measures are metaphorically framed in British newspaper discourse. On the basis of the findings discussed in previous sections, two broad directions for future research can be identified.

First, future research could extend the present analysis by examining how illness prevention is framed metaphorically across different newspapers. Such research could build directly on the corpus used in this study, as it includes newspapers with diverse political orientations, readership demographics, and newspaper types. By systematically comparing similarities and differences in the metaphorical framing of illness prevention across these newspapers, this research direction may contribute to a clearer understanding of how different segments of the public are exposed to, and potentially influenced by, distinct metaphorical representations of preventative measures.

Second, future research could follow the experimental approach adopted by Thibodeau and Boroditsky (2011) to investigate the extent to which the metaphorical framings identified in this thesis influence people's perceptions of, and willingness to adopt, illness prevention measures. While the present study focuses on newspaper discourse and does not examine audience responses directly, experimental or survey-based research could test whether exposure to particular metaphorical framings affects readers' attitudes towards preventative policies and individual behavioural choices.

Taken together, these directions for future research would deepen the understanding of metaphorical framing in health-related media discourse and help clarify the social implications of metaphor use in public communication about illness prevention.

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Appendix A Illustrative coded example from the cancer prevention corpus

Source: The Times, 22/01/20

There has been a large rise in cervical cancer among women in their late twenties, a charity has said, and **progress** in **defeating** it risks **stalling**.

The warning by Cancer Research UK came days after the NHS said there was a chance of **eliminating** the cancer after **advances** in screening and vaccination.

The charity said that thousands of cases had been prevented since national screening began in 1988 but this had slowed. The rate of cervical cancer among women aged 25 to 29 was 12 cases per 100,000 women in 2004-06, it said. This rose to 18.5 cases by 2015-17, up 54 per cent.

At least a quarter of women invited for screening failed to attend, it said. "Over the next decade, as people who have been vaccinated **reach** the age when they're most at risk, disease rates are expected to fall. But the vaccine doesn't protect against all types of HPV [the human papillomavirus, which causes most cases of the cancer] so it's vital that screening continues."

Since 2008 all Year 8 pupils have been offered a vaccine against HPV. It has been credited with a 51 per cent global reduction in the number of girls with "pre-cancerous" changes to cervical cells.

Public Health England is working on **ways** to improve screening attendance.

Appendix B Illustrative coded example from the Covid-19 prevention corpus

Source: Daily Mail, 07/07/2020

Emerging evidence suggests that certain vaccines don't just protect against the illness they were developed to **fight off**, but may in fact have additional benefits, too.

What we're talking about here are live attenuated vaccines. These contain a dose of the virus, which is modified so as not to result in illness. This causes the body to produce antibodies which **fight off** that infection if we encounter it later.

An example of the added protection vaccines may offer was identified following an outbreak of Covid-19 on the aircraft carrier USS Theodore Roosevelt.

More than 1,000 sailors on board tested positive but, astonishingly, only nine were hospitalised. Among their age group normally 14 per cent would be hospitalised in this case, more than 140 people.

It turned out that the crew had recently received an MMR (measles, mumps, rubella) vaccine all serving members of the military are given the **jab** irrespective of their vaccination history.

The MMR is created from live attenuated viruses, and that may be why so many were spared severe illness, reported the journal mBio.

This theory may help explain why children (who have generally had these vaccines more recently than adults) have not been severely affected during the pandemic, so further trials are now proposed.

As giving an MMR vaccine to an otherwise healthy adult is safe (though there are exceptions), it may well be a sensible precaution for those involved in healthcare or at added risk, even before we have that further proof.

I've just had the vaccine I was born too long ago to have had the jab and, although I had measles aged six, and rubella later, I've never had mumps to possibly ginger up my immunity.

Appendix C 88 lemmas used in concordance analysis for identifying topic-relevant linguistic metaphors in the cancer prevention corpus

Item	Frequency	Relative frequency
cancer	3890	11725.8031
risk	1624	4895.29672
study	1016	3062.57479
health	910	2743.05419
breast	820	2471.76312
disease	688	2073.86955
test	676	2037.6974
research	623	1877.9371
age	602	1814.63585
screening	593	1787.50674
cervical	563	1697.07639
increase	548	1651.86121
uk	526	1585.54561
develop	510	1537.31609
skin	497	1498.1296
cause	478	1440.85704
reduce	460	1386.59882
level	459	1383.58448
food	452	1362.48406
body	439	1323.29757
cell	430	1296.16847
blood	415	1250.95329
eat	406	1223.82418
prostate	396	1193.68073
nhs	392	1181.62335
low	378	1139.42251
hpv	355	1070.09257
change	350	1055.02084
researcher	339	1021.86305
university	337	1015.83436
link	335	1009.80567

type	330	994.73394
lead	319	961.57614
result	305	919.37531
heart	299	901.28924
diet	298	898.27489
drink	296	892.2462
likely	292	880.18882
add	291	877.17447
healthy	290	874.16013
patient	278	837.98798
vaccine	276	831.95929
alcohol	275	828.94495
fat	269	810.85888
vitamin	268	807.84453
suggest	264	795.78715
meat	259	780.71542
early	258	777.70108
diagnose	249	750.57197
weight	246	741.52894
prevent	244	735.50025
contain	244	735.50025
symptom	230	693.29941
bowel	225	678.22769
report	221	666.1703
gp	220	663.15596
publish	216	651.09858
benefit	216	651.09858
important	216	651.09858
expert	213	642.05554
programme	212	639.0412
treatment	208	626.98382
product	203	611.91209
hrt	203	611.91209
rate	196	590.81167
check	194	584.78298
gene	193	581.76864
effect	193	581.76864
offer	192	578.75429
compare	192	578.75429
scientist	190	572.7256

doctor	189	569.71126
journal	189	569.71126
evidence	187	563.68257
factor	185	557.65387
protect	182	548.61084
raise	179	539.5678
common	178	536.55346
professor	175	527.51042
associate	175	527.51042
hormone	171	515.45304
water	170	512.4387
affect	169	509.42435
sex	167	503.39566
medical	167	503.39566
condition	167	503.39566
sun	166	500.38131
england	166	500.38131

Appendix D 101 lemmas used in concordance analysis for identifying topic-relevant linguistic metaphors in the Covid-19 prevention corpus

Item	Frequency	Relative frequency
covid	1479	4422.93948
vaccine	955	2855.92103
test	953	2849.94004
government	893	2670.51045
health	828	2476.12839
mask	807	2413.32803
virus	742	2218.94597
covid-19	668	1997.64947
uk	600	1794.29593
public	530	1584.96141
lockdown	527	1575.98993
restriction	514	1537.11352
nhs	503	1504.21809
infection	489	1462.35119
wear	474	1417.49379
rule	466	1393.56984
face	460	1375.62688
school	442	1321.798
hospital	435	1300.86455
staff	431	1288.90258
care	429	1282.92159
vaccination	418	1250.02617
jab	411	1229.09271
england	411	1229.09271
risk	401	1199.18778
pandemic	388	1160.31137
vaccinate	384	1148.3494
quarantine	374	1118.44447
death	368	1100.50151
measure	350	1046.67263
plan	338	1010.78671
travel	329	983.87227

continue	327	977.89128
coronavirus	324	968.9198
add	323	965.92931
protect	311	930.04339
positive	309	924.06241
dose	303	906.11945
variant	299	894.15747
return	296	885.18599
remain	290	867.24303
rate	279	834.34761
rise	277	828.36662
patient	272	813.41416
spread	272	813.41416
change	258	771.54725
scotland	253	756.59479
million	249	744.63281
contact	248	741.64232
level	247	738.65183
warn	246	735.66133
stay	241	720.70887
testing	239	714.72788
report	223	666.87999
allow	222	663.8895
social	222	663.8895
flu	221	660.899
reduce	221	660.899
increase	221	660.899
national	217	648.93703
booster	215	642.95604
self-isolation	206	616.0416
omicron	205	613.05111
close	204	610.06062
china	200	598.09864
right	199	595.10815
further	197	589.12716
require	197	589.12716
move	196	586.13667
five	195	583.14618
expect	195	583.14618
worker	193	577.16519

protection	190	568.19371
system	190	568.19371
receive	189	565.20322
live	189	565.20322
study	188	562.21273
suggest	188	562.21273
guidance	187	559.22223
disease	187	559.22223
age	186	556.23174
decision	186	556.23174
wave	185	553.24125
result	183	547.26026
datum	183	547.26026
cause	182	544.26977
concern	178	532.30779
late	178	532.30779
london	178	532.30779
figure	177	529.3173
isolate	175	523.33631
likely	175	523.33631
announce	175	523.33631
medical	175	523.33631
low	173	517.35533
open	172	514.36483
professor	172	514.36483
force	172	514.36483
second	171	511.37434
business	171	511.37434
policy	169	505.39335

Appendix E All topic-relevant linguistic metaphors identified in the cancer prevention corpus

Linguistic metaphor	Occurrences	Linguistic metaphor	Occurrences	Linguistic metaphor	Occurrences
cut	93	campaign	53	jab	39
way	33	step	28	monitor	21
eliminate	19	slash	19	target(ed)	18
access	18	fight	13	intervention	12
role	11	aim	10	approach	10
progress	10	go	10	move	10
tool	10	odds of	10	reverse	9
play	9	struggle	8	further	8
advance	8	switch	8	pick up	8
hit	7	revolutionary	7	defence	7
drive	7	pave	6	track	6
pathway	6	myth	6	wake-up call	6
barrier	6	revolution	5	combat	5
overhaul	5	perform	5	deploy	4
route	4	panacea	4	tailored	4
remove	4	value	4	cut out	3
fight off	3	guardian	3	mission	3
surveillance	3	pioneer	3	forward	3
path	3	launch	3	game	3
hail	3	kick	3	down	3
push	3	picture	3	win	3
punch	2	reap	2	resistance	2
attack	2	slam	2	blast	2
secure	2	reach	2	lead	2

direction	2	landmark	2	green light	2
position	2	MOT	2	stage	2
faith	2	cut down	2	one size fits all/one-size-fits-al l	2
block	2	appetite	2	shot	1
crackdown	1	nail	1	battle	1
wreck	1	fight back	1	hit out	1
harm	1	destroy	1	crusade	1
devastating	1	weapon	1	double-edged sword	1
safeguard	1	guard	1	mobilise	1
hunt	1	retreat	1	defeat	1
move along	1	fast	1	mile	1
stepping stone	1	step up	1	far	1
slog	1	follow	1	uphill	1
shift	1	move away	1	go away	1
fall behind	1	turn	1	halt	1
short cut	1	journey	1	accessible	1
footprint	1	stance	1	switch off	1
trigger	1	kick-start	1	restore	1
automatic	1	cycle	1	toolkit	1
villain	1	performance	1	tightrope	1
wizardry	1	silver bullet	1	holy grail	1
curse	1	doom	1	star	1

luck star	1	winning the world's craziest lottery, the shitty jackpot	1	regime	1
one piece of that puzzle	1	spell	1	whisper	1
alarm	1	bell	1	noise	1
resonance	1	awaken	1	fit	1
bury	1	unravel	1	uncover	1
close	1	door	1	close off	1
mire	1	spring clean	1	clear up	1
wield that duster from room to room	1	dust has gathered behind the sofa	1	wipe out	1
once-over	1	shine	1	brush	1
carpet	1	sweep	1	coming-of-age present	1

Appendix F All topic-relevant linguistic metaphors identified in the Covid-19 prevention corpus

Linguistic metaphor	Occurrences	Linguistic metaphor	Occurrences	Linguistic metaphor	Occurrences
jab	122	way	33	shot	31
move	30	fight	22	step	18
place	18	path	17	approach	16
regime	15	further	14	lock	13
go	12	contain	12	campaign	11
struggl(e/ing)	11	roadmap	11	drive	11
tier	10	target(ed/ing)	9	monitor	9
access	9	stage	9	dark	9
damage(/ing)	8	U-turn	8	unlock	8
barrier	8	defence	7	tool	7
role	7	tweak	7	aim	6
combat	6	break	6	surveillance	6
reach	6	milestone	6	rolling	6
movement	6	pace	6	bubble	6
package	6	cripple	5	hit	5
cut	5	harm	5	battle	5
eliminate	5	shield	5	ahead	5
return	5	brake	5	play	5
perform	5	theatre	5	weapon	4
devastating	4	crush	4	fight off	4
wreck	4	forward	4	stay	4
performance	4	nightmare	4	race	4
reopen	4	firebreak	4	guard	3
fortress	3	victory	3	retreat	3

route	3	backfire	3	circuit breaker	3
hurdle	3	light	3	tunnel	3
shelve	3	dodge	3	open up	3
clampdown	3	tyranny	3	fight back	2
fierce	2	ruin	2	revolt	2
slash	2	crackdown	2	slap	2
assault	2	sledgehammer	2	defend	2
fortify	2	wall of defence	2	march	2
deploy	2	surrender	2	lightning	2
blitz	2	pave	2	far	2
shift	2	round	2	direction	2
back	2	get back	2	remain	2
emergency brake	2	trigger	2	on-off	2
traffic light	2	launch	2	fiasco	2
faith	2	sacrifice	2	doom	2
myth	2	gamble	2	game	2
blind	2	bright	2	open	2
hold back	2	cell door	2	arrest	2
shackle	2	prison	2	anarchy	2
bash	1	attack	1	tear up	1
rebellion	1	hit out	1	chop	1
brutally	1	self-immolation	1	reap	1
split	1	hurt	1	painful	1
kill	1	bite	1	aggressive	1
wield	1	hammer	1	explosion	1
collapse	1	crushing blow	1	crumble	1
grapple	1	army	1	arm	1
blast	1	beat	1	clobber	1
hit back	1	indefensible	1	bastion	1

line of defence	1	defender	1	nuclear	1
deterrent	1	mission	1	conquer	1
triumph	1	defeat	1	Stasi	1
Stasi-dominated East Germany	1	Nazi Germany	1	bullies	1
battlefield	1	endgame	1	furlough	1
hostile	1	warring	1	swift	1
swiftly	1	faster	1	hurtle	1
set out	1	venture	1	halfway	1
step up	1	speed up	1	plot a map	1
head off	1	headlong	1	rush	1
give way	1	exit	1	diverge	1
departure	1	lag	1	stray	1
come back	1	turn around	1	backtrack	1
long, hard and desperate road	1	accessible	1	terminus	1
track	1	road	1	landmark	1
journey	1	slow	1	stroll-out	1
stagger	1	sluggish	1	drag	1
feet	1	driver	1	fatigue	1
dismantle	1	indicator	1	handbrake	1
cycle	1	seatbelt	1	switch	1
failsafe	1	reverse gear	1	reverse	1
turbo-charge	1	a TV game show	1	juggle	1
panacea	1	silver bullet	1	magic bullet	1
believer	1	piously	1	sinister	1
doctrine	1	preach	1	miraculous	1

dogma	1	prophet	1	demonisation	1
zealot	1	magic spell	1	saga	1
kick off	1	Snakes and Ladders	1	house of cards	1
dice	1	monopoly	1	hide-and-see k	1
playmate	1	prize	1	blink	1
bleakness	1	darkness	1	spell	1
spell out	1	one-size-fits-all	1	patchwork	1
fit	1	cower	1	throw off	1
put	1	push	1	dust off	1
lock up	1	trap	1	obstruct	1
block	1	stuck	1	suffocate	1
chain	1	punish	1	internment	1
lead-lined bunkers	1	glass case	1	cocoon	1
dictator	1	totalitarian dictatorship	1	police state	1
tsar	1	fuel	1	architect	1

Appendix G The 10 most statistically significant collocates for each vehicle type in the cancer prevention corpus

Collocates are listed in descending order of logDice value.

Vehicle	Top 10 statistically significant collocates
step	step, next, forward, take, towards, toward, first, follow, down, further
approach	adopt, holistic, innovative, different, develop, take, integrated, management, approach, traditional
progress	toward, monitor, towards, slow, track, make, technological, significant, report, progress
further	information, detail, investigation, step, enhance, develop, development, research, study, contact
advance	thanks, technological, technology, cash, payday, ticket, loan, science, agenda, understanding
pave	asphalt, way, road, slab, driveway, path, paving, stone, pave, gravel
pioneer	Pioneer, settler, Valley, aviation, Square, pioneer, Woman, Mormon, innovative, spirit
forward	look, move, step, push, put, lean, straight, fast, backward, go
reach	agreement, goal, conclusion, out, until, level, audience, peak, height, beyond
lead	provider, manufacturer, team, light, role, lead, development, global, company, supplier
move along	microtubule, continuum, briskly, geodesic, kinesin, ecliptic, conveyor, smoothly, x-axis, axis
fast	pace, grow, speed, food, fast, furious, easy, slow, forward, enough
mile	km, square, north, mile, south, away, west, approximately, east, per
stepping stone	stumbling, stepping, Monkee, Brackman, Cornerstone, towards, Monkees, HTML4, stardom, eventual
step up	plate, ladder, transformer, effort, willing, definite, urge, ready, podium, cooperation

far	so, too, away, thus, beyond, than, concern, less, go, more
slog	slog, uphill, seep, Zil, mud, scree, Kneser, joyless, tedious, muck
follow	instruction, guideline, procedure, step, 1, twitter, rule, link, by
go	back, beyond, through, let, ahead, down, into, far, wrong, forward
move	forward, towards, away, toward, into, quickly, around, direction, fast, slowly
direction	opposite, under, direction, move, step, right, strategic, wind, head, funeral
uphill	downhill, battle, steeply, climb, steep, slog, uphill, trek, sprint, hike
shift	paradigm, shift, gear, towards, focus, toward, away, burden, phase, night
move away	eerie-ass, fossil, reliance, Trafford, fee-for-service, one-size-fits-all, paper-based, dependence, Anfield, traditional
go away	wont, headache, magically, pain, anytime, symptom, quietly, refuse, Rain, everlasting
fall behind	academically, schoolwork, best-of-7, 3-games-nil, repayment, Duggal, competitor, stagnate, mortgage, grade-level
turn	into, off, out, around, away, onto, down, back, head, attention
halt	grind, screeching, abrupt, temporarily, screech, skid, abruptly, progression, trading, sudden
way	along, pave, easy, find, different, same, good, there, either, effective
access	Internet, easy, gain, information, user, datum, provide, resource, allow, service
track	record, keep, track, album, down, title, race, fast, progress, audio
pathway	signal, metabolic, pathway, activation, Wnt, neural, transduction, activate, kinase, MAPK
route	en, Route, route, bus, along, Road, map, via, alternate, State
path	path, career, cross, along, walk, follow, bike, beaten, choose, down

landmark	historic, iconic, landmark, designate, preservation, famous, historical, ruling, Supreme, architectural
short cut	CTRL, Kyser, Ctrl, Destktop, ZHPDiag, Kumbh, Fanclub, ctrl, Stonor, Mela
journey	embark, begin, spiritual, through, journey, long, epic, discovery, start, towards
accessible	easily, wheelchair, readily, publicly, affordable, via, handicap, Handicapped, freely, accessible
green light	emit, Gatsby, Light, flash, Lorde, blink, eerie, give, nm, wavelength
position	hold, position, leadership, occupy, fill, current, take, full-time, pole, relative
footprint	carbon, ecological, footprint, reduce, Carbon, environmental, expand, dinosaur, geographic, minimize
stance	stance, aggressive, soften, monetary, neutral, hardline, adopt, defensive, accommodative, proactive
cut	off, edge, tax, budget, down, short, cut, spending, piece, half
campaign	marketing, launch, presidential, election, advertising, Trump, ad, awareness, campaign, against
jab	jab, AstraZeneca, flu, Pfizer, uppercut, booster, Jaan, Covid, Tak, Hai
eliminate	reduce, completely, virtually, unnecessary, altogether, barrier, possibility, waste, minimize, thereby
slash	slash, 4x4, hack, 'EM, throat, 2wd, sword, Hack, stab, spending
target(ed)	audience, target, specific, achieve, attack, hit, specifically, reach, market, gene
fight	against, battle, fight, war, enemy, back, win, hard, terrorism, force
revolution	Industrial, French, revolution, industrial, Russian, socialist, Cultural, Islamic, proletarian, American
revolutionary	War, Guard, socialist, Marxist, Corps, revolutionary, movement, Armed, Party, proletariat
aim	study, achieve, improve, project, at, initiative, promote, objective, programme, reduce

struggle	against, class, armed, liberation, struggle, survive, freedom, independence, cope, financially
hit	hard, ball, button, hit, big, run, target, shot, ground, head
combat	combat, hand-to-hand, terrorism, trafficking, brigade, troop, melee, tactical, aircraft, infantry
cut out	middleman, cutter, cardboard, scissors, glue, rectangle, tongue, cardstock, shape, circle
fight off	horde, invader, infection, immune, germ, attacker, pathogen, bacterium, intruder, antibody
cut down	tree, drastically, forest, spam, intake, strikeout, grove, clutter, rainforest, firewood
punch	one-two, sucker, punch, pack, hole, kick, gut, Punch, throw, fist
reap	Siem, sow, reward, benefit, whirlwind, harvest, Cambodia, Angkor, windfall, Phnom
resistance	insulin, antibiotic, corrosion, resistance, antimicrobial, abrasion, gene, overcome, thermal, drug
attack	terrorist, heart, attack, against, enemy, panic, launch, terror, kill, target
slam	Grand, dunk, grand, shut, door, Dunk, fist, poetry, brake, slam
blast	furnace, bomb, blast, shotgun, radius, explosive, nuclear, injure, absolute, horn
shot	fire, shot, flu, screen, hit, booster, shoot, block, miss, gun
crackdown	Tiananmen, dissent, brutal, pro-democracy, protester, dissident, violent, anti-government, demonstrator, intensify
nail	polish, nail, coffin, salon, hammer, tooth, manicure, remover, toe, Nail
battle	fight, battle, win, against, uphill, cancer, Battle, lose, defeat, epic
wreck	havoc, Crew, wreck, Ball, dive, reef, train, diving, salvage, nervous
fight back	against, oppressor, powerless, vow, tear, invader, bully, horde, resist, tyranny
hit out	Narendra, Mamata, Owaisi, Asaduddin, BJP-led, Vadra, Rahul, Kejriwal, Akhilesh, Modi

harm	bodily, cause, reduction, inflict, irreparable, harm, serious, Reduction, grievous, risk
destroy	fire, enemy, completely, damage, destroy, planet, utterly, building, threaten, kill
crusade	crusade, inquisition, Albigensian, Campus, Castles, burning, evangelistic, Constantinople, Indiana, jihad
devastating	earthquake, consequence, tsunami, flood, wildfire, potentially, hurricane, impact, effect, blow
weapon	nuclear, destruction, weapon, chemical, mass, assault, armor, biological, deadly, lethal
double-edged sword	Exceptionalism, double-edged, Khanda, wield, jian, Autophagy, proverbial, khanda, Sharper, penetrate
defence	Ministry, Force, defence, Minister, missile, minister, Secretary, aerospace, ministry, counsel
guardian	galaxy, angel, parent, litem, Guardian, Angel, guardian, newspaper, appoint, retrieve
secure	safe, funding, SSL, victory, reliable, secure, loan, payment, access, server
safeguard	procedural, safeguard, IAEA, privacy, adequate, welfare, integrity, protect, Children, constitutional
guard	Coast, National, security, guard, Revolutionary, Army, armed, Air, prison, catch
monitor	closely, monitor, progress, LCD, continuously, compliance, computer, activity, sensor, performance
intervention	prevention, intervention, surgical, therapeutic, military, behavioral, effectiveness, evidence-based, humanitarian, divine
deploy	troop, personnel, missile, Afghanistan, Iraq, application, deploy, solution, rapidly, technology
mission	mission, statement, accomplish, Mission, NASA, fulfill, rescue, Mars, vision, impossible
surveillance	reconnaissance, surveillance, NSA, camera, Intelligence, CCTV, footage, monitoring, drone, electronic
mobilise	mobilise, reservist, organise, mobilisation, sensitise, resource, Yeovil, grassroots, demobilise, supporter
hunt	scavenger, witch, treasure, Hunt, deer, hunt, Treasure, Easter, hunter, Egg

retreat	retreat, glacier, hasty, yoga, meditation, army, spa, force, troop, spiritual
defeat	enemy, army, suffer, victory, opponent, incumbent, champion, election, Republican, battle
tool	powerful, tool, use, useful, software, management, develop, provide, online, help
reverse	osmosis, trend, mortgage, transcriptase, reverse, engineering, polarity, remand, engineer, direction
switch	Nintendo, switch, mode, off, flip, toggle, light, ignition, between, circuit
drive	hard, car, drive, USB, vehicle, disk, growth, flash, away, truck
overhaul	MRO, overhaul, undergo, Repair, repair, sweeping, shipyard, maintenance, radical, major
launch	campaign, announce, rocket, new, attack, satellite, recently, missile, initiative, officially
MOT	bon, mot, clé, juste, servicing, Summ, bons, tester, Def, Jezebel, Tester, PI, Defs, Mot, VOSA, DVSA, les, Ponyobons, tyre, sorn, V5, sPonyobons, Opp'n, DVLA, PIs, le, Cash, Clé, Supp, Acharei, mileage, percept, advisory, magneto-optical, expiry, Dag, prelim, Inj, garage, Les, V5C, OTR, Bon, roadworthy, Motorola, expire, Resp, retest, Cranleigh, HPI, Testing, chose, qui, ordre, mid-life, certificate, Baal, passe, exempt, un, Dau, Reg, ECF, repair, jeu, Aharei, Kwik, logbook, Repair, NYSE, Transport, warranty, reg, scrap, des, roadworthiness, failure, cambelt, eee, Horsham, géographique, jour, gearbox, NCT, ce, Kedoshim, mem, dernier, valid, valet, testing, Dinas, See, LPG, sur, FSH, Tyre, cert, technician, Recon
switch off	unplug, ignition, analogue, stove, non-essential, appliance, unwind, Hazelwood, disconnect, fortnight
trigger	trigger, pull, alarm, Chrono, finger, reaction, asthma, warning, alert, event
kick-start	stalled, kick-start, moribund, metabolism, career, CSIRO, craze, renaissance, flagging, footrest
restore	backup, restore, habitat, balance, confidence, original, beautifully, fully, peace, glory
automatic	transmission, manual, gearbox, automatic, six-speed, Transmission, detection, eight-speed, rifle, fully

cycle	cycle, menstrual, vicious, life, Life, cell, election, carbon, phase, duty
toolkit	Toolkit, toolkit, FoneDog, Gui, Qt, GTK, Cuda, Ajax, RDA, open-source
role	play, important, key, leadership, vital, model, crucial, critical, significant, responsibility
play	role, game, music, important, guitar, player, song, football, key, play
perform	task, duty, function, analysis, operation, song, art, procedure, test, Arts
stage	early, stage, final, development, set, at, late, initial, cancer, various
villain	hero, villain, Batman, Marvel, Spider-Man, superhero, super, Bond, evil, comic
performance	improve, high, performance, measure, improvement, deliver, overall, live, indicator, enhance
tightrope	walker, Wallenda, tightrope, Blondin, trapeze, unicycle, Petit, juggler, walking, Monée
myth	dispel, debunk, legend, myth, perpetuate, bust, Greek, misconception, folklore, ancient
panacea	Biotec, Panacea, cure-all, ail, Adviser, Esculapius, panacea, woe, ill, Prozac
luck star	O'Hara, buffet, star, bad, good, your, my, one, you, have
star	Wars, Trek, star, movie, film, Star, bright, rating, guest, rise
faith	Christian, faith, Christ, Catholic, God, Jesus, religious, leap, belief, religion
wizardry	Hogwarts, witchcraft, wizardry, Swords, ultima, eldritch, sorcery, Hogwart, Roke, Sir-Tech
silver bullet	Seeger, panacea, Coors, Band, one-size-fits-all, airstream, werewolf, buckshot, Vehicross, Xcelerator
holy grail	Monty, python, Carta, Magna, grail, Blood, bloodline, Baigent, Quest, Arthurian
curse	blessing, curse, bless, silently, mutter, swear, breath, witch, yell, dimensionality
doom	gloom, impending, Doom, doom, eternal, Doctor, quake, patrol, failure, MF

odds of	happening, bookmaker, jackpot, slim, lottery, survival, Powerball, adjusted, lotto, bookie
game	play, video, game, player, win, season, football, fun, online, console
win	award, championship, title, medal, race, game, election, chance, prize, Cup
winning the world's craziest lottery, the shitty jackpot	
wake-up call	sobering, wake-up, much-need, KSFR, 5am, complacent, clarion, policymaker, heed, long-overdue
one piece of that puzzle	just, would, only, we, but, this, be, will, they, it
hail	Hail, hail, Mary, cab, rain, storm, taxi, sleet, tornado, bullet
spell	cast, spell, magic, caster, checker, correctly, casting, Spell, doom, wizard
whisper	ear, softly, lean, whisper, voice, hush, barely, Pines, kiss, quietly
alarm	alarm, clock, bell, false, smoke, burglar, fire, Clock, audible, trigger
bell	ring, whistle, Taco, pepper, Bell, tower, alarm, bell, Labs, ringing
noise	loud, noise, reduction, pollution, vibration, background, ambient, signal, cancellation, hear
resonance	magnetic, imaging, MRI, Imaging, spectroscopy, NMR, fMRI, plasmon, resonance, tomography
awaken	Force, Wars, slumber, Kundalini, awaken, rudely, Star, kundalini, consciousness, dormant
tailored	trouser, bespoke, blazer, tailored, suit, jacket, blouse, one-to-one, solution, skirt
one size fits all/one-size-fits-all	cookie-cutter, top-down, approach, mentality, prescriptive, solution, one-size-fits-all, off-the-shelf, government-run, straitjacket
fit	perfectly, perfect, size, into, nicely, bill, fit, model, well, tight
kick the can down the road	debt-limit, half-measure, do-nothing, prevaricate, Eurogroup, stopgap, Sunak, QE, Lawmaker, band-aid

bury ... head in the sand	ostrich, bury, ostrich-like, Bury, self-delusion, proverbial, pretend, shirk, platitude, tantamount
remove	from, remove, barrier, replace, add, completely, heat, easily, UTC, skin
unravel	mystery, tangled, knot, unravel, enigma, riddle, complexity, secret, tangle, conspiracy
uncover	hidden, secret, truth, mystery, archaeologist, excavation, conspiracy, investigation, simmer, clue
barrier	reef, overcome, great, blood-brain, barrier, break, entry, remove, language, protective
push	button, boundary, forward, back, pull, envelope, hard, limit, aside, notification
spring clean	Taisce, Torfaen, anti-litter, declutter, Starship, LitterFree, Royd, de-clutter, Dundry, AUSXIP
clear up	misconception, confusion, misunderstanding, acne, ambiguity, misperception, mess, misinformation, pimple, blemish
wield that duster from room to room	
dust has gathered behind the sofa	
wipe out	Surfaris, Amalek, skillet, humanity, vestige, threaten, entire, mankind, polio, illiteracy
once-over	twice-over, cursory, once-over, copyedit, thorough, duster, disdainful, copy-edit, appreciative, undisguised
shine	sun, brightly, spotlight, bright, light, rain, moon, star, shine, knight
brush	tooth, brush, paint, bristle, hair, aside, stroke, floss, comb, scrub
sweep under the carpet	inconvenient, risky, driving, everyday, keen, scandal, prefer, pretend, ignore, tend

Appendix H The 10 most statistically significant collocates for each vehicle type in the Covid-19 prevention corpus

Collocates are listed in descending order of logDice value.

Vehicle	Top 10 statistically significant collocates
jab	jab, AstraZeneca, flu, Pfizer, uppercut, booster, Jaan, Covid, Tak, Hai
shot	fire, shot, flu, screen, hit, booster, shoot, block, miss, gun
fight	against, battle, fight, war, enemy, back, win, hard, terrorism, force
campaign	marketing, launch, presidential, election, advertising, Trump, ad, awareness, campaign, against
struggl(e/ing)	against, class, armed, liberation, struggle, survive, freedom, independence, cope, financially
target(ed/ing)	audience, target, specific, achieve, attack, hit, specifically, reach, market, gene
damag(e/ing)	cause, repair, damage, suffer, inflict, loss, property, brain, collateral, prevent
aim	study, achieve, improve, project, at, initiative, promote, objective, programme, reduce
combat	combat, hand-to-hand, terrorism, trafficking, brigade, troop, melee, tactical, aircraft, infantry
break	down, heart, into, record, barrier, news, up, ground, rule, lunch
cripple	Creek, Inishmaan, cripple, maim, severely, financially, polio, emotionally, economy, arthritis
hit	hard, ball, button, hit, big, run, target, shot, ground, head
cut	off, edge, tax, budget, down, short, cut, spending, piece, half
harm	bodily, cause, reduction, inflict, irreparable, harm, serious, Reduction, grievous, risk
battle	fight, battle, win, against, uphill, cancer, Battle, lose, defeat, epic
eliminate	reduce, completely, virtually, unnecessary, altogether, barrier, possibility, waste, minimize, thereby
weapon	nuclear, destruction, weapon, chemical, mass, assault, armor, biological, deadly, lethal
devastating	earthquake, consequence, tsunami, flood, wildfire, potentially, hurricane, impact, effect, blow
crush	crush, Candy, crusher, garlic, skull, clove, rebellion, defeat, Saga, grind
wreck	havoc, Crew, wreck, Ball, dive, reef, train, diving, salvage, nervous
fight off	horde, invader, infection, immune, germ, attacker, pathogen, bacterium, intruder, antibody

fight back	against, oppressor, powerless, vow, tear, invader, bully, horde, resist, tyranny
fierce	fighting, competition, rivalry, battle, warrior, opposition, rival, competitor, fierce, resistance
ruin	castle, ancient, ruin, Mayan, reputation, temple, Castle, Roman, Abbey, fort
revolt	revolt, peasant, Peasants, slave, Arab, suppress, Maccabean, Pueblo, quell, rebellion
slash	slash, 4x4, hack, 'EM, throat, 2wd, sword, Hack, stab, spending
crackdown	Tiananmen, dissent, brutal, pro-democracy, protester, dissident, violent, anti-government, demonstrator, intensify
slap	wrist, slap, forehead, cheek, bitch, face, ass, tariff, thigh, bang
assault	sexual, sexually, rifle, aggravate, rape, harassment, weapon, assault, robbery, victim
sledgehammer	C.S.S., sledgehammer, Ergenekon, crowbar, Condrey, Treyarch, scalpel, Activision, subtlety, pickaxe
bash	Birthday, bash, Wrye, Bash, shell, birthday, script, bin, sh, Halloween
attack	terrorist, heart, attack, against, enemy, panic, launch, terror, kill, target
tear up	rulebook, dancefloor, tarmac, NAFTA, asphalt, rule-book, floorboard, double-face, renegotiate, bulldozer
rebellion	extinction, Boxer, rebellion, quell, suppress, Taiping, Jacobite, armed, whiskey, Bacon
hit out	Narendra, Mamata, Owaisi, Asaduddin, BJP-led, Vadra, Rahul, Kejriwal, Akhilesh, Modi
chop	finely, onion, pork, chop, parsley, garlic, tomato, clove, pepper, cilantro
brutally	honest, murder, repress, torture, rape, suppress, frank, persecute, beat, slaughter
self-immolation	Bouazizi, Tiananmen, jauhar, self-immolation, Palach, Thích, Quảng, Sati, Ngaba, Đức
reap	Siem, sow, reward, benefit, whirlwind, harvest, Cambodia, Angkor, windfall, Phnom
split	evenly, split, into, between, two, apart, separate, half, Split, personality
hurt	hurt, feeling, badly, someone, anyone, seriously, anger, pain, nobody, knee
painful	swollen, excruciatingly, painful, uncomfortable, urination, cramp, sore, sensation, extremely, memory
kill	injure, wound, civilian, soldier, kill, people, shoot, him, man, attack
bite	lip, mosquito, bullet, bite, snake, tongue, insect, tick, bug, spider

aggressive	passive, behavior, overly, stance, behaviour, tactic, violent, cancer, aggressive, driving
wield	sword, axe, weapon, machete, lightsaber, knife, clout, dual, hammer, spear
hammer	hammer, sledge, nail, Thor, chisel, Hammer, anvil, dulcimer, sickle, Armie
explosion	supernova, explosion, Cambrian, nuclear, bomb, injure, Beirut, fire, gunfire, massive
collapse	Soviet, verge, brink, Union, collapse, economic, civilization, economy, empire, USSR
crushing blow	potlatching, +40, airdrome, Blow, exarch, AOE, +100, lvl, merc, USMCA
crumble	feta, bacon, cheese, crumble, dust, rhubarb, apple, empire, cookie, edifice
grapple	hook, grapple, Hook, Beam, MMA, fallout, wrestle, BJJ, flat-footed, dilemma
army	Corps, U.S., Salvation, British, Engineers, soldier, Air, officer, Army, US
arm	leg, coat, wrap, shoulder, arm, chest, upper, around, length, neck
blast	furnace, bomb, blast, shotgun, radius, explosive, nuclear, injure, absolute, horn
beat	heart, drum, beat, egg, skip, hard, death, team, opponent, rhythm
clobber	clobber, overhand, Passages, asm, shar, clothesline, Cyberverser, homer, mid-wicket, errno
hit back	half-time, BJP, equalise, Carnaross, Mourinho, equaliser, Kangana, shamer, re-select, Holbeach
defence	Ministry, Force, defence, Minister, missile, minister, Secretary, aerospace, ministry, counsel
shield	shield, Cross, Blue, Sword, sword, Shield, spear, armor, protective, radiation
guard	Coast, National, security, guard, Revolutionary, Army, armed, Air, prison, catch
fortress	B-17, Flying, fortress, solitude, dwarf, impregnable, Louisbourg, Maximus, medieval, castle
wall of defence	impregnable, impenetrable, circumscribe, jab, encroachment, Scot, widen, bolster, booster, vaccine
line of defence	FloD, Isosaari, colistin, Safarov, Melkki, 1LOD, Rufat, Zulus, cyber-attack, BSF
defend	champion, against, successfully, themselves, himself, title, attack, champ, vigorously, thesis
fortify	fortify, cereal, heavily, vitamin, castle, manor, B12, folic, citadel, bunker

indefensible	morally, ethically, indefensible, defend, inexcusable, pre-1967, unjustifiable, reprehensible, scientifically, intellectually
lead-lined bunkers	in
bastion	bastion, Fisherman, Hollow, conservatism, rampart, liberalism, fortification, fort, supergiant, Helmand
defender	defender, Rover, attacker, midfielder, footballer, Public, staunch, Rights, goalkeeper, central
monitor	closely, monitor, progress, LCD, continuously, compliance, computer, activity, sensor, performance
surveillance	reconnaissance, surveillance, NSA, camera, Intelligence, CCTV, footage, monitoring, drone, electronic
march	UTC, retrieve, talk, March, April, February, Archived, [number], Saturday, Friday
deploy	troop, personnel, missile, Afghanistan, Iraq, application, deploy, solution, rapidly, technology
nuclear	weapon, Iran, reactor, nuclear, plant, power, missile, bomb, disarmament, warhead
deterrent	nuclear, deterrent, credible, Trident, burglar, would-be, theft, punishment, repellent, ground-based
mission	mission, statement, accomplish, Mission, NASA, fulfill, rescue, Mars, vision, impossible
victory	margin, defeat, celebrate, over, decisive, win, victory, Cup, secure, election
retreat	retreat, glacier, hasty, yoga, meditation, army, spa, force, troop, spiritual
surrender	unconditional, surrender, voluntarily, garrison, Appomattox, Japanese, unconditionally, sovereignty, refuse, Japan
conquer	Command, conquer, divide, territory, Divide, invade, empire, kingdom, conqueror, Empire
triumph	tragedy, triumph, adversity, Bonneville, motorcycle, evil, Tiger, Arch, spitfire, tribulation
defeat	enemy, army, suffer, victory, opponent, incumbent, champion, election, Republican, battle
lightning	thunder, bolt, strike, Tampa, lightning, flash, rod, Lightning, Bolt, storm
blitz	Blitz, blitz, HPI, linebacker, ESE, Rapid, bejeweled, Chess, ballroom, RTR
Stasi	Stasi, Mielke, KGB, MfS, Staatssicherheit, Eldredge, GDR, Gestapo, Wiesler, informer

Stasi-dominated East Germany	
Nazi Germany	Fascist, Hitler, Adolf, Soviet, Stalinist, Anschluss, USSR, Weimar, annex, fascist
bullies	schoolyard, bully, coward, thug, Broad, torment, bigot, playground, taunt, bully-victim
battlefield	battlefield, Gettysburg, hardline, Antietam, Somme, EA, V, Duty, Manassas, soldier
endgame	avenger, endgame, rook, pawn, tablebase, Thanos, infinity, middlegame, Beckett, Russo
furlough	layoff, furlough, unpaid, scheme, redundancy, CJRS, laid-off, employee, Furlough, shutdown
hostile	takeover, environment, openly, hostile, indifferent, Indians, territory, increasingly, intimidating, alien
warring	Period, Sengoku, Kahale, 475-221BC, 476BC-221BC, Jidai, Amarinder, Warring, zhàn, guó
step	step, next, forward, take, towards, toward, first, follow, down, further
approach	adopt, holistic, innovative, different, develop, take, integrated, management, approach, traditional
further	information, detail, investigation, step, enhance, develop, development, research, study, contact
reach	agreement, goal, conclusion, out, until, level, audience, peak, height, beyond
milestone	milestone, celebrate, developmental, mark, reach, achieve, achievement, deliverable, significant, anniversary
rolling	Stone, Stones, Thunder, hill, Beatles, pin, Rolling, countryside, ball, blackout
ahead	go, lie, straight, forge, curve, schedule, plan, stay, move, step
forward	look, move, step, push, put, lean, straight, fast, backward, go
pave	asphalt, way, road, slab, driveway, path, paving, stone, pave, gravel
far	so, too, away, thus, beyond, than, concern, less, go, more
swift	Taylor, Swift, Current, Boat, Jonathan, swift, Suzuki, Maruti, Gulliver, chimney
swiftly	decisively, react, silently, efficiently, glide, move, smoothly, swiftly, respond, flowing
faster	faster, than, speed, grow, much, harder, heal, efficiently, significantly, move
hurtle	headlong, breakneck, asteroid, earthward, toward, hurtle, towards, meteor, abyss, Myrtle

set out	paragraph, criterion, Appendix, Schedule, accomplish, guideline, Article, principle, accordance, Annex
venture	afield, forth, territory, farther, dare, beaten, guess, outdoors, uncharted, into
halfway	decent, through, halfway, mark, roughly, stair, between, house, thru, across
step up	plate, ladder, transformer, effort, willing, definite, urge, ready, podium, cooperation
speed up	metabolism, process, workflow, healing, slow, simplify, recovery, computation, dramatically, loading
move	forward, towards, away, toward, into, quickly, around, direction, fast, slowly
go	back, beyond, through, let, ahead, down, into, far, wrong, forward
roadmap	roadmap, strategic, NIH, lockdown, reopen, outline, ESFRI, implementation, milestone, Recovery
movement	movement, social, civil, freedom, Rights, political, Civil, labor, bowel, protest
shift	paradigm, shift, gear, towards, focus, toward, away, burden, phase, night
round	round, second, pick, final, first, trip, draft, third, Table, funding
plot a map	plot, location, script, map, star, cell, show, datum, track, land
direction	opposite, under, direction, move, step, right, strategic, wind, head, funeral
head off	rip, lop, bite, chop, scream, beaten, blow, laugh, bawl, shotgun
headlong	plunge, hurtle, rush, dive, careen, tumble, hurl, precipice, abyss, gallop
rush	yard, Limbaugh, touchdown, adrenaline, Gold, rush, gold, hospital, hour, TD
give way	roundabout, pedestrian, oncoming, despair, cyclist, hon., meadow, despondency, oblige, gradually
exit	exit, entrance, Interstate, poll, entry, ramp, enter, roundabout, Route, onto
diverge	converge, lineage, diverge, interchange, sharply, clade, ancestor, wildly, radically, markedly
departure	arrival, radical, airport, prior, departure, lane, lounge, sudden, abrupt, flight
lag	jet, behind, lag, turbo, B'Omer, indicator, Jet, shutter, noticeable, stutter
stray	cat, bullet, capacitance, feral, Cheryl, dog, Dogs, stray, kitten and Dog
U-turn	U-turn, RCUT, left-turn, abrupt, screeching, signalize, southbound, roundabout, intersection, northbound
return	tax, investment, home, value, normal, return, after, function, upon,

	when
back	forth, bring, come, go, get, then, push, head, turn, pull
get back	normal, track, ex, eager, soon, foot, itch, wait, ASAP, swing
come back	haunt, bite, tomorrow, later, again, soon, wait, hope, someday, beg
turn around	fortune, Drown, retrace, low-performing, quick, repent, everytime, tat, ailing, Everytime
backtrack	backtrack, prolog, recursive, regex, recursion, parser, Kali, depth-first, lookahead, dependency-directed
way	along, pave, easy, find, different, same, good, there, either, effective
path	path, career, cross, along, walk, follow, bike, beaten, choose, down
access	Internet, easy, gain, information, user, datum, provide, resource, allow, service
route	en, Route, route, bus, along, Road, map, via, alternate, State
long, hard and desperate road	
accessible	easily, wheelchair, readily, publicly, affordable, via, handicap, Handicapped, freely, accessible
terminus	Termius, Mosh, Telnet, SSH, ssh, Apps, co-funder, Client, sync, iPad
track	record, keep, track, album, down, title, race, fast, progress, audio
road	Road, along, road, down, trip, traffic, mile, side, bridge, dirt
landmark	historic, iconic, landmark, designate, preservation, famous, historical, ruling, Supreme, architectural
journey	embark, begin, spiritual, through, journey, long, epic, discovery, start, towards
place	take, where, put, first, emphasis, safe, in, third, second, order
pace	slow, fast, rapid, steady, accelerate, leisurely, quicken, keep, snail, brisk
stay	tune, away, hotel, home, night, healthy, safe, overnight, until, long
remain	until, unchanged, silent, intact, still, while, unclear, same, constant, largely
slow	down, pace, speed, growth, cooker, motion, slow, fast, progress, steady
stroll-out	A-checklist, Brazen, armful, Ugg, nonchalantly, thief, Maxx, leisurely, pier, casually
stagger	Leeroy, backwards, drunkenly, drunken, backward, stagger, drunk, lurch, daze, stumble
sluggish	unresponsive, lethargic, bloated, digestion, sluggish, metabolism, thyroid, economy, tired, pace
drag...feet	foot, feet, wearily, hind, procrastinate, leaden, stirrup, dawdle, unceremoniously, aerodynamic
drive	hard, car, drive, USB, vehicle, disk, growth, flash, away, truck

tool	powerful, tool, use, useful, software, management, develop, provide, online, help
brake	brake, disc, caliper, pad, pedal, rear, steering, rotor, ABS, wheel
backfire	spectacularly, backfire, horribly, badly, ploy, prank, disastrously, tactic, Tu-22M, sputter
circuit breaker	Breaker, breaker, MCB, GFCI, fuse, resettable, SF6, MCCB, Fuse, RCCB
emergency brake	train-initiated, Eba, EBD, Lokar, brakeforce, provincewide, Brakeforce, EBFD, anti-lock, AEB
trigger	trigger, pull, alarm, Chrono, finger, reaction, asthma, warning, alert, event
on-off	on-off, OOK, SPST, off-on, keyed, 2024F, switch, intermittency, DSGC, Direction-Selective
traffic light	intersection, crosswalk, amber, Rt, Rte, prix, junction, roundabout, front-of-pack, Rd
launch	campaign, announce, rocket, new, attack, satellite, recently, missile, initiative, officially
driver	license, taxi, driver, truck, bus, seat, passenger, vehicle, car, install
fatigue	chronic, syndrome, fatigue, headache, nausea, adrenal, dizziness, muscle, CFS, compassion
dismantle	racism, reassemble, systematically, apartheid, supremacy, systemic, dismantle, nuclear, oppression, patriarchy
indicator	indicator, Key, performance, KPIs, key, economic, Performance, technical, dial, reliable
handbrake	handbrake, MakeMKV, libdvdcss, MKV, MP4, VLC, WinX, lever, gearshift, transcoder
cycle	cycle, menstrual, vicious, life, Life, cell, election, carbon, phase, duty
seatbelt	fasten, pretensioner, airbag, seatbelt, unbuckle, buckle, pre-tensioner, limiter, three-point, unfasten
switch	Nintendo, switch, mode, off, flip, toggle, light, ignition, between, circuit
failsafe	failsafe, RTL, Talaos, Pixhawk, EKFAEM, Wideband, APM, Liquiphant, killswitch
reverse gear	synchromesh, tilt-down, push-down, Ragonnet, Seven-speed, DC100, Kincrome, OXKB, memory-linked, layshaft
reverse	osmosis, trend, mortgage, transcriptase, reverse, engineering, polarity, remand, engineer, direction
turbo-charge	OS-1, freeport, snoot, inflexion, multipolar, sunglass, no-deal, post-Brexit, isolating, roll-out
stage	early, stage, final, development, set, at, late, initial, cancer, various
role	play, important, key, leadership, vital, model, crucial, critical, significant, responsibility

play	role, game, music, important, guitar, player, song, football, key, play
perform	task, duty, function, analysis, operation, song, art, procedure, test, Arts
theatre	Theatre, musical, Company, theatre, Dance, Royal, repertory, Festival, cinema, production
performance	improve, high, performance, measure, improvement, deliver, overall, live, indicator, enhance
fiasco	Lupe, fiasco, subprime, sub-prime, Ricks, OC, Gelato, Enron, L4, WMD
a TV game show	contestant, buzzer, paraphernalia, jeopardy, Emmy, jackpot, panelist, peep, parody, MC
juggle	Chatroom, Gosling, juggle, Bride8, juggling, motherhood, unicycle, juggler, Destiny, childcare
nightmare	Elm, nightmare, logistical, dream, recur, wake, haunt, flashback, scenario, Freddy
faith	Christian, faith, Christ, Catholic, God, Jesus, religious, leap, belief, religion
sacrifice	altar, sacrifice, willing, ultimate, ritual, sin, Christ, offering, god, bunt
doom	gloom, impending, Doom, doom, eternal, Doctor, quake, patrol, failure, MF
myth	dispel, debunk, legend, myth, perpetuate, bust, Greek, misconception, folklore, ancient
panacea	Biotech, Panacea, cure-all, ail, Adviser, Esculapius, panacea, woe, ill, Prozac
silver bullet	Seeger, panacea, Coors, Band, one-size-fits-all, airstream, werewolf, buckshot, Vehicross, Xcelerator
magic bullet	Colorista, Ehrlich, NutriBullet, Trapcode, blender, Denoiser, Specter, panacea, Arlen, hypodermic
believer	unbeliever, believer, Christ, true, non-believer, firm, priesthood, Gentile, baptism, faith
piously	holily, intone, soberly, righteously, devoutly, virtuously, impiously, chastely, declaim, blamelessly
sinister	argent, gules, bendwise, dexter, sable, sinister, azure, Mister, bend, motive
doctrine	covenant, doctrine, trinity, false, Catholic, Faith, Christian, Monroe, preach, Fairness
preach	sermon, gospel, choir, preach, preacher, pulpit, Sermon, Word, pastor, doctrine
miraculous	Ladybug, healing, Medal, deliverance, miraculous, cure, comeback, supernatural, feat, recovery
dogma	dogma, creed, infallibility, Conception, doctrine, immaculate, Dragon, papal, religious, Marian

prophet	Muhammad, false, Allah, Isaiah, apostle, Holy, Mohammed, prophet, PBUH, Jeremiah
demonisation	dehumanisation, Chavs, delegitimisation, scapegoate, criminalisation, vilification, stigmatisation, demonisation, mischaracterisation, deligitimisation
zealot	zealot, Zona, anti-gun, fanatical, anti-smoking, religious, fanatic, anti-abortion, Sicarii, Masada
magic spell	dispel, Zipes, AoL, Spells, Frobozz, Rit, caster, incantation, spellcaster, Vashikran
saga	twilight, Saga, saga, Icelandic, Skywalker, Wars, Candy, Norse, Banner, epic
race	race, gender, win, ethnicity, car, horse, human, religion, finish, track
hurdle	overcome, 400m, novice, hurdle, bureaucratic, handicap, 100m, Champion, 100m, 100-meter
gamble	Procter, Proctor, gamble, casino, gambling, Gamble, Huff, addiction, gambler, poker
game	play, video, game, player, win, season, football, fun, online, console
kick off	festivity, 3pm, 45pm, celebration, 30pm, Week, 2pm, season, Season, weekend
Snakes and Ladders	ludo, Kahuna, Parcheesi, tiddlywinks, pachisi, Caul, hopscotch, Candyland, Jenga, EUCW
house of cards	spacey, Willimon, Netflix, Underwood, tumble, Fincher, Veep, collapse, topple, crumble
dice	dice, onion, roll, slice, tomato, finely, Dice, celery, pepper, peel
monopoly	monopoly, oligopoly, capitalism, capitalist, Monopoly, cartel, Gazprom, patent, state-owned, scrabble
hide-and-seek	hide-and-seek, peek-a-boo, hopscotch, kick-the-can, peekaboo, capture-the-flag, sew-along, Kakurenbo, kickball, hider
playmate	playboy, playmate, McDougal, centerfold, Hefner, Stratten, imaginary, ex-Playboy, Brande, benton
prize	Nobel, winner, Pulitzer, Peace, win, award, Prize, grand, prize, Grand
dark	brown, dark, chocolate, blue, green, light, Knight, hair, color, eye
light	shed, light, shine, bright, bulb, red, dark, blue, green, flash
tunnel	carpal, tunnel, underground, syndrome, wind, bridge, dig, VPN, entrance, subway
spell	cast, spell, magic, caster, checker, correctly, casting, Spell, doom, wizard
spell out	Acronym, abbreviation, phonetically, numeral, alphabet, planchette, lowercase, explicitly, scrabble, clearly
blind	blind, deaf, spot, impair, visually, eye, Venetian, curtain, faith, roller
bright	yellow, red, shine, color, light, orange, colour, star, blue, future

blink	blink, eye, cursor, eyelid, stare, rapidly, tear, light, LED, LEDs
bleakness	unremitting, bleakness, unrelieved, callousness, unrelenting, desolation, Beckettian, starkness, Megadon, wintry
darkness	darkness, light, plunge, Heart, Light, shine, dispel, ignorance, shroud, Trek
one-size-fits-all	cookie-cutter, top-down, approach, mentality, prescriptive, solution, one-size-fits-all, off-the-shelf, government-run, straitjacket
patchwork	quilt, quilting, patchwork, applique, appliqué, embroidery, quilter, Popular, state-by-state, coverlet
fit	perfectly, perfect, size, into, nicely, bill, fit, model, well, tight
cower	cringe, whimper, cower, frightened, fear, tremble, terrify, fright, flinch, grovel
throw off	yoke, shackle, bowline, pursuer, oppressor, fetter, Imperius, oppression, tyranny, incubus
put	together, into, forward, pressure, down, effort, aside, place, simply, on
lock	door, lock, unlock, Lock, key, gate, mechanism, nut, down, wheel
lock up	garage, headlock, carport, brake, converter, Stallone, 23-hour, berth, Roode, Sheamus
unlock	unlock, lock, door, iPhone, bootloader, potential, secret, password, mystery, phone
trap	trap, fall, booby, inside, bait, hunting, traps, lure, cage, hunt
obstruct	airway, impede, obstruct, justice, hinder, wilfully, interfere, resist, willfully, investigation
block	block, building, stumbling, Street, diagram, concrete, road, Block, Avenue, apartment
stuck	Hans-Joachim, Stuck, squeal, Moment, Mojo, fermentation, stuck, rut, Inside, pig
cell door	clanging, clang, jailer, Zuern, ajar, clank, SILVERFOX, spy-hole, Ebong, creak
arrest	warrant, police, cardiac, Police, suspect, charge, arrest, officer, detain, detention
shackle	handcuff, shackle, padlock, Shackle, ankle, wrist, bushing, hanger, hardened, fetter
prison	sentence, inmate, prison, prisoner, jail, guard, escape, federal, convict, camp
chain	supply, Supply, reaction, chain, polymerase, food, supermarket, value, restaurant, retail
punish	severely, perpetrator, imprisonment, reward, harshly, offender, sin, punish, crime, guilty

internment	Japanese-American, camp, Camps, internment, Manzanar, Relocation, Drancy, WWII, Japanese, internee
clampdown	Thunderhoof, clampdown, Steeljaw, dissent, Quillfire, Underbite, strongarm, IOK, killock, Deepcover
bubble	burst, bubble, gum, housing, wrap, bath, pop, soap, blow, dot-com
glass case	tempered, locked, vermicelli, climate-control, embalm, iCUE, taxidermied, Glenshaw, mantelpiece
cocoon	cocoon, silkworm, pupa, pupate, caterpillar, silken, silk, chrysalis, larva, pupation
regime	Assad, communist, authoritarian, Iranian, totalitarian, Syrian, Nazi, Saddam, repressive, overthrow
tyranny	oppression, tyranny, despotism, dictatorship, injustice, anarchy, tyrant, liberate, overthrow, oligarchy
anarchy	Sons, anarchy, lawlessness, chaos, anarchism, Utopia, Nozick, anarchist, tyranny, despotism
dictator	Pinochet, benevolent, Saddam, Hussein, Mussolini, overthrow, brutal, dictator, Augusto, tyrant
totalitarian dictatorship	communo-fascist, autocracy, one-party, single-party, Luciferian, non-progressive, Brzezinski, Jean-Bertrand, one-world, Zbigniew
police state	totalitarian, militarize, Orwellian, fascist, Anti-Capitalism, repressive, harshness, Indymedia, authoritarian, tyrannical
tsar	Nichola, Bomba, Romanov, Nicholas, Tsar, Tsarina, Ivan, Saltan, Mikhailovich, abdication