# Citizens in Camouflage:

# The production of the means of violence in the everyday

Elena Simon

## Acknowledgements

# Content

# Abstract

This thesis is motivated by ordinary objects that are produced for violence, and the extra-ordinary story of a farmer turned gallows-exporter, and asks in what ways do civilians participate and contribute to the production of the means of violence? This question is embedded in a broader social context in which state-sanctioned violence and its production typically is attributed to distinct militarised agents, whereas civilians are seen to not take part in any of these dynamics and thus hold no agency in the production of it. Recent scholarship on militarisation has called into question the assumption of a peaceful and non-violent civilian sphere that is encroached upon by military agents and raised the question of how to transcend the civil/military dichotomy. In building on these, I argue that we need to take agency seriously and scrutinise how different spheres are established. I draw on Marxist and Feminist thought that takes *the agency of the civil* seriously, and empirically explore what work *the civil* is doing, through a multi-sited ethnographic approach. Taking the objects produced for collective violence and their design as a starting point, I follow them to the people who promote, design, produce, and contest their existence. I argue that the production of the means of violence takes place beyond a narrow security and defence sphere and set out to empirically explore this sphere. In so doing I trace what work the civil is doing in a literal sense, as well as how this work is rendered invisible. I am highlighting the civil as a force in the production of the means of violence and trace how it depoliticises its own contribution. The civil is thus integral to the integration of violence into broader logics of capitalism.

# 1. Introduction

## 1.1 Project outline

In May 2006, the British newspaper The Guardian published an interview with the UK's last gallows producer. The man, who was based in Suffolk, had been producing and exporting gallows from his farm at £12,000 apiece, alongside rabbit hutches and bird houses (Barkham 2006). The newspaper stated that he had started the business ten years earlier, when he was approached by a "foreign business man" (Barkham 2006). Amnesty International had publicised the business when it became apparent that the farmer had been trying to sell some of the equipment to Zimbabwe, a country Amnesty International contends was guilty of serious breaches of human rights legislation. However, he insisted he had not done anything illegal and clarified, "I believe in law and order. The production of gallows is for law and order, not for bad people to get hold of it" (Barkham, 2006). When asked about his motivation, the BBC quotes the farmer's simple statement "business is business" (BBC 2006). The trade in execution equipment was outlawed within the European Union a few weeks later in July 2006.

On the other side of the Channel, in Germany, an artist, teacher and political activist found their picture on a number of wanted posters in 2013 with a reward of 25,000 Euros listed. The posters were distributed by the activist collective "Zentrum für Politische Schönheit", (Political Beauty) in search of the shareholders responsible for illegally distributing weapons of German arms producer Krauss-Maffai Wegmann (KNDS) in areas of conflict (Friedrichs 2012; Political Beauty 2019). The goal of Political Beauty was to scandalise the sale of the Leopard II A7+ tank, which was designed for combat in urban settings, to Saudi-Arabia during the so-called Arab Spring and to politicise the role of silent shareholders. The company was then owned by only two families, yet some of the family members reportedly found out about the reach of their involvement only through the posters.

Extraordinary stories like these point to the puzzling ways in which the so-called civilian spheres of society are seen to be decoupled from the production of collective violence and its means in democratic societies, and as such escape public scrutiny for long time periods. The story of the gallows producer is intriguing because it juxtaposes the idyll of farm life with the extraordinary activity of producing commodities that are used for *state-sanctioned violence* (Basham 2015). The story of the teacher, artist, and activist owning shares in tank exports juxtaposes not only the assumed humanist ideals of these professions with war; but also highlights to what extent people can literally have stakes in arms exports, without knowing

about it. The way that these stories are seen as extraordinary illustrates the common-sense assumption, that the production of the means of violence is not part of 'normal', civilian life. And yet, the existence of these stories also illustrate that civilians are somehow implicated in this production. The question that arises and animates this thesis is: in what ways do civilians participate and contribute to the production of the means of violence in liberal democracies? And in fact, how is this contribution rendered invisible?

My research links into recent Feminist and Critical Military Studies' debates on war preparedness and its political economy. I follow the objects, technologies and services produced for the markets of violence in the UK and Germany and analyse what symbolic and literal work goes into the production of these means of violence. Adopting a Marxist feminist approach, I unpack the gendered work of 'the civil' in this process which writes out economic interests, dynamics, power, and violence while producing the means of violence in two of the leading arms exporting economies in Europe. The production of the means of violence is woven through a broad range of services and sectors and it is a particular gendered notion of the civil that holds liberal war economies together by depoliticising and normalising this production.

I am using *the civil* as a noun, in an imperfect attempt to establish a parallel line of thinking about civil-military relations and the civil/military dichotomy. Where the military is always already conceptualised as distinct institutions, sites, and agents, the civil is lacking this inherent notion of form, place, and agency. In fact, as critics have noted, and I will demonstrate in chapter two, it is always already thought of as not having agency at all, and at best, forms the background from which the military appears and is distinguishable (Howell 2018; Manchanda 2022). The categories civil/military are co-constitutive and less stable than the binary suggests when interrogated empirically (Mabee and Vucetic 2018: 100). Framing this inquiry as one into *the agency of the civil* allows me to unpack the notion and the work of the civil in producing its opposite, and at the same time rendering invisible its own contribution. Rather than a concept that is operationalizable, the civil is an animating idea that allows me to trace its work across a varied set of sites. It manifests and is mobilised by people with distinct political projects at arms fairs; it disciplines protests and depoliticises the everyday, and it emerges as an ideology in the Marxist sense from the mode of its production, stabilising capitalist exploitation. Throughout the thesis I'll be tracing the work of the civil and unpacking the politics that are bundled up in the neat civil/military dichotomy. In its blurriness the term 'the civil' does have its limits, but it helps me to think through the ways in which war production is normalised in the UK and Germany.

The prompt to focus on the role of civilians and *the civil* in the production of the means of violence is twofold. The well-established concept of "militarisation" (Enloe 2000: 3) was

developed as a tool to render visible and criticise the gendered process of spreading militarist ideas in society and thus normalise war and the use of societal resources for war. The body of ideas that establishes militarism includes, amongst others, the beliefs that "men are natural protectors (…) soldiers deserve special praise for their contributions to their countries (…) [and] the belief that in human affairs it is natural to have enemies"(Enloe 2016: 26). The categories of war, such as soldier/civilian are "reproduced by gendered hierarchies such as masculinity/femininity, protector/protected, activity/passivity"(Millar 2019: 239-240) which are reflected in the imagery of the "Just Warrior" (the knightly male protector) and the "Beautiful Soul" (the gracious female admirer and mourner) (Elshtain 1982: 341). Militarism leads to the gendered subjugation of values, budgets, labour, and bodies under military purposes and prioritises military budgets, values, and beliefs to the detriment of civilian ones. This led to a body of analysis that explained military budgets and spending and the rising support for militarist ideas: militarised discourses, committees, and marketing campaigns contributed to bigger military budgets and resources for institutions, and nations (Enloe 2016: 26). Work on militarisation has been heavily focused on US society and law enforcement as a case study (Paul and Birzer 2004) and the concept has been successfully applied to describe the increasing armament of humanitarian missions and NGO work, as well as security personnel (Anders 2013; Duffield 2001; Leander 2022a). In its feminist tradition, militarisation has contributed to the interdisciplinary analysis of the role of militarism in women's life, popular culture, tourism and many more (Basham 2018; Cree 2020; Enloe 2016; Karides 2009; Sjoberg and Via 2010; Weaver 2011); linking war with the system of gender that "makes the world go round"(Enloe 2014: 8).

However, recently, scholars started to critique the concept of militarisation for neglecting the violence within the societies that are being militarised (Howell 2018; Manchanda 2022; Neocleous 2015). Howell argues from an intersectional perspective that militarisation reproduces a view of society that is dominated and oppressed, and ultimately "encroached on by military values and institutions" (Howell, 2018: 117). Therefore, militarisation ignores the violent and racist history of liberal state formation and tends to sanitise state institutions reproducing violent systems of oppression such as racism and ableism. Howell's key critique is that keeping society and war separate until militarisation happens, is to implicitly assume a time prior to militarisation, otherwise that sphere could not become militarised. Therefore, militarisation implicitly states that war is naturally and temporally separate from the social landscape and that war-like violence forms the exception; when this, as Howell argues, is not the case for oppressed groups; and "there is no 'good' liberal civilian past to which we can retreat" (Howell, 2018: 131). She therefore suggests to "forget militarisation" and instead proposes the concept of "martial politics", to denote that war-like politics targeting marginalised

groups has always already been part of the laws that uphold the liberal order (Howell, 2018: 121).

Neocleous' (2015) critique is levelled not at militarisation itself, but studies on war, policing, and violence more broadly and the continued separation of war and policing. Seeing these forms of state-sanctioned violence as separate obscures their origin as a means of managing exploitation and reproduces not only the separation between economics and politics but also between internal and foreign affairs (Neocleous 2015: 358f). Neocleous therefore suggests that militarisation as a concept contributes to obscuring violent practices of policing within the global reproduction of capital and thus is based on a liberal understanding of the state. At the heart of the current debates on militarisation thus lies the question of agency: who are the agents of violence and who in society has agency to resist it?

Second, and I argue, relatedly, the focus on how discourse changes priorities from civilian to military spending purposes, has been somewhat neglecting the economic interest of the civilian sector that is being militarised. This is where I draw on Marxist theory and focus on the production of the means of violence to sketch out how civilian life and labour contributes to the production of the means of violence. While Enloe emphasises the role of companies that are not traditionally seen as part of the arms industry in producing the global system of militarism, such as "advertising companies, fast food chains, garment makers, engineering and scientific research laboratories, transport companies, landlords, pharmaceutical companies, computer software companies" (Enloe 2016: 15f), the production of the means of violence has been relatively neglected in studies on militarisation, privatised security and the marketisation of violence. Work on privatised security has highlighted state budgets and outsourced state functions and contributed to our understanding how these neoliberal policies change citizenship, state authority as well accountability under international humanitarian law (Abrahamsen and Leander 2016; Avant 2005; Duffield 2001; Krahmann 2010; Singer 2008). The analyses of "[t]he Market for Force" (Avant 2005) have been focusing specifically on services such as guarding, policing, and soldiering which previously were the sole authority of state institutions, civil servants and soldiers (Abrahamsen and Williams 2007). Arguably, while a-typical providers, these services continue a focus on activities that are seen as exceptional and state-guided, as privatisation requires a decision on state level to outsource services.

More problematically, studies on 'markets of violence' tend to focus on country studies of warlordism, and illicit markets that emerge in the absence, or destruction of a monopoly of violence and failed states. Markets of violence are "highly profitable social systems, which can remain stable over several decades [in which] the dominant actors (…) combine violent appropriation with peaceful exchange" (Elwert 2018: 219). The long list of examples of these markets of violence are exclusively southerened countries. Southering denotes the process of

ordering countries into a political, racialized hierarchy (Jansson 2017). The turn from "othering" to "southering" is an anti-essentialist, discursive move that seeks to highlight the sexualised, racialized, gendered and, thus, binary relationship of North and South. Designating this status to a subject is linked to political, historical, and economic factors and "South" in political discourse is not geographically determined, either as a site on the globe or within a country (Jansson, 2017). Second, the specific form of the devaluation of "South" in relation to "North" is the result of imperialism, capitalism, and racism and it is ongoing as wealth is shifting and regard is bestowed or withdrawn. Thus, "southering" is a process of boundary-drawing that restructures the political landscape along relative hierarchies. Countries, groups, or regions that previously have been regarded as part of "North" can be out-casted from it in order to justify political, military, or economic intervention, such as in the case of Greece after the 2008 economic crisis, for example(Buddeberg and Grotlueschen 2018).[1]

It thus establishes a dichotomy between stable and non-violent economies of the states providing the material for humanitarian interventions, and the violent economies of former colonies, largely ignoring the violent practices of accumulation of these stable economies in the former colonies (Banerjee 2018: 1023ff.). The way the concept 'market of violence' is used, thus, tends to obscure the link between markets of violence in regions of conflict and the markets that are often the source of (the means of) violence in conflict areas: the liberal democracies that lead the production for war, or liberal war economies.

With the focus on *where* force is being applied or authorised, the *means* of violence had taken somewhat second place, with the notable exception of small arms and their proliferation to Private Military and Security Companies (PMSCs) (Abrahamsen and Williams 2007; Bourne 2011; Patterson 2014). Thus, studies on the producers of weapons, for example, had been existing side-by-side with little overlap, even though both would be relevant to the understanding of the market for force. But even within the analyses of the defence industry (e.g. Hartley 2000; Tan 2014), the companies that Enloe mentions, the marketing services, the events firms and, importantly the suppliers, are rarely dealt with. Studies on the privatisation of security have been very instructive on the gendered dynamics of the global security service markets and the revival of militarism in marketing strategies (Eichler 2013), however, they tend to exclude marketers and producers of military and security objects from their analysis. This holds true even for analyses in Feminist Political Economy, which tend to focus on the gendered division of soldiering and labour that has been militarised (Adey et al. 2016; Chisholm and Stachowitsch 2017b; Greenwood 2016; Meger 2016), rather than at the gendered way in which 'civilian labour' produces the military. The big guns draw our attention, and thus we

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[1] For the same reason, I refrain from using the terms "global North/South" and refer to those categories as "political North/South" as this better reflects the reality and dynamics of dominance and power.

overlook the markets that provide the material for them. While some objects establish the military infrastructure, such as drainpipes, other objects equip the military and security body, such as belts, boots, or smart gadgets. What is the civilian infrastructure, literally and symbolically, of the production of the means of violence and how does this change our perception and understanding of war economies? Screws, make-up, fibres, and scents are organised in civilian markets and not only provide the raw materials, but, I argue, shape the military in a more profound way and thus play an important role in the production of the means of violence. There is a trend in the works on security, violence and its political economy, that focuses on the move of products, logics and beliefs from military to civilian spheres and does not focus as thoroughly on the move of logics, products and beliefs from the civilian into the military sphere, and thus does not ask how the civil may be contributing in producing the military. With that, a certain notion of the civil is produced and mobilised that is eternally linked to the gendered non-violent sphere that Howell and others have criticised.

This thesis takes up these two threads and builds on the ground-breaking work of Enloe, while also suggesting that our attention needs to shift more thoroughly on the agency of the ones that are (being) militarised. I do this by drawing on Marxist feminist thought, which inspires the phrase of 'the means of violence' in the style of Marx' means of production (Marx and Engels 2018), as well as the notion of the *acquiescence of the oppressed* (Haug 1980) which radically argues to pay attention to the many ways in which the individual spends effort and time to rationalise and reproduce the webs of her oppression by denying and obscuring agency. This notion inspired me to think about the role of the civil and to interrogate how the civil is continually re-producing its disconnection from the military. In a similar vein, I am looking at how agency is rendered invisible through the civil.

Visuality plays an important role in the distinction between civilian/combatant and the civil/military dichotomy. In fact, as Helen Kinsella argues, the core of the principle of distinction in international humanitarian law is formally based on the ability to visually differentiate between combatants and civilians as well as military sites (legitimate targets) and civilian infrastructure (Kinsella 2011: 145). As Kinsella has shown, this is based on a discourse of innocence and loyalty which is not only deeply gendered and racialised, but is also laying the basis for the inconsistent application of the principle of distinction (Kinsella 2011: 1ff). The role of (in)visibility in the production of the means of violence, leads me to consider the artefacts of civilian agency as a starting point (Gibbon and Sylvester 2017). I *follow the objects* (Cohn 2006) which in this case are the means of violence, as the visible traces of the agency of the civil and consider what they show and reveal at the same time.

In following the objects, I apply a Marxist understanding of these artefacts as not only interesting artefacts, or symbols in a process of meaning-making, but also in their function as

commodities. Marx' analysis of the capitalist mode of production and his analysis of the commodity as the manifested result of social relationships allows me to think through the labour of the civil in a literal sense; while a wealth of feminist analysis on gendered cultural symbols, technologies, and artefacts allow me to trace the symbolic work of the civil. To gather insights into the social relationships of the labour and organisation of violence, I follow everyday objects such as screws, make-up, and scents, to sketch out how war is dependent on the exploitation of civilian life and labour in the production of the means of violence. Taking the objects and their design as a starting point for my inquiry, allows me to follow them to the people who promote, design, produce, and contest the existence of the means of violence in my multi-sited ethnography. Through participant observation at the trade show, Defence and Security Equipment International (DSEI) 2019, and protests against the arms trade as well as interviews with current and retired workers in dual-use companies, I trace the iterations of the civil and its political work across various sites. I build on work that highlights the instability of dichotomies and analyse gendered cultural symbols, technologies, and artefacts in order to trace how the military and the civil are socially produced as separate spheres and markets with special logics, privileges and aims in the UK and Germany.[2]

Focusing on the UK and Germany allows me to layer my analysis to include the interconnectedness of markets, but also follow iterations of the civil and the normalisation of the production of the means of violence. While civil societies in democracies have been calling for more justification to sanction warfighting and arms-producing, the industry remains one of the most powerful, dynamic, and profitable. As Enloe observed in 2016, well before Putin's government invaded Ukraine, we have been living in a world of "unprecedented military budgets, number of military agents and global military strategies" (Enloe 2016: 16f).

The global "defence export market in 2017 is estimated to be valued at close to $98billion" (GOV 2019) with an additional $150billion in the security export market, and the creation of new markets due to smart industry, data mining and surveillance techniques. International arms fairs are increasing not only in number, but also size. The UK, for example, is host to nine international fairs aimed at security, emergency, and military services. It is seen as understanding that "military force is integral to state power and national strategy" (Giegerich and Terhalle 2021: 1) and thus is certainly perceived as a country in which militarism is accepted in decision-making bodies. Not only is the UK defence industry seen as the crown jewel in the otherwise largely de-industrialised economy of the UK (Rossdale, 2019: 40), but the narrative around victory in both world wars meant that the use of military means to enforce

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[2] Other objects I considered were boots, and drainpipes – but those turned out to be more difficult to trace than anticipated and with the pandemic making in-person research impossible, I focused on objects that did not require extensive in-person field visits.

state interest was not completely de-legitimised in the post-war period. This is illustrated, for example, in the anti-colonial wars against the Empire and the policing of critical engagement with the history of the Empire, the Falkland Wars, the support for the 'coalition of the willing' intervention in Iraq, and perhaps even the Brexit campaign which sold the idea of a revival of the Empire.[3] The public is invited to demonstrate active support for the troops by buying branded products for example (Tidy 2015); or by wearing a red poppy during remembrance season in November which is not only an act of remembering the fallen heroes who won WWI, but also a sign of respect for the current armed forces of the UK, and refusing to wear one is a point of contention and public debate (Basham 2015).

Germany, in particular seems to be an odd case in this regard. Pacifism has been regarded as a unique feature and constant in Germany's strategic culture due its role in World War II and the efforts of subsequent civil rights movements to fight Nazism, militarism and fascism from ever returning (Rathbun 2006: 68f). This core belief is so strong that it has even led military strategists to lament that the "strategic debate has remained largely sterile [because] too many Germans subscribe to an inaccurate and unhelpful understanding of the lessons of the country's history" (Giegerich and Terhalle 2021: 17), namely that military force should only be used as a last resort in genuine self-defence. The involvement in military interventions, as well as providing military support to interventions, on the other hand, has led some commentators to coin the phrase of "The myth of German pacifism" (Rathbun 2006: 68) and to analyse militarisation "in the shadow of pacifism" (Hein 2011: 135). The fact that critics aim to scandalise military force in foreign policy, while military strategists complain that the country is not embracing militarism enough, illustrates how contested the use of military force, and the military at large, is in Germany.

At the same time, in a pre-pandemic, pre-Ukraine war Germany arms exports are thriving. The oldest arms fair of Germany, the IWA Outdoor Classics, grew from 1145 exhibitors in 2010 to 1619 exhibitors in 2019 and reached a record of 45,476 visitors (IWA 2019). The German Federation of the Defence and Security Industry represents 221 members, including subsidiaries and in 2019 it claimed that its membership employed up to 410 000 people directly and indirectly and contributed to 13.1bn Euros of cross-sector investments (BDSV 2019). Even before the war in Ukraine and the historical decision to ramp up military spending by 100 billion Euros to meet the US demand of 2% of GDP in 2022, Germany had overtaken the UK and China in the ranking of arms-exporting countries for the second year in a row in 2017. It has been in the top five of the biggest arms exporting nations since. Aggregated over the last decade (2008-2021), Germany ranks as the fourth biggest arms supplier in the world, after the US, Russia, France and ahead of China (Table 1). The table below shows the aggregated data

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[3] Many other examples could be named.

of the transfer volume of conventional arms, measured in SIPRI Trend Indicator Values (TIV) from 2008 to 2021. The data has been edited for legibility.

Table 1 TIV of arms exports from the top 50 largest exporters, 2008-2021

| Rank 2008-2021 | Rank 2007-2020 | Supplier | 2008 | (…) 2018 | 2019 | 2020 | 2021 | 2008-2021 |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Utd States | 6804 | 9824 | 10923 | 9233 | 10613 | 129168 |
| 2 | 2 | Russia | 6175 | 7097 | 5531 | 3686 | 2744 | 85762 |
| 3 | 3 | France | 1984 | 1996 | 3713 | 2484 | 3954 | 30595 |
| 4 | 4 | Germany | 2372 | 1073 | 1000 | 1217 | 914 | 22602 |
| 5 | 5 | China | 607 | 1306 | 1504 | 775 | 1085 | 19864 |
| 6 | 6 | Utd Kingdom | 987 | 704 | 957 | 556 | 601 | 15032 |
| 7 | 8 | Italy | 434 | 496 | 351 | 847 | 1717 | 10211 |
| 8 | 7 | Spain | 601 | 704 | 303 | 962 | 612 | 9228 |
| 9 | 9 | Israel | 375 | 704 | 349 | 400 | 606 | 9157 |
| 10 | 10 | Netherlands | 446 | 462 | 253 | 478 | 299 | 7278 |

Figures are SIPRI Trend Indicator Value (TIV) expressed in millions.[4]
Source: SIPRI Arms Transfers Database; Generated: 03 February 2023 (SIPRI 2023c).

Militarisation seems to sit somewhat uneasy next to debates of the supposed post-heroism in liberal democracies (Luttwak 1995) and until recently had been side-lined by critical security studies, which had identified security risks beyond war and thus progressed a research agenda that focused on security agents beyond the military (Mabee and Vucetic 2018: 98). Post-heroism identifies an increasing casualty-aversion of Western societies, either due to low birth rates, televised representations of violence such as in the Vietnam War, or a "general demise of the hero figure" (Frisk 2018: 899). Thus, through a shift in societal attitudes and discourse, soldiers dying in war is seen as a tragedy, as opposed to an honourable sacrifice to the nation, as has been the case historically. This leads to reluctance to engage with the military and heightened expectations on the justification of the use of military force. While the thesis of generic post-heroism has been challenged as too broad (Avant 2014), many commentators agree that traditional appeals to sacrifice for the nation – a key feature of militarism – have lost their persuasive hold over these societies (Leonhard 2016; Schüßler and Heng 2013). These debates link with the thesis of democratic peace. The democratic peace theorem highlights the institutional limitations of liberal democracies to fight war which pose specific demands on the

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[4] "SIPRI TIV figures do not represent sales prices for arms transfers. They should therefore *not* be directly compared with gross domestic product (GDP), military expenditure, sales values or the financial value of export licences in an attempt to measure the economic burden of arms imports or the economic benefits of exports. They are best used as the raw data for calculating trends in international arms transfers over periods of time, global percentages for suppliers and recipients, and percentages for the volume of transfers to or from particular states"(SIPRI 2023b).

justification of doing so. Therefore, according to the theory, democratic regimes are less likely to engage in war than non-democratic regimes, as German foreign policy seems to illustrate (Geis, Mueller, and Schoernig 2013: 231ff). The dyadic version of the democratic peace theorem specifies that thus being accountable to the populace via parliament, liberal democracies rarely engage in wars against each other, but can justify military interventions on the basis of these democratic ideals against non-democratic states (Geis, Mueller, and Schoernig 2013). Post-heroic warfare builds on strategic thought that minimises casualties in its own ranks, such as trade embargoes and airpower (Schüßler and Heng 2013: 357) and tends to justify these with narratives about the protection of human rights, liberal freedoms, and democracy (Geis 2019).

Taken together, shouldn't we see a decline in militarism as contestations towards the military are on the rise, and traditional military values and beliefs in the military as a capable agent of conflict resolution are growing brittle? Not only is the traditional masculinist soldier-hero in decline; but disinterest, or scepsis towards violent conflict resolution is taking hold in society, thus seemingly undermining the readiness with which the dependence on military's approval for something's "worth, its influence or its sense of well-being" (Enloe 2016: 26) is accepted.

One strand of explanation links the privatisation of violence (Abrahamsen and Leander 2016; Avant 2005; Krahmann 2010; Singer 2008) and militarisation. Linking the two, means that the rise of militarisation can be understood through the outsourcing of state functions to private companies, which establishes a loophole through which the liberal political system can escape accountability for casualties and human-rights abuses, and hyper-masculinisation is preserved in private military and security companies (Chisholm and Stachowitsch 2017b). This means the traditional hero survives but is now clad in private, rather than state uniforms. Mabee and Vucetic (2018) have argued for a typology of militarism, in which militarism continues, but its specific form is the product of the societal constellations, and hence, rather than a decline in militarism, we can observe different ideological forms of militarism.[5] The art of maintaining a pacific image, while also promoting high levels of military production and subduing conflict

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[5] Mabee and Vucetic (2018: 100ff), propose four types: 'Exceptional militarism' is basing itself on emergency-rule and thus is the basis for securitisation which proposes extra-ordinary measures in face of an existential threat to a security object (Weaver etc). The privatisation of security and military services is the result of 'neoliberal militarism' based on military professionals. In contrast 'civil society militarism' sees the "state-supported, but not state-led"(Mabee and Vucetic 2018: 102) mobilising of new agents, such as paramilitaries, terrorist groups and armed civilian groups in actions ranging from crime fighting to border control. Traditional militarism is featured as 'Nation-statist militarism', which is characterised by civilian control over the armed forces and mobilisation of these forces by the state as the guard of the monopoly of violence.

within the boundaries of the nation state, while participating in acts of 'policing' abroad, has also been coined 'liberal militarism' by historical sociologists (Rossdale 2019: 47).

But even with this, Germany's thriving arms industry seems to be an odd case. Despite the general diagnosed scepsis and scrutiny of all things military, if asked few Germans probably could name more than two of the biggest arms producers operating in the country. In 2021, those where the following, in this order: Airbus Group, Rheinmetall, Thyssen-Krupp, Hensoldt and Diehl Defence Holding (SIPRI 2023a). Monopolies such as the world's second largest defence supplier, Boeing, have long left simple commodity production and provide commercial as well as defence services, with products ranging from private jets and missiles to rockets, training, research, and analytics. Many companies are known more often for their 'commercial' products rather than their bombs (Stavrianakis, 2010: 140f). Despite their different 'grades' of militarisation, and although their historical narratives about war, the nation state, heroism, democracy, and civic agency differ quite drastically (not to mention the extent to which military phrases, parades, and uniform in public are seen as acceptable) the UK and Germany are both in the top ten arms exporting countries and thus, both have developed into similar sized liberal war economies.

Thus, there seems to be more to producing the means of violence and establishing a thriving defence sector than militarism and militarisation. While critical and feminist work has been focusing on the political and societal normalisation of war, or perhaps better expressed, the "*social* production of war"(Tidy 2017: 99, emphasis added), I argue that our attention should move more closely to the production of war in a materialist sense. The production of the means of violence does take place beyond a narrow security and defence sphere and it is the civil that plays a crucial role in integrating violence into larger processes of capitalism. Importantly, as I will show below, the civil agency within the civil/military dichotomy is understudied and, thus, it remains unclear in what way the civil legitimises, produces, and interacts with the military.

This has important implications for research as well as political activism. First, it tends to limit our understanding of militarism as inherent to some actors but not others, thus reducing the sites and actors under scrutiny. Second, this focus tends to write out the deep links between the state and the economy and reframe business interests in an apolitical way; and third it tends to individualise war rather than highlighting the systemic dynamics at play. With so much focus on the military side of the civil/military dichotomy, we therefore have only a fractured and incomplete picture of the markets and stakeholders that are relevant in debates about disarmament, arms trading practices and control as well as the role gender plays as an organising force in that. I therefore visit the sites of trade of the means of violence, focus on

the labour that goes into them, as well as being sensitive to the contestations against the civil/military dichotomy which can be observed in everyday organising such as in trade unions.

This is especially the case in the area of 'dual-use' technologies which traditionally focuses on technology that can be applied in civilian and military contexts, but has not paid as much attention to services, which are coded feminine, for example. Hosting and selling are among the highly gendered services that go into the production of the means of violence (Gibbon and Sylvester 2017), but there are many more 'everyday' services that shape the production of the means of violence.

Meanwhile, political-economic projects, such as economic conversion, which aimed to reduce offensive commodity production to put knowledge and technology to "socially useful" (The Lucas Plan, 2019) purpose, have instead seen a reframing of their agenda in alignment with the neoliberal restructuring of the industry. The literature on conversion, prominent in the 1980s and 1990s had largely been forgotten (Brzoska 1999; Intriligator 1998; Molas-Gallart 1997; Wieschollek 2005) and is only recently fighting for a revival (von Boemcken 2019). Rather than curbing down the defence markets, dual-use technology opened up new investment opportunities and normalised close cooperation between military and civilian companies (Acosta et al. 2018; Acosta, Coronado, and Marín 2011). This illustrates the importance of scrutinising the assumptions about the civil and its function in society. The limits of transformation through workplace organising which are set by the property relations in capitalism, also highlight the role of the civil in depoliticising the very site of its production: the workplace. At the same time however, the civil is also prevalent in the politics of contestation and shapes which form contestation can take.

The question of the contribution of civilians in the production of the means of violence is embedded in a broader social context in which organised violence and its production typically is attributed to distinct agents, such as the military, defence markets, or the police, whereas civilians usually do not take part in any of these dynamics and thus hold neither agency in the production of organised violence nor interests in its occurrence. This, however, largely ignores civilian agency and infrastructure in the production of the means of violence. I aim to render visible the instability of the distinction between a 'military' and 'civil' sphere and in turn civil agency in the production of the means of violence as well as meaningful contestation. To inquire into the agency of the civil within the civil/military dichotomy that shapes this conversation, the project applies a multi-sited ethnographic approach using participant observation and interviews, which are analysed through a semiotic perspective, to focus on the objects produced for violence in two countries.

## 1.2 Thesis Guide

The thesis is divided into eight chapters. In the second chapter, *Challenging Assumptions about Civil-Military Relationships,* the thesis discusses the state of the art of the literature with a focus on how different scholars have conceptualised civil-military relations and the dichotomy of civil/military. In this second chapter I will discuss key concepts, identify the gap in the literature and formulate the contribution of this thesis to our understanding of the production of the means of violence.

The third chapter, *Uneven Data and Following the Objects*, explains the research philosophy of the thesis and the methods that I use to collect and analyse the material. The project is framed as a multi-sited ethnography that 'follows the objects', which is assisted by participant observation and interviews. My analytical lens is informed by semiology, the study of signs and signifiers. I will highlight the limitations of the project, as well as challenges I encountered and how I hope to address them.

The fourth chapter, *The Geography of the Means of Violence*, follows the objects to the site of trade and introduces the empirical material I collected through participant observation at the arms fair DSEI2019, in London as well as a demonstration in Liverpool in 2021. I discuss how civil and military spaces converge in practice, and thus argue that the notion of two separate spheres is somewhat insufficient and generates moral geographies that are integrated into the strategic interests of liberal war economies. At the arms fair we can observe how 'the civil' is staging this assumed spatial separation.

In the fifth chapter, *Labour in Liberal War Economies*, I discuss how the exploitation of civilian labour is one dimension through which we can understand the agency of 'the civil' and understand the production of the means of violence. I interrogate the distinction between selling and producing the means of violence and argue that 'the civil' is depoliticising the violence within labour exploitation. Thus, the exploitation of civilian labour is essential in the production of the means of violence but it is through the civil that the site of production is bracketed out of the analysis.

The sixth chapter, *The Black Box of the Civil: Dual-Use, Fibres, Makeup, Scents*, takes a closer look at the design of objects produced for the markets of violence. I develop on the story of the screw and explore other mundane objects and technologies that have travelled from the civil to the military. I argue that this process is neither automatic nor straightforward. Rather it is the result of human design. I open the literal black box of the civil and highlight how the civil is depoliticising violence in design through a focus on application and the notion of dual-use technology.

In the seventh chapter, *The Politics of the Civil*, I explore ways in which the civil has policed the contestation of the production of the means of violence at the workplace, in society and through art. Within these observations I point to the messy subjectivity of 'the civil' which depoliticises peace, but also serves as a mobilising force for anti-militarist protest. The seductive allure of 'the civil' promises us to end up on the right side of history, and thus it smooths over exploitation, class interest and violence. 'The civil' is thus an ideology that depoliticises not only violence, but also peace, and renders it into something abstract and a-political that becomes integrated into the strategic interests of liberal war economies.

The eighth chapter *Conclusion* summarises my reflections on the agency of the civil and points towards further research into this field.

# 2. Challenging Assumptions about Civil-Military Relations

The questions raised in my thesis build on a huge body of literature about war, peace, technology, and the agents within it. In teasing out and sharpening my analysis of *the agency of the civil* and the material and symbolic work that the civil does for state-sanctioned violence, I have drawn on work across Critical Geography, Defence and Strategic Studies, Economics, Arts, Engineering, History, Feminist IR, Political Economy, and Marxist analysis. While those debates meet at times, they often run parallel to each other. In the following chapter I discuss what these diverse fields have contributed to our understanding of the civil/military dichotomy. In so doing, I situate my thesis in the bourgeoning field of Critical Military Studies and Feminist Political Economy and join the conversations about war preparedness on the one hand, and on the 'instability of dichotomies' on the other. I first introduce some of the challenges surrounding the definition of the civilian as a legal concept, but also as a semiotic resource in concepts such as civil society. I then introduce Institutionalist, Political Economy and Feminist contributions to the debate. I argue that, although there is a huge body of literature contributing to the understanding of militarism, its gendered implicitness, and economic implications, the civil has been understudied. From this follows a discussion on militarisation and other key concepts in the second part of the chapter. I explain my theoretical outlook and discuss how I hope to contribute to the understanding of the relationships that normalise war production with a Marxist theory of state and agency.

In the third part of the chapter, I reflect on the epistemological and ontological tensions that stem from a historical materialist and critical realist viewpoint and post-structuralist methodologies, arguing that these tensions hold creative potential and are acknowledged in a dialectic materialist perspective.

## 2.1 Problematising the Civilian

### The Principle of Distinction

The distinction between the military and the civil is seen as an universal truth and its translation into international law is seen as proof of the humanitarian project of the rule of law that defines modern democracies (Alexander 2007: 362; Kinsella 2011: 10). Protocol I of the Geneva Convention codifies the principle of distinction between civilian and military targets: "In order to ensure respect for and protection of the civilian population and civilian objects the Parties to the conflict shall at all times distinguish between the civilian population and combatants, and

between civilian objects and military objectives and accordingly shall direct their operations only against military objectives" (Protocol I Art. 48, Kinsella 2011: 142).

The principle of this distinction is key to International Humanitarian Law as it codifies who and what can be legitimately exposed to military force and what should be protected, or at least only targeted in proportion to the military objective. While the definition of what a combatant is – a person who is armed and wears uniform and takes part in hostilities - seems to be clear at first sight, on closer inspection it becomes evident that the definition is politically contested in every armed conflict (Kinsella 2011: 6). The legally highly questionable figure of the 'unlawful combatant' in the US' drone war against Pakistani citizens, for example (Archer 2014:191; Megret 2005), or the discussions over the ban of chemical weapons in warfare (Tezcür and Horschig 2020), are indicative of how warring parties bend the interpretation of the principle of distinction towards strategic objectives. The political nature of the definition of combatant is rendered visible in defining the opposite of the combatant – the civilian. Think tanks and research institutes, such as the Uppsala Conflict Data Program have grappled with the political concept of the civilian in operationalising battle-related deaths: "'Civilians' are any unarmed people that cannot be said to be part of either a government's official or unofficial machinery or part of an armed non-state group. In terms of coding, not all unarmed people are thus viewed as being civilians. People that are employed by the government in a function of exerting government authority, as well as unarmed members of rebel movements, can at times be recorded not as one-sided deaths but as battle-related fatalities if they are killed in direct armed action" (Sundberg 2009: 4). This definition aims to capture the responsibility of nominally 'civilian' employees of states in war who are in charge of organised violence, and thus classes them as battle-related deaths, rather than one-sided deaths, or 'real' civilians.

'Civilian' as a legal term was only established during World War I and gained its progressive meaning only with the drawing up of the Geneva Conventions and in light of the horrors of World War II (Alexander 2007). A critical reading of legal opinions of the time indicates that the two international treaties that first formulated a proto-type of the principle of distinction, the Lieber Code and The Hague Conventions were less concerned with the protection of 'citizens' and more concerned with the efficiency of war and questions of property in occupied lands (Alexander 2007: 363). This history of the civilian in international law highlights that those international treaties are largely void of a progressive agenda but reflect the imperialist agenda of the nineteenth century's states, and that legal principles such as the 'legitimate target' were subject to re-interpretation that reflected changing tactical considerations that became possible through less costly war-production and industrial innovation. Rather than containing war, these legal interpretations made civilised conduct during war a matter of better propaganda. While the active citizen previously had threatened 'civilised' warfare through ambushes and

treachery, it was replaced by the passive and exposed civilian, represented by depictions of women and children, whose treatment during war determined how 'civilised' war was. The paradox of the civilian in military strategic thought then, was, that of "a desirable target and protected victim" (Alexander 2007:376). 'Civilised war' thus not only aimed to protect civilians to win the moral high ground in the war of propaganda but needed civilians to target and leverage against its opponents. With the experiences of World War II and the ratification of the Geneva Conventions, the notion of civilian shifted again, and is now widely seen as the preserver of the rule of law, peaceful conduct, and democratic agency (Stavrianakis 2010:14 ff).

In fact, neither of these fundamental categories are very stable or reliable, as they are dependent on one another, and every warring party aims to depict its victims as legitimate military target. Because of the instability and co-dependency of the categories of 'combatant' and 'civilian', the discourse and legal debate turned to visibility. Thus, civilian persons and objects were to be spared and protected if and when they are clearly, and visibly civilian.

As Helen Kinsella points out with the help of Foucault and Nietzsche, visibility is not a neutral space, but one shaped by imperialist policies: those who are visible can be governed, surveilled, and this precludes 'perfect sight' in order to target the right individuals (Kinsella, 2011: 149). Moreover, who is seen as civil, and even human, is a political question.

In her analysis of the application of the principle of distinction Kinsella highlights how Black women who had suffered violence under slavery experienced violence from either side of the US Civil War, and working-class women and women who did not preside over plantations were not included in these discourses of protection. The very production of this principle is linked to discourses of civilisation and works to determine which states and entities are considered, expected to adhere to, and protected by the principle of distinction. As Kinsella argues, the key point of demarcating the civil/uncivil line serves to identify those who are deemed uncivilised enough and barely human, and thus those who are not covered by any Christian or humanist notions, to justify violence, killing, and genocide against them (Kinsella 2011: 95). The civilian who is universally and equally a victim of war or universally protected from it, is thus a myth, that homogenises, depoliticises, and trivialises the deeply unequal impacts of war, the reasons war is being waged, and those who die in war (cf. Kinsella 2011).

Second, as the US Civil War illustrated, below the superficial visibility category, the principle that really drove who to target with lethal force was loyalty. As Kinsella has argued, international law requires the civilian to be outside of the process of politics, outside of representation and action – something that has previously been described as vital in 'becoming human'. Derek Gregory, thus argues that international law requires the civilian to be subhuman – which is where it links back to its colonial roots (Gregory 2006). Gregory traces the history

of the word 'civilian' which has first been used in the English language in the 18th century and "it was closely tied to colonial military adventures, and referred to European servants employed by the East India Company" (Gregory 2006: 633). The 'civilian' thus is intended as a figure that is placed into dependence and at the receiving end of orders, rather than in a space where decisions are being made. It is this supposed non-act that offers justification for war in the first place, where the military is seen as the more capable agent of conflict solution or interest defence. The civilian thus is enmeshed in gendered and racialised concepts of innocence and citizenship, based on class. As Kinsella summarises her critique of those treaties poignantly "(…) it is not the arms one bears but the sentiment one carries that truly distinguishes combatant from civilian" (Kinsella 2011: 86). With this, she argues, the Lieber Code did not establish a binary between civilians and combatants, but introduced a third category, the unarmed yet disloyal citizen, whose treatment is up to the "civilised soldiers" and the "overruling demands of war" (Kinsella 2011: 86).

Cynically the myth of the possibility of 'civilised' or 'more humane' war, not only creates "dangerous illusion[s]" (Zehfuss 2018: 181) in the aptitude of war to respond to conflict, but legitimises war as a tool of politics, rather than an inherently political problem, and also continues to sustain the functionality of the protector, and thus the necessity of state-military. As critical researchers have pointed out, this creates a number of problems. Mainly, the codification of war obscures the violence of the practice and sustains the myth that there could in fact be something like 'civilised warfare', if only civilian casualties were avoidable (Sjoberg 2014: 148f). Rather than working towards de-militarisation, the inevitability of violent conflict resolution is reproduced and justified through ever more sophisticated and supposedly 'precise' weapon systems that drive military innovation in the urban battle spaces, in order to make war more humane (Dymond and Rappert 2015; Graham 2010; Zehfuss 2018).

Critical approaches to interventionist warfare by the United Nations and other trans-national organisations raise the problematic justifications of those. The 'protection of civilians' doctrine has been mobilised to justify military intervention and expand UN missions' mandates to include the offensive use of force in the Democratic Republic of the Congo (DRC), for example (Schlag 2012). The existence of the civilian is thus entrenched with the continued narrative of just war that is being waged by liberal democracies. While *civil war* is being portrayed as dominated by raw emotions, hatred, collective violence, greed and grievance, and dominated by racialised masculinities that occurs only ever in southerened regions, *humanitarian* warfare is dominated by cool war experts with no apparent political agenda and seems thus, somehow more legitimate and civilised. It is thus a continuation of the mission civilisatrice of colonialism (Schlag 2012).

Critical studies on liberal warfare since 1989, however, illustrate how casualties and 'collateral damage' are part of military strategy (Cronin 2018; Tidy 2017). Now that precision strikes are possible, the continued occurrence of civilian casualties has been explained by too much information, caused by the simultaneous, but differential access to information in drone teams, simultaneously highlighting the role of rules of engagement that tend to err on the side of strike, rather than constraint (Gregory 2018). As Gregory has illustrated with the example of US drone strikes on a civilian convoy in Afghanistan, technology, and perfect sight, thus do not limit casualties. In the technocratic universe of drone production and artificial intelligence it is scenarios like these that are supposedly avoidable through machine learning, that ultimately will order the data points and make the right decisions.

However, the point of war is not to limit casualties; it is precisely the credible threat of doing as much harm as possible that informs its. Thus, 'collateral damage' is not only a euphemism, but a calculated strategy – highlighting Alexander's point about the civilian being a valuable, if illegal, target. To further illustrate this point, I refer to a presentation at the arms fair DSEI2019 which I visited as part of my fieldwork. The presentation on the urban battlefield at DSEI2019 discussed the problems of military doctrines that focus on the *avoidance* of civilian casualties in cities, arguing that "firepower restraint prolongs the battle and does not reduce suffering" and that instead armies should "use their firepower advantage: intense destruction may result in less casualties and city destruction" and thus the "doctrines, laws are incompatible with modern reality" of urban warfare (Fieldnotes DSEI2029). In this strategy, cuts to electricity and the intense bombing of cities were presented as proportionate acts of war where this shortens the war and supposedly leads to less casualties inflicted by the attacking force (in this example the US in Iraq). Key for this strategy to work, is to "re-politicise soldiering" and the control over the strategic narrative that needs to be spread to the press and global audiences. The chair of the discussion thanked the speaker for "an interesting and I may add provocative talk" which produced laughter in the audience – but no-one pointed to the illegality of the strategy that was proposed (Fieldnotes DSEI2019). So, while this viewpoint was not a universally shared consensus of the DSEI2019 audience in 2019, it was not unthinkable. In a context like this it is more likely that artificial intelligence will provide a technocratic justification for why this or that person was in fact a combatant and a justified target; or how this and that glitch unfortunately meant that persons were regrettably targeted that shouldn't have been. Civilians in war are thus cynically valuable targets and assets with which to force the enemy's hand.

The erosion of confidence in identifying the categories combatant and civilian over the last twenty or so years, has been going hand in hand with ever more expanding legislation to combat terrorism. This is where the questions of peace and war and "internal" conflicts intersect and render visible that the distinction between internal and international affairs is just

as fluid and produced as the distinction between who to kill and who not to. At the core of it lies the building of citizenship loyalty to the entity they happened to be born into; or aspire to become resident of. A citizen has agency, rights, privileges, but a civilian is always already conceptualised as passive, an object of domination, rather than a subject with a political agenda.

## The Progressiveness of the Civil

While the civilian should technically only appear during combat, the imagery of the civil in the civil/military dichotomy holds meaning beyond this legally defined space, which is illustrated in terms like 'civil society', 'civil war', or 'civil servant' and the particular, non-violent and progressive meaning that is attributed to 'civilian' actors. Seeing oneself as part of 'civil society' or a 'civilian', is deeply context dependent as will be illustrated in the coming chapters, as people call upon the civil in particular ways and the distinctions themselves move around and shift to achieve particular political ends.

This means that a more sober view on civil society actors is needed. In the case of arms trade regulation, for example, Anna Stavrianakis (2010) has observed that where civil society actors seek a position of influence, they increasingly converge their views and policy proposals towards government and business stakeholders' views, which are seen as the more "rational" and "realistic" ones. Thus, agency and a position of influence is bought at the price of accepting the predominance of state and business actors. Importantly, the notion of being non-profit driven and independent, obscures the capitalist structures that shape the project-oriented funding environment of civil-society actors, the reality of agenda setting through privatised funding and the dynamics of competition within the funding market, all of which limit the progressive potential of NGO's and their campaigning (Stavrianakis 2010:26 f). The work of NGOs, then, tends to re-produce an ahistorical and a-political notion of 'civil society' that does not hold up to scrutiny.

In decision-making these processes also work to naturalise the formal and gendered distinction of public/private which privileges the public over the private, and thus renders "private affairs" irrelevant. This also mimics masculinist standards of respectability. Within this civilised discourse of hegemonic masculinity in 'humanitarian interventions', other civilised actors may speak and make suggestions, as long as they mimic the standards of acceptability set forth.

"Civil society" is a contradictory and very broad, as well as contested concept (Hodgkinson and Foley 2003: vii). Antonio Gramsci understands civil society as the terrain of non-state activity, including the church (Gramsci 1992: 245). Michael Walzer (Walzer 2003: 306) defines civil

society as "the space of uncoerced human association, and also the set of relational networks – formed for the sake of family, faith, interest, or ideology- that fill that space", and Jeffrey Alexander (Alexander 2012) has coined the phrase "the civil sphere" to reimagine a society that highlights the potential for compassion, support, and mutuality present in all societies. Adam Seligman, in building on Marx, on the other hand stresses that civil society as "a collective entity existing independent of the state" (Seligman 1995: 5) is to be understood as a concept full of ideological baggage, rather than a fact. Marx' critique of civil society links into the curious distinction between 'man' and 'citizen' in the declarations of rights of the time; and deconstructs them as establishing a decidedly a-political, individualist, bourgeois sphere: civil society. The struggle for political rights and freedoms finds its legal limits in the protection of private property and the individual egoistic interest is put above the right for political emancipation. Rather than being emancipated from unequal property relations, individuals gained the right to own property; "[they were] not liberated from the egoism of business; [they] received the liberty to engage in business" (Marx 2003: 111). Through this inversion of means (civil society) and ends (political freedom), the liberal idea of humans as interested only in their personal matters is naturalised, and "Man as a member of civil society – *non-political man* – necessarily appears as the *natural* man" (Marx 2003: 111).

Thus, civil society conceptualised as a sphere independent of the state, as a space of "free association", and often both, is problematic. Not only does the concept of 'civil society' raise questions about how coercive-free those relational networks are; it also writes out the historical entanglement of those networks with the state, such as the church for example[6]. From a Marxist and feminist perspective, the nuclear family – a prime example of this state-free association – is first and foremost an expression of property relations (Eisenstein 1979b: 27f) and guarantees not only the private accumulation of socially produced property but the continuation of patriarchal devaluation of women as well as feminine coded activities, objects and bodies (Peterson 2008: 9). Feminist research has analysed the oppressive nature of patriarchal family and sexual relations for decades as they are codified in marriage laws, and taxes, but also reproduced through the precarious financing of public services for care over many decades (c.f. Eisenstein 1979a). Though less and less rooted in lived reality, the nuclear family as 'the norm' also reproduces the emotional attachment to the myth of the paternal state that orders the matters of society in everyone's best interest as well as the extension of

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[6] This applies for secular societies as well, where the remnants of this entanglement are still relevant: In Germany, for example, while a secular state, the Christian churches (Protestant and Catholic) are supported by a tax that is due by anyone who has been christened, unless they formally declare their break with the church, which comes with a fee. The churches are also governed by their own jurisdiction, which means they can, for example, grant political and humanitarian asylum on their grounds; it also means, however, that the Catholic church has its own courts with Catholic jurisdiction over employment. Thus, the Catholic church can refuse to employ someone because of their faith, or marital status (Mueller 2016).

solidarity to blood relations only (Davis 2000: 160f). In their function of preserving intergenerational wealth, the family and state-governing of family relations are intricately linked (Peterson 2021: 292).

Thus, the development of the state and civil society with it, needs to be scrutinised and the standards of respectability that are set forth by 'civil society' are deeply gendered. These standards of respectability are also enforced in less formalised contestations of war and the production of the means of violence. For instance, art as the epitome of 'civilisation' takes on an important and contradictory role in shaping the civil/military in liberal war economies. While political art, for example, certainly has been rendering injustice, violence, and oppression visible, it is also easily appropriated into capitalist markets and militarist agendas. State-sanctioned art, such as Paul Cummin's and Tom Piper's fragile clay poppies of "The Blood Swept Lands and Seas of Red", performed for Remembrance Day 2014 in the UK (Kidd and Sayner 2018), raises money, and re-envisions nationalism, as well as military and civil agency. Crafting for and artistic expressions of peace are moreover deeply gendered, and activities designated to the ones who represent the 'ideal' civilian, such as women, pensioners and children, whose artistic expression is integrated into the political economy of the 'civilian' as unpaid labour, such as in the UK's poppy appeal (Basham and Catignani 2018). Not only have artists been designing the iconic camouflage patterns of WWII, but they continue to experiment with pigments, technology and creativity to immerse the public with the artist's vision (Newark 2007). While also documenting, publicising and scandalising the horrors of war, the idealist distinction between art as the 'creator' and 'war' as the destructor seems a bit too clear-cut (Alexander and Rueschemeyer 2005b); and yet art and the ones who make it are shaping the appearance of the distinction between civilian and military. Moreover, as Jill Gibbon observes on string-quartets at arms fairs: "[a]rt and university research, like a pinstriped suit, are often part of a veneer of civilisation that normalises war" (Gibbon and Sylvester 2017: 251).

'The civil' in the political North's discourse, is thus the realm of reason, argumentation and proficiency that has largely banned violence and the collective from its midst, and not only underplays the many violent ways of racial exclusion, gendered devaluation and violence, but also classist impoverishment, exploitation and under-representation – as well as the collective and concerted effort that is war. These are not static but shaped by their situational context. The imagination of the civil is codified in international treaties that emphasise the vulnerability of civilians during war and draw a clear distinction between combatants and non-combatants. In this context, the role of the civilian is to be protected.

Civic agency, as performed in protests and campaigning is situated in regulating and contesting collective violence and thus the embodied performances of the civil tend to be situated in opposition to military – arguably stabilising the civil/military dichotomy (Ziemann

2008). But while the civil can be mobilising against war, it simultaneously is drawing the boundaries between legitimate forms of dissent (Rossdale 2019: 20f). The depoliticising tendency of the civil becomes visible where the civil/military dichotomy is challenged. Forms of protest that do not play by the rules of the hegemony are policed and sanctioned. Thus, traditional accounts of *the civil* underplay *the civil's* role in legitimating and producing military as necessary, natural, and normal. Moreover, it guides our gazes towards events rather than the everyday as a site where informal ways of resistance are enacted (Hobson and Seabrooke 2007).

## The Banality of the Civil

The focus of anti-militarism and militarisation is often the way in which lethal instruments or authoritarian ideology are rendered banal and how what is considered normal is made so (Rossdale 2019: 30). The potential technologies that could be adapted to war-making seem endless and thus the starting points for inquiring into the civil seem vast (Fisher and Gamman 2018). As Enloe puts it, because 'normal conduct' usually rests upon fine-tuned, gendered assumptions, "[n]ormalcy is always interesting to a feminist investigator" (Enloe 2014:142). Banality is difficult to study because it rests on unquestioned assumptions and, thus, may be unarticulated and invisible. Banality is indicated when the answer to the question seems obvious, unchallenged and 'common sense'. This is when we know that we have found a power dynamic of normalcy, and our detective radar should be in a state of alertness (Cohn 2006: 107). The civil is the 'background' of any non-civil activity and thus it tends to invoke static, institutionalist imagery. *Civilianness* is therefore such a field of "normality" and as such complicated to study because of its "sheer banality" (Millar, 2019: 243). While there is a huge body of literature that analyses civil-military relations, the political economy of war and the gendered reproduction of violence, I argue in the following section, that *the civil* has thus far remained the background of such analysis.

## 2.2 Civil-Military Relations and Boundaries

Civil-military relations in modern capitalist democracies are complicated. Armed forces governed and overseen by a civilian and democratically elected body are still the signifier of a mature and potent state (Basham 2018: 32), yet more and more democracies abolish conscription and expand the private security market, thus reducing accountability and often evading public scrutiny (Abrahamsen and Leander 2016; Avant 2005; Hibou 2004; Krahmann

2010; Singer 2008). Whether societies have a standing army, conscription, or an all-volunteer army – or no armed forces at all, and how these armed forces are governed and interact with the civil, is at the heart of the study of civil-military relations. Those relationships are not only constituted through institutions but are made and remade in the everyday. While Feminist scholarship has focused on the everyday and the way gender organises these relations, Institutionalist approaches focus on the organisation and culture of military and civilian organisations. More recently we have seen a move in Critical literature on security and war towards practices and the materiality of war and war preparedness which has led to analyses of the Political Economy of war, with a focus on military budgets, labour and to a lesser extent capital. Rather than clustering the literature according to discipline, I decided to arrange the varied approaches along the key questions they ask.

## Institutionalist Approaches to Civil-Military Relations

In a narrow sense, the study of civil-military relations analyses the relationship between civilian, often elected, governance bodies and armed forces (Angstrom 2013: 224f). It is thus primarily concerned with the ethical and institutionalised civilian control of the military (Feaver 1996, 2003) and the interaction of government officials, generals, policy-makers and the military as an institution as well as military conduct to keep those relations intact (Cimbala 2012). In this view, Civil-Military relations are confined to the military, generals, the government, white papers, and parliament. The concept and theory of civil-military relations was first suggested by Samuel Huntington who sought to provide a theory of civilian control over and independence from military (Huntington 1964). In an effort of enhancing 'objective civilian control' he suggested to militarise and professionalise the military. Objective civilian control means "a clear distinction between political and military responsibilities and the institutional subordination of the latter to the former" (Huntington 1964: 163). This also comes with a distinct military culture, career progression and responsibilities, which is oriented towards the public good and national security. This is in contrast to 'subjective civilian control' by which Huntington understands a civilian government or group that tries to impress its politics onto the armed forces, controlling it not through institutional oversight but values. Thus, the aim is to de-politicising the armed forces through professionalising them. Tracing the rise of the officership and the military as a profession in the 19th century, Huntington argues that a clear line between military professionalism that engenders and confines obedience and discipline within a designated military site, would ensure the objective service of the armed forces to the civilian government according to political and state interests (Huntington, 1964: 83). Liberal militaries are organised along this principle, though the exact military culture varies. In the UK, for example, military culture has been described as "almost completely sealed-in" (Ledwidge

2017: 12) as the traditions, ethos and expertise are fenced off from civilian life. Ledwidge criticises this separation as leading to a sense of military exceptionalism based on the belief "that anything can be done, and that the possibility of failure is not only not an option, but cannot even be acknowledged" (Ledwidge 2017: 10).

While Germany also follows objective civilian control, the lessons from WWII meant that more emphasis is placed on core values within the military. The German army's ethical code *Innere Fuehrung* - sometimes translated as 'internal leadership'; closer to 'code of conduct'; or "Leadership Development and Civic Education"(Dörfler-Dierken 2017: 168) - conceptualises soldiers as 'citizens in uniform' and stresses the obligations a soldier has towards protecting human rights and democratic rule as well as the dignity of the person. As a reaction to the war crimes committed by the Wehrmacht during WWII, and the Holocaust, the concept lays responsibility on the soldier as a person vis-à-vis illegal commands that are in breach of human rights legislation, thus highlighting that a soldier is never 'just a soldier', but also always liable as a citizen and hence bound not only to obedience but also conscience (Dörfler-Dierken 2017).

The thesis that professionalism guarantees a politically disinterested general staff, loyal to the state and interested only in service saw immediate critique as being too idealist in its assessment of the possibility to disentangle political and military objectives and careers (Travis 2017: 369). To counteract this flaw, the paradigm of 'pragmatic civilian control' was suggested in which society should shape civil-military relationships according to the types of wars that are being waged, and thus ensure the "professional soldier as politico-military manager of violence" takes on a participatory and interactive role within democratic governance (Travis, 2017: 339).

The question of objective civilian control has been taken up particularly in works on processes of democratisation. A large part of this field is concerned with the formal disentanglement of a civilian government from military posts through security sector reform (Ball 1982; Bland 2011; Bruneau and Trinkunas 2006; Mares and Martínez 2014; Rosén 2013), which is seen as an important indicator for progress in post-conflict settings (Ball 2004: 510). In a critical perspective on civil-military relations this discourse is positioned within Peace and Conflict Studies as critique and problematises the interaction between military and humanitarian agents and the threat of militarising humanitarian work (Anders 2013; Duffield 2001; Guttieri 2016; Malešič 2015).

As Jan Angstrom has remarked, these accounts tend to take the categories of the civil and the military for granted, which leads to narrowing the focus on policies and programs of control, rather than "the entire range of civil and military relations" (Angstrom 2013: 226). They therefore ignore the blurred lines between legally civilian institutions, such as the police and

the military for example, but also cannot aptly deal with the inherent fluidity and multiplicity of identities, such as an officer off duty, or part-time soldiers of the Vietcong who were farmers by day, and reconnaissance officers by night (Angstrom 2013). I also argue that an institutionalist approach tends to foreground the military as a site and form of social organisation and narrates a history in which democratic, communal, and deliberative organisation fights its way out of military domination and oppression, into a supposedly independent liberal order. With this, the civil is constructed as an agent with precarious agency that is in constant threat of being undermined by more effective agents of domination. In the context of international aid and development, this construction not only writes out the colonial history of many agents but also ignores the broader political economic dynamics of the humanitarian sector (Wilson 2012). This view does not only sanitise and obscure relationships of domination within the civil sphere; it fundamentally constructs 'the civil' as an object of military domination.

## Political Economy Approaches

Beyond the institutional confines of the military and the question of who can legitimately be killed in war, there are other ways that agents call upon the civil/military dichotomy. While Institutionalist approaches largely operate on the governance level, Political Economy literature focuses on the circulation, accumulation, and organisation of and for organised violence. This literature focuses on military budgets, capital, the privatisation and most recently the labour of violence.

The arms industry is represented as both a sinister site of "the merchants of death" (John McDonell, Fieldnotes 2021) in which corruption rules (Feinstein 2011; Roeber 2005) and which holds the (civilian) sovereign hostage, as well as a vital "national asset" that drives innovation and without which one just cannot do (Stavrianakis 2010: 102). The efforts to theorise the potential of disentangling military and civilian organisations and manage their relations in a way that is compatible with liberal governance, can also be read as a reaction to and sometimes as an expansion of the 'military-industrial complex' debates. While the term is usually attributed to ex-US president Eisenhower, Weaver (2011) argues that its sociological fore-runner is "The Power Elite" (Mills 1956). Mills maps the shared interests and pathways of the economic, military, and political elite which is fostered and reproduced through private education, inter-marriage, and inheritance in a quasi-hereditary manner, which renders the single voter rather powerless. From this conceptualisation of the concentration of power in social institutions, there has been a spike in research on the military-industrial complex, with special focus on the US's 'permanent war economy' (Melman 1974). Powerfully illustrating the

economic drivers for increased military budgets, inflationary tendencies of arms spending, and the non-appearance of the 'peace dividend' after the collapse of the Soviet Union, scholarship building on this work has identified a variety of new 'complexes', and spheres of society getting into the grasp of the military-industrial complex. Publications on the "media-military-industrial complex" (Winer 2007); "A biomedical-military-complex?" (Reppy 2008), "the military-industrial-media-entertainment complex" (Der Derian 2009), "tourism and the military-industrial complex" (Weaver 2011); and the "military-animal complex" (Nocella, Salter, and Bentley 2014) have analysed military marketing campaigns and the purchasing power of state-backed businesses, military-sponsored films, revolving doors and the diffusion of military agendas across society; often with a focus on euphemistic imagery and the effects of these. As Weaver (2011: 687) argues "[t]he durability of the military-industrial complex is partly a product of its entrepreneurialism and adaptability; new and profitable civilian out-lets for military technologies are being found or developed", and made palatable through a widespread and subtle campaign. These important works on diffusion techniques and blurring of markets and methods, also illustrate that in order to adequately capture the "evolving boundaries of defence" (Bellais 2014) ever more hyphens will be required.

Stemming from the nuclear arms race during the Cold War, and the 'permanent war economy', Melman also developed the concept of conversion (Melman 1974). Melman defines "economic conversion from military to civilian economy [as] the formulation, planning and execution of organisational, technical, occupational, and economic changes required to turn industry, laboratories, training institutions, bases, and other facilities from military to civilian use" (Melman 1985: 11). In Germany and the UK the idea was taken up by the peace movement, helped with the prominent case of the Lucas Aerospace Plant, where union activists, faced with the closure of the UK site, drew up an alternative plan for production (Cooley 1987). Economic conversion also saw a revival in the 1990s with the end of the Cold War and the expectation of a reduction of military budgets and the "dismantling of the cold war economy" (Markusen and Yudken 1992). In Germany conversion led to restructuring projects of areas that were economically dependent on military bases, and looked into a bleak economic future after NATO forces were withdrawn from these areas (Wieschollek 2005: 3f), as well as the establishment of the Bonn International Centre for Conversion (BICC)[7]. The literature on conversion focuses on the technological and economic requirements for successful conversion (Altmann 2000; Brzoska 1999, 2000; Pianta 1992). With a negative balance sheet (Brzoska 1999), the main challenges for economic conversion are the capacity for large-scale planning, lack of political will, and economic motivation (Pianta 1992). While envisioned as an ambitious systemic and political project by Melman, conversion has since been redefined. In technology

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[7] Renamed in 2021 to Bonn International Centre for Conflict Studies.

studies, conversion refers to technology transfer from one area to another area (Molas-Gallert 1997). These works have largely been forgotten and economic conversion as a concept lives on in activism much more so than in the literature.

"MILBUS" short for 'military as business' aims to capture the economic activity by the military officer class (Siddiqa 2007). Ayesha Siddiqa defines MILBUS as "military capital used for the personal benefit of the military fraternity, especially the officer cadre, which is not recorded as part of the defence budget or does not follow the normal accountability procedures of the state, making it an independent genre of capital" (Siddiqa 2007: 5). Examples of the ventures of the officer class are apartment blocks, amusement parks and fashion labels (Siddiqa 2007). With this definition Siddiqa reveals the dynamics of both legal privatisation and covert accumulation which are not accounted for in any government budgets. Her definition is a variation of the BICC definition which extends the definition to "corporations owned by the military as an institution, to welfare foundations belonging to different services, to enterprises run at the unit level and individual soldiers who use their position for private economic gain" (Brömmelhörster and Paes 2003: 1-2).

Siddiqa points out in her study, that there is a spectrum as to how independent military actors are and thus to what extent military capital is accumulated. In this typology, armed forces in liberal democracies fall into the least independent spectrum, which makes her approach compatible with traditional concepts of civil-military relations. Even though Siddiqa's typology of MILBUS broadly follows the contested hypothesis that liberal democracies are less likely to engage in armed conflict[8], her work highlights that assumptions about the a-politicalness of professional armies and their supposed dis-interest in personal economic gains are misplaced. While her definition is based on a masculinist reading which aims to analyse "the military's capacity to penetrate the political, social, and economic system" (Siddiqa 2007: 33), it serves as a reminder that the market of violence is not only dominated by private companies and agents that encroach onto previously state enrolled areas but includes the state and state institutions. Thus, through a focus on economic activity, the lines between the civil and the military become seemingly less clear cut.

Emily Gilbert (2015) writes about the monetisation of war and the reorientation of the armed forces from battle forces 'in the field' to economic entrepreneurs. The US counterinsurgency strategy with the telling acronym "COIN" aims at restructuring the military from a bureaucratic and service-based organisation into a proactive market force. Gilbert's work highlights how structural violence is deployed through the investment and management of money directly by the military and justified through neoliberal and ultra-libertarian ideals such as helping to help

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[8] Critical on this: Geis, Mueller, and Schoernig (2013).

themselves through market-based interventions such as micro-loans. These loans keep the loanee indebted to international institutions and the occupying force, or as Gilbert puts it "literally indebted to the liberal way of life" (Gilbert 2015a: 209). This also requires a new skillset for the army, illustrated in the UK Armed Forces' recruitment call to bankers in 2021 to the new economic warfare taskforce (Warrell 2021). Gilbert points to the blurred lines which the use of money as weapon creates: "For if war is economics, and the economy is war, where do war and peace begin and end? Where is the battlespace in 'the everywhere war' that is unfolding (Gregory 2011)? And who is the target?" (Gilbert 2015a: 216). Where 'wars below the threshold' of a declaration of war are fought, trade embargoes, interest rates, tariffs and economic sabotage, thus the economy, is the weapon. This is an important question indeed, and points to the liberal theory of state and the economy which underpins the above approaches.

The 'military-industrial complex' literature is influential in empirical studies on the political economy of war as well as popular within anti-militarist campaigning, where it adds a much-needed economic perspective to the analysis and allows to account for profitable networks between companies, governments, and councils (Rossdale 2019: 44ff). However, the concept of 'military-industrial complex' has been criticised as constructing the image of an all-powerful elite that renders protest near ineffective and its theoretical heritage can be traced to non- or anti-Marxist concepts of power, which specifically aimed to downplay the economic foundations of power and class-conflict (Moskos 1974: 498). With that, I would add, it contributes to the construction of a civilian sphere that is at the mercy of a sinister group of people; and thus, shrouds military production in mystery, while at the same time contributing to the mystique of the arms trade. While useful in pointing to undoubtedly existing patriarchal networks of power and hierarchies and their reproduction, it tends to refocus our attention to the 'big men and women' and brackets out the rest of society, and ironically the economy. It begs the question of whether the boundaries of defence are ever evolving, or whether there are other dynamics at play that blur the seemingly clear-cut boundaries of the civil that are invaded by military ventures. Similarly, Melman's permanent war economy is based on the civil/military dichotomy, and thus focuses on the military aspect of the economy without challenging the ways in which the 'civilian' aspects of the economy may be constituting the military. Ultimately, the economy is split into a non-violent civilian, and a violent military sphere, without exploring the relationship between the two.

Critical security studies and particularly the study of the privatisation of security has been domineering more economically focused analyses of agents of violence in International Relations. Thus, the study of Private Military and Security Companies (PMSCs) is at the heart of debates about blurred lines between war and peace and its economy. The new "corporate

warriors" (Singer 2008) have been problematised as the privatisation of core state functions under a neoliberal agenda with important implications for the principle of distinction and state authority (Abrahamsen and Leander 2016; Avant 2005; Krahmann 2010; Stavrianakis and Stern 2018). 'New wars' that are waged out of greed rather than political gains, and failing states that create a vacuum of authority as well as cuts to military budgets in light of victim-aversion in hegemonic states, have been identified as some of the driving forces of privatisation and increasingly blurred contexts of conflict/non-conflict and "hybrid peace" (Mount 2018). While some contributions have diagnosed a "post-national era" (Nullmeier et al. 2010) in which the monopoly of violence is challenged, or at least diffused, others have pointed out that the informalisation of relationships of power and authority strengthens political and economic elites, and thus does not undermine the monopoly of violence, but re-articulates and reproduces it as governmentality (Hibou 2004: 4ff). In this Foucauldian view, authority is not merely a matter of government positions, but includes "more subtle methods of power exercised through a network of institutions, practices, procedures, and techniques which act to regulate social conduct" (Joseph and Rosenberg 2006: 411).[9] PMSC studies has been contributing to the study of agents other than the military, and more recently embraced a stronger focus on practice, rather than institutions, such as the "managing, marketing, materialising of security, and the demobilising of resistance" (Leander 2022b:11).

The framework of privatised security and PMSCs usually focuses on services and thus does not include the sphere of production. While a diverse field, there is a trend to focus on violent services, such as soldiering, guarding, or surveillance. This led to a tendency to locate the problematic aspects of privatised security outside of the states that produce them. Recent contributions suggest a focus on labour, in an effort to bring PMSC studies into a framework of International Political Economy and to overcome the internal/external dichotomy of problem framing (Chisholm and Stachowitsch 2017a).

Deborah Cowen has been pioneering in this field and demonstrated how the military and the soldier as the military labourer, has not only shaped technology and geography of civilian life, but also social institutions such as welfare (Cowen 2005). With her focus on the soldier as a worker, the conditions of labour come into focus as well as changing economic strategies and their impact. She also shows how the expansion of welfare systems that were developed in the military to guarantee service and sacrifice eventually served to provide problems for military recruiters who struggled to outcompete the conditions in the civilian labour market. Moreover, she develops a perspective that breaks with the methodological localism which is often evident in studies on the military: "The military spans the borders of the territorially organised nation-

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[9] See also, and more comprehensively, Joseph (2012).

state system. As a domestic institution and labour force and international actor, the national military does not allow for any simply separation of inside/outside" (Cowen 2005: 674-675).

Sarah Meger conceptualises war as feminised labour in global capitalism (Meger 2016). Based on empirical work on Colombia and the DRC, she highlights the essential and constitutive work that violence does in the global supply chains. Rather than being a threat to the global order, violence and chaos in those countries are fundamental and sometimes directly funded, to keep access over extractive markets and prevent labour organisation that could challenge the conditions that keep raw materials for the global market cheap (Meger 2016: 386). Thus violence "cheapens" the labour in the southerened countries but at the same time, Meger argues, the labour of violence is cheapened itself, through feminisiation and orientialism (Meger 2016: 386). Feminisation, Meger defines not only as the process in which labour is "de-valorised" and constructed as unqualified, or simply less "worthy"; but also informalised, precarious and insecure (Meger 2016: 383). Where the two discourses are mapped onto each other, violence is constructed as the 'failing' of 'weak states', that are in need of Western intervention, either through aid, armed forces or economic means (Meger 2016: 386). Thus, budgets for security and armed violence are not solely accounted for in military and defence budgets, but to a considerable extent in budgets of state aid, development aid and state building exercises, that often focus on security sector reforms and target the military of the 'weak state'; turning them effectively into new markets for providers of the political North.

Chisholm and Stachowitsch argue for a focus on labour in order to render visible the connection between state relations, markets, as well as gendered and racialised structures, and highlighting that private and state labour should not be seen as separate but as deeply intertwined (Chisholm and Stachowitsch 2017b). "By focusing on security as labour, we can begin to conceptualise the industry not as exceptional, but as an integral part of the reorganising of work and capital in the neoliberal era"(Chisholm and Stachowitsch 2017: 382). PMSCs are reorganising global workforces. While they are recruiting from state military, they are not bound to that, but can source talent from across the globe and exploit gendered and racialised structures that cheapen labour across the globe: "The neoliberal restructuring of military affairs is thus not only a process of commodification but also one of labour flexibilisation, leading to growing precarity of the military workforce" (Chisholm and Stachowitsch 2017: 378).

In the overall argument of this thesis labour takes on a crucial role. It is what turns 'supply chains' into value chains and it renders visible the junction at which '*civilian' means* are turned into means of violence. All three contributions, moreover, are informed by a feminist perspective on war, which has been the most productive field in generating critical thought on war, the soldier, and the blurriness of dichotomies in recent years.

Feminist analysis has brought together "the big words" (Barlow 2011) of peace, women and the everyday. By politicising and rejecting the public/private dichotomy, feminists have paid attention to the ways in which militarism is reproduced in everyday relationships (e.g. Enloe, 2014; Pain, 2015) and in many ways have kept the discussions on militarism alive beyond the Cold War (Stavrianakis and Selby 2012: 3). From a variety of theoretical and political perspectives, feminist scholarship has been assessing the gendering of war, the nature of citizen-state relationships, their shape, form, reproduction, and performance and has made major contributions to the study of war and peace, as well as combatants and civilians (Sjoberg and Via 2010).

Feminist scholarship has deconstructed the militarist myth in which soldiers protect 'womenandchildren' (Enloe 2014: 4). Analysing the systematised targeting of women in war, especially through forms of gender-based and sexual violence, they shed light on the centrality of sexual violence in conflict as a weapon, which ranges from rape camps, sexual mutilation, forced prostitution, and the purposeful infection of women with HIV (Duncanson 2017: 41). Thus, feminist scholarship has not only exposed how women's bodies become "a battleground" (Duncanson 2017:41) in war but kept in tune with the fact that "death may not be the worst thing that happens in war" (Duncanson 2017: 40). Feminist analyses of violence do not allow for easy boundary-drawing: "gender links violence at different points on a scale reaching from the personal to the international, from the home and the back street to the manoeuvres of the tank column and the sortie of the stealth bomber: battering and marital rape, confinement, 'dowry' burnings, honour killings, and genital mutilation in peacetime; military rape, sequestration, prostitution, and sexualised torture in war. No wonder women often say, 'War? Don't speak to me of war. My daily life is battlefield enough'" (Cockburn 2004: 43). Domestic gun violence and femicide render distinctions between internal/external violence analytically void, which has important implications for arms control policies and anti-arms trade campaigns (Stavrianakis 2019: 74). With that, anti-militarist feminists have made a compelling argument against the binary and naturalised myths that populate war propaganda where honourable soldiers sacrifice, while 'beautiful souls' (Elshtain 1982) at home admire. They have pointed to the gendered emotional labour demanded of military wives, and charitable labour such as acts of caring, mourning, and supporting that keep these stereotypes alive in remembrance practices and are thus part of civilian emotional labour that legitimises war (Basham and Catignani 2018; Tidy 2019). Feminist scholars have highlighted the role of women in war as

fighters, ammunition workers, spies and camouflage experts (Archer 2014; Fieldhouse and O'Leary 2020; Tasker 2011).

Beyond the role of women in war, feminist scholarship has highlighted the role of gender in naturalising state-citizen relations (MacKinnon 1989) and the gendering of war (Sjoberg 2013), the offensive (Wilcox 2010), and the economy (Peterson 2005). Understanding that violence does not cease to exist just because there seems to be no army, Black feminists in particular have challenged not only liberal concepts of violence (Carraway 1991; Crenshaw 2013), but also the distinction between domestic/foreign politics which results in colour blindness towards the violence that shapes the lives particularly of Black women in the US and for people in southerened countries (Manchanda 2021: 55). Importantly feminists have highlighted the varied sources of militarism, which are not limited to the military as an institution and thus challenged established dichotomies (Basham 2018: 33).

Soldiering and masculinity have been tied up to citizenship from the birth of nation states through conscription in a way that "the obligatory military service of men elevated their citizenship status over that of women" (Eichler 2013: 315). As Peterson and Runyan have drawn out, the traditional citizen-soldier performs a hegemonic masculinity in which risk-taking and heroism is privileged over risk-avoidance and naturalised within a gender binary (Peterson and Runyan 2010: 4). The neoliberal restructuring of the state diversified those relationships and the performance of masculinities as Private Military and Security Companies (PMSCs) gained popularity (Abrahamsen and Leander 2016; Krahmann 2010). As Eichler argues, neoliberalism transformed citizen-state relationships into a market relationship that gave rise to "the private security contractor as a market model of militarised masculinity" in the private sector (Eichler 2013: 316f). The neoliberal hegemonic masculinity standards involve competitive individualism, reason, and self-control, yet still devalues bodies and entities that are in less privileged positions (Peterson and Runyan 2010: 4). Stachowitsch and Chisholm (2017) have also demonstrated that far from undermining or transforming militarism, privatisation has stabilised the gendered imagery that underpins militarism, where hyper-masculinised men fight 'the bad guys', and 'womenandchildren' admire them.

Such critical and feminist analyses of security and defence actors, their ways of delivering violence into society, and the gendered reproduction of cultural meaning that justifies this violence have enriched the understanding of military logics, liberal warfare and its legitimation (Gibbon and Sylvester 2017; Gilbert 2015, 2017; Kelly 2013; Rech 2019; Sjoberg 2014; Stavrianakis 2009).

While the discussions about political economy of war and violence and the politics of war and soldiering have been developed rather independently in ways that reflected ontological and epistemological commitments to a materialist versus a post-structuralist project, in recent years

there is an increasing body of work that aims to bridge the materialist and discursive divide (Hudson 2018; Millar 2019; Stavrianakis and Stern 2018). A turn to the materiality of war has highlighted objects and geographies of war and war preparedness. Critical Military Studies has taken up the thread, developed by critical feminist's attention to 'the everyday' and has "alerted us to some of the more mundane as well as bellicose ways in which war and war preparedness are animated and sustained" (Basham 2018: 34). Portable objects do not only communicate militarism and allow for its everyday consumption and symbolic order, but consuming militarism is an embodied practice that re-creates geopolitical landscapes, as Matthew Rech argues (Rech 2019). In building on Jonna Tidy's work (2015), he introduces the concept of "objectness of militarism" (Rech 2019:4) in order to shed light on how objects like free pens or toys collected at an airshow move from (re)militarised sites to the home as he seeks to concretise the materiality of war as embodied and spatial.

Production relies on skills, technology, and knowledge and therefore is an intimate and embodied activity by agents (Tidy 2019: 5). Jonna Tidy introduces a perspective of 'war from a making point of view', as this "provides a way into a wide array of embodied processes of production in varied spaces and political contexts, necessitating a broader research agenda" (Tidy 2019:6). This allows her to trace objects to the sites and bodies who make them, by engaging (auto-) ethnographic methods, such as observing, interpretation and making. Both these innovative conceptual and methodological moves towards bridging the material/discursive of militarism engage objects as the starting point of their analysis in order to raise questions about their origin. They both stress that the "geography" and situatedness of objects, their sites of production, is not an even plane nor a straightforward process. Rather it is the "juxtaposition and layering" (Cohn 2006: 107) of different material from different spaces, that enables the richness of these analyses and their inclusion of agents.

The move towards the practices and objects of militarism sketches the current conceptual debate in Critical Military Studies on how to overcome the civil/military dichotomy (Stavrianakis and Stern 2018). The strive towards overcoming dichotomies is mirrored by the recent endeavours in overcoming camp building and boundary drawing in IR, Feminist research and Political Economy that has inspired a discussion on how to bring together materialist analysis of gendered and racialised inequalities and poststructuralist insights on positionality, performativity and the reproduction of binaries (Hudson 2018: 134). The revival of security and economic analysis under a historical materialist perspective holds significant potential to overcome some of the questions of troublemaking binaries that concern the Social Sciences as a whole, such as the problematique of agent-structure, the ideational and material, and the everyday and exceptional (Blakeley 2013: 601).

These works relate to and build on the feminist concept of militarisation, which has been fruitfully employed to draw attention towards the everyday reproduction of militarism in schools, universities, marriages and around military bases (Cree 2020; Enloe 2014b; Frisby et al. 2011; Jackson 2017; Stavrianakis 2008).

## 2.3 Militarisation, Militarism, Marxism

Cynthia Enloe conceptualises militarisation as the "step-by-step social, political, and psychological process by which any person, group, or any society absorbs the ideas and resultant practices of militarism" (Enloe 2016: 26); and thus the appropriation of a set of beliefs, such as "to see military solutions as particularly effective, [or] to see the world as a dangerous place best approached with militaristic attitudes" (Enloe 2016: 68). It is a concept that aims to render visible the "process of bringing military values into civilian life" (Jackson 2017: 258). Militarism, Enloe defines as "a concept that refers to a complex package of ideas that, all together, foster military values in both military and civilian affairs" (Enloe 2016: 25). Amongst those are a set of values and beliefs such as soldiers deserve special recognition for their service, that serving in war is the ultimate expression of masculinity, and that violence is normal in human relationships (Enloe 2016: 25). A can of tomato soup with weapon shaped pasta, became the starting point for investigating the pervasiveness of the militarisation of civilians' lives, and thus the normalising of war and militarised beliefs, since for the soup to exist, Enloe argued, a whole host of people from marketing teams to pasta makers had to be militarised and believe that military sells (Enloe 2000: 2). Enloe highlighted the role of gender and how gender stereotypes stabilise the military hegemony on a global scale, not only through rendering invisible the important role women play in supporting the military as arms manufacturers, camp followers, or military wives (Enloe 1983), but through labour more broadly (Enloe 2016). Gender is an analytical concept, that renders visible the social construction and naturalisation of power relations which categorise subjects into binary, hierarchical and exclusive categories of masculinity and femininity (Oakley 2016: 33ff). Women's skilled labour, such as sewing in the textile industry for example, is conceptualised as 'naturally' female, and thus re-classed as 'unskilled' by company managers. Through this, women's labour is cheapened, meaning underpaid; and female unionisation is met with martial violence, keeping it 'cheap'. Gendered stereotypes that are reproduced in families and by men in the workplace of women as 'natural seamstresses' obscure the power dynamics backed up by violence that are not only guaranteeing profits for fashion labels but are also generating new markets and profits for Private Military and Security Companies (PMSCs) in the political North. It is through this gender lens that Enloe argues "feminists make the link" between globalisation and militarism (Enloe 2016). Enloe's work has been an effort to de-naturalise and

historicise militarism, and through grounding it in women's labour, highlighted how militarism is fundamentally dependent on the ones it supposes need its protection (Enloe 1983). Militarisation has thus opened the *everyday* as a site where civil/military and international relationships are (re)produced as a gendered hierarchy that privileges military over civilian agency (Åhäll 2016).

While Enloe's research is focused on everydayness, normalcy, and banalities, because "most militarised people are civilian" (Enloe 2016:68), the focus on the social as well as economic relationships that stabilise the system have laid the basis for bridging the materialist-poststructuralist approach. With this research agenda, her work has inspired generations of feminist scholarship concerned with militarism, war, and peace (e.g. Bulmer and Eichler 2017; Crane-Seeber 2016; Higate et al. 2021; Jackson 2017)

Stavrianakis and Selby's account on theorising militarism, identifies five ways of defining militarism: militarism as ideology, focusing on the belief system that elevates and glorifies military over the civilian sphere; behavioural approaches which define militarism as the "propensity to utilise force to resolve conflict" (Stavrianakis and Selby 2012: 12); a quantitative approach which defines militarism through the 'build-up' and thus investment and growth into military infrastructure; institutionalist approaches which define militarism in terms of civil-military relations; and finally a sociological approach which aims to understand militarism as part of society, cuts across the civil/military dichotomy and defines militarism as "the social and international relations of the preparation for, and conduct of, organised political violence" (Stavrianakis and Selby 2012: 3). While close to a more ideological understanding, militarism as understood by Enloe made explicit the overlapping relationships of exploitation, the racialised and gendered organisation of labour, and highlighted the everyday as a site of agency (Enloe 2014a).

New typologies of militarism have aimed to capture the variety of militarisms and especially liberal militarism which does not openly glorify war, but presents itself in a pacific way, building on the theorems of just war and post-heroism (Angstrom 2013; Mabee and Vucetic 2018). In referencing Enloe's work on military bases which are dependent on the consent of the local population, Rossdale, for instance, argues that the military industry is similarly dependent on the consent "both active and passive of ordinary people in unremarkable spaces" (Rossdale 2019: 44). 'Banal militarism' thus references the values, beliefs, and everyday justifications of militarism (Rossdale 2019: 44).

Jan Angstrom suggests we should go beyond institutionalist approaches to civil/military and perceive of civil and military as "a normative dichotomy" (Angstrom 2013: 227). This normative dichotomy changes according to historical and cultural context and demarcates the space between public and private or legitimate killing (war) and illegitimate killing (crime), which lies

at the basis of the Westphalian state, and therefore allows for the construction of ideal-types of militarisms. In a broad sense I agree that the civil could be understood as a norm, however the liberal theory of state underpinning Angstrom's proposal tells us little about the civil's contribution to the military, and ultimately relies on the same focus on institutions authorised to kill that it seeks to overcome. This means that the sphere of production of war is rendered outside of the realm of civil-military relations; and thus, a vital site of war preparedness is ignored.

Bryan Mabee (Mabee 2016) defines liberal militarism as the specific liberal justification of militarism which is based on an ideology of modernisation, and on a (neo)liberal, capital-intensive mode of production. He thus encourages an analysis of militarism that is "examining the linkages between war, security and political economy" (Mabee 2016: 253). I build on this suggestion but argue that Marxist theory can help sharpen this analysis. In drawing on Marxist theory, I understand ideology as "a social cement that holds together the different parts of the social system. Ideology, therefore, is concerned with the unity and reproduction of the social system, generating the necessary beliefs to ensure that humans act in the right ways"(Joseph 2006: 14). Thus, ideology is not merely a political preference of a certain group, such as economic libertarianism vs Keynesianism, for example, but is generated from the material conditions of society and refers to the variety of ideas that in this case legitimise private property (Joseph 2006: 14).

While militarisation research has sought to make these social processes visible in the everyday and establish a counter-hegemonic discourse that takes into account the gendered labour of militarisation, it has been criticised from an intersectional perspective as reproducing 'the civil' as a predominantly non-violent sphere (Howell 2018). Allison Howell's critique on formulaic applications of militarisation juxtaposes militarisation with the imperial origins of the police: "Policing cannot be said to have been 'militarised', but rather forms part of a broader 'martial politics' directed against racialised, Indigenous, disabled and queer people with the aim of reproducing liberal order" (Howell 2018: 125). Howell therefore highlights that society's institutions have much deeper roots in war than liberal concepts of the state want to acknowledge. However, militarisation implicitly constructs a non-violent history of many institutions, a time when they were not tainted by militarism. Thus, militarisation is deemed as mobilising a notion of society that is too harmonious, too peaceful, too dependent on a military protector. Therefore, 'the civil' is reproduced as the feminised Other of the military that is dominated and oppressed, and ultimately "encroached on by military values and institutions" while ignoring the very military history of many of today's institutions (Howell 2018: 117). Howell, therefore, suggests the concept of "martial politics", to describe a politics of force that is independent of its agent, and only one politics among other forms of politics (Howell 2018:

121).  Where civil society is conceptualised, the focus is mostly on non-military and non-violent alternatives to the martial ways of the state and thus, rather than addressing the contradictory and co-constitutive relationship of civil/military, reproduce 'the civil' as non-violent, feminised Other (e.g. Boulding 2001; Rabrenovic and Roskos 2001). With this, critics argue, militarisation conceptually denies the role of the civil and obscures the martial practices within (Mabee and Vucetic 2018).

The critique of militarisation as a concept can be framed in two ways. In the first, the critique refers to the underlying theory of state within militarisation, which conceptualises a distinction between economic, political, and military interest, which is trespassed and blurred in the process of militarisation. In contrast to this liberal theory of state, Victoria Basham and Bryan Mabee conceptualise the institutions of the monopoly of violence, i.e. the armed forces and the police, as a site of organised, state-sanctioned, and thus collective violence (Basham 2018; Mabee 2016). Thus, military activities cannot be seen independent of state activities and state activities cannot be separated from violence, either institutionalised and structural or direct. State-sanctioned violence includes violence within the state including police brutality, racialised and gendered inequality and targeting of groups of police and state intervention and incarceration (Segal 2008).

Again, I believe that through building on Marxist theory, this aspect can be sharpened. From a Marxist perspective the state is the historically formed bureaucracy of the dominant mode of production: "under capitalism the state must act in accordance with the interest of private property,  the market economy and capital accumulation" (Joseph 2006: 26). Historically this has been achieved through the armed and political struggle of the economically dominant group, and 'their bodies of armed men' to use Marx and Engel's formulation in the Communist Manifesto (Marx and Engels 2010). Importantly, because of the logic of competition in capitalism, the interests of individual capitalists come in conflict with the capitalist class as a whole, which is why it falls to the state to at times save capitalism from itself. While not without its contradictions and participatory elements which have been won in the many struggles of workers, civil rights movements, and environmentalists, the state in its totality is best understood as a mechanism through which the economic dominant groups reproduce their hegemony (Gramsci 2003; Joseph 2008b; Zaky 2005). The understanding of the state, not as a neutral plane, but as a site of formalised and ongoing political conflict and struggle of different groups and economic interests challenges the dichotomist thinking of civil/military which pre-supposes a-political state institutions, and stresses that in fact economic interests are deeply entrenched in the make-up and strategies of states (Blakeley 2013: 602). Thus, rather than seeing the state as a neutral arbiter, a Marxist understanding highlights the state as fossilised political struggle between classes. In capitalism the two predominant (though not the only)

classes are the bourgeoisie and the working class, defined as the ones who own the means of production; and those who do not; therefore, to survive, the working class must sell their labour-power on the market. Capitalism, then, is a historical system of production based on the generalised collective/social production of surplus value and the private accumulation of said surplus value, and based on the social institution of private property as well as the nation state which grew out of this mode of production (Joseph 2006). 'Historical' notes capitalism's temporality, thus acknowledging that other systems of production have existed in history, based on different forms of property and social organisation (Engels 1972).

In recent debates, Anna Leander has come to the defence of militarisation, arguing that the political consequences of 'forgetting militarisation' could be severe, in overlooking what militarisation can render visible, and muting voices who articulate changes in the relationship between the military and society (Leander 2022: 7). I agree that there is a political risk of perpetuating militarism's core belief, that armed conflict is part of the human condition if we give up on the notion of military's Other altogether. Just as Howell does not want to give up the space that is different from 'martial politics' there is value in keeping in mind what the notion of the non-violent civilian sphere is doing: it is projecting the space that could be different. Building on the current debates and drawing insight from Marxist-Feminist thought, I argue, that this impasse can be understood as a problem of agency.

From a critical-realist perspective, structure, culture and agency are distinct from each other, even though they are subject to change and mediated (Archer 2016:428). Structures refer to the relatively stable material relations of the (social) world, that can be shaped by humans, but which exist independently from any individual's will or belief, they thus have an "objective existence independent from the conceptions we have of them" (Joseph 2008a: 110). From a historical materialist perspective, society is shaped not only by culture but also by the way production is organised socially (Blakeley 2013: 601). This has important implications for agency. Since "[a]gents are not the mere bearers of structures, nor are structures the mere outcome of agential activity" (Joseph 2006: 115), the question of collective action for purposive change and transformation of structures arises (Blakeley 2013). While society is an inter-subjective, historical, and thus thoroughly human endeavour, based on re-production, transformation, contradiction, and struggle, it becomes a material condition in as much as it precedes any one individual or collective and shapes their mode of living .

I define agents as human beings, individual or collective. In more recent debates about war and agency, Artificial Intelligence and autonomous weapon systems have been debated as 'new agents'. Although it is not new to perceive of weapons as agents - e.g. chemical agents, but see also Cohn's analysis of the gendered anthropomorphisms of nuclear warheads, (Cohn 1987) - the prospect of 'self-learning' machinery has pushed the discussion into new depths

(Asaro 2012; Sparrow 2016; Verbruggen 2019; Warren and Hillas 2017). With the thesis' focus on agency, it seems important to clarify the distinction between objects and agents. Objects can be simple or highly complex, they can be material (a pen) and immaterial (a poem) (Archer 2016). The immaterial thing still relies on the material thing: a body, brain that thinks of the poem, and that needs to be fed and cared for in order to think; or in the case of artificial intelligence, a server, microchips, software and the raw materials to produce any of the aforementioned, *as well as* the humans whose labour extract, move, and transform those 'raw' materials, who again have a body that needs to be fed and cared for. Thus, carriers of artificial intelligence are objects and artificial intelligence itself a product of human agency, rather than an agent itself. Things can assist human beings to achieve complex tasks or limit human activity, and therefore appear to humans as agents. Money is the prime example for this. Marx calls this fetishisation: the appearance of a relationship between things and the action of things, when, in actuality, things represent relationships between humans and human actions (Marx 2013: 46f).

In critical thought, agency is often positively connotated, yet, agency is multifaceted and not always progressive as Marxist-Feminist Frigga Haug reminds us. As a result of an auto-ethnographic study on learning experiences, Haug and her co-researchers built on the theory of self-objectification and found that women often had adopted a self-concept that reproduced them not as agents in society and thus, subjects of history, but as objects of social processes, circumstances and conditions (Haug 1999: 17). The conceptualisation of oneself as an object of oppression mystifies oppression and ultimately reinforces the feeling of powerlessness, because for an object the conditions of its being are always outside of reach (Haug 1999: 179). Building on cultural studies, critical psychology and Marxist dialectics, Haug pushed to change this construction and shed light on the many ways women and the subaltern spin the webs of their own oppression, which led her to formulate the provocative statement: "Being a victim is also an action, not a destiny" (Haug 1980: 7). Haug comes to this statement, not as a condemnation, but in an empathic, self-critical, and radical endorsement of women's agency, which aims to do away with the perspective that women are the passive receivers, somehow uninvolved in their own socialisation. Rather, "Through such means as bribery, diversion, suppression, and compensation women accept to settling for spheres of less actionability. This is particularly apparent in spheres of power, in which the conditions of agency are negotiated" (Haug 2005: 150, own translation). This change of perspective challenges to uncover internalised oppressions and places the power to transform oppressive structures into the hands of women collectively.

While feminists have taken on this challenge to unmake those webs, I think there is a lot of value in these insights for challenging the civil/military and the objectification of 'the civil'.

Asking how 'the civil' is produced and what role it plays in the production of the means of violence, and how it relates to the military is to ask a question about a social structure and aims to identify the agency within that.

The invocation of the military does mobilise a certain notion of the civil, and while the military in this dichotomy has been scrutinised, de-constructed as hyper-masculine with harmful effects on individuals, a perpetuation of violence and the covering up of the emotional, embodied, and habitual processes of war, the same cannot be said for the civil. Importantly the reflections on the civil need to take into account the civil as a productive force of the military, in metaphoric as much as in literal sense. The existence of chivalry and the gendered code of civil/military does not only establish a dependency between soldier and civilian, masculinised and feminised people, but also a dependency of both on the system which gives rise to these categories: war. 'The civil' depoliticises the production of this system, and thus takes on a crucial role.

War and peace, "war and society need to be seen as inseparable" (Mabee and Vucetic 2018: 97) The hybridity of war and peace, military and civil, soldier and civilian calls for the analysis of their relational bond (Mount 2018: 204). Focusing solely on the 'militarisation of civilians' dilutes the ways 'civilians' act to produce sites, markets, and identities for collective violence. This also limits our understanding of the ways the civil is producing the military in a very material sense. To speak about the military, therefore, is to speak about the civil at the same time (Peterson and Runyan 2010: 6). Rather than adding yet another hyphen, I argue that war can be better grasped from a perspective of *the agency of the civil*, which radically breaks with the military-legal construction of the civilian as 'the innocent' and instead explores the many ways 'the civil' is a productive force in the political economy of violence, circulating coercion while simultaneously reproducing itself as the progressive and subservient counterpart to 'military'.

Thus, as long as there is no interrogation into the many ways 'the civil' is producing the relationships of martial domination, and the ways it is bribed, diverted, suppressed, and compensated to settle for less and stay away from spheres in which the conditions of agency are negotiated, civilians will remain objects of martial dominance. As long as civilians are seen as an object of martial domination, it is unclear how they could take care of themselves, without a martial protector. If we take on the insight that civil/military are co-constitutive categories that are (re)produced in the everyday, the question that arises is who produces these categories and who owns the means of their production? In order to do this, 'the civil' needs to be taken seriously as having a role in the production of the means of violence, rather than always already being an object of martial domination. It is in this sense that I use the phrase 'agency of the civil'.

In so doing, I believe we can overcome first the dichotomist and institutionalist thinking of civil/military by including feminist insights of the dialectic relation between everyday violence and institutionalised violence. This allows to shift the focus on "the civil" in the civil/military dichotomy, as first suggested by Helen Kinsella (Kinsella 2011) and made more explicit by Katherine Millar (Millar 2019). A Marxist understanding of the relation between state and economy also opens the path to explore the fault lines between the civil and the military. The centring of agency within Marxist theory allows us moreover, to illustrate the complex moves of acquiescence and normalising in society.

## 2.4 Reflecting on Tensions: Marxism and Feminism

In realigning a political economy perspective with the analysis of collective violence, a variety of sites of production and revenue in liberal war economies come into focus that have been somewhat overlooked, namely supply-chains, dual-use technologies, and casualised labour (Mabee 2016). Gender is front and centre in this analysis as it helps to render visible how masculinities and femininities are mobilised to make liberal war economies go round, to borrow a phrase from Cynthia Enloe (Enloe 2014: 25).

My research also illustrates that there is nothing 'natural' about this distinction and that 'the civil' is sanctioning political action by agents to make it a viable 'background' of the military agenda. Thinking about what is actually needed to produce military and war, makes us also think about the kinds of labour that go into that endeavour and thus brings sites into the focus that previously have seen little attention, such as hospitals, businesses, universities, supermarkets, festivals, trade unions, or art fairs. The first step here is to acknowledge the agency of the civil within the civil/military dichotomy and take it seriously in producing the relationships of martial domination.

To shift the way of thinking about civil/military, I draw on Marxist theory and take inspiration from the Marxist-Feminist notion on the acquiescence of the oppressed. The professed historical materialist approach of this thesis is in tension with the more post-structuralist approaches that I also draw on. Socialist feminists, radical feminists, post-structural feminists and historical materialist feminists have contributed to rendering these tensions transparent and have engaged in discussions on ontology and epistemology which have produced a large body of work to build on (Barrett and Weeks 2014; Eisenstein 1979a; Hartmann 1979; Haug 2007; MacKinnon 1989). The at times tense theoretical struggles between Marxism(s) and Feminisms stemmed from a struggle against mechanical understandings of historical materialism, the struggle against reducing Marxism to economics, and a reaction against a static theory of development and progress on the one hand (Joseph 2006: 103); and a relativist

concept of class and exploitation on the other (Beloso 2012)[10]. While some accounts of Marxism have been criticised (and rightly so) for adopting an economist perspective of the social and emotional world; activist accounts of Marxism, and a growing number of academic articles, reclaim the dynamic and dialectic perspective of Marx and Engels' writings, which created a new ontology: dialectical materialism (Gillman 2016; Gunnarsson 2013; Hudson 2018). As Haug, an eye-witness, and agent within these movements summarises the debates, "we conclude that previous socialist politics did not include the emancipation of women as a necessary condition for the emancipation of all. However, conversely, any radical emancipatory politics of women is only to be formulated as a project of the emancipation of humankind and becomes feasible only as such" (Haug 2007: 55, own translation).

On a generalised level, Marxist accounts and feminisms share a lot as approaches which share a common ethical and political goal of emancipation that takes into account the lived experience of people: "Hence, the process of emancipation should avoid utopian gestures and focus on the specific mechanisms of social exploitation and identify concrete practices designed to transform them" (Joseph, 2011: 31).

They also share an epistemological interest in the destabilisation of naturalised dichotomies and share an ontological closeness that is reflexive and concerned with the social relationships that establish the world and what is in it; and with this hold value for social sciences more broadly. The early debates between Marxists and Feminists address the problems of dichotomies and power and find mutual understanding in dialectics and historical materialism (Eisenstein 1979a). As Zillah Eisenstein formulates "Marxist analysis provides the tools for understanding all power relations; there is nothing about the dialectical and historical method that limits it to understanding class relations" (Eisenstein 1979:7).

The ontological perspective of Marxism allows for change and agency as it conceptualises a dialectic, i.e. reflexive relationship between the world around us, our experiences in it, and the possibility to do something about it (Blakeley 2013). With this mediating, dynamic and agency focused perspective the social emerges as shaped by its historical, economic, and gendered relationships re-produced, transgressed, and collectively transformed by individuals. As such, the social and material world neither appears as a harmonious totality heading towards a point beyond progress, nor as completely determined by discourse and imprisoned into webs of meaning-making, but as a contradictory juxtaposition of different values, interpretations, experiences, masculinities and femininities and not least living conditions (Joseph 2011: 33f).

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[10] These played out in the political sphere where socialist and communist politics were dominated by a Stalinist vision of politics that put forward a stage-ist view of history and thus, in many cases argued that certain struggles needed to wait until after the socialist revolution; as well as the context of ideological warfare between the two blocs during the Cold War.

It is at the junctures of established binary categories (contradictions) forced into dichotomies, that Marxism finds movement and attempts to challenge the system of class society that gives rise to them.

Marxism and Feminism also share an epistemological perspective that is oriented towards making visible the workings of hegemonic knowledge (ideology) and the lived experience of the subaltern (the material), "real people" (agents) and thus a shared commitment to concretion, de-mystification and politicisation of social science (Joseph 2006: 17; Kronsell 2006: 111). As a philosophy and activist theory, Marxism commits to change not only in an ontological sense, but also in action. This is where Marxism and Feminism share a commitment to emancipation. Thus, Marxism and Feminisms are not necessarily incompatible either politically or theoretically, and some would argue they necessarily go hand in hand (Eisenstein 1979). The explanatory vocabulary of Marxism has been invaluable in rendering visible power relations, their stabilisation and materialisation in the world and their interconnection with hegemonic systems of meaning and thus, in politicising exploitation, markets, domination and normalcy (Joseph 2006:29). With this theoretical framework objects are understood as manifestations of social relationships as brought forward in capitalist democracies, and thus lead us to the agency that collaborates with, designs and contests those relationships. The historical materialist approach of Marxism, in conversation with post-positivist feminisms, provides a fruitful avenue to explore, negotiate and balance the multidimensional aspects of the social, as argued for example by Laura Gillman (Gillman 2016).

The rediscovery and demystification of dialectics as a core element of Marxism (Meger 2015) which conceptualises a reflexive relationship between epistemology and ontology, as well as the orientation towards material manifestations of hierarchies and inequality as conceptualised in historical materialism (e.g. Blakeley 2013), has inspired not only a productive conversation between Marxism and Feminism. These encounters have had their reverberations in Feminist IR more broadly and inspired also a conversation between post-structuralist feminism and IPE that focuses on how to navigate the material and discursive (Choudry 2014; Gillman 2016; Hudson 2018; Meger 2016; Stavrianakis and Stern 2018).

Furthermore, the debates between Marxist and Feminist work can be seen as a productive way to move beyond the material/ideational divide, in an aim to make the analysis richer without losing the commitment to emancipation and the contribution to transformative knowledge. As Joseph puts it "Social science is concerned not just with actions, but with the material conditions for such actions, the structural context within which such actions and meaning develop. Beliefs cannot be studied separately from the material practices in which they are inscribed" (Joseph 2010: 9).

With a dialectic approach that takes change, reflexivity and agency to heart, these tensions turn into revived fields of inquiry of normalised exploitation, productive research agendas of the conditions of the oppressed and the opportunity for change. A crucial step towards this is, first, to render visible that what we call 'the civil' in its banality and trace the work it does in liberal war economies.

## 2.5 Summary: Civilian Agency and Oppression

At the heart of any discussion around civil-military relationships lies a very specific concept of what 'the civil' is, how civil conduct looks like and what role the civil plays (Stavrianakis 2010). Framing this project as an investigation into the agency of 'the civil' comes with certain difficulties and needs to be explained, as 'the civil' is rarely used as a stand-alone phrase or noun. I use this vague concept, nonetheless for several reasons. First, as we have seen the civilian is the idealised embodiment of the set of values, projections, rights, and duties that come with 'not being a combatant'. In theory, the civilian is a figure that helps to assess justifiable deaths in a very limited set of circumstances and thus is a tool to help decision-making in those circumstances. However, the concept arises in a broader set of beliefs and things are more complicated than that: civilians are identified also in contrast to police officers, or indeed sometimes in contrast with state institutions in the absence of armed conflict.

While Kinsella's investigation into the discourses of gender, civilisation and innocence that establish 'the civil' sets the groundwork, I want to take this spin further. Looking at civilians as defined by humanitarian law, tells us little about what a civilian looks like, does or becomes, after war ends, or indeed what they did before conflict broke out. It seems like 'the civil' is everything that the military is not; thus whatever clings to 'the civil' is perceived as not 'war involved'. This flexibility stretches beyond institutions and agents or objects, rather it is a whole set of imagery, associations and practices that can cling on to 'the civil'. Therefore, I think there is something about 'the civil' that is not captured in the focus and concept of the 'civilian'.

Underlining my thinking is a Marxist analysis of the production of violence, and thus my project follows the calls to re-align political economy and security, as suggested by Sara Meger (Meger 2018) and Heidi Hudson (Hudson 2018). The project starts from the visible and tangible results of the civil's agency: the objects it produces for organised violence. As materialised result of the interplay between civil/military these objects point us towards the interstices of civil/military and their productivity within the capitalist market.

In investigating the dynamics that normalise the production of the means of violence and troubling seemingly obvious statements such as "business is business", I am guided by feminist researchers who have long been pointing to the power structures that make things

appear banal, trivial, and natural (Enloe 2014). I thus ask about the civil's suspicious absence from liberal war economies. We are going there because a huge amount of the production of the means of violence is undertaken not by military institutions but by civilian corporations, industries, and workers. If the majority of the production of the means of violence occurs outside of the military, what does this mean for 'the civil'? For the purpose of this investigation, I will think about 'the civil' as an animating idea, which circulates across society and demarcates a space of difference. Taking inspiration from feminist work and the way gender has been identified as de-politicising and naturalising logic, I am problematising 'the civil', and ask, where are the civilians, what are they doing, when, how and why is the concept of the civil mobilised by individuals, and what work is being done by this concept when it is mobilised. Thus, the core concept of this project is up for investigation.

With the phrase 'the agency of the civil' I intentionally use a contradictory term. While I follow a critical-realist understanding of agency-structure, I aim to render visible the structure and its ordering mechanisms as well as the agents within that structure. In the next chapter I discuss how this theoretical understanding translates into my research strategy and methods.

# 3. Uneven Data and *Following the Objects*: Methods

This chapter focuses on the methods I used to study 'the civil' and its war-normalising dynamics. I crafted a multi-sited ethnographic research design that draws on the lived experience of people, as well as observations and reflections. In this chapter I will explain my approach, and how it fits into the overall thesis, and discuss each data-collection method in turn. I also discuss my inductive research-strategy, of *following the objects* and its limits, and how I dealt with those. Following Charlotte Davies (Davies 2012: 5) in her broad conceptualisation of ethnographic research I include a variety of qualitative research techniques that generate descriptive detail from a critical realist ontology. From a critical realist perspective, the purpose of social research is to increase the understanding and explanations of social reality while at the same time "critically examining the conceptualisations used in these explanations" (Davies 2012: 6). I understand this as acknowledging the socially constructed nature of all knowledge of self, Other and the world, while still holding that there is a (social) reality that is constituted independent of the self, and which can be experienced and inquired about. It further means to be aware of the role and presence as a researcher in social situations. The research process is not a linear, but circular one, thus establishing a dialogue between data and literature. This translates into the presentation of the analysis, too.

## 3.1 Research Design: Multi-sited and Multi-method

Since I am trying to access and study 'blurriness' and the instability of dichotomies, my research design is inductive and explorative and follows a multi-sited ethnographic approach that links an arms fair, protest sites, workplaces, production sites and websites (Marcus 1995).

My research strategy has been to 'follow the objects', inspired by Carol Cohn's approach and other work that builds on multi-sited ethnography (Cohn 2006; Cowen 2014; Marcus 1995). Following a Marxist understanding of objects I inquire about, as manifested human agency, I am specifically following objects that have been produced for violence, or put differently the means of violence. In exploring 'civilian' agency, I am looking at where these objects, containing 'civilian' agency are produced, sold, and marketed, in order to find the people who sell and produce them and learn more about how 'the civil' operates as a productive force in liberal war economies. Objects are interesting, but it is people who interpret, use, create and sell them (Fisher 2018: 36).

Multi-sited ethnography has been growing out of postmodern debates in anthropology, which aim to progress an agenda that focuses on the power of meaning, discourses, and interconnectedness. Influential works that advanced the multi-sited approach came from interdisciplinary fields such as media studies, or science and technology studies, and George Marcus counts Haraway, Latour, and Apparendi amongst those who advanced this approach to investigation, but also includes the 'strategically situated' ethnographic work of Ann Tsing in advancing the field (Marcus 1995: 112).

The research logic of multi-sited ethnography is decidedly inductive, as "[i]n multi-sited ethnography, comparison emerges from putting questions to an emergent object of study whose contours, sites, and relationships are not known beforehand, but are themselves a contribution of making an account that has different, complexly connected real-world sites of investigation" (Marcus 1995: 102). In following the objects produced for violence, I am simultaneously paying attention to the ways the civil emerges as a productive force within the civil/military dichotomy.

While my project started as a comparative design in the traditional sense, the pandemic, as well as the uneven-ess of the data, made a multi-sited approach more viable and allowed me to include uneven data that enriched the analysis. The focus on the UK and Germany became important but in different ways than I had anticipated. Rather than triangulating findings, the connectedness of the two industries came to the fore, and thus helped me in layering complexity.

I do this by employing multiple qualitative methods. A common approach in multi-method approaches is to combine participant observation, interviews and focus groups which are complementary in enriching the data on lived experiences (Bryman 2012: 423f; Jackson 2011). Engaging multiple qualitative methods differs from a traditional mixed-methods approach in that the aim is not triangulation but detail and reflection (Jackson 2011: 48f). I build on work that has done this successfully within Security Studies and Critical Military Studies in particular. The burgeoning body of work that is ethnographically inspired has been driven by feminist research and the turn to the "everyday" (e.g. Denmark and Segovich 2012; Enloe 2014; Feaver 2003; Jackson 2017; Pain 2015; Rech 2019; Tidy 2015). Notably (auto)ethnography, interviews and arts-based methods have been combined productively to enquire into the materiality of militarism and its objects (Fisher 2018; Gibbon and Sylvester 2017; Kirkpatrick 2015; MacLeish 2015; Paparone 2014; Sjoberg and Via 2010; Tidy 2016). In everyday encounters, different spheres, dynamics, and subject positions are signified through various objects, such as a camouflage rucksack, a graffiti, a stamp on a paper, or a specially designated and designed wastewater system. The local is simultaneously global as these

objects and commodities are tying together global supply chains, and thus the everyday is simultaneously extra-ordinary.

The research design includes participant observation and qualitative interviews with employees in the 'dual-use' sector, in order to bring to light their interpretation of "the civil" and the "defence" market, as well as their lived experiences shaped by working or campaigning in the sector. I have conducted twelve semi-structured interviews, five days of participant observation (four at an arms fair, one at a demonstration), and collated a body of fifty products and services from online research, between January 2021 and October 2021. I was also sent a written account by one person, in place of an interview which I include in the analysis. The next section details how and why I carried out my research, while reflecting on the research design and conceptual commitments.

### 3.2 Participant Observation, Interviews, and Semiology

*1. Participant observation*

Participant observation at arms fairs and protest sites allows me to sketch out in what ways and what kind of "civilian" companies participate in arms fairs. Bringing together a wide range of military and civilian objects as well as protesters, the arms fair is a rich site of "dramatised public life performance" (Gibbon and Sylvester 2017: 256) of the civil/military dichotomy. Thus, in observing how different people enact and call upon notions of civil/military, the workings of 'the civil' start to take shape. Participant observation is an embodied, spatial practice that collects a descriptive account of people, dialogue, and scenes in a field (Emerson et al. 2011). Whereas sometimes, participant observation is incorporated in a broader ethnography that requires the researcher to completely immerse into a field for a longer time period (so did Gibbon 2018), it is not limited to that. Thus, this project's approach to participant observation is closer to a "participate-to-write" approach (Emerson et al. 2011:356). With this approach, an event or a series of events are visited in order to collect as detailed an account of the people, their interactions and conversations as possible, but the researcher's role as observer is privileged over their role as participant. An example of the "participate-to-write" approach is the analysis of "the material culture of military recruitment" (Rech 2019: 2) at military airshows.

The notion of "participate to write" means, that a researcher attends an event with a set of open-ended questions, and thus rather than embracing the 'whole field' focuses on the interaction she observes with these questions in mind. The observation of the staging of the event also brings a spatial dimension into the observation. Whose bodies appear in a specific space? Paying attention to the bodies that are blocked or governed can lead further into the

analysis of power, boundary-drawing, and the racialised and gendered politics of space (Longhurst 1998: 20). All these observations are written up in fieldnotes and later organised into 'thick descriptions' of the event. While an observation can be understood as a narrative, it is also a visual experience. In both instances, what is seen and how we see it, and thus, what is reported as seen, is shaped by power-relations and the experience of the observer (Tidy 2016: 96). For a critical-realist and Marxist-feminist observer, issues of race, class and gender will shape the observation. While this approach narrows down the experience, I drew on this in order to make my research manageable. The data collected through the participant observation consists of fieldnotes and short summaries and transcripts of conversations, assisted by photographs that I took; notes I wrote down on the spot, memorised interactions and sketches I drew. I transcribed my fieldnotes into NViVO and added a 'thick description' to capture the atmosphere and imagery.

After gaining access to DSEI2019, I participated in the four days that the event was open to the public. This means I missed "Day Zero", which was more expensive and open to "premium guests", only. For the observation I had prepared a folder with the programme and highlighted talks that seemed interesting, I had exchanged my flip-phone for a smartphone and attended in business dress.

My fieldnotes consist of notes on talks and short observations I took in a notebook on the site; recollections of the days that I wrote down at the end of each day; sketches in my research diary that I made back at the hostel when I was too tired or emotionally triggered by what I had seen; pictures and short videos I took from day three at DSEI2019 and at Art the Arms Fair 2019. The written or mental fieldnotes are the basis for the 'thick description' of human behaviour and lived experience that participant observation aims for (Bryman 2012: 422). The guiding questions for my observations were: In what ways do "military" and "civilian" worlds and subjectivities merge in a hybrid space? In what ways does it transgress or reaffirm gendered, and racialised social structures? This enabled me to explore the ways civil/military subjectivities are negotiated and reproduced in co-operation as well as contestation. Through participant observation I explored the socio-economic structure of "hybrid" spaces, the objects of collective violence and tested the research strategy of "following the objects" through noting the ways this led to conversations, working conditions, and collective organisation. This helped me to reflect and process my own emotional conflict, and also to remember certain aspects of the experience. At the same time, this distorts the recollections as some aspects are highlighted in my memory while I may have forgotten others.

At the trade show, I wandered around trying to look at and remember as many items as possible, asking questions at the stalls, making conversation with the stall employees, trying to gauge interest in my research, and collecting business cards, flyers, and freebies. The

objects and technologies I followed at the arms fair were those known as 'spin-in' technologies, i.e. civilian technologies adapted to military purposes (Acosta et al. 2018: 823). I took those as a starting point because I was interested in how the companies understand themselves as either part of or 'outside' of the defence enterprise. Over the four days of the event, I visited nineteen talks and presentations. I tried to make them a mix of research interest (women in defence; supply chain security; hybrid war, joint missions, and dual-use technologies), performative ones (keynote, and VIP speakers), and random ones, on topics I did know little or nothing about (Electromagnetic warfare, information warfare and maritime security for example). I had a few short exchanges with the catering staff, and two longer lunch conversations with fellow visitors. At the stalls I asked about the product, explained that I was a researcher interested in dual-use technologies and civil-military relations, and asked how the event was going for them. Through the participation at DSEI2019 I gained rich insights into the self-perception of civilian companies, and their struggles to enter the defence market which is dominated by state-sponsored companies. Through the conversations with workers and seeking to note the intersectionality of gender and race in this space; I gathered material that helped me in thinking about the normalisation of precarity in the civil which I will be addressing in chapter five. Over the course of the four days, I talked with twenty vendors, representatives, developers, hospitality workers, and business owners. The length of these conversations ranged between two and ten minutes. Sometimes I would ask about what the product was because it would not be intelligible without inside knowledge; such as specialised coils, used in aeroplanes. I spent most of the time trying to have conversations with middle-sized companies. Those stalls were often represented by their owners. One of them, a process-management company owner, told me about the difficulties in accessing the security and defence market. Others, a transport seat producer, hesitantly revealed that the company was producing for commercial customers such as train companies. Workers at the food stalls talked about the noise and heat, and the high intensity of the work at the event.

While I participated in 'community building' events, such as the key-note speeches, I did not fully embrace the spectacle: visitors were able to pose behind guns, sit in a tank, and the new fighter jet mock-up of "Team Tempest", as well as get free drinks and snacks; none of which I felt comfortable in participating.

In the UK and Germany access to trade shows is heavily policed and access is restricted even for researchers. In some cases, this goes as far as only allowing researchers who are employees of the Ministry of Defence, or who are invited by one of the vendors (IWA 2019: Access). The policing of trade shows in the defence and security sector is not only based on security considerations, but specifically designed to keep critical voices out of sight. This is of

course a political decision but severely limits the conversation and shrouds the sector in mystery (Fisher 2018: 24).

To access the DSEI2019 site two security checks were conducted, one upon disembarking the tube, the second before entering the halls. On the second day, something beeped and I got screened. On the third day I was approached before the second security check and asked what my purpose was at the fair, and I was informed that they could not let me in as my student badge was not valid anymore. After negotiating and explaining that I am conducting research on dual-use technologies, I was let in. I later found out[11] that one exhibitor was found to showcase illegal items, banned under the anti-torture equipment legislation on the same day, but I can only speculate that this was why security seemed stricter than on the other days. While this had no material impact on the research, it reinforced the feeling of being an outsider and intruder to a carefully stage-managed event.

I added pictures and short videos to my fieldnotes on that day. Photography was only allowed with permission of the vendor, and I did not see any other visitors taking pictures on the first two days, which is why I refrained from this activity as well. However, on day three visitors took pictures and selfies liberally, and I joined them, thinking it might be the last opportunity to do so. When I took a picture of a specific stall I asked for permission at the stall first, such as at the exhibit of the BAE systems stall. At this opportunity I took ten pictures at DSEI2019, and seven short videos to capture the atmosphere. I also took pictures at the protest event "Art the Arms Fair", which was a useful tool to keep a record of the many ways activists think about the defence industry. In reflecting on artwork, I gained a sense of what other people think is odd, noteworthy, or "artworthy" in thinking about the defence industry.

Transcribing those fieldnotes meant I digitised my sketches and notebooks and integrated them into Nvivo. The pictures and short videos helped me to remember certain aspects, and also allowed for follow-up research on certain objects, phrases and campaigns. However, they also feature in the data set as artefacts in their own right, as they depict what I thought noteworthy. The pictures I took are processed through description and curation: first I add a transcript of what I can see on them and second, I create a memo that entails 1. Information about the picture (where and when it was taken); 2. Reason for taking it (initial reaction and impression of noteworthiness); 3. Thoughts about the picture (reflections added during processing the picture); 4. Additional information and associations (contains data I forgot or did not know at the time, for example what exactly the company was, what it reminds me of in the rest of the data set). Not all pictures ended up in the final data set, as some were blurry,

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[11] By researching DSEI2019 in the news: Guardian.

doubles or showed faces of employees. The analysis is based on the transcripts and memos, rather than the pictures themselves.

Importantly, I gained access to numerous presentations given by companies and state agencies and their understanding of being part of the 'civilian sector', which I include in my analysis. Finally, the relevance of 'design' as concept and bridge to access civil/military relationships has been highlighted not only in the artistic way companies presented their products and the way protesters articulated their dissent; but also through the new business strategy 'inter-operability by design' which has been developed to facilitate the entry of 'civilian' commerce into the 'defence' market.

Similar events in Germany are GPEC (18.-20.02.2020, Frankfurt a.M.); MS&D (08.09.-11.09.2020, Hamburg) and IWA Outdoor Classics (06.03-09.03.2020, Nuremberg). Due to the pandemic these events were cancelled in 2020, rescheduled and cancelled again in 2021 due to rising Covid cases and stricter covid procedures in Germany. IWA Outdoor Classics would have been particularly interesting for my project, as it puts a strong focus on leisurely activities, such as "extreme-camping", sports shooting and hunting, but it is simultaneously one of the biggest arms fairs in Germany (IWA 2019). Although promoted as a civilian space, access to it is restricted to government and defence employees, and researchers are not readily admitted.


2. *Interviews*


This policed line between insider/outsider also has implications for interviews. With a critical project, and ethical commitment to participant agency and equality, I approached my potential recruits in an open way: my participant information sheet stated the title of the thesis and explained my interest in civil-military relationships and the dual-use of technologies in the everyday. Perhaps a covert approach would have yielded a higher response rate, however, it would have defeated the object of the project to enter open conversations with workers.

I have conducted twelve interviews with eleven interview partners, and I was sent one written account which I include in my analysis (964 interview minutes/16h). Two of the twelve interviews were follow-up interviews. Most interviews took place online and nine of them were scheduled beforehand. One interview recording was lost (two participants, ca 120minutes), one interview was conducted over a landline and therefore these two cases have been reconstructed from memory and the notes I took during the interview.

In addition to the nine scheduled interviews, I am also drawing on a script that has been sent to me, as well as two spontaneous interviews which resulted from conversations at protests,

each of which lasted for about sixty minutes. I have transcribed the majority of my interview data verbatim and have organised my data in NVIVO. Informed consent was collected for all interviews, but the two spontaneous ones were not recorded, and I did collect verbal consent only.

The interviews in the UK and Germany have been conducted as semi-structured conversations, ranging from sixty to ninety minutes in length, and in two cases have been followed up by a second interview. The recruitment of my interviewees was an open-ended snowball strategy. The criteria to choose interviewees have been relevance and consent to participate. Relevance for this project meant that the interviewee works or has worked in a context where defence and commercial sectors meet. This broad definition was designed to cast a broad net of potential interviewees, with varied job descriptions, income levels, and thoughts on their work. The scope of the interviews was set to allow an in-depth conversation about the interviewee's expertise, their training, their experiences, and challenges in working in the sector. I specifically asked about whether and which differences they experience in working for the "commercial sector" versus the "defence sector". I have also allowed for topics the interviewees brought up, such as economic challenges of their workplace, industrial relations, and personal rationales and reflections about their work.

The snowballing started by contacting employees who I met at DSEI2019 and had given me their business cards and signalled potential interest in a more in-depth conversation about their work, challenges, and experience. This was the least productive strategy, as I got one negative response, one invalid email address and nine no-replies.

A second avenue was to contact employees of companies I found in the DSEI2019 exhibitor booklet. These were contacted and selected out of a list I collated of all UK and German companies, and then started to contact every twentieth company. I also contacted companies whose products and service range caught my attention at the fair and through internet research. These companies had a distinct commercial portfolio but have been collaborating with defence clients for certain projects. The reason of contacting these companies was to find out more about how these collaborations are negotiated and come about. This way I invited thirty-five companies to participate in this project, with thirty-three non-replies, two responses, which resulted in one interview. Because of the low response rate, I focused on the third avenue of recruitment.

A third avenue of snowballing was to contact trade unions and campaign groups and asking them for suggestions for institutions and potentially interested interview partners. This avenue was more fruitful, stemming from the identification of these interviewees with the critical agenda of the research project. While this does limit the political views represented in this project, I have included conversation fragments from my fieldwork at DSEI2019, and through the in-

depth analysis of my 964 minutes of interview material, draw out general themes. Through these interviews, certain commodities were highlighted, which became a new focal point of the project, such as screws and fibres. The explorative research design therefore allowed me to follow those objects more closely, ask questions about them and research companies that produce them.

While the number of interviews could be higher, the low return rate and the time resources that went into researching appropriate candidates meant that I agreed with my supervisory team to focus on the data quality rather than an increased sample, particularly given the challenges presented by COVID travel restrictions.

Qualitative interviewing allowed me to gather material on everyday routines and the lived experience within the complex space of "civilian" and "military" interaction and production. Qualitative interviews are one of the key methods in feminist research as well as research focused on sensitive topics and secrecy as they allow for in-depth conversations and the analysis of behavioural patterns such as gendered power dynamics (Cohn 2006; Enloe 2014b; Kronsell 2006; Sjoberg and Via 2010; Stavrianakis 2010). Semi-structured interviews are interviews that are informed by an interview guideline, yet allow for flexibility and topics brought up by the interviewee (Bryman 2012: 471). They are apt where nuance, a fresh view on a topic and its history are of interest (Rubin and Rubin 2005: 38).

While "in an iterative approach to research you do not know exactly where the final destination will be when the train first leaves the station"(Rubin and Rubin 2005: 78) and, thus, the exact sample of participants as well as the questions I asked them was open-ended at the beginning of the project, this openness allowed me to follow the data more closely, draw out contradictions, and add nuance to the data I am analysing.

Because I am interested in the space between "the civil" and "the military", my aim was to interview people who are, or who have been working, in dual-use companies, or other "hybrid" institutions, in jobs that are indirectly related to the defence or security market, suppliers, as well as where useful, activists who research these companies and provide public information about them. As described above, the recruitment strategy for the interviews was snowballing from contacts I established within trade unions and activist groups, and through networking during my participant observation at DSEI19 until data saturation was reached. This established a constant process of reflection and dialogue with the theoretical and conceptual framework of the project.

Nine interviewees who participated in this project have been or still are working in companies that produce for the civilian as well as the defence markets, two are activists organising against the arms industry. The questions I asked every participant were broad questions focusing on

the participant's *own biography* and path to their current or past position, questions about their *work routines, skill sets, and drivers for the job*, as far as they were legally able to talk about this, as well as their *experience, and opinions and challenges* in working with what different interviewees referred to as "the military", "defence", or "the public sector". While foregrounding the banal and legally unproblematic areas of worker's experience surprised the interviewees, some of whom came prepared to share more sensitive information, it meant that the interviews were free-flowing, rich in detail and led to more contacts and interviews; focused on the everyday routines of the civil/military. I also asked every participant about whether it made sense to them to differentiate between "civilian" and "military" markets and how they experienced any differences in their work. Apart from that, each interview left space to follow cues from the interviewees and the specific knowledge each participant brought about their field, activities, and experience (Rubin and Rubin 2005: 34f).

The interviews allowed me to gain more insight into the social make-up of dual-use companies as well as activism and 'pre-news' organising in and outside the workplace. Qualitative interviewing thus helped me to understand how living and working conditions are shaped by the production and cooperation with "military", and render visible the workers who are rarely thought of when military production is analysed, but without whose work "military" would not exist (Rubin and Rubin 2005: 11). The interviews opened space to talk about their struggles, frustrations, and agency in holding companies to account and highlight how individuals navigate a deeply blurred, political, and emotionally loaded space. Many interviewees offered their insight into the economic space they are operating in and challenges of the market their companies are faced with, as well as what this means for them and their work.

Nine interviews took place as online-calls during the year 2021. At the time of interviewing, online-conferencing had become much more common and normalised in many workers' experience, due to repeated lockdowns and working from home during the Covid-19 Pandemic. I obtained written and verbal consent to record the video calls and sent both a participant information sheet, as well as a consent form to all participants on average one week before the scheduled interview. Before each interview and recording, I asked whether there were questions regarding the process, my research, or the use of data, and informed the participants, when I started to record the interview. In all interviews, I recorded verbal consent for the transcript, as not every participant had sent their consent form back to me pre-interview, even though they were eager for the interview to take place. Apart from occasional technical difficulties (one interview recording was lost, using a participant's preferred platform), this meant that all online interviews could be recorded without an intrusive camera set-up, which added to the flow of the interviews. While I initially thought that 60 to 90 minutes would be the absolute limit for many participants and offered shorter time slots to accommodate schedules,

I found that most interviews went well beyond 60 minutes, the longest taking almost three hours. I did not follow-up all interviewees, but where I had more questions, or the participant contacted me, I conducted a follow-up interview. All interviewees gave their consent to be contacted for follow-up questions.

I transcribed recordings, verbatim, and only edited out repetitive phrases or pauses when it was clear from the interaction that it didn't influence the interview dynamic, such as when participants or myself were searching for a word. I transcribed pauses that were filled with meaning, and purposeful. In determining this, I referred to the video recording and facial expressions of myself or the participant. The recordings were not stored and were destroyed after the transcripts with annotations had been developed, in line with my data management plan. The data analysis is entirely based on the transcripts and annotations. Data from the unrecorded interviews are the notes I took during the interview and summaries that I wrote from memory.

For coherence reasons I pseudonymised all transcripts and memos using a code that refers to the language in which the interview took place (G for German, E for English) and the order in which I transcribed the interviews with interviewees (GP1-GP8; EP1-EP3, at various points interview fragments have been anonymised for confidentiality), which is different from the order the interviews were conducted in. As a German speaker, I did not translate the transcripts into English, but only the quotes I am using in the analysis. All translations, and possible mistakes in meaning are my own.

To analyse and organise my data, I used NVIVO. The questions I asked approaching the interview data are how do civil-military relationships work in practice? Are the distinctions as clear cut as the civil/military dichotomy would suggest and what are the markers of this distinction in practice? What are the themes that connect those differing sites, and what kind of power dynamics are at play?

The in-depth interviews I had with workers in what I describe as 'dual-use' companies, were qualitative and followed a flexible interview schedule. While I was aiming to recruit interviewees in a broad variety of jobs, most interviewees who responded to the invitation had been working on defence projects in the narrow sense. While this changed the emphasis of the thesis, it also helped to shed a light on the processes of diversification of defence companies and brought into focus the workings of 'the civil' in stabilising the military. I was interested in the everyday lived experience of working in a company that (also) caters to military; their tasks and the atmosphere of their workplace, what they thought about working in defence, and to what extent there are differences in working in a context of defence in comparison with commerce; or 'military' vs 'civilian' projects. In this I was trying to focus on the everyday – which at times was difficult to communicate, as some interviewees, being experts in their field, understood their

field of work as extra-ordinary, which meant that questions about workplace routines caused initial irritation. By focusing on dual-use technologies, design, and workplace organisation these initial difficulties could be overcome and the interviews provide a wealth of information. Another challenge I encountered was that catering and facility staff as well as interns, are typically not members of staff on a company website, and company balance sheets do not specify business partners and service providers. There is, therefore, a lack of data in my inquiry when it comes to precarious workers as well as business to business services – both of which are crucial for understanding labour and services within liberal war economies – which future on-site and in-person research may be able to tackle.

*3. Semiology*

Following the objects inevitably raises the question which objects to follow. Asking about overlooked or "boring" objects is a vague, and inherently subjective notion. In the early stages of the project, however, this was the notion I took to guide and navigate me into the field in order to narrow down the objects and technologies I thought needed more attention and consideration.

I collated fifty products and services to illustrate my argument for the need to rethink the defence and security industry as well as the work of *the civil*. Products collected range from camouflage make-up and screws to green ammunition and rubber mulch. Services include inter alia professional services, design services, HR services and event management. The guiding notion in collating these objects has been 'the banal' and 'the boring'. While these are inherently subjective and superficial categories, they have been a useful starting point in operationalising my research. Boringness is socially constructed, and thus, as Moller argues, in relation to art, "announcing that certain works are boring is to assume something like that there is not anything sufficiently interesting in them when that is in fact never true" (Moller 2014: 182).

My objects establish 'the background' of more noticeable and written about objects, such as drones, for example, and cover more ground, as a focus exclusively on supply chains, for example would have. Some objects seem so trivial that they are easy to forget, such as screws, and cables, or they are invisible because they are manufactured materials, such as plastics, and the technology that makes it marketable for the defence and security industry. While 'the boring' or 'banal' is, to some extent a stylistic device, as a starting heuristic it proved useful, as illustrated in the interviews. A third group of objects seemed intriguing because they seemed to be coming from an area that previously has not been associated with the defence industry, such as the make-up compact or the scent diffuser. In collecting these objects, researching

their history and reflecting on what they communicate and how they become the background, I drew on semiotics, the studies of signs and meaning-making.

The relevance of semiotics for this project stems from my focus on design and the departing point of objects as the materialised and depoliticised relationships of civil/military. Semioticians are interested in meaning-making processes and build on Halliday's concept of grammar of a language as a "resource of meaning-making" (Halliday 1978: 192). Social Semiotics expands this idea beyond language, hence signs are not restricted to language, but meaning-making resources can be found in any *artefact* or physical doing (the resource or signifier) that is drawn into social communication, i.e. meaning (the sign) (Leeuwen 2004: 3ff).

Projects that aim to reach beyond "the limit of the word" (Archer 2014: 186) in studying security and international relations, have thus far been focusing on objects (Van Veeren 2014) and visuality (Guillaume, Andersen, and Vuori 2016; Kirkpatrick 2015; Mirzoeff 2009) as a stand-in for the materiality of security. However, this is only starting to become a systematic agenda, and does omit the "makers' point of view" (Tidy 2019). To engage meaningfully with the literature on design of, for example, uniforms (Hoare 2005; Paul and Birzer 2004; Ugolini 2010) it is therefore necessary to learn the language of those who design. Semiology is the study of signs and as such part of the analysis of the structural and material repertoire of the civil/military. Importantly, semiotics is the language of designers (Nadin 2017: 41), whether they design security architecture or computer interfaces (Deni and Zingale 2017; Gage 2007; Krampen 1989; Nadin 2017a; De Souza 2005; Weber and Lacy 2011).

Design is a tricky concept to define, as it refers to the practice of finding solutions to wicked problems (Fisher and Gamman 2018: 2) and as a process sits somewhere in between the depoliticised process of problem-solving and a morally progressive force that is imagining a better future and is bringing about things that will improve the world (Fisher and Gamman 2018: 3). In a very broad sense design refers to "the processes that bring 'things' about" (Fisher and Gamman 2018: 3). Fisher and Gamman's (2018) collection is particularly interesting, as they embark on the quest to unpack the ethics of design and follow the uneasiness that comes with engaging with the "dark side of creativity" (Cropley et al. 2010). All these notions helped me to think through the role of the civil in the production of the means of violence and their design.

A review of how semiotics is taught in design schools, highlights the systematising function of design and design teaching (Deni & Zingale 2017). Semiotics is taught to increase the cultural sensibility of students and thus arranges symbols into a definite order. This is applied in improving intuitive machine-user interfaces and in engineering consumer choices. To employ semiotics (applied semiotics) is not merely a semantic choice or preference in framing interpretative practices, which easily could be captured through discourse analysis. Rather, it is the acknowledgement of the method within the process of designing commodities.

I therefore browsed the internet for objects that dress the security body and establish the military site, and yet are rarely talked about. Considering the security body, and how it is equipped, for example, I collated a Google Image search for security personnel. While their uniforms vary in cuts, and colour, the one thing that stood out was the uniform belt with its many pouches. Surprisingly however, the belt of a uniform is rarely considered when security bodies are written about. Camouflage print and design takes the centre stage because it is the iconic representation of military bodies and is still widely used in fashion to communicate a daring look (Archer 2014; Craik 2003; Guillaume, Andersen, and Vuori 2016; Newark 2007; Paul and Birzer 2004; Ugolini 2010). Camouflage clothing and military cuts do not only feature in fashion, but also live a deviant life in fetishes and sex shops (Craik 2003: 129).

The belt, however, is the one piece of clothing that holds the uniform together. It does not feature in uniforms worn by children, such as in cadet uniforms. It thus, is a marker of adolescence, and mastery. Uniform belts and pouches are used to signify importance and authority whether they are worn by conductors in a subway, a security guard at a festival, or a special operation soldier. The many pouches hide the exact function and power of the person wearing the belt, and thus signify a clear demarcation of insider knowledge. Uniform belts are marketed in a language of high performance and robustness. Companies like AccuMold have patented a plastic moulding technology that they claim makes the material of the belt unbreakable. For this AccuMold developed and designed specialised machinery and an innovative micro-moulding process. The uniform belt takes on such an important role in dressing the uniformed body, because it enables the wearer of the uniform to wear it correctly, and thus protects them from ridicule or disciplinary action. Yet, at the same time, the belt is offered with spare buckles, highlighting the weak point of the belt which cuts across the image of mastery, a fact that AccuMold addressed in its newest model the "buckleless AccuMold Elite duty belt".

In considering the uniformed body, the notion of "overlooked" and "boring" drew my attention to the belt, and the notion of design urged me to research the materials and technologies used to make the uniform belt. While learning about the AccuMold micro-moulding technology I discovered that the technology has applications beyond the uniform belt, such as in medical moulding, emergent technologies, and polymer optics, automotive electronics, and micro-electronics. Thus, the point of departure for technology to be able to circulate across different applications, is at the point of design and production, not application.

The concept and language of *design* is therefore a frame in which to arrange the objects, and a bridge to asking more questions about how the meaning of *the civil* circulates and what work it does. Design is also a bridge to making the makers visible, in the sense that designers are a focal point that tie together creative industries with high-tech industries and logistics (Fisher

and Gamman 2018: 3). This helps to emphasise the embeddedness of military production within the legal framework of *the civil* as well as everyday practices of military production. As Fisher has noted, when focusing on design, it seems impossible to draw a neat distinction between a manufacturer of explosives and a supplier for saxophone components (Fisher 2018: 31). I reflect on the human agency contained in those objects by looking at those objects through design, which is a reminder to myself that their existence is not arbitrary.

In order to narrow down and classify the objects I would consider in this thesis, I attended DSEI2019 in an attempt to find out what companies took part in the event and thus self-identify as agents within the security and defence industry and dual-use industry. The experience of the trade show left me with the problem many others have already noted: the sheer diversity and number of products especially in the dual-use sector makes those companies less prone to scrutiny. It seems there are just too many. In my interviews with workers one interviewee shook his head at my announcement to try and map the suppliers: "our company has about 20,000 suppliers. Forget it". However, there are still interesting questions to be asked about this ambiguous sector and the interviews highlighted components and other things that hold the military together.

One such thing was the screw, which is signified by its unimportance. As one interviewee explained: "We focus on the bigger companies, I mean if someone produces, like a screw, what do you want to do with that? Sure, you can go to them and say, don't make business with that guy, but ooh, [waves hands dismissively]…there are other.. like more direct and bigger things, we need to worry about" (Interview GP1).

It strikes me, that it is exactly those technologies that are shrugged off that are at the heart of the ever-growing profits of the security and defence industry. It is also exactly those technologies and services that highlight that normalised civil-military relationships are at the heart of liberal war economies and the production of the means of violence. It is the technologies that are designed to hold things together that help me to think through the implications of dual-use technologies and militarism. With the example of the screw, I will therefore endeavour to highlight those technologies that are developed in the commercial, civilian sphere and "spin-in" the military and which are crucial for the production of the means of violence. I take the example of the screw but will touch on other everyday products and technologies based on my participant observations and interviews, to interrogate the dominant imagery of the 'military encroaching upon the civil'.

3.3 Uneven Data, Creative Tensions, and Limitations

Differing sites give rise to different ethical considerations and reflections, and some sites are more accessible than others. Accessibility is always a challenge for research, as Gibbon's work on arms fairs demonstrates (Gibbon 2018). The sites at which I conducted my research, such as arms fairs, protests, online interviews with employees, companies, and activist groups lend themselves to some methods more than others, which is why the project was designed to allow for this flexibility. As Marcus explains, accessing different sites means that data will be uneven – as each site comes with its own peculiarities and by accessing multiple sites, the researcher needs to learn how to immerse in more than one, which means that necessarily the immersion into the field cannot be as deep as in more traditional ethnography (Marcus 1995: 113) at each site. With the additional complication of the Covid-19 pandemic at the onset of this project, embracing unevenness and flexibility became a necessity for this project. The interviewees were self-selecting, I did not access a German trade show and I had more German speaking interviewees than English speaking ones. Thus, the project does not provide a systematic comparison between two liberal war economies as I had envisioned at the start of the project.

Rather than having a comparative design that is based on distinct categories, my research design is therefore based on in-depth analysis of the uneven data I was able to gather. As Marcus argues, a multi-sited ethnography has an inherently comparative element to it, as it translates and compares the use of terms, for example, in one area with another area, and establishes a common frame for the research objects. Thus, the value of this type of research lies within the shading and nuancing of translation that "connects the several sites that the research explores along unexpected and even dissonant fractures of social location" (Marcus 1995: 100).

The creative tensions discussed in chapter two, also unfold in the methodology and research design. Both studies on design and the notion of multi-sited ethnography draw inspiration from post-structuralist thought that understand themselves as critiques of 'grand theory' approaches, such as Marxism, but also some feminist approaches. As a result of thinking about the world in deconstruction, fragmentation and complexity, systemic approaches seemed inadequate to capture the simultaneity and perceived acceleration of the world. As Marcus argues, the changing paradigms were shaped by changes in the conditions researchers found themselves in, in which globalisation and privatisation seemed to simultaneously de-organise and spread global capitalism around the world (Marcus 1995: 98). Rather than analysing holistic systems or refer to macro-theoretical concepts like capitalism to build the context for in-depth investigation, multi-sited ethnography worked towards world-building, by following people, objects, metaphors, or plots. Thus the distinction between local and global is collapsed and the global emerges at the end of following different meanings, cultural idioms and practices

and after the researcher has traced the circulations of those in between various, and sometimes surprising sites (Marcus 1995: 99).

Design, historically, has been informed by relational philosophies such as Heidegger's phenomenology and Dewey's pragmatism (Buchanan 1992: 6ff; Fisher and Gamman 2018: 8ff). The contributors in Fisher and Gamman's edited collection draw on relational philosophies to think through the complex relationship between the imaginative, the material, and people. Their irritations stem from the role of the designer and the desire to challenge the dominant view of the subaltern position of designers in the production process (Fisher and Gamman 2018: 2). With this, the methodology seems to sit rather uncomfortably in a project committed to deep ontology and a clear distinction between agents and materiality.

However, as Hibou argues, privatisation has not been undermining capitalism and state power, but rather stabilising it (Hibou 2004). While structuralist accounts of capitalism are framed in a totalising manner, Marx highlighted the instability, unevenness and contradictions between planful action and anarchy of capitalism; as well as the mediated, complex and historically changing relationships between forms of social organisation and production.

Thus, while the scholars developing multi-sited ethnography envisioned it as an anti-thesis to structural arguments, I argue that its openness allows us to set structures and agents into conversation. As outlined above, I argue that it is the fine-grained, historical and context-specific approach of historical materialism, that allows these sites to emerge, not only as singularities, but as expressions of power struggles that make the world go round. A multi-methods approach allows me to adapt and if necessary craft methods appropriate to the objects I am following and "layer" my analysis with complexity (Cohn 2006).

From a historical materialist perspective design brings together creative industries and security industries and it is thus worth exploring how these industries work together to produce the security and defence market, "make [security] accessible, liveable, and essential"(Weber and Lacy 2011: 1026) as well as *purchasable*. Design links security with technology and questions of innovation for solvable problems. Thus, most of the literature on design and security, so far, is concerned with the development of secure virtual and material objects and few have taken on a critical perspective on how design "smooth[es] over the messiness of political life on behalf of the state" (Weber and Lacy 2017: 126). However, when focusing on design, the civil appears as a productive force within the market. For design and semiotics this means that it is an aide to make things useful, intuitive to use and functional, from a colour particle to facial recognition algorithms (Weber and Lacy, 2011). In building on the rich and nuanced vocabulary of semiology, I draw out the repertoire of civil/military' in analysing the production of the means of violence. It means I am asking certain questions in interviews about processes, material,

and knowledge that is needed to make something. Semiotics helps me understand the processes of depoliticisation in making the means of violence and how they circulate in society.

In order to hold true to the conceptual framework, I engage methods that help me to simultaneously address structures of meaning and production and allow agents themselves to speak and organise. Next to agency-based concepts to approach my 'field', which is the formless civil, I therefore combine qualitative methods that lend themselves to document complexity, performances, meaning-making and interdependency and interpret them through a semiotic perspective. This is carried by the understanding that the relations between the civil and the military are not just happening, but are being produced, managed, and disciplined in the everyday.

In being strongly committed to reflexivity and dialectics, I aim for a dynamic conversation between those methods that will enrich my analysis. With the semiology I aim to analyse in what ways the product of labour and the labour itself is rendered invisible or unimportant, and what kind of change in perspective I need to adopt to see the agency of the civil more clearly.

## 3.4 Summary

To sum up, participant observation in hybrid spaces adds the broad range of industries that are participating in the production of civil/military as well as the interaction of civil/military in 'real' life. Qualitative interviews inform the project about the everyday processes of people working within hybrid spaces. A deeper understanding of semiology and design, helps me to articulate and analyse how the civil agency is rendered invisible. With these built-in levels of reflection, I hope to substantiate my theoretical claims and the ambition of the project to provide a fresh perspective on the agency of the civil and the markets that produce for violence. It is with these reflections that I approach the sites of civil/military production, the labour in the defence enterprise, the commodities of violence and the politics of the civil in the following chapters. This arrangement follows a broad heuristic of sites, labour, design and contestation. Each chapter highlights one aspect, though the components and themes often overlap. The following chapter interrogates the notion of 'hybrid spaces' and explores the role of the civil in constructing the moral geographies of liberal war economies. In highlighting the circulation of the means of violence, the civil is depoliticising the production of the means of violence. With the example of the screw, I trace supply chains, production processes and profits and highlight how *the civil* is shaping *the military*.

# 4. The Geography of the Means of Violence

The geography of the means of violence illustrates how the imagined spatial distinction between the civil and military is constructed and often, these sites converge. I illustrate this point in the following chapter by discussing the arms fair as a hybrid site that looks and feels military but is a product of the civil. A focus on military traders tends to overshadow the civil production process not only in academia, but also at times in anti-military protest. At the arms fair I started to observe how the civil is producing itself as mundane and thus not worth our attention. This establishes moral geographies that are easily incorporated into strategic narratives of liberal war economies. In so doing I explore how the civil is leading our gaze to the circulation of objects, rather than the production. This chapter argues that the literal work of the civil exceeds narrow concepts of the defence market and includes promoting the means of violence, dressing them up, setting up markets and managing supply chains. I illustrate this process with the example of the screw, and screw production. In an ideological sense the civil is producing imagery of two separate spheres of civil and military; it produces moral geographies that depoliticise the logic of production and circulation for profit; and it is rendering invisible the civil's contribution in that.

## 4.1 Hybrid Sites and the Arms Fair

As I walk through the aisles of the Excel exhibition centre, trying to find my way through the various "theatres" of the arms fair, the famous first lines of Marx' Capital spring to mind: "The wealth of those societies in which the capitalist mode of production prevails, presents itself as 'an immense accumulation of commodities', its unit being a single commodity" (Marx 2013: 17).

I am not sure what I expected. I walk through the aisles of uniforms, boots, socks, bullets, pink pepper sprays, food supplements, rucksacks, a tank, cables, coils, power point presentations, ropes, grenade launchers, prisms, a helicopter, wooden boxes, metal treatment paint, lethal loitering systems, cafes, presentation areas, GPS systems. I try to navigate my path through the Excel Centre, and quickly find that it is easier to make a note of companies rather than objects, because I do not know what most of the objects do. It will not be the last time I wish I had an engineering degree. A coil producer, for example explains how you have to roll the material in a specific way and that it is hard to find skilled people who are willing to work to those standards. I am alarmingly aware that I am the outsider – this space is not designed for me. Over the next few days, I keep getting lost and wonder if the stalls rotate or change. Nothing seems familiar.

I wonder if it has to do with the way the arms fair is curated – there is an implicitness in knowing that draws boundaries between knowledgeable participants, guessing participants and clueless visitors, and the symbolic message of belonging is echoed through the large signs that invite military personnel to wear uniform (Harrison 2012). Cohn's analysis of acronyms in nuclear strategy come to mind when I am left googling what everyone else means by the "Three I's" (Cohn 1987). The various halls are "theatres" with specialised hubs sprinkled through them, playing at the "theatre of war" formulation and the art of war, which frames war as an art form. Logistics has been described as an art, and I remember the development of the screw and technological innovation being described as a form of poetry (Rybczynzki, 2005).

The arms fair, or trade show as I quickly learn to call it, is the site of selling, promoting, and looking out for competition. I have been following the objects to their place of trading, and circulation because this is where I imagined they become visible, and with them the system that enables their circulation (Rossdale 2019). It is the infrastructure of trade where the lines between military spaces and civilian spaces blur most obviously: a range of companies, chambers of commerce, government officials, military personnel, catering and security staff are mingling amongst the objects produced for violence.

The Excel centre is host of many trade shows and has done so proudly since 1947. The website of the show producer provides an overview of the sectors it caters to: "We operate in stable, long term, vertical industries with significant international growth potential – including energy, defence, gaming, electronics, antiques, fashion, retail, technology, life sciences, show jumping, classic cars and more" (Clarion Events 2023). The images used to advertise the variety of events include stuffed toy animals, fire fighters, and the HMS Medwey (P223), an offshore patrol vessel that was launched in 2019 and has been operating in the Caribbean mostly in anti-narcotics missions, as well as enforcing border controls of the British Virgin Islands during the Covid-19 pandemic. It is the simultaneity of these images that is at the root of critique of a narrow understanding of what establishes the "Defence and Security industry". It is the work of Clarion Events to curate the show, attract exhibitors, market the event, hire security to conduct the two security screenings upon entry, contract stage builders, project managers and cleaning personnel (Rossdale 2019). At the trade show, the products and companies that are used to sell the commodities are invisible. Those include the printing companies that print business cards and catalogues; roller banners; stage builders, hospitality agencies and waste management companies; caterers; and fashion labels that provide the business attire for the civilians and the uniforms for military personnel. Military personnel are kindly reminded and encouraged to wear their uniforms, not only in the preparation pack that is sent before, but also through print outs on the venue. *The site is 'dressed up' in military*

*aesthetics by mostly civilian companies, services and workers*. Thus, the civil's material labour is building the infrastructure for the circulation of the means of violence in this 'hybrid space'.

The industry itself is aware of that fact, and thus Australian industry experts Ward, Lightowe and Neagle define the "'defence enterprise' (…) as the Department of Defence including the Australian Defence Force (ADF) and Australian Public Service (APS), defence industry (large companies or primes, and small to medium enterprises (SME). It includes other key stakeholders and enablers such as education and training organisations. (…) business size definitions [we] used: Small business - an actively trading business with 0–19 employees. Medium business - an actively trading business with 20–199 employees. Large business - an actively trading business with 200 or more employees" (Ward, Lightowler, and Neagle 2019: 4). This definition captures the broad range of defence services and business interests, as well as the interconnection with 'stakeholders' and 'enablers' that make up the liberal war economy. It importantly includes SME's, which are often an afterthought in the arms trade. The means of violence they produce include but are not limited to: Hardware and software; management and training practices; procurement and project management; workplace practices; profitability and marketing models.

The defence and security enterprise is, like any industry today, a globalised one (Stavrianakis 2019). In widening the perspective on what makes these economies go round and holds them together, this seems important to stress. The world of the military seems to be a predominantly national one, with its national laws, hierarchies, uniforms and agendas (Rossdale 2019: 43). Militarism, masculinities, and the national project go hand in hand, so much so that having a standing army controlling a specific territory is one of the defining features of a "mature state" in the minds of many people (Enloe 2016: 26).

This assumption is echoed and backed up by a revisionist narrative of the Westphalian Peace that supposedly created the modern international system based on sovereignty and secularism (Kayaoglu 2010: 195ff). The colonising pasts, clearances and anti-vagrancy laws of these militaries and the wars fought over the domination of these territories have been a defining part in the history of the states we know today but are written out in this narrative (Engels 1972; Peterson 2021: 297). The imagery produced by this narrative has been a cornerstone in legitimising military strategies to national security. The spatial division of "war and peace" stems from the vision of war as being fought at the borders of nations with violence occurring "always outside supposedly peaceful national borders"(Cowen 2014: 226).

The imagery of inter-state war is based on gendered tropes, and division of labour, captured in home-making and war-making. Home-making and peace-making have been unpacked as gendered division of labour during war, in which the Beautiful Souls "kept the home fires burning, the farms and factories producing, and the bandages, blankets and food stuffs flowing,

and the dead mourned" (Elshtain 1982: 343). The sites of war are 'away'; people are 'leaving home', the site of peace where women manage the 'home front'; and "yet, because women are in practice often exposed to frontline combat (…) the military has to constantly redefine 'the front' and 'combat' to wherever women are not" (Enloe 1983: 15). Elshtain's intervention exposes these depictions as myths and legends that underpin just war theory and argues that just war theory has outlived its relevance in the age of nuclear warfare (Elshtain 1982; also Enloe 1983).

Alongside these imageries there are new realities and geographies of warfare, and military deployments, producing hybridity. Mission goals have been redrafted to include law-enforcement, border-control and supply chain security, and thus "national security is increasingly a project of securing supranational systems" (Cowen 2010: 600); or in Lenin's words "spheres of influence" (Lenin 2005: 56). As Cowen argues, organised violence is deployed along the supply chains of companies who have been recognised as the "lifeline" of capitalism (Cowen 2014, 606). This is reflected in strategies to secure critical infrastructure which spans from pipelines, and nuclear reactors, to maritime passages, such as the Gulf region. Thus, 'hybrid' space is created at the point of production and securing trade.

'Hybrid' space is not only imagined as the blurred lines between peace and war but also as a blurring between digital and physical worlds to the effect that in the 'everywhere war' it will not be clear whether war is being waged or not, and "[n]either will it be – nor is it – clear where the battlespace begins and ends" (Gregory 2011b: 248). This is especially embedded in analyses of the changing spatiality of warfare through the more intensive use of air force, in the form of drones and the War on Terror (Gregory 2011a; Kindervater 2016; Maurer 2017; Williams 2015). Translated into strategic thought this is embedded in a broader shift in business and military thought towards system thinking which are based on 'hybrid threat' scenarios. "Hybrid threats" refers to the simultaneity of cyber threats to infrastructure, electromagnetic warfare (the passive and active use of electromagnetic energy to create offensive and defensive effects), and heavy artillery as well as the use of diplomatic, political, and economic networks for offensive purpose (DSEI2019 Fieldnotes). Within these scenarios the shared understanding at DSEI2019 was that "our enemies will not stick to categories (…) they don't care what category they're in, they will apply all these" (DSEI2019 Fieldnotes), and thus an enterprise approach towards defence was necessary to overcome fragmentation between services, businesses, and domains of the military; captured in the slogan of DSEI201 "Interoperability by Design". Hybrid space and warfare does not only project a chilling perspective for the future; but with its indetermined, endless scenarios, it extends the market for the means of violence in equal measure.

While 'hybrid' spaces are focused on threats in cyberspace, this weirdly unlocalised locality that surrounds everyone and is nowhere, the dominant imagery of defence and security industries produced by the civil is bound up in 'localisms', and the imagination of the nation state. This is exemplified and reproduced by the focus on the biggest arms producers in statistics and discourse. SIPRI for example, lists the biggest arms producing companies by country and uses national expenditure of states as a measure of militarisation of the world.

The biggest arms producers and projects of the UK and Germany are however supranational companies. Airbus and BAE systems, and the new UK platform Team Tempest are not sourcing German and British screws exclusively. Instead, the production process is stratified over several countries, and the "factory is now 'stretched' across a highly uneven economic and political geography (…), exploiting and producing difference (Tsing 2009) around the world" (Cowen 2014: 184). Cowen convincingly argues that the shift in security discourse and military doctrine is shaped by the development of capitalism.

While national regulations and monitoring bodies, and in the case of Germany, the parliament, need to approve and control the trade in weapons, the image of the nationalised tank factory seems to stem from a time of mass mobilisation and nationalisation for the 'war effort'. The imagery of a national defence and security sector that is easily controlled and for the sole purpose of supplying the national armed forces, is further stabilised by a focus on national expenditure on defence. Thus, states appear as the sole, or at least the most important customers of the defence and security industry. However, no private business could survive with a customer base of only one, and the biggest companies are the biggest precisely because they do not have a sole customer and are not solely bound to national contracts or defence supply. It is in this sense that supranational alliances such as NATO establish an important, but not singular, market. While national and European champions are sponsored by states; they at the same time have an interest to expand their markets and supply chains beyond national boundaries to find the cheapest labour in a competitive market (Enloe 1983: 202).

The EU champion's Airbus operations, for example, have been designed to take place in France, Italy, the UK, Spain and Germany, accompanied by "a lot of horse trading to get a piece of the production line" (Interview GP 7). While there are main sites of assembly, and headquarters, these are accompanied by a vast number of other sites of component production, documentation, storage and so forth, as a military aircraft is the product of up to twenty thousand suppliers spread across the globe (Interview GP 7). "The image of the factory as located in a single place is less relevant than ever before. Instead, the functions of the factory have been disaggregated and dispersed across space according to the logics of total cost" (Cowen 2014: 103). As Enloe has pointed out, this creates contradictions between

(supra)national militaries, which are concerned with the integrity of their military supply chains, and business interests which are moving to locations where labour is cheapened, un-unionised, and where countries compete to offer their workforce to the most exploitative terms (Enloe 1983: 203). Thus, while the narrative of self-defence was a major theme coming up in interviews, and workers justify their direct involvement in the defence sector through narratives of self-defence as a necessary evil, national interest comes into conflict with business interest (Lenin 2005).

In her research on ports and containerisation, Deborah Cowen conceptualises ports as the site where you "see" the quality of objects as commodities: they are all the same when they are shipped, and to the market it does not matter whether you are a can of beer, raw material or a tank (Cowen, 2010: 601). In a compelling study, she traces the way security laws follow the needs of the market and production rather than agendas of "national security" or threats to citizens, as supply chains are cast as the lifelines of national economies and workers reframed as a potential existential threat to them (Cowen, 2010: 606). Thus, the supply chain itself becomes the object in need of protection, and striking workers as disruptive citizens pose a threat to it. Cowen shows how these shifts are rendered visible at ports as the nodes that connect the supply chains and the policies placing ports under market authority where different laws apply. The legal framework of ports is structured around a discourse of security through which the security of supply chains and national security becomes interchangeable. The security legal framework conflates the distinction between crime and terrorism, rendering the smooth running of the market and uninterrupted supply chains more important than other demands (including national security demands). This more profitable organisation of production renders the supply chains at the same time more fragile and sensitive to disruption -especially with 'just in time production', which is aimed to reduce costs for storage. To combat disruptions from "within" workers are subjected to invasive security checks and are framed as potential threats, while at the same time are responsible and crucial for the operationality of the port. Like the troublesome citizens of the 19th century, workers are rendered 'vulnerable' and 'protected' in international treaties, while at the same time being targeted not only by assessment centres, and disciplinary hearings, but also riot shields and batons (which they help to ship).

A similar development can be traced with regard to critical infrastructure and cities which drives the development of the surveillance industry and renders cities themselves into targets (Cowen 2014). Logistics and the securitisation of ports and the supply chain, argues Cowen, puts into relief the conflict between capital and labour: labour disruptions can be and are policed as security threats. Thus, "supply chains play a unique role in the reorganisation of security,

because of the authority of market calculation within neoliberal government" (Cowen, 2010: 606), undermining labour and citizen rights.

Moreover, this account highlights the agency of the commercial sector in shaping securitisation and militarisation, and thus shaping the hybrid space, drawing on masculinised labour. Thus, the push for more military, stricter law-enforcement and policing of workers, is not driven by a sinister military elite, but stems from the necessity of the market in global capitalism. The needs of the market, and the way supply chains have been identified as value-chains (Tsing 2009), means policy is being made to meet those market demands, and hierarchise market demands over demands for democracy, transparency, labour rights, and climate action, and we can add with the experience of the pandemic, global health.

A focus on supply chains also demands to focus on the business-to-business relations and competition between suppliers of suppliers. As Cowen draws our attention to the "mundane" science of logistics, she also draws attention to the violence inherent in it and highlights that supply chains are intentionally shaped or designed (Cowen 2014). The circulation of violence is not limited to the shipping of tanks and bombs, but extends to microchips, screws, and fibres, and the very shipping container that moves all these around the globe.

Levinson (Levinson 2016) has illustrated this in his account of the triumph of the shipping container. The truck company entrepreneur Malcom Purcell McLean understood that logistics and the shipping industry are not concerned with navigating ships but transporting goods. He then invested in people who designed a new system of transporting goods – not just a new tool to transport them in (Levinson, 2016: 73f). The revolutionary idea of moving truck loads in a container from truck to ship, rather than unloading the freight in boxes, chests, baskets in all shapes and sizes as had been done for centuries, meant that not only were ports redesigned, but jobs replaced by cranes, unions busted, carrier vessels and transport systems around the world standardised to enable export. Cowen and Levinson argue that it was the Vietnam War and thus military expansion and investment that rendered the seemingly mundane invention of the shipping container into the means of revolutionising logistics and globalisation and laid the grounds to privatising logistics in war (Levinson 2016: 247). It was the business-savvy Malcom McLean who spent a year and a half convincing government officials to leave things to him, and as Levinson argues was "vital to the U.S. war effort in Vietnam" (Levinson 2016: 247).

However, Levinson's account also shows that the financial success of McLean was built upon military and masculinised labour in a more profound way than accelerated through war demand and persistent lobbying: first, he bought old navy ships from WWII. And second, he licenced veterans who were "eligible for cheap government loans to set themselves up as independent truckers" (Levinson, 2016: 52). While Levinson attributes these moves to the entrepreneurial

genius of McLean to outsmart the regulators and sniff out a pool of cheapened labour, reading those lines from a Marxist Feminist perspective, highlights how violence and business go hand in hand. First, the veteran's labour had been made cheap through their military service. As Cowen (Cowen 2005) argues, at the end of WWII the mass return of drafted men created an oversupply of labour. The absence of sufficient welfare state provisions, and the trauma of WWII meant, that WWII veterans were in a dire financial situation. Thus, the condition that helped the success of containerisation along was the labour of veterans that was cheapened by trauma, and unemployment.

Second, McLean might be the first to introduce a system that is now known as 'Uberisation' – the truckers he 'hired' were independent businessmen leased by the McLean truck company and incentivised to keep taking orders from the company through bonus cards McLean organised with gas stations (Levinson, 2016: 52). Thus, the financial risk was offloaded to the veterans while at the same time, McLean had circumvented traditional labour struggles by not having employees in the legal sense in the first place. Together with the automation of dock labour and supported by the government's policies of the red scare, this led to a decisive victory of the employers over the unions, mass lay-offs at the docks and thus lower wages that rippled through the transport industry. When expanding his business into the shipping industry, McLean was among the first to introduce personality and intelligence tests, as he "wanted people that were smart, aggressive, and entrepreneurial; the wrong test scores meant no job offer" (Levinson, 2016: 92), thus increasing competition amongst workers.

Originating from the art of war time supply, logistics has changed. "Today, logistics is a 'science' of the efficient organisation of movement within spatial systems that entails the design and management of supply chains" (Cowen, 2010: 601). Part of the supply chains are banks; and while anti-militarist campaigns such as 'critical investors' have drawn attention to this, it is not only the investment in wars that's problematic; but as Gilbert has been arguing 'finance' increasingly is a 'weapon system'; not only in Afghanistan; but in trade wars (Gilbert 2015). The recent call for applications of bankers for the Ministry of Defence, illustrates that tanks are not the only means of violence. In his DSEI2021 address, UK Strategic Commander General Sir Patrick Sanders highlights the role of political warfare, based on non-military means that "have exceeded the power of force of weapons in their effectiveness" and the arms race in the electromagnetic sphere (Gen. Sir Sanders 2021). Embargoes, tariffs, and interest rates are the civil's means of siege, primarily targeting the civilians of the enemy.

Deborah Cowen also highlights Marx' analysis of circulation and that commodities do not have to physically move in order to circulate in the market (Cowen, 2014: 100): "And yet, the seeming simplicity of 'following commodities' may also be misleading, as they may be bought and sold many times over the course of a simple journey from producer to consumer, meaning

that various forms of capital are at play" (Cowen 2014: 101). Rather, a commodity changes hands multiple times without moving at all, until it is moved to the user. Thus, trade is not (only) signified by movement, but by finance transactions, and infrastructure. Much of the site of circulation, thus is rendered invisible.

Importantly, and overlooked in the literature until recently, transport does not just happen, but requires an "additional step in the process of production" (Cowen 2014: 100) and therefore adds value to a commodity. To unpack that 'added value' is of crucial importance to understand how violence circulates in this system. From a Marxist analysis of value, the value of commodities is determined by the socially necessary labour time of their production. The commodity producing labour time is labour power, thus, the exploitation of labour power for longer than needed to reproduce itself, creates that 'added value'. It is in this sense that logistics becomes deadly, as it produces 'crunch times', just-in time systems and intense precarity for workers in order to extract as much surplus value as possible. Workers at harbours are not only faced with intense schedules but also subject to security policies focused on keeping the logistic hubs running smoothly (Cowen 2014).

However, the image of putting infrastructure under military protection and imbued with security concerns, is only showing half the picture. The integrity of supply chains and building sites is framed as another security issue as the case of the US embassy highlights, which had to be rebuilt after the staff discovered that the Russian builder had wiretapped the building (Anonymous), or the NSA hacked phone of Germany's ex-Chancellor Angela Merkel. Supply chains are thus fragile, and highly porous and bear the unsolvable contradiction within them that they are necessary and profitable while at the same time increase risks to profit and are susceptible to disruption.

The builders and contractors who build the bases are not the military themselves. Maybe this seems an obvious point, but it also means that those builders are accountable to building regulations (Interview EP1). Thus, health and safety concerns need to be taken into account, whether you are building a hospital or a firing range. Emergency exits, ventilation and fire safety are regulations fought for by trade unions which not only shape "civilian" spaces but military spaces, too. The same goes for environmental concerns. While the military itself is often cited as one of the biggest polluters, the companies building for them can be held liable for infringements. In one case a firing range was to be built with higher safety measures, to prevent serious injury and death of soldiers in training. A key component of the new design was a copper-based bullet, which would dissolve into dust, when hitting a target. Seen as an advancement in moving away from poisonous lead, the copper bullet was at the core of the design of the space. However, copper is potentially poisoning for the environment and while the bullet would dissolve when hitting a target, a stray bullet could hit a tree and poison it. As

the company was worried to be involved in a PFAs-style scandal, either a different bullet needed to be found, or the training site needed to be redesigned drastically. In the end the project was terminated (Interview EP1).

Two points can be drawn out from here. First, the spatial division of military and civilian spheres are not as clear cut as the civil/military dichotomy implies. Rather, they converge into 'hybrid' sites. Second, the civil is shaping those hybrid spaces through health and safety laws, means of transport, profit interests, environmental regulations and dress codes. The civil thus plays a role in the way military is seen and perceived.

Reflecting on the sites of production of the means violence highlights the limits of a conventional concept of what establishes 'military and security companies', 'arms producers' or the 'defence and security' market. This shows that the material work of the civil is spread beyond charitable work, as well as how the symbolic work of the civil curates distinctive spaces through advertising uniform-wearing and designing military spaces.

## 4.2 The Civil And The Screw

As Deborah Cowen notes, "Military writers are typically oriented toward the monumental rather than the mundane, drawn to the most sensational aspects of organised violence"(Cowen 2014: 25). This observation has been inspiring a move towards the 'mundane' which, as Leander argues, lies at the heart of militarisation (Leander 2022b: 11). While walking through the trade show, I am tuning in to the 'mundane' and try not to have my attention captured too much by the fighter jet mock-up. I am here to focus on components and the civilian companies who produce them.

In reflecting on why this is hard, and amongst the many mundane components represented at the arms fair, I decide to focus on the screw that symbolically holds together the arms trade and simultaneously captures the work of the civil.[12] The screw illustrates that design is not arbitrary. Unlike the small-scale production series of tanks, the screw is produced en masse and easily replicable. Its design, its production, market, and sale is gendered and global. Moreover, it is a powerful illustration of how civilian technology is applied for military purposes; rather than the other way around. It is easily overlooked because it's hidden; it is familiar and therefore not seen as military; it is mass-produced which makes it omni-present, exchangeable, and ordinary and its value per unit seems negligible which is why the fastener

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[12] And ironically, amongst the many notes and company names I wrote down in my fieldnotes, there is not one that is a fastener company.

industry is not a major focus of anti-arms trade protesters. One of the interviewees highlights this point:

"The perpetrators are here in our backyard in the companies and we want the public to know that, and which companies are active in the first place (…) and the bigger ones, we put on the map; of course there are uncountable small suppliers, and we do collect those to some extent, but if someone is delivering screws, for example, of course that's not of that much interest" (Interview GP1).

I take the screw as an example here because it illustrates the ambiguity of 'civilian' objects and their supply chains. Not only does the screw seem rather boring, and negligeable, but at the same time it has been lauded as "the best tool of the millennium" (Rybczyinki 2005: 13)[13]. To grant such a title is not a small thing. The discovery of the screw and its functionality as a fastener has indeed revolutionised industrial production, and inspired international standard setting (Yates and Murphy 2019: 1). Alongside it, the screwdriver as well as nut and bolt were developed; and it set the scene for the standardisation movement, which culminated in the establishment of the International Organisation for Standardisation (ISO). The main difference between bolts and screws, is that a screw will eat into the material itself and thus paves its own thread and has a 'final' head, whereas the bolt requires a pre-treated nut to hold things in place and often has a flat end and head that can be grabbed. The screw principle is also applied in lids and caps, hoses, faucets, drills and staircases (Glover 2006). As Rybczyinki explains, the shape of the screw means its holding power far surpasses that of any nail, as it is based not on friction, but on a "mechanical bond: the interpenetration of a sharp spiral thread and the wood fibres. This bond is so strong that a well-set screw can be removed only by destroying the surrounding wood" (Rybczynzki, 2005: 70). By eating into the material, a screw thus holds two surfaces together without loosening. Thus, the repeated impact and movement that steam produces does not impact the links between the pipes. Nails would loosen and the whole construction would break down in contrast. But this revolution could not happen before the screw's production was revolutionised.

The history of the screw

The concept of the screw was discovered and developed to industrial standard in ancient Greece. Hero of Alexandria is credited for having discovered the screw press and designing the helix form to lift and press weight. The revolutionary discovery of a mechanism that could execute pressure many times over the applied force, was "unprecedented" (Rybczynzki,

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[13] This history heavily relies on the research of Rybczynski (2005), as the authority in screw history.

2005:116). Thus, early screws were used to move water from one path to another, and reset fractured bones. The quality of the screw concept also meant that it could press things together. These screws were used to press olives, and linen and played a role in wine and paper production. The printing press was a later application of the screw press concept. At the current state of the art into screw research, the next advance sees a qualitative leap – a screw with a nut is used on a medieval helmet as a fastener. When and where exactly it was discovered that the screw could not only move things, but hold things in place too, is not known, but there is a fourteen hundred year gap between the screw as a press device to the screw as a fastener (Rybczyinki 2005: 125). Other screws are depicted in torture and prison equipment, such as manacles and body armour, and the matchlocks of the first handheld firearms appearing in the Ottoman Empire and Europe (Rybczyinki 2005: 57ff). The screw was thus adapted by the ruling classes to fasten protective and coercive equipment. The screw then, becomes one of the first innovations that transfer from the civilian realm of wine production to the field of torture and medieval combat.

Medieval screws were rare and handcrafted (Rybczyinki 2005: 50ff). The process was laborious as each screw had to be adorned with its pattern by hand, which was done by filing the threads into each bit of metal. This also meant that each nut for each screw had to be a perfect and individual fit. Thus, none of the medieval screws was like another, which made widespread application of the screw unproductive, and the screw itself expensive. The manufacturers were, as far as there is evidence, armorers employed by feudal lords and locksmiths. The majority of people were using nails to hold things together, as those were easy to forge from diverse material (Rybczyinki 2005: 70).

The screw, however, did not revolutionise production because of its usefulness in the military. Instead, screw development took place in clock and lock manufacturing when demand for smaller house clocks and watches started to rise, and miniature screws kept things precise and in place. As these expensive goods were only consumed by the ruling classes, the fact that its components were expensive did not matter that much, even though it also meant that any screw  still held only its designated place and were sold individually (Rybczynski 2005, 72).

In the UK, screw production was organised as a cottage economy in the Midlands, employing whole families in the monotonous and laborious process. The revolution that took place to change the way things are joined together forever, did not happen until 1586 when the lathe had been perfected by the royal engineer Jacques Besson in France, which greatly developed pattern making. Butt-hinges were another invention that required screws and thus screws found their niche market. Inspired by clock machinery, the first patent for a semi-automated screw-cutting machine was awarded to the Wyatt brothers in Birmingham in 1776. While they

themselves went bankrupt, their invention was bought up, further developed, and distributed in France, Germany, and the United States. Around the same time Jesse Ramsden developed an automatic lathe to turn the pattern into screws. About thirty years later, Henry Maudslay combined the cutting machine with the lathe and created the first power-driven screw-cutting lathe, which is still used today; and a catalogue page of a Sheffield tool maker, William Marples & Sons illustrates that screw production had developed so much, that "by the early 1800s, the demand for screwdrivers was large enough to warrant factory production" (Rybczynski 2005, 43).

The lathe development meant a qualitative shift in producing screws and the fact that they could be produced mechanically, rather than manually, meant that they could also be produced more uniformly than before. In the US similar patents were awarded in the eighteenth century to David Wilkinson. The further automation of screw 'manufacturing' was driven by the search for 'precision', which resulted in the precision lathe developed by Henry Maudslay (Rybczynzki, 2005: 104f). This allowed uniform screw cutting which made them more interchangeable, and after years of development resulted in standardised screw heads and threads. While the British companies led the way, important developments were made on sites in the US and Canada, where Cullen Whipple invented a machine that could cut pointed screws which eliminated the need for predrilling, and Charles Rogers perfected tapering. Finally, automated screwhead manufacturing was revolutionised by the calculations and experiments of Peter Robertson who calculated, trialled and produced a screw with a socket head, which meant screws became self-centring. Unwilling to hand over intellectual property and production rights, he was outcompeted by Henry Phillips. The Phillips screw head is more susceptible to cam-out than the square Robertson screw head, but ironically this was exactly what was needed for automated car manufacturing in the 1930s as it prevented over-screwing (Rybczynski 2005: 86).

The Robertson screw and the Philips screw saw a fierce competition over the standards, a race that was won by the Philips screw which became the official standard in the US. In Europe, the Pozidriv screw was initially more popular but had to eventually give way to the Philips screw, which was used in more commodities. Not only the screw heads, but also the threads of screws were an issue of fierce debate within standardisation processes. The first thread standard was proposed in Great Britain by Joseph Withworth, a pupil of Maudslay, who rather than focusing on the best technical properties sought to find an average that British workshops could produce; thus not only unifying the British screw market but also strengthening it through the export of the standard (Yates and Murphy 2019: 29f). This would not only increase interoperability; but also extend the market for spare parts and meant British companies set up shop in the US and Canada. However, the economic development in the US meant that

eventually the British companies were outcompeted as the emerging screw industry in the US adopted its own thread standard, developed by William Sellers. Having developed a thread standard that reduced production costs because it relied on less skilled labour than the British, he had managed to convince a series of railway companies as well as the US Navy of the superiority of the US built screw, which helped to secure a large market (Yates and Murphy 2019, 29f.). The two standards competed over the world screw market, until the shortages and destruction in WWII highlighted the problems of different spare part standards of members of the same military alliance (Yates and Murphy 2019, 129ff). Shifting power after two world wars and the decline of the Empire's influence, the world of screws shifted to the metric system with the establishment of the International Organisation for Standardisation (ISO) in 1946.

Without the screw, nuts and bolts John McLean could not have built and developed the container, and containerisation would not have been possible, because we would not have the containers. Industrialisation itself, however, cannot be delinked from its imperialist history and intertwinement with the slave trade as one activist at the Liverpool demonstration said, "all the big houses, all the architecture that you see, it is all built upon the slave trade. This is why we have a responsibility, especially here in Liverpool to stand up against war and the ones who profit from it" (Fieldnotes Liverpool 2021). This is true for the US railway industry which was such an important market for the screw. Moreover, the rise of markets is not accidental: Sheffield steel production meant it became an important developing site for screws and fasteners; the slave trade and slavery-produced cotton was vital for the rise of the British textile industry and links to (eventually) computerisation and digital services; the competition between British and German dye-makers lies the basis for Germany's chemical giants. Of course, it is not the screw itself that changed the world but the humans applying, manufacturing, and circulating it. As the literal cog in the machine moves it, the screw was there to hold the cog in place.

The political economy of the screw

The development of the screw was crucial for industrialisation, because, as stated before, without the screw the industrial steam engine would not have existed. Screw design was not arbitrary, and the standardisation of the screw was a major achievement in interoperability. Standards play an important role in the interoperability of tools, but, as Yates and Murphy's research demonstrates, it is also crisscrossed with power and profit margins. Illustrated in the condensed history of the screw and its standardisation, is the contradiction between increased use-value of commodities on the one hand, and the protection of specialist equipment which establishes a monopoly over a niche market on the other hand. While military standards are

supposed to guarantee safety, longevity and reliability of the equipment, several interviewees highlighted a more cynical reading, which interpreted standards and certificates as market boundaries that guarantee a share in the value chain and protect national interests in transnational projects: "Every country, every organisation, and every company has its own certificate, and once everyone has made their stamp on it, the component costs not 10 Euros but a 1000 Euros"(Interview GP 7). Similarly, another interviewee remarked: "every association has their own standards and puts its own stamp of approval onto the screw. And by the time the object has travelled from Germany to Italy, through the UK, through Spain and back to Germany to be built into a German Airforce plane, that object has quadrupled in price. And any customer – whether it is the German army or another one, has to pay that" (Interview GP6).

This sentiment is illustrated by AEGIS, the lobby-organisation of the European manufacturing associations. While promoting cooperation within the network, AEGIS displays a notably aggressive tone, and demands the "predictable enforcement of the EU's trade defence system" (About — AEGIS Europe n.d.). The site, last updated 2015 features a quote from AEGIS chair Ines Van Lierde:

*"AEGIS Europe is an advocate of fair international competition, level playing field and multilateralism as key elements for a prosperous European economy. However, under the current unstable circumstances the Alliance believes that the EU needs to stop being naïve and step up for the protection of its industry. The EU needs to end asymmetrical relationships with third countries which do not heed by international market rules." (Lierde 2015).*

This illustrates the push by the regionally organised industry towards political intervention to protect market shares. The thousands of fastener companies have thus formed hundreds of trade associations which provide networks, markets, scholarships, and mentoring programmes, and most and foremost are aimed at increasing political leverage. The "Global Fastener Alliance", for example includes eight independent fastener manufacturers, which protect over ninety trademarks. Apart from DSEI2019, fastener producers come together at shows such as the International Fastener Expo (IFE) and other business-to-business (B2B) trade shows and keep up to date with industry news through publications, such as Fastener and Fixing Magazine. Trading websites which list manufacturers and their products aim to bring traders together, as the sheer number seems to be overwhelming not only for an outsider but also an insider.

Screw manufacturing is seen as an automated industry: The raw materials that can be stainless-steel, copper, aluminium alloys, zinc, titanium, are spun into wires in refineries. Depending on their intended use, a finish can be applied to harden, protect against rust, corrosion or heat the wires. The screw manufacturer buys the wire rolls, which then are automatically straightened, cut to size, hammered into blanks, and then slammed to make a

screw-head which is then flattened and trimmed. Finally, the screw is squeezed through a threading machine which cuts the essential threads into the material (Oritz 2023). Bolts, studs, and nuts undergo a similar process, but can be hot-forged. They then are cleaned or "annealed" which increases their uniformity, trimmed, turned, and threaded, heated up again, and treated with phosphate, rethreaded and then packaged (Kant Fasteners 2023).  Because of the extensive automation, screw manufacturers fall outside of anti-war campaigns – there are seemingly no humans involved whose conscience could be called upon.

However, as the history of screw design, automation and standardisation also demonstrate, automation is the product of human labour and design: designing machinery and processes requires humans, connecting markets requires humans, operating the machines requires humans, and of course mining and transporting requires humans. While the design and standard of screws has seen little changes in the last eighty years, its history is driven by invention, power struggles and cartels. Component design, then is not arbitrary, accidental, or an afterthought. Rather it is time consuming, expensive and the result of civilian agency. With this intense competition, trademarking has taken on the role of standards.

The fastener technology is one of the many trademarked technologies built into most security and military equipment and generates serious profits. Germany-based Boellhoff Fastener Systems, for example, is operating in twenty-four countries, offers over one thousand fastener systems, and designs these with new specifications as well as materials. As one of the leading fastener companies in the world, the business proudly states that there "is hardly a car in the world that does not contain Boellhoff products" (Boellhoff 2023). Founded in 1877 as a hardware trading company, the business soon expanded to supply beyond its region. By 1969 the trademarked HELICOIL® threaded inserts were used in the lunar module aiding the Apollo mission and in 2022 it was protected as a global trademark. The family-run business spread across fifty companies is run in the fourth generation and employs about three thousand employees across forty-four sites. The company's influence is spread across a network of foundations, and charitable trusts such as the Wolfgang and Regina Böllhoff Foundation which provides scholarships to young people in the company's home region East Westphalia. The Mechthild Böllhoff Foundation is active across the Middle East and funds religious and social projects in Israel, Palestine, and Jordan. Notwithstanding the ideals of individuals, the economic function of private trusts and foundations in Germany is most often the protection of company assets from splintering and inheritance laws (Adloff 2004: 274f). With an annual turnover of 545 million Euros and a net worth of 400 million Euros, the family still makes it onto place 457 on the list of the 500 richest Germans (Neßhöver 2022). Trusts and foundations in Germany are only loosely legally defined institutions and can be combined with other legal structures. The Wuerth Group, another family-run fastener enterprise originating in Germany,

for example, is a registered foundation to guarantee majority family ownership over the company (Hirschmann 2020: 153).[14] Wuerth was established in 1945 as a wholesale screw business, comprises of over 400 companies today and has been a military supplier for thirty-five years. With record annual sales of 19 billion US dollars in 2022, and an estimated 30.1 billion dollars net worth as of March 2023, Reinhold Wuerth and family even make it to number 43 on the Forbes real-time billionaires list (Forbes 2023). These hybrid companies thus institutionalise the imagery of the philanthropic entrepreneur and highlight the economic function of the family in capitalist states as keeper of private property. Starting with the feudal family industries in the Midlands, screw producers still often rely on family structures. Moreover, as these examples illustrates, fasteners are money.

Since those days, the industry has been male dominated and invites reflections on the gendered language of screw design. Similar to the phallic imagery that populates nuclear strategy and weapons, where strategists talk about having "the bigger stick", and of countries losing their nuclear "virginity" (Cohn 1987: 693ff); gendered language carries through to the fastener industry. And similar to the nuclear sexual language, the gendered language of nut and screw design doesn't require a lot of imagination. The material the screw is supposed to hold, is called 'mating material'; a bolt has an external male thread that requires the pre-made female thread of the nut which has been threaded to fit the bolt's threads perfectly; and there are washers that are applied to prevent "loosening and crushing" and "relieve friction" (Sabhadyia 2021). Gendered language reflects and contributes to the marginalisation of women in the industry. Women are marginalised in this patriarchal field and have organised networks to help women succeed. The organisation Women In the Fastener Industry (WIFI), a mentoring programme for women, for instance, challenges the male dominated industry and shares success stories of female owners, producers and suppliers. Gender, however, plays a role in selling the labour of women. In the 2018 edition of Fasteners and Fixing, WIFI appeals to industry to close the labour shortage by focusing on women aged 26-35; since, due to the life experience, and caring responsibilities "adult learners are more driven and resilient. Women have more at stake and therefore display tenacity and a good work ethic" (WIFI 2018: 105). Thus, rather than arguing for equality and fair treatment, the particular socio-economic situation of women which is the result of patriarchal divisions of labour is advertised as employability; rendering women more exploitable. This is illustrative of the webs of oppression Frigga Haug is speaking of, and thus invites us to pay attention to the way oppression is re-packaged as opportunity and advantage.

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[14] A more popular example is the supermarket chain Aldi Nord&Sued, which is also registered as a trust company.

The competition in the fastener market means that efficiency is hard earned. The industry is thus not only ruled by technological standards and trademarks, but also certificates, which structure the competitors and filter them for end-users. Certificates are not only a quality check and increase transparency, but are also a tool of controlling and disciplining the supply chain as a whole (Tsing 2009, 156). In Anna Tsing's 'supply chain capitalism', capitalism not only intensifies the exploitation of diverse labour laws and union organisation around the globe, but also adopts discourses of cultural, citizenship status, gender and race differences to mobilise workers within the supply chains and motivate them to self-exploit and identify with the corporate identity (Tsing 2009, 159f.). This is not only achieved by designing a corporate culture that re-imagines wage-labourers as consumers and entrepreneurs but also by inventing industry certificates and trading standards for the supply chain, as exemplified by Wal-Mart (Tsing 2009: 156). While one side of the value chain is indeed diversity and the search for ever new lines of distinction that justifies a cut in terms and conditions and different treatment of workers, at the same time value chains are organised spatially through standards and certificates. This was illustrated at DSEI2019 in a talk on optimising supply chains. Organised by the UK's trade association for Security, Defence and Aerospace ADS, the session titled 'Achieving Supply Chain Excellence' focused on the voluntary programme 21st Century Supply Chains (SC21), a ADS certificate for small and medium sized businesses. The certificate comes with a "rigid framework with industry recognition" which ADS helps implement and awards in a bronze, silver, and gold standard. I expected a talk on the market shares and challenges of those kind of businesses. However, supply chains, as Tsing observed are more than a technical question. Thus, the DSEI2019 talk focused on 'ambition' and 'agility', or rather the lack thereof in small and medium sized businesses and pitched the voluntary programme SC21 as a corrective tool, to increase productivity and to snatch a slice of the 5.7 trillion cake of the world-wide defence, security and aerospace market.

For this, companies were asked to consider not only that the UK market was growing at a lower rate than the competitors', but to consider their own contribution to that. Thus, suppliers need to "keep fit; if you stop, there is the danger of putting weight on; we want achievers" (DSEI2019 Fieldnotes), and thus it was the lack of fitness and ambition that explained why most of the cake went to the competitor markets. In visualising the goal, the talk personalised growth rates and efficiencies and urged the audience to make it personal: "What does good look like? Think about yourself, think about your supply chains and think if that is what they look like, and my suspicion is, they don't" (Fieldnotes DSEI2019). The audience was put on the spot, with repeated questions like "who has achieved this?", "who knows the criteria?", "who has the bronze standard?" – which in an information session few attendees could answer in the positive. The business owners who attended the talk, in search for strategies to de-risk their supply chains, needed to be lectured and patronised into the needs of the market and the

presentation stressed how a falling profit rate, increased costs and delays are to be attributed as personal failings and lack of ambition and agility of the ones present (Fieldnotes DSEI2019). The dramatic pauses, the way weight imagery was used to evoke the fat-shaming overweight-equals-lazy trope, and the interrogative tone, turned the presentation into a class-room and a very unpleasant one at that. Rather than selling the certificate as something beneficial or useful, the strategy of the presenter was to shame and call-out businesses for not working hard enough (Fieldnotes DSEI2019). Thus, far from being a technical challenge, supply chain management involves passing on economic – and emotional – pressure onto smaller businesses and their managers. Larger companies aim at 'de-risking' their supply-chains and thus put pressure on them to produce to the lowest price possible.

The logic of certificates explains some of the difficulties of small and medium-sized businesses in entering the defence and security market. In conversations at DSEI 2019 one supplier of digital logistic solutions said it is very hard to enter the market when big companies get all the state support for innovation (Fieldnotes DSEI2019). Established companies that are full or partly subsidiaries to the big monopolies like BAE Systems, for example, have bigger market shares and closer relations to those companies and thus entry into the defence and security market is difficult. Certificates set boundaries around the products a company produces, and while opening markets, the acquisition of certificates is labour-and time-intensive, and therefore expensive.

One (of only four businesses worldwide) which has been awarded the SC21 gold standard, is the UK company Denroy Plastics Ltd. The small company from Northern Ireland specialises in light-weight polymer products and specialises in metal-to-plastic transformations. While mechanical, non-permanent fasteners (screws, nuts, bolts etc) have transformed the way things are joined together, the demand for light-weight material has given the moulding and adhesive industry a push (Richards 2018). The main sectors Denroy Plastics supplies are aerospace, automotive, defence and commercial. The commercial applications for the moulds that the company designs are haircare, packaging, medical, leisure and construction. In Aerospace the company has been supplying components for the Airbus320, Hawk, Tornado, and Eurofighter programmes and is registered as a Bombardier and Boeing supplier (Denroy 2023a). For the Defence sector the SC21 gold award holder "typically" produces such products as ammunition containers, firing shell nose cones, missile systems components, firing hand grips, and trigger mechanisms (Denroy 2023b). This example illustrates the future of the fasteners industry, but also illustrates how changing product design can change the geography of supply chains: Moulding technology needs to be adapted and developed, new materials mean products and machinery need to be re-designed and thus supply chains change. Thus, supply chains are not arbitrary but are shaped by product design and are designed to keep

cost low. A perspective that focuses on the production of the means of violence, can therefore help highlight these processes. Moreover, the intense market entry costs and costs that occur in the components for advanced military equipment, also highlights that not every economy has equal access to these technologies; which should inform threat assessments.

## The mundane-ness of the civil

It is the "mundane-ness" of components and services that I want to focus on here. The focus on the 'biggest' arms producers and monopolies tends to direct our attention towards the biggest products too: fighter jets and transport planes, submarines, tanks, rockets and explosives, and firearms, which again guides our gaze towards the production sites of those. With that, a large section of the production of the means of violence is overlooked. One worker pointed to the technically civilian sites he was working on "The plane leaves here and it is a mail-plane. The armaments are then only attached in France" (Interview GP5). The focus on the finished commodities also reaffirms the imagery of those products being shipped as a whole. This is not the case, as the objects are traded in parts for most of their lives, which creates challenges for arms-control: "It's not like you can't avoid the regulations – so you send separate parts, like a kit, and that is then assembled in the country" (Interview GP 4). Thus, big products and production sites disproportionately demand our attention and because components are small and everyone could buy a 6-inch screw in a store and knows the price of that screw, we assume that there is no money and thus no interest in screws. However, if there was no money in screws, they would not be produced. Supply chains are designed; 'the everyday' of circulation is being policed and the civil establishes an artificial distinction between components and finished products, which is upheld by moral codes and laws, which struggle to keep up in regulating the trade in so-called dual-use components and technologies (Csernatoni 2021; Nixdorff et al. 2018; Tucker 1994; Vinke, Rais, and Millett 2022; Volpe 2019).

While the products traditional defence companies sell certainly have a big price tag attached to them (and the ordering of a line of fighter jets does qualitatively change not only the military capacity of whoever bought them but also makes a quantitative change in the shareholders' books) compared with the rest of the trade and commodities, fighter jets are a rather rare commodity as the interviewees explained (Interview GP6). Because of the high investment costs and tailored on demand production, big defence projects are limited series that never go into mass production (Interview GP 7). This is one argument in the discourse about the search for civilian applications for military technology: because government orders for new jets, for example, are rare, businesses need to produce profit with other things in 'between' contracts, thus increasing dual-use capacities.

Because of their strategic import, traditional defence companies certainly take on a special role in the proliferation of the means of violence, however this also means that only a fraction of the production cycle is illuminated by focusing on these companies and military to civilian technology transfer. All the suppliers have to work to industry standards, adhere to national and supranational safety norms and produce to a competitive price. While some suppliers enter symbiotic relationships with the 'customer' business and are subsidies but in name, these super specialised products come with some risks to the supply company, which is why the military market is not always a priority, as, for example, an employee of a robotics company explained: "It takes ages to establish in defence, up to five to ten years, because everything is dominated by established companies, or 'monster companies' as I call them (…) this is the only defence show we're doing this year – it is an interesting market for us, but slow" (Fieldnotes DSEI2019). Rather, with the logic of universalised risk and thus seemingly limitless purchasing power, the market presents an opportunity for companies who seek new revenues.

The reason the tanks and planes catch our attention is that we rarely see components on their own – we notice them as the finished product, such as a tank, but the coils, and cables, and nuts and bolts, are invisible because they are built into it; the machines that pressed and polished and painted the steel are not on site; they are carefully protected and guarded intellectual property. In that, the work that the civil does in building a tank is rendered invisible. The distinction between components and products and the attention that is given to the latter, reproduces the unimportance of the civil in relation to the military and thus shapes which sites are worth investigating and which sites are not. In the following section, I discuss how this constructs moral geographies of the civil/military that obscure the simultaneity of producing and selling which in turn establish the infrastructure on which changing liberal alliances can move about.

## 4.3 Moral Geographies

Anti-arms trade activism has been leading the move towards the banal and the local, with the intention of rendering war production tangible, and thus cut across global/local perceptions, which tend to render the international into an inaccessible sphere, out of reach of political activism. While a trade show may be an exceptional event, a trained anti-militarist eye spots the military sites in the midst of civilian life (Rossdale 2019: 40f). Military research is conducted at universities and college campuses (Stavrianakis 2008). Companies that specialise in high performance fasteners are not secluded and cut off from the world but have their production sites at strategically useful places. Dual-use technology companies are at every corner, producing the cables, coils, moulds, and so on for both commercial and military markets. The

company that designs the citizen-outreach project for the next city development complex, designs a military shooting range on the same floor. Campaigns, such as War Starts Here, and for example the German campaign "Keine Waffen vom Bodensee" (No Weapons from Lake Constance, KWVB) map companies into Defence Atlases and thus aim to render visible the production of the means of violence in the midst of tourist regions.

With this, anti-militarist activists have collated rich and accessible data bases. Quantitatively speaking, most means of violence are in fact not bullets, tanks and planes; but fasteners, cables, software, and textiles and machines. Mapping these companies into an area shows that the means of violence are produced in the midst of the 'civilian' and depoliticised life of tourist regions. The lake Constance region is one of them. Known for its beauty, wine, and good food, the region is one of the major tourist regions in the South of Germany, bordering on Austria and Switzerland. The well-to-do region prospers not only through its beautiful vistas, but through the production of the means of violence, which buy-off the community through sponsorships of church-run child-care and youth centres, as an activist from the campaign 'Friedensregion Bodensee' ("Peace Region Lake Constance"/ FRB) highlights (Interview GP 2).

KWVB lists more than twenty companies as defence and security companies in the region, thus producing ten percent or more of their output for military purposes. The campaign has captured them, collating information from business newsletters, local newspapers, and websites on new production lines, collaborations, management assignments and mergers. The companies that are being outed, do not produce flashy objects, their names and logos are banal and descriptive, such as for example ZF (ZahnradFabrik). The unassuming name Zahnradfabrik translates into "Cog Wheel Company", pointing to the history of the company, which has two subsidiaries, one specialised in race engineering and a catering company that serves food to ZF workers and visitors as well as to local schools and offers a party-service. The automotive manufacturer produces gearing systems, as well as electronic components, ranging from buses to sports cars. Amongst the heavy-duty vehicle systems developed in the company are the gearing systems for tanks, and military trucks; and besides the local production sites the company has more than fifty sites spread across Germany, which makes it one of the biggest suppliers for defence and security in the region. While KWVB focuses on the 'big ones' they also note that "there are all the suppliers, hundreds if you also consider 'dual-use' but we can't list them all" (Interview GP 1). Thus, focusing on larger products and companies is, to some extent, a question of prioritising sparse resources in volunteer organisations.

Rendering these visible in the everyday is not a harmonious process, however. 'Dual-use' or hybrid geographies are contested and depoliticised sites. Thus, raising the issue of military production is seen as an act of "indecency", "inappropriate" and often moralistic scolding of

workers who just need to earn a living (Anonymous). The economic dependency of the region on manufacturing means that it is more or less "an open secret that they [companies] also produce for military, but people don't want to talk about it" (Interview GP 2). Raising it as an issue implies judging the workers employed by the company and thus is seen as violating standards of respectability and politeness.

Bakeries and small shops are not to be convinced to put up material for openly anti-militarist protests out of fear of losing customers "They say, 'I can't put this [poster for a demonstration] up, I will lose my customers', because so many people work in these companies, you see?" (Interview GP1). KWVB, a group engaged in performative direct action struggles against institutional as well as everyday policing in the region: "You have to explain to the local authorities that protesting is a constitutional right, and you have to get loud about it too, before it gets through!" (Interview GP1). Hostile responses by passers-by towards the group is another form of everyday disciplining: "Well, of course you have to have thick skin, people call you names, spit on you (pauses) it's not *nice*, but it comes with positioning yourself" (Interview GP1).

Paired with strong anti-communist sentiment, anti-militarist protest is seen as provocation and reacted to defensively. "Because everyone is scared to set a foot wrong and scared to be labelled as 'one of them' one of those lefty-communists! If you are against the arms industry, you're a communist! And that's still here ... like 'Yuck – I don't do that'; because they are respectable people" (Interview GP 1). A spokesperson for FRB highlighted the importance and simultaneously impossibility of framing peace in political terms: "The only openly anti-militarist party left, is of course Die Linke[15]. But you can't say that here; if you bring in politics you have lost" (Interview GP2). Thus, (revolutionary) politics are seen as necessary but unspeakable in the moral geographies of dual-use production.

This perhaps explains to some extent why activists tend to mobilise moral, rather than political language at protests. The (a)morality of arms-trading is a major feat within anti-war campaigning (Stavrianakis 2019). This is illustrated at a demonstration in Liverpool against the Electronic Warfare Europe Convention 2021, organised by Clarion Events and hosted by the Association of Old Crows (AOC). AOC is an US-based, non-profit organisation specialising in Electronic and Electromagnetic Warfare Strategy and policy advice that "stands at the heart of the Electromagnetic Warfare community!", established in 1964 (AOC 2021). Warfare across the electromagnetic field is aimed at disrupting communications of the enemy and thus aims to jam radar and signals of air defence systems, critical and civilian infrastructure, but also includes misinformation and information warfare (Fieldnotes DSEI 2019). In their leaflet, which

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[15] Left-wing, socialist party in Germany.

I picked up at DSEI2019, the now familiar language of trivialisation describes AOC as "an organisation for individuals who have common interests in Electronic Warfare (…)"; making it sound like a club of enthusiasts, rather than an organisation of academics, companies, and government representatives. The leaflet advertises the planned show in Liverpool as an event "ensuring exhibitors can access a bustling pool of potential customers throughout the show" and cites testimonies of visitors in 2019, when the show was hosted in Sweden (AOC Leaflet, 2019).

The event in 2020 was cancelled due to the pandemic but rescheduled in 2021 to take place in Seville Spain, where rather than with a bustling pool of customers it was met instead with a bustling pool of protesters, and because of the backlash, it was re-scheduled in Liverpool. The spark for the protests in Liverpool was lit when it transpired that the show was to be hosted in the ACC, a Council owned venue. Starting as a local protest, activists took the initiative to turn it into a national campaign, reaching out to the anti-arms trade and labour movement (Fieldnotes 2021). Thus, the campaign coalition invited political heavy-weights John McDonnell and Jeremy Corbyn and organised the local social justice groups, revolutionary groups, union branches ranging from the Fire Brigade Union (FBU) to the National Education Union (NEU) as well as sympathetic Labour Party constituencies.

The speeches at the rally against the Electronics Europe arms-fair in Liverpool in 2021 aim to bring to the fore the complexity of the arms trade where on the one hand the number of jobs provided through defence companies are overstated, while on the other hand it is a highly profitable enterprise, and one of the few sites of industrial innovation in the UK's de-industrialised service economy. As people gather and the streets are shut down, I take note of the banners which highlight companies that are set to exhibit at ACC, as well as the wide range of social justice, socialist groups and unions that have come to raise their banners in protest. The placards and banners demand to "Cut War not Welfare" and call out "Elbit Weapons Tested ON Palestinians" which is a reference to the Israel-based defence systems provider Elbit, whose marketing slogan of "battle tested" systems caused outrage amongst activists.

Pointing out the economics of the trade and highlighting the profit motive, the rally organiser draws attention to the "despicable" nature of the AOC event and the "immoral companies (…) profiting from death" (Liverpool 2021 Fieldnotes). One activist draws on the triangle of perpetrator, victim and bystander as has been proposed in Genocide Studies, but also psychology of relationships. The companies of the fair and the UK government backing them are framed as "perpetrators" who not only "gaslight" the public but are creating the hostile environment for refugees that their wars for example in Afghanistan created. The triangle of abuse which is evoked here, denotes a victim, perpetrator and bystander. There is no good side of the triangle – rather each corner contributes to co-dependency and the

bystander/rescuer can even increase the dependency of the victim rather than empowering them – through actions that aim at 'fixing' the victim, the agency of the victim is undermined. The activist is well aware of this, and aims to carve out a fourth space for the engaged public: "No, we are not perpetrators but there is something equally bad that you can be and that is a bystander. Thank you Liverpool, for not being bystanders" (Fieldnotes 2021). The cases in which the UK government sold weapons to Saudi Arabia and the Israeli government feature prominently and are embedded in a legalistic narrative of war, which is repeated through a series of speeches at the protest. The activists thus aim to counter the hegemonic narrative of protecting civilians (Afghanistan), and strategic threats (Syria) with a narrative about calculated, and therefore immoral, profit interests of companies which sustain wars. This move aims to establish an alternative moral landscape to the one presented by governments aiming to justify their military deployments and contracts.

John McDonnell draws a parallel of Jesus throwing money lenders out of the temple and states that "The traders of war are besmirching the image of Liverpool (…) they are merchants of death" and ends his speech with the impassioned plea that "these traders in blood need to be stopped" as they are damaging "the reputation of the city" (Fieldnotes 2021). The city of Liverpool is rendered into a morally and spiritually pure sanctuary, struggling against the corruptors that lay it under siege. High profile speaker Lowkey's speech recalls the "heroes of the Lucas Plan" who came up with an alternative plan of production and demands that "BAE systems, these parasitic profiteers of death cannot have the keys to Liverpool" evoking the imagery of medieval practice where city keys literally opened the gates to markets and signified obedience to kings. The Lucas Plan is an influential and inspiring episode of workplace organising which will be discussed further down; but here, I just want to draw attention to the moral imagery that is being mobilised – where the (albeit former) producers of arms are heroes, whereas the distributors, BAE Systems, are the 'parasitic profiteers of death'; workers aim to "feeding their families" and are dependent on "the merchants of death".

Framing the arms trade as a criminal and abusive and immoral endeavour is of course in aid of politicising the profiteering through violence. However, the moral distinction between 'evil traders' and 'honest producers' tends to eschew exactly the companies that produce the supposedly unimportant components, who supply defence companies as well as projects, such as for example the exhibition "AI – More than human"; an exhibition on Artificial Intelligence organised by Google in cooperation with the artist collective Barbican, which we passed during the march.

This is because this move relies on a moral distinction between production and circulation on the one hand; and on individualist (immoral) profit-seeking and (depoliticised) national welfare on the other. In this geography, trading falls on the side of the immoral profit-seeking, whereas

producing falls into the morally unproblematic sphere of creating welfare. The focus on the (a)morality of potential customers, moreover, turns the question of who to sell weapons to into a case of correctly assessing the moral integrity of the receiver in question.

While there is a lot of double-standards and politics involved in who to sell weapons to and who not to; focusing only on 'criminal' regimes that weapons should not be sold to does ignore that governments change from time to time and political and military alliances will shift over time. The moral geographies that are re-enforced, through the focus on human rights violations of the buyers of weapons, establishes at the same time the 'respectable' customer base; and thus, does not challenge the arms trade as a whole. However, as Anna Feigenbaum has shown in her research on tear gas, produced in the UK, sold in Latin America and the USA, the products sold to those respectable customers are used for less than respectable ends (Feigenbaum 2017). Similarly, Deborah Cowen notes the use of the military to break strikes, and labour organisation in the US, China, and elsewhere (Cowen 2014). Thus, based on the moral distinction between 'evil' states that oppress human rights and the ones who supposedly do not, the arms trade is not challenged as a whole (Rossdale 2019: 42).

In fact, it is only challenged in as far as it does sell to the 'wrong kind' of customers. The idea of the 'fine' customer ultimately is based on the idea of a just war, or, a perfectly moral civilian using the means of violence for self-defence. However, companies do not produce for self-defence but are driven by competition and profit margins. I would argue that this also opens up the path to reproducing geostrategic narratives of arms producers, which operate on a racialised hierarchy in which southerned countries are framed as a risk to security. Thus, rather than challenging those narratives, focusing on 'evil' states provides a meta-narrative that can be mobilised for increased arms production. Mapped onto the world, the moral geographies of many arms trade critics fit the moral geographies of the military doctrines of the UK and Germany. They thus recall 'the exceptional' of war and war production and render the violence within 'the civil' not only invisible but de-political.

Later in September, during the fair three people are being arrested on charges of "suspicion to commit criminal damage" and the police statement makes a distinction between lawful protest and criminal activity. A Clarion Event statement after the protest states that "There are no arms being sold whatsoever. It's not about a sales show, this is about sharing ideas, innovation, and technology"(BBC 2021). In this argument, the spokesperson leans into the critique of the protesters, who have articulated the problems as the selling of arms – not their production or design. This division is articulated more broadly in the division of circulation and production which keeps focusing and identifying the circulation of the means of violence as the main problem; not the production of the means of violence.

These moral geographies are not only produced on an international level. As the examples from the South of Germany illustrated, they are everyday moral geographies that police the everyday and ensure that it stays a-political. They are not always oppressive but have a compelling side as well (Tsing 2009). Anna Feigenbaum's work highlights the importance of human agents: building the relationships between customers and services: smoothing over the irritations individuals may have with their assigned task, is crucial in making tear gas circulate freely. This was illustrated by one interviewee, a graphic designer, who described her transition from the civilian operations to military operations like this: "I didn't really think much about it. But I had a moment of realisation when they added ammunition to the portfolio. That's when I realised that what I was working for was for military purposes. But I had a very nice boss, and he invited me to his home and his wife made apple pie and we were sat in the garden and talked about it. He said that his door was always open to discuss any concerns, so I felt reassured. Later on, this offer cooled off. I started to be more politically active, but not too much, because in the end there is job security to be considered" (Interview GP4).

The apple pie acts as the sweetener to the bitter moral dilemma and seeks to smooth over the doubts of the employee, who is asked to place trust in the judgement of a man, whose respectability relies upon the comforting environment created by his wife. Later-on the employee regularly travelled to exhibitions and represented the company at a variety of trade shows. The garden scene, the pie and the employee illustrate that the production and selling of the means of violence does not occur solely in boardrooms, and inaccessible spaces, and thus the perspective that views selling and producing as separate moral questions is not getting to the core of the production of the means of violence.

While the phrase "merchant of death" is of course a moral hyperbole, used to de-normalise the attitude of "business is business", it is also imprecise and perhaps obscures more than it clarifies. It does not invite us to ask what kind of skills profile people are bringing with them and how this is taught at universities and in business courses and narrows our focus onto the 'hard cases' of defence and security companies.


## 4.4. Chapter Conclusion


While military bases are sometimes clearly marked and fenced off, the distinction between military and civilian spheres becomes less pronounced when focusing on the production of the means of violence. Civilian, economic interest is shaping not only military logistics, but also redefining military priorities. As the history of the screw illustrates; the clear-cut distinction between military tools and civilian ones is not as clear cut – but perhaps not in the way

traditionally thought of. It is less so that the screw is 'turned into a weapon' rather than it holds together a market that is driven by accumulation, and exploitation. Thus, the economic needs of the market shape the form of military engagement. At the same time, the screw's production illustrates how a focus on objects alone may be misleading, unless we focus and ask questions about the processes and labour that bring those objects into being. Concepts like the arms trade and defence industries seem too narrow to capture the wealth of the means of violence. With a Marxist analysis the object as commodity is the manifestation of a web of human relationships; competitive markets, cartels and thus a system of power that emerges from the social organisation of production. As the screw is hammered, threaded, and shaped into form to seamlessly hold together commercial interests and the means of violence, so is society shaped into form through the civil.

The distinction between the 'evil' seller and the honourable manufacturer holds only some truth. Rather, the role of the civil, the way the civil is smoothing over the violence within it and the logics that drive the expansion of markets, and undermine labour organising, need to be scrutinised. My point is not to say that human rights violations should not be criticised and organised against, but that at the very least there should be equal scrutiny and attention paid to the supposedly respectable customers of the means of violence. However, this is where the civil plays a powerful role in stabilising narratives and imageries that locate violence outside of national boundaries and economic-military alliances.

With shifting the focus from the circulation to the production of the means of violence, we can start to see how the civil is mobilised to construct two sites: a morally pure sphere of civilian production and a rotten military sphere of circulation of the means of violence. These in turn are cast into sites that can be legitimately criticised and politicised. It is politically unsound to criticise the workers feeding their families, or the heroes of the Lucas Plan. But this also shuts down engagement with labour and what role labour plays in the production of the means of violence. As we dive deeper into the production of the means of violence and its contestation, the workplace appears as a crucially depoliticised sphere, that needs protecting not only from protesters, but politics altogether. A focus on the production of the means of violence also means to focus on labour in liberal war economies.

# 5  Labour in Liberal War Economies

The sites of the production of the means of violence are much more blurred than the civil/military dichotomy implies. However, this blurriness is no accident but the result of the depoliticising work of the civil in producing the means of violence. It is therefore worth considering what work 'the civil' does in these economies in a literal sense and how it organises and structures labour producing the means of violence symbolically (semiotically) into a dichotomy.

In the everyday work of the production of the means of violence the clear civil/military distinction is not as easy to uphold. In many ways interviewees highlighted how their work and labour is transferrable and thus the idea of a strictly military sector and a strictly civilian one does not do justice to the lived experiences of workers.[16] Except in cases where workers refused to work on military projects, the employees worked within civilian/commercial projects as well as military/defence projects; and even then, people knew their work could end up in military applications. The following chapter takes a closer look at the labour that is extended in the production of the means of violence. I argue that the depoliticisation of socio-economic relationships through 'the civil' lies at the heart of the camouflaging of military purposes in 'civilian clothes'. It is not only the military logic subsuming 'civil society' under its martial politics, but it is the depoliticisation of 'the civil' that renders violence into a market and integrates it into broader logics of capitalism. In this chapter I draw on the interviews I conducted between January 2021 and October 2021, as well as conversations and observations from the arms fair and informal conversations with workers and interviewees at an anti-arms trade demonstration in Liverpool 2021, and throughout my PhD.

## Labour and the Military

In their analysis of privatised security services, Chisholm and Stachowitsch (2017) argue for an analysis of security through the lens of labour in order to render visible the connection between state relations, markets, and gendered and racialised structures: "By focusing on security as labour, we can begin to conceptualise the industry not as exceptional, but as an integral part of the reorganising of work and capital in the neoliberal era" (Chisholm and Stachowitsch 2017b: 382). I argue that focusing on labour can bridge the methodological

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[16] While German participants more readily used commercial and civilian activity interchangeably, the English-speaking interviewees seemed more confident with making a distinction between commercial and defence projects. As the analysis hopes to demonstrate, the commercial merges with the civil, in rather complicated ways.

internal/external divide and thus argue that a broader focus on labour is needed to inform works on war and the production of the means of violence.

The relation between soldiering and labour has seen a recent revival and animated discussion in the literature (Freeman and Field 2011; Fury, Daly, and Fancy 2022). There is a political and legal argument for not conceptualising soldiering as labour. From a militarist view, military service is a duty, carried by sacrifice and thus elevated above the rest of society (Mittelstadt 2011: 30). The duty of military service has been a condition to acquire rights, forced onto male populations under threat of disciplinary and lethal force; and of course, in its capacity to uphold state institutions soldiering has been regularly used to break labour organising and uprisings (Fury, Daly, and Fancy 2022: 2f). However, this perception is not only rooted in normative judgements, but is underpinned by very material and functional considerations which uphold the distinction between service and labour in order to keep such mundane demands as labour rights outside of the institution. This was illustrated in the 1970s, when the US armed forces were remodelled into an all-volunteer force and soldier benefits were under threat (Krendel and Samoff 1977; Mittelstadt 2011, 30f). While the 'occupational' framework was seen as disruptive to military discipline in the 1970s (Krendel and Samoff 1977, 9f), it has now become the dominant model in many armed forces (Sjoberg and Via 2010).

In a speech at the German parliament, then Minister of Defence Ursula von der Leyen of the Christian Democratic Union (CDU) illustrated this understanding: "Yes, the Bundeswehr (the German Armed Forces) does have a special mission. But it is also a global enterprise (…) it comprises an airline; a shipping company; a hospital association par excellence (…); a logistics company…" (von der Leyen 2014, own translation). This understanding of the state as a business goes deeper than the privatisation of state functions where the focus usually is on outsourced services to PMSCs. It is also not the militarisation of society. Rather, we see the state articulated as a capitalist entrepreneur competing on a world scale for markets. This is much closer to Lenin's account of imperialism, where finance capital, national champions, and state interests converge. Thus, the state's involvement in the market of violence goes beyond military budgets and tenures. The marketing teams of the military thus have a fine line to tread, where risks to life and personal excitement and opportunities for self-actualisation are held in balance.

From a critical perspective, the political argument against soldiering as labour is based in discourses on the exceptional nature of soldiering, arguing that the uniqueness of military service needs to be acknowledged as it is one of the few activities in which lethal force is employed: "The soldier is the one who, when ordered to do so, will if need be take to impersonally killing or maiming designated human beings, destroying property and

suppressing freedoms, all in the name of a legitimate or even sacred duty which he (sic) cannot possibly evade" (Boene 1990, 8). In exchange for following this calling, which is fostered and trained into soldiers in military organisations, society bestows status and "the prestige he (sic) needs to command and be obeyed"(Boene 1990, 12). Military institutions around the globe have been trying to down-play the lethal force at the heart of their operations and normalise military employment as an opportunity for self-actualisation (Strand and Berndtsson 2015). Thus, anti-militarist activism often points to the extraordinary nature of military service, arguing that it should not be viewed as a job like any other, in a move to problematise and politicise militaries which play-up the civilian nature of their employments.

There are also legal differences which place soldiers outside of the realm of labour law. In Germany, soldiers and state do not have an employment contract, but instead an agreement of service, which is why employment law does not extend to soldiers. However, while there is some nuance across the institution, when it comes to the officer class whose recruitment can follow quasi-hereditary lines, the seemingly strong distinctions between 'military service' and 'civilian labour' become much blurrier at closer inspection of the military everyday (Fury, Daly, and Fancy 2022, 3). Moreover, the ideological battles over unionising the military in the 1970s illustrate that for many soldiers industrial democracy was not a far-fetched idea, irrespective of legal classifications (Krendel and Samoff 1977: 10). While UK armed forces highlight the distinction between soldiers and workers and have been viewing soldier organising as a potential revolutionary threat, the German armed forces of the Bundeswehr have the right to organise in an interest group, which acts as a quasi-union in a corporatist framework (Heinecken 2010, 402). While there could be an argument that the legal ban from organising confirms the uniqueness of soldiering, soldiers are not the only group under such a ban. German civil servants, which includes some teachers and university lecturers, for example, are banned from collective bargaining and strike action in exchange for guaranteed employment and pensions (Keller 2020). Meanwhile public employees (Angestellte) have won both the right to unionise and strike, regardless of whether they are employed by the Armed Forces or other state services, which has led to strikes of civilian employees within the Bundeswehr in the past.

In my view, the intense discussions and careful management of soldier organising highlights that a focus on labour can illuminate how certain institutions are carefully managed to make them appear above the rest of society. The economic aspects of soldiering highlight how the military workforce and its conditions are deeply intertwined with the establishment of a civilian sphere (and vice versa). "The military spans the borders of the territorially organised nation-state system. As a domestic institution and labour force and international actor, the national

military does not allow for any simple separation of inside/outside" (Cowen 2005: 674-675). Labour is therefore at the core of society.

A Marxist perspective of labour could also help conceptualising what is going on. Marx defines labour as an activity of a definite kind and with a specific aim which renders objects and materials useful to human wants (Marx 2013: 23), and labour-power as "the aggregate of those mental and physical capabilities existent in a human being which [they] exercise whenever [they] produce a use-value of any description" (Marx 2013: 119). Containing use-value is the basis on which the products of labour can be exchanged for a ratio of each other, which establishes their exchange-value. It is the form that the relations of production take under capitalism, in which production is for surplus-value, that renders labour-power into a commodity which the labourer must sell off in varied fractions of time, regardless to what use this labour-power is put during this time, or indeed regardless of how few rights they have during that time (Marx and Engels 2018: 24f). Whether weapons have a 'use-value' is passionately negated in anti-militarist circles; but from the perspective of the ruling class, the picture might be different. Marx (1969, 132ff) further distinguishes between economically productive and unproductive labour, where productive labour is labour that creates surplus-value, whereas unproductive labour is paid out of a share from that surplus-labour, and thus rather than creating surplus-value re-distributes that value in varying ratios. In as much as labour employed by the state is not creating surplus-value, it is therefore, economically, unproductive. This does not mean the workers employed are not being exploited or that their labour has no use, or that they are not engaged in wage-labour; rather this wage-labour is not creating profits, is useful in providing services that reproduce the system as a whole and is therefore being paid out of a share of the surplus-value created by economically productive labour.

Keeping this in mind and without denying that soldiering is a complex case where socialisation and shaping identities play an especially important role, I would argue that in as much as soldiering in liberal market economies is based on the paid expenditure of mental and physical capabilities of people over a certain time, it is also labour. From the perspective of capital however, soldiering labour performed in state military is unproductive; even though from the perspective of the individual soldier, their means of subsistence may be coming from selling their labour power in a context where they have considerably fewer workers' and civic rights in exchange for future benefits and prestige.[17] Employed by a private company, soldiering labour is being sold as a service and thus creates surplus-value for the company owner. Historically

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[17] This does not deny soldiering as embodied practice and is not to be read as a move to relativise the violence that comes with the job as military PR materials try to do. On the contrary, I aim to demonstrate how pervasive and depoliticised this violence is.

this has led to fractions along class-lines within the armed forces, such as the sailor-uprisings in Germany (1918) or soldiers joining the Russian Revolution (1917). This partly explains the continued need for the ideological homogeneity and justification of the military as an institution. Class plays a role not only within a country's military, as the explicit targeting of de-industrialised areas for recruitment campaigns illustrates; but imperialist class relations are also reproduced internationally where the more dangerous and combat-close deployments are delegated to southerened countries (Meger 2016).

Trivialising military service as an adventure and opportunity for a fulfilling career signifies the shifts of military service being 'civilianised', with an intensified circulation of concepts and practices formed in the civilian sector. It signifies how civilian norms of self-fulfilment are appropriated by the military. In another sense, it is signifying the pressure by private companies on state institutions to comply, conform and integrate into a market. In this sense, the civil is shaping the military. It is thus neither the case that labour is somehow inherently civilian, nor that the military have the monopoly on producing (the means of) violence. Rather than focusing on how violence is seeping into the civil, I argue that through focusing on labour we can untangle how the civil does important semiotic work and depoliticises the very mode of labour's existence. To focus on labour, and the labour of the civil, is thus to recognise the production of violence as an integral part to the organising of labour and capital; as well as societal relations.

## 5.1 The Defence Enterprise

The imagery of the defence industry is dominated by a focus on highly skilled, highly paid jobs, still dominated by male engineers and ex-soldiers, and thus focused on militarised agents. In this gendered approach to the defence industry, Small and Medium Enterprises (SMEs), the state as *economic* agent, as well as companies providing *generalised* services are often overlooked. This is due to the focus on 'prime contractors' within the defence enterprise, i.e. companies that produce complete weapon systems or assemble platforms. In the industry's own view, this presents as a tiered system (Cauzic et al. 2009). The 'prime contractors' of Tier 1 are the companies providing weapon systems. Tier 2 contractors provide components and supply services, typically specialised SMEs, or subsidiaries of Tier 1 companies. Finally, Tier 3 contractors provide 'commodities' or 'general economic infrastructure', such as externalised training, and generalist services. In some cases, Tier 2 and Tier 3 production is done in the same company. Cauzic et al (2009) do not specify agencies as part of Tier 3, but I would argue that cleaning, catering, and facility services would fall into this category.

This tiered model does not only allow for a more rounded and interdependent view on the production of the means of violence, beyond monopolies like BAE Systems and Airbus, but it also highlights a range of business-to-business services which are rarely addressed in the literature. However, the model also has its limitations as it is only focused on agents usually understood as 'private', thus emphasising the separation of state and business (although some states retain a greater degree of state ownership over Tier 1 businesses). Another industry perspective, from Australia, conceptualises the relevant actors as the "defence enterprise" (Ward, Lightowler, and Neagle 2019), which is defined "as the Department of Defence including the Australian Defence Force (ADF) and Australian Public Service (APS), defence industry (large companies or primes), and small to medium enterprises (SME). It includes other key stakeholders and enablers such as education and training organisations. For this paper Australian Bureau of Statistics (ABS) business size definitions are used: Small business - an actively trading business with 0–19 employees. Medium business - an actively trading business with 20–199 employees. Large business - an actively trading business with 200 or more employees" (Ward, Lightowler, and Neagle 2019: 4).

This definition captures the broad range of defence services and business interests, as well as the interconnection with "stakeholders" and "enablers" that make up the liberal war economy. It importantly includes SMEs, which are often an afterthought in the arms trade.

Cauzic et al (2009) argue that at all levels of this tiered model, companies not only produce dual goods but establish a dependency between civilian operations and defence industries. Especially in Tiers 2 and 3 the diverse clients and customers of a company also mean that some companies are not captured as defence companies at all, meaning that "the number of jobs that are dependent on trends in defence production is much higher than the number of jobs directly involved in the production of the defence equipment and related services" (Cauzic et al 2009: 22). Importantly, the employment levels in industries that produce chemicals, components, fabrics, or generalised services, are "directly dependent on the level of activity in defence industries" (Cauzic et al. 2009: 22).

The depth of this dependency is a contested issue (Cooley 1987; Melman 1974). Anti-arms trade activists often point to the fact that the numbers of jobs that the arms industry is providing is overstated, as many processes are highly automated or outsourced (Interview GP6). Therefore, the claim of the defence industry to being a vital asset and driver of the economy should be seen as an ideological move which is usually accompanied by appeals for more state spending (Interview GP7). Since the profits of Tier 1 companies mainly stems from national budgets based on taxation, rather than a driver of the economy creating surplus-value, Tier 1 companies should be seen as a drain on the economy, receiving a ratio of surplus-value that is being created elsewhere in the economy (Interview GP2). Compared with consumer

goods, Tier 1 companies have a limited number of customers as well as scale of production, further downsizing staff numbers (Interview GP8). As many Tier 2 and Tier 3 companies are not exclusively producing for the market of violence, one interviewee further argued that their dependency on arms production is overstated and rather should be used to politically argue for converting and divesting from the arms production entirely (Interview GP6). Moreover, employment in all tiers is shaped by and dependent on anticipated threat scenarios, budgeting negotiations, and shifting political alliances, which can increase the instability of the job market from workers' point of view (Interview GP5). Smaller companies, the argument continues, have more flexibility, and thus could more easily adapt production to a military-free portfolio.

There is certainly some complexity when it comes to the job market and military spending that goes beyond directly employed staff and companies in the second and third tier. In the scope of this thesis, I want to focus on why these companies are often overlooked. Many of these companies fall into the small and medium sized businesses category. The ideology of the civil allows those businesses to position themselves as separate from the means of violence.

Protected from qualitative analysis by their sheer number, but also by a political discourse that focuses on SMEs as being the family-run providers of local jobs and therefore worthy of special business support, subsidies, and pride, they also form the backbone of the war economy in producing thousands of specialised technologies, gadgets, components, paints, moulds, fabrics, and materials. Talks on supply chain management at DSEI2019 highlighted the difficulty in entering the market and the support structures provided by the trade department to help SMEs succeed. One interviewee illustrated how the barriers for SMEs and 'newcomers' for military tendering are not only based on a lack of capital, but also fewer staff means that the short turnaround times for tender applications will benefit already established companies (Interview EP1). Applying to tenders is expensive and is potentially labour that stays unpaid – just like in the creative industries, putting together a portfolio or funding application means hours of labour with only one winner, and limited resources to rank the applications fairly: "Military tenders are long, and complicated, you have your standards etc (…) but if I have to read 600 pages per application, I won't care what exactly is on page 245 – I'll put a number between 1 and 7 and that's it" (Interview EP1). Moreover, past interaction decreases the risk that new business relationships pose: "If you're a company and you're new you are a risk, because I don't know if you can do what you say you want to" (Interview EP1). For all these reasons, SMEs are at a disadvantage vis-a-vis monopolies. However, it is exactly the foregrounding of the struggle of competition with monopolies of SMEs that depoliticises the products of the ones that have made it.

In the US, for example, the oldest producer of correctional constraint chairs describe themselves as a "family run business" on "a mission to provide the most humane constraint

chair" (Safety Restraint Chair Inc. 2023). The brainchild of a Sheriff in Crawford County who sought a way to move detainees around prison, to court, or medical facilities more smoothly, "he thought about a type of chair, with wheels, crossed with a dolly, and the restraint chair was born" (Safety Restraint Chair Inc. 2023). Patented, fully equipped with cut-outs for handcuffed arms and tethers, available in two sizes (full-size and junior), and including a three-page instruction leaflet to avoid injury and death, the restraint chair has been exported to twenty countries since 1995 (Safety Restraint Chair Inc. 2019). The restraint chair gained notoriety through the works of Edmund Clark, whose photographs of the artefacts of torture in Guantanamo prison brought attention to the use of restraint chairs as a tool of torturous force-feeding of detainees (Gadinger 2020). While the force-feeding chair is not representative of the types of products typically produced by SMEs, it serves as a stark reminder that small is not necessarily more beautiful or harmless.

What makes SMEs an overlooked site within liberal war economies is the respectability that they claim in grounding themselves in the concept of family. It is here that we can see the civil at work. With its cosy overtones, a family-run business, and the framing of employees as family, a deeply gendered concept captures our imagination. As family businesses, SMEs are not interested in profit for profit's sake but for the family's sake. In an ideal family, we cheer for an individual's success and want them to shine, which is what makes it so compelling as a marketing slogan. The reproduction of the company becomes a mission, and it implies intense focus on detail and nurturing.

A key component of that narrative is 'care': Care goes into considerations of restraint chairs; care goes into functionality. Making soldiers human and caring for them firmly grounds SMEs on the side of the beautiful soul and the work of the civil that provides a selfless act of solidarity. The discourses of the family-run business, mobilises imagery of civility that renders, for example, the production of camouflage makeup not only into a human-interest story on a TV programme like 'How do they do it', but makes the production of the means of violence more palatable. Foregrounding the care, attention to detail and passion that goes into the product, renders the violent intent of the design invisible (more on that in the next chapter). Rendering complex systems into individual passions and stories about self-actualisation is thus writing out the violence to which those passions are applied. Small and medium sized businesses draw on family values to appeal to workers as good employers. Thus, it is notions of respectability and responsibility that recruit workers to the company that produces restraint chairs.

This marketing slogan has its limits, however. From a Marxist perspective, family-run businesses are the manifestation of inherited wealth; dispossession and the generational accumulation of exploitation of labour power, and thus exactly the private accumulation of the

social wealth that sustains inequality. The nuclear family is the opposite of Marx' free association of people, it is the legally forged and governed unit of property-relations between people for life (Peterson 2020), and mentioned above, scores of feminist research has highlighted the family and close relationships as unsafe, violent places (Barrett and Weeks 2014; Gray 2016).

In companies the importance of corporate culture and the business as a "family" is mobilised to quell criticism, and through investment into personal relationships make the company run more smoothly, demand more from workers and justify cuts and favours, as you would 'for family' (Tsing 2009). The stereotype of the criminal family, the Mafia, comes to mind and when interrogated a little bit, the bonds of loyalty, and sacrifice to the family, with the implied threat of discipline for those non-conforming ring familiar (Chandhoke 2001, 19). The site of the family is of course the home, so really what we are asked to do is to see the company as our home – against the juxtaposition of demands for mobility, flexibility and precarity. This is also re-introducing a certain localism to the company. On a societal level the civil is the figurative family that the military can return to which accepts and supports and forgives, no matter what, and that is worth sacrificing for (Åhäll 2016: 164).

In terms of the political economy of war, SMEs are also an interesting vantage point to re-assess military spending. As one interviewee highlighted, military budgets are not only comprised of what is declared in the share for the Department of Defence and spending on weapon systems and their maintenance. Rather funds to improve women's equality, start-up funds, export support, green initiatives and many more are part of the funding that the industry receives (Interview GP4). The state acting as an economic agent through subsidising SMEs can reproduce itself as a care-taker, rather than a military investor.


## 5.2 Blurriness by design: Working in liberal war economies

In the everyday of workers, the compartmentalised nature of the work means that the violence to which the commodity will be employed is on the backseat and the violence is packed into concepts such as resilience, impact, durability, and stress that is put on material and objects. All these ultimately describe how resistant to destruction an object is, or how destructive the object itself is.

An example is the interview with a group coordinator in a development department for system energy supply and security. These wiring systems would feature in a plane type that was designed as a mail-delivery plane, but could also be armoured, though those upgrades would happen at a different site.

He describes how in a broad sense the job was the same but differed in the equipment he is working with: "In the broadest sense, no [there are no differences between working on a civilian/military project]. Because the checking, and the coordinating and the problems are exactly the same. But the equipment becomes more complicated and heavier in military projects because there are higher requirements on those, when it comes to heat resistance, agitation, and so forth. There are different demands on the wiring, for military projects you always had to guarantee three-tier supply, you always have to assume strafing and for an electronic system that means heightened performance requirements" (Interview GP 6).

In the technical everyday language of the job, explosions and bombings are thus anticipated and designed for but quantified into performance requirements of heat resistance and agitation. These concepts ensure that the skills of the worker travel easily between civil and military design requirements and occupy the workers mind, rather than the specific scenario that would make the forced-turn off switches which guarantee the safety of system and personnel, for example, necessary. For everyday work this means working with a different list of requirements and checking that each element in the circuit meets them exactly. From a problem-solving perspective it is unimportant what context the system will be applied to, as the workers themselves don't have control over that. Thus, the checking, the coordinating and the problems of miscommunication with designers, calculations in the requirements and the reliable running of the system take centre stage.

At the arms fair I talked to a physicist at the BAE Systems stand who explains about ammunition. I immediately reveal that I am no expert in the field for using the word "ammunition". She corrects me to say they do not develop and speak of ammunition, but they are involved in the "energetics industry"; and that she has been working on improving impact. [18] When I ask about what is new about the design of the energetics system in front of me (which to me looks like a warhead of some sort), her face lights up and while most of the words and acronyms she is using are unfamiliar to me, the language of design signals that I have come in peace. It means we can have a conversation about her job, what she enjoys about it, laugh together and I can take a picture of the stall's arty set-up.

I learn about energetic material, multi-layered additives, throw in some very questionable knowledge from the 1960s US show Hogan's Heroes about the desired stability of an energetic mix, which lays the basis for further explanations of the improved performance; all to "provide our customers an advantage"(BAE Systems 2023). The new technology for the improved energetics system is based on ResonantAcoustic® Mixing (RAM) which is a patented technology by Resodyn™ that uses sound energy to "virtually mix anything"(Resodyn Acoustic

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[18] The International Journal of Impact Engineering would be a good starting point for further research.

Mixers 2023). The physicist is proud of having successfully applied this technology to the traditional energetic mix, as she enjoyed the intellectual challenge it presented. Her team's work means that the energetics system in front of us has a 20% improved impact, reducing the amount of material needed and waste produced per unit – this not only improves economic and material efficiency but also environmental sustainability. Next to energetics, mixing propellants and explosives, the technology has made some advances in the pharma industry the physicist explains, and it is a real success of creative thinking in dual use.

I get a glimpse into the normalisation and depoliticisation at work, that comes through the division of labour. Stripped even from concepts and common euphemisms such as lethality, which have been used liberally in the talks on supply chains and hybrid threats throughout the arms fair, the work of the young physicist focuses on impact and performance – concepts that ring familiar not only to physicists, but also web-designers, consultancies, and academic writers. Climate change is taken to heart in looking for ways to reduce the environmental footprint of the system, and thus, normative concepts stemming from the peace and environment movement are actively promoted and shape the design and requirements of the new warhead.

Design requirements are not only relevant in engineering and manufacturing, however, and the challenges they pose are similar across those different sectors. A project manager in a services company detailed how his job was dominated by teasing out the design requirements of various customers and the challenges it poses:

"I did, what we call user requirements, briefs, which, there is an art to it; (…) we articulate what we need and write that down. That is our baseline for our design theory for our designers to design to, because *they don't know* (original emphasis), they just gonna go off a list and if we can make it.. if we can articulate it the best we can, we will get exactly what we asked for. Ahm the problem is (chuckles) that most users in my experience are not very good at [it]" (Interview EP1).

The example came from a project, which was terminated to great frustration at a stage of fifty percent design. The design process for a new object in practice consists of five steps as explained by Schade (2007: 50): research and analysis in which the purchaser or employer communicates their needs/requirements, visions, and any material they want using and in which the designer researches competitive products and market trends; concept and preliminary sketches which could also be described as brainstorming that is informed by conversations; visualisation of the concept, in this phase details like materials, technology etc are determined and quickly digitally visualised mostly through CAD data; and finally realisation and prototype production, in this phase designers ideally talk to all suppliers and co-ordinate the details of every single component until it finds its place in the prototype and until the product

goes into serial production (Schade 2007: 50). At fifty percent, a lot of work, time and money has already gone into a project.

In the interview, the project manager illustrated the labour and challenges that can arise leading up to this stage. In this case, the defence client ordered an 'austere' training facility but there were different interpretations of the word 'austere': "Now austere to some people means cheap. This wasn't the case. They wanted… something... barren, or sparse, it wasn't gonna win architectural awards, it wasn't gonna be pretty. (…) And if I had to line the wall with diamonds, you know, because that's very hard [as a material], then we *would* if that was the only solution that would do it, we would line them with diamonds. (…) and a lot of people grapple with that like EP1 we wanted a cheap solution, (shrugs shoulders) I said no, you didn't; you wanted an austere solution, I can't give you a cheap one, because of *your* rules. And *your requirements*" (Interview EP1).

Requirements and narrowing down meaning to clear concepts are at the heart of design, whether it is a new office space or a shooting range. Challenges in the job arise when clients are not effectively communicating what the object they want, needs to do for them, which can result in extra labour for design teams and increased cost. This in turn results in sharp budget negotiations which can strain the relationships within the project. To smooth these tensions and build good relationships across designers, builders, suppliers, and the client was one of the key tasks.

Interviewee GP7 spend a significant time of his career in test scheduling: "that means you have people who analyse the operation charts for all kinds of things, and then identify when which element needs to be checked; for example if you have a machine working, you need to know when do I need to check which part – not everything at once, but which element of it" (Interview GP7). These quality checks are a crucial element for safety and durability of the machines producing the plane parts and ultimately guarantee that each component of the plane works according to its requirements. This worker also stressed the difficulty of distinguishing between military and civilian technologies and projects: "Often, it is not at all easy to keep civil and military apart" (Interview GP7). As an example, he referred to the design of the Polaris rocket which could be launched under water and swim to the surface, where the designers were confronted with the problem that the spinners that helped with the target-tracking mechanism would break after only a few minutes. "Until the Americans thought of video recorders, and the bearing that held the tape in place in the video recorder. And that's what they used in the rocket; because those kept spinning for an hour" (Interview GP7).

At the same time, design requirements can also be an indicator for the purpose of an object. "There *are* differences in military design, and of course the requirements are higher. Usually, you can spot it. For example, cars that can drive more than 45 degrees are usually already

military designs, so the engine doesn't fall dry. Or if you have a low-loading truck, with reinforced ramps then that truck isn't designed for tractors or agricultural vehicles, but tanks, even though the vehicle often states that it is for agricultural use" (Interview GP7).

These interview fragments illustrate how central design, and the design process is in making things run smoothly between the civil and the military. As a universalising language across creative workers, problem solvers, quality guarantors, design provides the language that strips the contextual elements from a project, narrows it down to a list of requirements and thus depoliticises everyday work.

But design is not only relevant in the everyday production of the means of violence but in their circulation too, as illustrated by the elaborate stalls on display. The physicist does not know who designed the stall for BAE systems but explains that the arty displays at the corner of the stall are the results of testing their new mix. "We thought they look really cool" she nods with a smile, "so that's why we brought them" (Fieldnotes DSEI2019). The displays in question caught my eye, even more so than the launching system placed next to it. Sitting on a black and white narrow pedestal with crisp white indirect lighting sat a large white concrete block. In front of it sits a smaller concrete block slightly to the side of it, with a hole blasted in it, laying bare the thick rusty steel skeleton of the building mesh holding together the block, all in a white frame and a handle. The steel was broken, and the parts of the building mesh twisted into different directions. On the other side of the centrepiece, a silver-matte plate had been placed in a white frame standing out against the charcoal black base of the pedestal. A warm yellow light was placed behind it, indirectly lighting up the frayed contours of a larger hole in the middle of the plate as well as the stratified holes sprinkling circular over it. The warm yellow light reminded me of a living room lamp, and I could easily imagine this plate as a centrepiece somewhere in a modern home. Standing next to it was the new missile-launcher, the system with which the energetic mix had been tested on the objects (Fieldnotes DSEI2019).

The centrepiece integrated into the wavey white arch that was the focal point of the BAE systems stall and that stretched over the entire display of new propellants, bullets, and integrated launching systems. It tells the story of the sound waves that have been utilised to produce the bullets and shells on display. Further research into the BAE system stall tells me that it was designed by the company M-is Integrated Solutions (M-is) and won two platinum awards and one gold award in 2019 (M-Is 2023). DSEI2019 presented yet another gold award for Best Stand 1000sqm plus, which was awarded in 2020 for the best defence stand at a defence and security event from World Exhibition Stand Awards. Its winning features were re-useable elements that would fit in different settings and allow for a multi-use space, thus being able to accommodate video demonstrations, quiet conversations, and more casual engagement with the products. The Award is sponsored by Exhibition World (a market journal),

Kuehne and Nagel (a global logistics partner) and YSB Your Stand builder (a business-to-business platform for the exhibition and trade show industry).

The judges for the awards are CEOs of global logistic companies, project managers of exhibition centres, technology giants, heads of industry associations, consultancies, and marketing companies. The agency, M-is is based in London and has designed for the Olympics, such as for the Paralympics Committee in Beijing, The Rubgy World Cup, as well as the Xerox Forum, an annual event of the global printing company. On their website, M-is describe their strategy as "channel neutral, deploying global Communications, Digital Expertise, and Experiential environments to best effect"(M-Is 2023). The business philosophy of "'kaisen' or continuous improvement" drives the company which describes itself as "award-winning, adventurous, ambitious", and prides itself in assisting relationship building between fans, customers, and constituents. The core team of the agency comes from the creative industries – illustrators, graphic designers, video editors.

Thus, design is linking industries in more than one sense. This has implications for the kinds of companies that are involved in producing the means of violence, but also for the labour that goes into producing the means of violence.

The pressure on performing in a creative setting and for designers is immense, as Schade describes in her paper on the job market for designers (Schade 2007). Permanent positions are rare, and freelancing and unpaid internships are commonplace in creative industries (Hesmondhalgh and Baker 2010). This creates a particular pressure and little employment or social security for often un-unionised workers, who are facing a brutal regime of competition, short-term contracts and dangerous workloads (Hesmondhalgh and Baker 2010: 9f) all which are normalised in 'the civil' sphere, but rendered invisible in the production of the means of violence.

For labour in the defence enterprise, this means that it is organised less around narratives of self-defence or national security, as these political concepts are driven into the background. What integrates violence into broader logics of capitalism is the depoliticisation of labour through the translation of violence into design requirements.

For the labour of sales teams, for example, this means that salespeople are employed to analyse customer and "defence user needs", conduct opportunity assessments, and "translate operational requirements into business winning proposals" (Fieldnotes 2021: Job adverts in defence sale). The profiles of job adverts are consequentially not shaped by national defence discourses, or values of chivalry or stability. The companies advertise their jobs with promises of "fun teams" and requirements of diversity and inclusivity.

A conversation I overheard at DSEI2019 illustrates this. Around a table in the lunch break there are three men (M) and a woman (W) engaged in light conversation and laughter, when the sales woman skilfully steers the conversation to business.

> W: So, tell me, when can we see the shipment?

> M1: (smiles) We can't ship it, we don't want to, ship it before February

> W: (makes a shocked face and laughs) Oh, no, that's not possible, come on you can see that

> M1: Aah, there's nothing I can do, you know I love you, but there just isn't (laughs)

> W: (laughs) You know I love you, but we**, I,** really need this before February

> M1: We want to ship later

> W: (laughs) if you transfer £20,000 on my bank account, then you can ship later!

> (all laugh). (Fieldnotes DSEI2019)

What this lunch conversation at an arms fair illustrates, is first, that part of the selling of the means of violence is not happening through shady businessmen a la Nicolas Cage in Lord of War (2005), rather the soft-skills of light-hearted but firm negotiation are required, mixed with some mild flirtation and charm. It is not only the job of a BAE systems CEO to sell weapons – it is the job of sales teams, marketing agencies, event management teams, hospitality agencies and much more that provides the labour for selling the means of violence.

Second, whatever was being shipped, the banter and flirtation in the negotiation clearly were not concerned with the product but the timing of the deal, thus making the conversation transferrable to any sales context which are defined by quarterly targets and schedules: we forget about the violence when selling the means of violence. Customer-facing services are a key area in the normalisation of the production of the means of violence and rendering invisible a huge number of jobs that are integral to the operations of a company. The soft skills companies are after, such as the ability to build trusting relationships, gain respect from others, be open-minded and welcoming of different talent are key attributes of a service economy (Fieldnotes 2021: Job adverts in defence sale).

In a similar vein, as trading and producing are imagined as happening in different places, these activities are also allocated into different moral spheres. Thus, we have the gendered imagery of the ruthless arms trader who secretly travels the world and shady backrooms to broker deals and delivers boxes of grenades into the desert. While investigative studies suggest that there is considerable corruption in the arms trade (Feinstein 2011; Roeber 2005), trading and selling

does not happen quite as glorified as this in all contexts, and while gender does play a role, it is perhaps not always in the way that the masculinised vision of arms trading suggests.

However, trading and producing are not separated from each other. As with any other company, companies producing tanks and rifles have established sales departments. As one interviewee described the colleagues who work in sales with a shrug: "They are selling stuff. Car seller types, that's what you can imagine" (Interview GP5). The "car seller type" reference points towards a slightly overenthusiastic, customer-oriented person who not only wants to, but needs to make a deal because they are working on commission. Thus, sales people in the defence industry have quotas to deliver, quarterlies to fulfil and compete over customer assets. Their salaries often have a considerable flexible component, and they are trained, selected and shaped by rather invasive assessment centres. Sales as a work environment is fiercely competitive. The interviewee asks me "Do you know the film 'Frohes Schaffen'? Watch that, exactly like this, this is how it is!" (Interview GP5). The 2013 German mockumentary throws a critical eye on the religious-like status of money, status and overwork and renders visible the alienation of individuals through wage-labour and ever increasing demands to productivity.

Moreover, the job of selling a product is not done with sending an envoy to a show – the show needs to be curated, the stall needs to be designed, the design is evaluated, and so forth. The aesthetic is informed by the message the customer wants to convey; and hence to a large degree the design of security, the imagery, and colours we see, hence, the very look of war, is shaped by the imagination of civilians. The Arts and Humanities and creative industries play a vital role in making sales events run smoothly, connecting clients with customer needs, and giving liberal war economies their competitive edge. While those civilians are not present at the arms fair, their labour is visible in the stands, the furniture, the posters, and the attire of the staff. All these services are part of the value-chain generated in liberal war economies and the creative careers of the people working in those agencies and for these projects depend on liberal war economies to boom, and are part of the "veneer of civilisation that normalises war" (Gibbon and Sylvester 2017: 251).

In an employment estimate from 2006, indirect employment in Tier 3 sectors made up the biggest group in defence jobs (26%); where direct employment with prime contractors was only 10% (Cauzic et al 2009: 24). Thus, defence is a valuable market for a wide range of companies, not usually associated with the defence sector, as they are part of the often-overlooked Tier 3. In terms of skills, the report notes an increasing demand for professionals over manual workers, though skilled labour remains in demand (Cauzic et al 2009: 27). Focussing on skills, the report highlights that skills needed for civilian versus defence projects do not vary: "Companies involved in dual markets claim that – with a few exceptions such as nuclear engineers – there were no major differences between the skills needed for defence production

and those needed for the production of civilian equipment and components" (Cauzic 2009: 28). As this section has outlined, these transferrable skills need to be conceptualised much more broadly in order to capture the labour that goes into producing the means of violence. At the same time, it is exactly these transferrable skills that are a corner stone for conversion from military to civilian production, without de-skilling the workforce, as I will discuss below.

## 5.3 Workflow organisation

While the distinction between civilian and military labour is thus blurrier than dichotomous thinking allows for, the distinction is still being produced with material effects. Interviewees drew attention to a whole set of important ways in which there are differences between the sectors, and also surprising ways in which the civil is shaping the defence enterprise. In these conversations, the everyday would be highlighted as depoliticised.

While workers usually clearly identified whether or not they were working on a military project, the 'military-ness' of the work was less highlighted in regard to what they are producing (or the tasks they undertook on an everyday basis) and more highlighted in regard to the conditions under which something is produced. Rarely, and only when there is public debate, is the substance of the work under discussion: "We once had an export project to Russia, that went through the media and politics and eventually it was stopped by Sigmar Gabriel, he was the foreign minister at the time (…) but it is at those junctures when colleagues come up to you and ask the difficult questions, like 'is it ok to work on this?' and ask moral questions. But you need the public debate to incite this" (Interview GP5). It is therefore important to note the shape which those public debates take and to what extent they reproduce strategic interests.

Government funding for military projects that decreases risk for companies was amongst the most highlighted differences between the commercial and the military. Extracting how these structural differences translate into everyday experience was not always easy – but there are some and they focus on the way work is structured, how work needs to be documented, and the way work is being monitored. In a variety of companies, the organisation of labour was seen as a key difference in comparison with civilian projects (Interview GP5; EP1, GP7).

 "In the military – and this has changed over the years, they are much tougher on it now; but historically you had real freedom in developing. Like there is this drone, KZO, (….) it was a pure research project, started in the 1970s, and the design brief for it was to find out what was technologically possible with a small aerial object with locating technology, so how precise could you get with it. And that was the contract. For about twenty years (…) and once a year or so someone had to make a report to the military, but that was it. No problem with costing

either. This is how the military contracts used to look like" (Interview GP5). Military contracts were characterised by long-term financing and little intervention in the research process.

In contrast civilian projects in the same company were shaped by only marginal technical developments and tight schedules: "So, one difference is cost and time and they lead to different work contents. Like, for example it's not like you develop something completely new, it's rather people come to you and ask if you can do a certain thing, perhaps with this and that new feature or adjustment and then you get hired within a very very tight cost framework. For the civilian projects you always have to work on a tight – a very tight – cost and time schedule. That's the big difference" (Interview GP5).

The intensified labour and short turnaround for civilian projects were explained by the bigger financial risk that civilian projects pose to the company in the absence of government guarantees: "The companies, if they are banned from delivering [a military contract], they get full cost compensation. So, they don't take a hit financially, or not a big one, anyway. You don't get that in the civilian market of course, no one is compensating you there if a product falls through" (Interview GP5).

Reflecting on the changes within the sector, however, the interviewee also identified increasing similarities, and thus the effects of marketisation in the everyday: "You can see the difference from how it was previously where you designed and developed to order, and now the companies provide advance performance. And the demand, which isn't there anymore, has to be generated, like in the normal economy. And you do that through presenting something pretty - you develop something that at least looks finished so you can show it to the customer" (Interview GP5). This has led to the set-up of marketing and sales teams, and a 'quick and dirty' approach to product design, in which a product looks presentable and sellable, though not all technical challenges may be resolved at the point of presentation. For the worker then, the civilian market is characterised by intensified labour in a drive to increase profit for the company; while the tax-paid military market has been a safe financial bet for many companies. In the competition for markets, this is increasingly eroded and thus the state-funded market becomes increasingly competitive and work intensive.

Another related theme was inefficiency and a lack of professional project management. This meant, for example, in terms of documentation, a system of three-tier procurement security had to be adhered to; longer-term workflows; and translating between institutional expectations.

An engineer who used to work in various sectors of an aerospace company laughed when recounting the documentation work: "You had to document everything twelve times for each component you build into an aircraft; you have a booklet with tracing paper, and on the last

page the lines are almost illegible (laughs)" (Interview GP7). The three-tier supply of military procurement was established in Germany to guarantee the resilience of military supply chains. While in theory this meant three different suppliers, practice meant that individuals made informed decisions about the quality of components: "Well, you had to make sure there were three suppliers on paper, right. But, if you know that the part from a certain country isn't up to scratch… well on paper there were always three suppliers" (Interview GP7). Unspoken is the inefficiency of official guidelines and military practice, which was a theme in several conversations.

Inefficiency in procurement, while increasing workloads, means increased profits for companies. This is illustrated in two examples, one in an aerospace company, the other in a services company.

When interviewee GP7 was working in quality control, companies in Germany could book any incurred costs plus four percent for government contracts: "4% was pure profit on top of any costs! So that meant of course that you had to document well and generate a lot of costs" (Interview GP7). An anecdote on checking an airplane part for deviations demonstrates how functionality and cost efficiency hold different meanings for the military and companies: "So for example instead of a 6inch screw, there was an 8inch screw – all of which needs to be documented and delivered and incurs costs, as customised items do (…) Well and then I calculated what each deviation cost, and what the whole part cost and decided: discard. And then I got a meeting with my line-manager (giggles). And they went like 'young man, do you realise what you have done discarding a piece with so many beautiful deviations? It means we can't make money with that piece anymore!' Cost plus 4%, that's how they made money" (Interview GP7). This, too has slightly changed, so that today militaries tend to be more cost-sensitive and thus, increase pressure on companies to deliver to a certain price.

Another project in a services company illustrates why the design process can be costly as clients are not always articulate in what they need and make frequent changes: "I had a wall, (…)I called it the million dollar wall, because the designer, like every time defence changed their mind, we went to the design team and they changed process (…) So, they had about a million dollars [laughs] of design changes and investigations and reports" (Interview EP1).

When asked about differences for civilian/military projects the specific product faded into the background and interviewees pointed to organisational and financial differences that shaped their experience. In this context the institution of 'military' or 'defence' was turned into a 'client' and project partner with challenging demands and organisational requirements. This, for many interviewees, meant delays, doing things more than once, and overall increased work. Other differences that were cited were a lack of professionalisation in terms of project management

and budgets that are determined by the financial year, rather than the lifetime of a project which creates challenges in aligning project partners and cash-flows.

Moreover, project management in public service is often not a specialised section which creates difficulties because requirements are not clearly communicated, costs not thoroughly discussed, and thus tensions over payments arise: "they deal in change and people hate change, projects create chaos – so, there you have public servants, not well liked, no qualifications, and then they become a client in charge of a lot of money, they don't know about documentation, accountability, costs for change (…) and then they go 'we're not going to pay for that'" (Interview EP1). Defence in particular is a difficult client because of the high requirements and standards which increase cost.

"Defence is just hard because they have a high level of standards requirement needs, above and beyond normal, and a lot of them are *old* and they may not be current, and defence standard may not be the latest industry standard (…) it'd be like buying the Nokia 5010 right now – you can buy it, but it's probably gonna cost you two grand, or probably cost you a million dollars to put the production line back up"(Interview EP1).

Standards, as well as customised needs, do not always align with legal requirements for the contracted company, which also makes things more difficult.

Interviewee EP1 smiled while recounting how he had to explain fire security requirements for buildings to the defence client: "They want real-life situations, right, so when there is a scenario with fire, 'all the fire escapes close, no one gets out and when you're locked in you die' (laughs). And I'm like, yes. Well I can't build that, because we have the *builders code* and *the builders code* states that you have to have *x amount* of fire escapes and that if it is an enclosed building irritants have to be cleared through ventilation in *that* amount of time, and so forth" (Interview EP1).

In another company a contract went into uncomfortable negotiations because the government in question wanted the company to sign-over the copyright to the ministry of defence, a request that made the interviewee laugh in recollecting the scenario: "That's of course ridiculous, no company signs a contract like that, no lawyer would allow that. (…) And it's not really of use for the client – at most they could prohibit others from developing something similar, but that's only a theoretical debate which you can't enforce in practice anyway" (Interview GP5).

This illustrates the transition of military institutions in liberal war economies from a previously nationalised industry that was directed by the monopoly of force into an agent in a market and client. Thus, the civil is shaping the military through health and safety regulations and standards but also, increasingly holds the intellectual property rights to key technologies, which are developed in the shorter life-cycles of civilian commodities. Petermann (2000) points out

that while historically – and until the late 1980s – the trend was for civilian research and development to profit from military and thus state funded research, this trend has been reversed, which means the military is "using civilian technology and commodities to an unprecedented extent" (Petermann 2000: 263, own translation).

The project manager illustrates this point from his work experience: "In the past, defence forces were amazing in driving forward standards because they were trying to, like Henry Ford, make as many things as cheaply and efficiently as possible to get it out to soldiers so they drove standards, they controlled the design, they *owned* the design, they updated where required. So, then industry caught on, and as we get more specialised industry is now doing the standards – (…) if they know exactly what they want, write it down, but if they don't; leave it to industry" (Interview EP1).

When transforming civilian technology and components into military and defence equipment the materials undergo a process of controlled corrosion and aging. For example, the tension in cables changes in the material which is why there are performance changes in cables over time. Over time the ratio of change becomes less dramatic and thus more predictable. This is why cables intended for military use are exposed to heat until they perform at a specific rate of change and thus create predictability. As a toolmaker explained "But in defence you don't want change. So, you take your cable and put it in the oven. And then when you have baked it for a certain time it will perform at a specific rate. You won't get rid of the changes, but they are slower, so it is more predictable" (Interview GP7). This could also be a metaphor for the military logic, where public servants are seen as resistant to change, but markets thrive on shorter performance cycles, frequent small-scale updates to equipment and generally, exchange. Thus, the commercial/civilian companies claim to be outperforming the traditional agent of the means of violence and to hold the expertise on efficient delivery of destruction. The privatisation of intellectual property, moreover, diminishes democratic control over those means.

Exchange between companies is alive and well and several interviewees pointed to the openness of research within their fields: "Everyone knows what everyone else is doing, you can't keep a secret in that field" (Interview GP6). Some even illustrated how knowledge exchange happens beyond formal boundaries: "We went over to visit a site, state of the art, the newest design and all and of course we were expected to bring back notes, and we took notes, I can tell you. Everybody is doing that" (Interview GP5). Through protecting copy-rights, setting the industry standards and forcing them onto procurement departments, the civil is shaping the production of the means of violence in a profound way.

While workers are very aware of the structural make-up of their workplace, when focusing on their everyday work it was not always easy to identify how the military and civilian sectors

shape their work differently. Where workers identify differences, those differences are not dominated by the lethality of the product or moral concerns, but by organisational difficulties in performing their jobs. In the variety of their jobs the workers are concerned with everyday challenges such as changes to their workflow, inefficiencies, documentation and enforcing compliance with regulations and coordinating with stakeholders. In this the commercial sector is characterised by shorter-time frames and intensified labour and the military projects are increasingly modelled after the civilian ones. The increasing focus on job performance and efficiency renders invisible the violence that is being produced. The civil is thus not merely the receiver of outsourced military contracts but shapes the military in a much more profound way through copyright law, standard setting, and supply-driven production.

While industry secrets were identified as a myth by the interviewees, secrecy still plays a role in the sector:

"Of course, the whole sector still operates under secrecy, often required by government statutes, but also, the customer doesn't really have an interest in going public about a product they bought, or how exactly it works. So, there's that difference where people behave differently from the commercial sector" (Interview GP5).

While secrecy is typically understood as a prime military logic, in the following section I discuss the role of the civil in producing secrecy and (in)visibility.


## 5.4 Curating (in)visibility

Workers in the armed forces and companies that supply to defence are often bound by secrecy, which often is enforced through non-disclosure agreements. The reasons for secrecy are varied: there are some cases where the company and employees are bound by the Official Secrets Act because they work with government. For example, a design team I approached had to decline participation on that basis. In other cases, non-disclosure agreements are in place because the nature of the work is sensitive and personal; or a company wants to protect intellectual property.

Secrecy and the control over information is a struggle of power (Balzacq and Puybareau 2018). In day-to-day work, secrecy means a hierarchical structure. The invisibility and silence enforced by secrecy creates a hierarchy of 'importance'. The ones who know the most are not necessarily the people working on a project but the ones managing them, and this hierarchy is at times more important than the project itself. At one workplace, for example, this meant that each employee only knew about the part of the project that their work immediately related to. "Perhaps this is how it needs to be", mused a programme designer, "but it leads to odd

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interactions sometimes. For example, I was working on a project and got stuck with a technical problem and I went to my boss to tell him that I can't continue my work without knowing about the counterpart in the project and what they were doing. I really couldn't. So it went through the hierarchies, and in the end, I was told they could not give me the information I needed. And that was it; it was just impossible" (Interview GP5).

In the realm of security, secrecy is the norm (Bosma, de Goede, and Pallister-Wilkins 2019: 2). However, while secrecy is normalised for government contracts and often referenced as one of the key features of the security and defence market, it is important to note, first, that secrecy is far more common in society than the civil/military and open/secrecy dichotomy suggests: "Companies limit physical access to their research and production facilities, require non-disclosure agreements from all employees, and monitor the publications and communications of their research staff" (Felbinger and Reppy 2011: 279).

The differences lie in the duration of non-disclosure agreements beyond the production and marketability of a technology in defence projects. Non-disclosure agreements are normalised in manufacturing and alongside patents, intellectual property rights and export policies protect a company's innovation and operations from theft and sabotage (Felbinger and Reppy 2011). German employment law formulates a general "obligation of secrecy" for the employee regarding any legal operational or commercial processes in a company. The obligation continues even after the employee has left the company and can apply not only to company outsiders, but colleagues too.

One person working for a translation service said that the fact they let slip that they had signed an agreement was technically already breaching it. Another interviewee highlighted that non-disclosure agreements had been put in place at every level of handling the company's defence product: "A worker cannot simply say what they put in the box, or the tracking number of that thing they put in the box. This is true on every level, from the guy who is developing the next rocket to the guy picking up the boxes" (Interview GP1). Rather than viewing secrecy as exclusive to security and defence companies and agencies, secrecy is regularly produced throughout the economy and most businesses in a power struggle over the distribution of information and knowledge, forced upon them by the logic of competition within capitalism (Balzacq and Puybareau 2018).

Secrecy is therefore not only a market of its own, with expanding encryption and tech firms who promise to deliver "information advantage" (Fieldnotes DSEI2019). It extends beyond the traditional defence and security market, through the people producing and re-producing secrecy as a necessary commodity: the law firms drafting non-disclosure agreements for employees, suppliers, and partners, and enforcing the silence about them.

Second, silence is produced in more ways than a legal contract. That is to say that secrecy is not exclusively a state technology of governance and enforced by a contract. One interviewee reported invasive practices such as the instalment of speakers that were used to spy on employees which raised not only the question of workplace ethics, but also served to discourage private and political conversations amongst colleagues (Interview GP 7).

Another interviewee pointed to the selection process in their company which discriminated against applicants who had done mandatory alternative service.

"We had a mixed portfolio, military and civilian but most colleagues – and I only realised this later – most colleagues had a military background. And that wasn't a coincidence. People who had done mandatory alternative service weren't hired in the first place. I know that because in my role as union representative you get to hear a thing or two" (Interview GP6).

Mandatory alternative service in Germany was labour in the care and social services done by men who objected to mandatory conscription on ethical grounds. Mandatory conscription was reintroduced for all male citizens aged eighteen when Germany was remilitarised after WWII. While conscientious objection was introduced in the post-war constitution of 1949, it was only institutionalised and regulated in 1961 and then linked to mandatory alternative service in the health and care services, after heated debates over its legal, economic and ideological form (Bernhard 2005, 32ff). Continued critique on the unfair mandatory militarisation of men's life and campaigning against mandatory conscription, as well as a rise in male conscientious objections and appeals for exceptions on health grounds, finally yielded results in 2011. Mandatory conscription was limited to states of tension and cases of defence to transform the Bundeswehr into an army of professionals (von Bredow 2015, 200ff).[19] In public discourse this is often referred to as the abolition of conscription; however, legally, conscription prevails with no material consequences in peace time (Bundestag 2011).[20] Conscription meant that the armed forces were part of adolescence for generations of men and discrimination against men who had made use of their right to conscientious objection was unlawful.

Thus, the preselection and recruitment process in these companies is driven by prioritising people with military experience and the silence over their military projects allows them to keep up a civilian veneer. In one case this was down to specific expertise the interviewee had,

[19] Amongst various arguments across the political spectrum ranging from anti-militarist and feminist critiques of conscription, the argument that tipped the scales in favour of a professional army were economic and regulatory: it was argued that professional armies save costs and would integrate further into out-of-area campaigns of NATO and the United Nations (framed as 'being fit to take on the new global responsibility of Germany')(von Bredow 2015, 208f).
[20] Similar to how abortion is legally a crime that is not prosecuted. Since the Russian invasion of Ukraine, there are debates to return to a pre-2011 state on conscription.

having been working at a project advertised by the armed forces. Other interviewees interpreted the selection process as a form of policing and ensuring corporate cohesion.

"There was a process of selection. I know that for sure because a son of a colleague did not get in. And having family in the company did play a big role in industry too. But he didn't get in and after some inquiries, HR confirmed that it was because he had done mandatory alternative service. This was later rectified but this is when I realised that this selection took place" (Interview GP6).

The quote highlights how companies have been aiming to ensure the political uniformity of their workforce through (unlawfully) selecting their employees on grounds of their political beliefs. But it also highlights the informal tool of using family ties as a marker of potential loyalty. This is not dissimilar to army recruitment. At the DSEI2019 Women in Defence panel discussion, Former Chief of Defence People General Richard Nugee stressed the need to focus on family units to specifically bring more women into the army to help it debunk the view that the army was not welcoming of women: "there is a mechanism in the family that brings people to the army" (Fieldnotes DSEI2019). The hope here is that families provide the encouragement necessary to join the army and pass on their life experience to their children; and perhaps also dispel security concerns. Moreover, with difficulties to recruit for the volunteer armies, gender equality has become more important to the military. In Germany, women have had access to all branches of the armed forces since 2001 after Tanja Kreil won her lawsuit at the European Court of Justice against Germany (Kümmel 2008: 5), but conscientious objection also ran high. While conscription prevailed, this meant women could serve in the armed forces, but could not be drafted. In the UK, while women have always been working in the armed forces (Adie 2003) they have had access to combat roles since 2016, and to all branches and roles of the armed forces since 2018 (National Army Museum 2023). Thus, it is still true that militaries are fundamentally dependent on the civil, and women in particular as Cynthia Enloe observed: "Militarists cannot guarantee the social order on their own. They need patriarchal family structures to assist them in enforcing discipline" (Enloe 1983, 189).

With the pause on conscription in Germany, companies have lost one of the formal markers for their selection process. This means informal markers have been developed. Another interviewee highlighted the increased use of assessment centres and employment agencies to monitor the cohesion of the workplace and to achieve silence over dual-use products. These assessments were perceived as invasive practices led by psychologists in which "you have to strip naked, mentally" (Interview GP5) in order to be considered for career progression. This created an atmosphere in which employees understood that normative convictions they held themselves were unconducive to business and best hidden. As the interviewee recounts:

"We once had a colleague who was rather Christian, and at the management school he was told, 'You can't lie' – as a criticism, right? And he responded, 'No, I don't even want to be able to do that', Christian education, you see (laughs), well, he was of course out of favour with management after that" (Interview GP 5). He expanded that "you should adopt what's popular with the company as your own opinion, right, what the company wishes, and nothing else counts, and you only advance in management, in your career, if you adhere to that (…) You know the phrase comply or fly? That's how it was" (Interview GP 5).

As Levinson has pointed out in his account of containerisation, the entrepreneur of the box McLean was amongst the first to introduce such personality and intelligence tests into the recruitment process and as a hiring requirement. Thus, assessment centres and the psychological disciplining of employees has been a practice with which the civil has been achieving the individualisation of the struggle for labour and thus depoliticising the workplace.

Another interviewee described the end of his career due to his moral convictions in a dual-use company:

*"Yes, I was asked, I was pretty good at my job, and they were clear about the nature of the project, that it was military. I said no, but it was also clear to me, that I would not progress within the company. It was a conscious choice… and I was proven right. You didn't get a promotion when you said 'no' to military projects, even though it wasn't their main thing"* (Interview GP4).

Overperformance and excellence was seen as a clear prerequisite for being more vocal about controversial contracts of the company in other workplaces too. "Those who did a good job were respected and those who did an excellent job gained freedoms. They were more likely to be tolerant of critique if you did your job without flaw" (Interview GP6). This theme came up in another company too: "Yes, of course if you do your job well, you can criticise them and perhaps question the decision to deliver to a specific customer, for example. If you maybe aren't performing so well or hand in work late, then you can't do that (…) it was comply or fly" (Interview GP5).

Underlying these experiences is the idea that in the workplace, freedom of expression is not a right but earned and only comes with strings attached and those strings are in the hands of the employer. This mirrors Stavrianakis' analysis of NGOs emulating the codes of respectability of the powerful agents they critique (Stavrianakis 2010). With the perspective of labour, it becomes clear that this emulation stems from the conditional relationship between worker and company. The mutual understanding not to criticise the military branch of a company as a whole, but rather raise concerns on occasion over specific contracts, also spills over into private conversations where political debates become rarer, as one interviewee illustrated:

"You break the habit of talking about the nature of the work you do. It's not welcome, and you are colleagues, afterall… and then often you're not allowed to talk about your work anyway" (Interview GP 5).

The effect this had on collegial relationships was one of polite silence for another interviewee: "They knew my position and knew they could come to me if they wanted to talk about something, but you don't go and harass them with it every day (laughs). I started to be an activist instead" (Interview GP4).

Thus, because the personal is immensely political, it is silenced through the circulation of coercion, and secrecy becomes a practice, not only in relation to the work that is being done, but also in relationships with the employer and colleagues. On an interpersonal level, the conversations I had with interviewees highlighted the complexity of retaining lateral relationships. Maintaining good collegial relations meant to not talk about the politics of the work.

An employee for a research facility, who refused to work in a defence project said "I know that some of the things I am working on will be ending up in defence appliances. But I am not directly involved. You have a wider range of views here. They do let you decline for ethical reasons. You know roughly where people stand, but you're still colleagues. In the end everyone has their personal lines they draw" (Fieldnotes 2021). Thus, the silence that is induced through informal means of control, such as assessment centres, promotion control, and even fuzzier means such as codes of politeness, tends to render the navigation of a complex societal and political field into a personal choice. In a similar fashion in which families practiced "silence as care" (Davies 2022, 107) in the heated debate on Brexit, silence keeps the lateral relationships between colleagues intact. Far from being apolitical, this silence is highly political and extends to the companies themselves. While it is relatively easy to mobilise around big companies who seem to hold a lot of power (as will be discussed in chapter 7), the process becomes more complicated and less convincing if the relationship is seen as a lateral and personal one.

The lack of control over the use of their work pointed out by the engineer highlights the pressure of the workplace. Sometimes, companies push this even further and add misinformation into the project description. In an informal conversation with an engineer, they related the indignation of their colleague who was asked to supposedly design part of a new body armour. Being confronted with the design, they refused apparently stating: "This is a warhead. Are you kidding me? There is no body part of that shape" (Research Diary, 2022).

Moreover, the informal ways of keeping political cohesion in a company is a market itself that is rarely addressed in the markets of silence and secrecy, because they are coded as 'civilian'. *"Of course, there are specialised companies for everything. So, for example, there are*

*employment agencies that have been going through a certain security clearance process – this is the case, for example, in technology as well as for many leased workers"* (Interview GP5). These companies provide background checks on applicants, set up the terms of non-disclosure agreements, offer management courses and performance reviews. We can therefore add the labour in employment agencies, law firms, human resource agencies, and business advisors to the production cycle of the means of violence.

The slogan at DSEI2019 of "interoperability by design" does take on a meaning beyond the integration of technology and systems into different strands of military service. Rather, the practices in industry guarantee the interoperability between the civil and the military. Silence, while still a key feature in this process, appears not as a governance technique unique to the state, but rather one forced onto employees by the competitive environment of businesses. Next to state-sponsored secrecy, the civil has developed its own powerful tools of silencing in the form of assessment centres, family ties, and the all-powerful threat of job loss. This is how the workforce is kept in place and the workplace in turn gets depoliticised. The civil is depoliticising its own contribution and reframes disciplinary inquiries into personality scores of individuals and induces silence as a means of care for personal relationships amongst colleagues.


## 5.5 Precarity

Whose labour is and is not visible in the production of the means of violence is political. When starting this project, I envisioned being able to visit sites of production, develop relationships and thus talk to canteen staff and service workers in varied sites and businesses, as well as engineers and marketing teams. This was partly curtailed by the pandemic. However, there are other barriers to reaching precarious workers that meant that the project had to reorientate towards a more pragmatic approach to interviews.

For one, services staff do not feature on company websites. Thus, my strategy of reaching out to companies and working from there was not effective in reaching general services staff. Most staff that are employed in Tier 3 are providing business-to-business services; facility management, IT infrastructure for sales and human resource management, cleaning, catering, and caring. However, companies are not required to detail their subcontractors, so the information on which companies are being hired for those services is not publicly available, and only features sporadically where there is scandal or a union is organising the workforce. Especially where workers are employed through agencies, such as Sodexo which is catering for the UK Army, but also for schools, universities, and private clients, unionisation is difficult and has only seen an uptake in recent years (Falck 2020). Sodexo is offering military spouses

employment in their kitchens, illustrating the relevance of these sites for future feminist and IPE research.

Thus, the casualised labour of the everyday in liberal war economies that keeps companies running, clean, and nourished, is not represented on the companies' websites through logos or email addresses etc. This aspect would have had to be foregrounded in the research design of the project to a much bigger extent than I did. Participate to write, for example, was a very useful notion in scoping out the workings of the civil and gathering data that allowed me to reflect on the production of the civil/military dichotomy. However, to build relationships with casualised workers, my participant observation would have to have been designed in a more relevant way, as an employee at the food stalls for example.

Another approach, in which I asked permanent staff about the casualised labour in their workplace, did not yield contacts either, because most of the interviewees were retired; and I had anticipated more transparency about business-to-business services. While the interviewees had general insight into the working conditions of services staff, this did not result in contacts. Asked about precarity in their sector; people said things like 'yes, of course, those in the canteens and such, they are precarious.' However, workers do not necessarily know the companies that are being contracted to provide general services. The division of labour and divide-and-rule tactics that force different services into different unions – albeit in the same workplace – produced complexity that I was not able to overcome systematically within the scope of my project and under conditions of the pandemic.

I gained most of my contacts through snowballing by contacting political campaigns. Thus, the interviewees were self-selecting and loosely connected through union and activist networks, though they did not necessarily know each other personally. They were politicised through their own work which they saw as being directly linked to the defence industry. Conversely, generalised services workers may not be as involved in those campaigns, as their labour is generally not seen as being relevant (enough) to those campaigns as a site of organising.

Finally, I had envisioned a series of participant observations at arms fairs which would also serve as a first point of contact and opportunity to build relationships with workers at the fair. However, research restrictions and time limitations meant that DSEI2019 was the only fair I accessed. Thus, a lot of my observations were focused on mapping companies, orientating, and sketching out the dynamics and companies at the arms fair, and I only had illustrative interactions with service workers at this event.

At DSEI2019 I took the opportunity to ask hospitality workers about their jobs and experiences at the fair – but this was only possible while standing in a queue to buy things:

It is day two at DSEI2019 and it is busy – there are thousands of people. Every single seat is full at lunch and there are groups of men talking everywhere. A hospitality worker told me she is employed by an agency, the arms fair is just "another gig". On the last day catering staff are exhausted. One of them tells me she has been travelling two hours to get to the job, "It is hard, it is very intense" she says (her colleague nods), "the shifts are so long. They start at seven, but I live in a different part of the city, so it's up at five in the morning… yeah I'm exhausted, but this isn't my full time job. Some of them are [full time workers], others like me come through an agency. But all the food stalls [not the workers] are permanent ones". I give an empathic nod, and am about to say that it seems very intense, before she continues quickly "But I love it, it's really interesting; you meet people that you wouldn't otherwise and see stuff…so that's pretty unique" – I take it she wanted to reassure me, the customer, that she is not unhappy to serve me. So I offer what seems to be an accepted and friendly bit of small talk, "Yeah it's huge, I keep getting lost", to which she smiles. While she notes the context of the fair, the first thing that she associates with her experience of it, is ten-hour shifts, exhaustion, and four hours of unpaid travel time to even get to her job.

Looking for excuses to stand in front of the food stands, I buy another orange juice, and ask the workers there how they experienced the fair. The first one says "yeaaaah, I'm so glad that it's over, it was super intense!". Her co-worker adds, "Yeah! But it is full time for two months and then a break – so every time it is an event. But this was stressful." At this point our short conversation is over as I move along the queue to get my lunch. I therefore do not find out what exactly it is about the arms fair that makes it more stressful than other events. But I note that it is not the arms fair that is in the foreground, but the working conditions and demands of the job.

The conditions at the fair for precarious workers leave their traces. When I leave the hall to go to the bathroom, I see a worker sitting on the staircase, she is on the phone, looking tired and distressed. When I ask another worker "How are things?", she immediately replies, "It is so hot! There are no air conditioners here, I am glad when it is *over*". Another one adds, "Yes, hot and it is all this noise, it is so loud", which makes taking orders and communication in the kitchens harder. There is warm food from morning until evening. Some visitors get burgers for breakfast. The food stalls start cleaning up around four each day, the official end of the day at the exhibition centre is 5pm.

Cleaning staff are constantly emptying the overflowing trash cans. I have not seen a cup or cutlery. Everything at DSEI2019 is disposable. From the outside terrace, facing the river on which the Frigates are moored, I see a uniformed contingent parading from the VIP tents towards the entrance of ExCEL, while two workers push a recycling container across the

parade ground. It is overflowing with plastic waste. Indeed, it seems everywhere I stop, somebody is emptying the bins, which seem to fill relentlessly and are distributed across the exhibition. The recycling staff are overwhelmingly BAME workers hired through an agency, and I see them more than once being rallied in small groups to get a briefing, rushing through the hall. They do not have time to stay for a chat. Their red T-shirts with the company's logo stand out in the dominant muted attire of the business people. The distinction of rank is not accidental. Large signs distributed along the red carpet leading to the security clearance of the centre encourage military personnel to wear uniform. The dress code for civilian visitors has been communicated in an email and is stated as smart business dress.

The omnipresent plastic waste is illustrative of the incongruencies at the event: next to the two water refill stations there are posters about ExCELs commitment to saving the planet, low-lead bullets are promoted as a way of making war more environmentally friendly, and the talks of prosperity that accompany the launch of the new investment strategy ring hollow while agency workers are rushed all over the event.

The security screening at EXCEL is provided by G4S staff. I wonder what other visitors think about being screened and note someone in front of me being surprised that they have to go through security. While the General, Municipal, Boilermakers' and Allied Trade Union (since 1987: GMB) ran a successful recognition campaign that means UK and US staff enjoy basic employment rights, the track record of G4S includes illegally taking employment fees from migrant workers in their Qatar business, withholding sick pay to UK hospital workers during the pandemic (GMB 2022), and several documented human rights abuses (Pattison 2021).

At the fair the frantic atmosphere at the food and coffee stalls in the hallway stands in contrast to the hospitality provided by the country embassies. The French embassy serves wine and cheese at lunch time; the German embassy offers beer towards the end of the day; the US staff wear blinking flower necklaces that resemble the Hawaiian Lei necklaces. The staff smile, the wine is pre-poured, no one is looking impatiently at their watch to get served. At five o' clock the socialising starts in earnest. The result is several visitors looking rather hungover the next day – one is sitting in a corner in one of the cafes burying his head in his hands.

Meanwhile, the walls of the site and in the facilities are showing posters that promote the campaign "Stop the Drop". It is a poster published by Event Supplier and Services Association (ESSA) displayed at Excel, to prevent injury and death from working at height in the events industry, which tops the rank of work-related deaths in the UK (35 deaths in 2022). The poster starts with avoiding dropping persons and ends with dropping objects. It serves as a reminder that serious workplace injuries happen in the civilian sector, driven by the intensification of work to improve the customer experience. At McDonalds and in the food industry, it is burns

that are most frequent. In most office jobs it is unhealthy seating and too much screen time that leads to sight infringement, chronic-backaches, and – of course – overwork is not only a driver of obesity but also the number one factor for the rampant mental health crisis leading to more suicides in both the UK and Germany. An engineer highlights the noise at the workplace too, "95 decibel constant noise in the halls – I can feel the effects now" (Interview GP7). Thus, while the industry promotes silent soldiers, the workers employed in liberal war economies are enduring noise, burns, and mental health hazards.

However, even though there are risks to health and at times even life, these risks are trivialised because they occur in the 'normal' life of the civil. So, while according to the UK Trade Union Congress more people die at work every year than from war, those deaths and injuries do not rouse the same outrage or coverage. In contrast to Remembrance Day, which is commemorated on a national scale, International Workers' Memorial Day (28 April) is a fringe event of committed union activists, if at all (TUC 2023). Nor are event and stall builders portrayed in heroic fashion, risking their lives to deliver infrastructure under immense time pressure as the iconic soldier is. The civil normalises and depoliticises the risks to life and health within liberal war economies, and places danger firmly into far-away war zones.

The advertising slots and brochures at DSEI2019 depict running, kneeling, targeting soldiers, mostly men, with camouflage make-up, and thus continue the myth of the traditional hero. This of course contrasts with the vision of a body-less war that most of the products aim to sell. Innovation, and the talks I attended, advertise technology and systems in which machinery takes over dangerous and exhausting roles. Equipment becomes ultra-light, ultra-farsighted, ultra-silent, ultra-sensitive and ultra-data based, rendering the anatomy of the soldier less important. Indeed, it is the creation of the cyborg and overcoming the body altogether, with which the companies sell their products and plaster their flyers. At the fair, it is the civilian workforce that is doing the exhausting roles, and it is male BAME bodies dealing with the seas of plastic waste, women of colour cleaning the facilities, and casualised workers rushing to prepare food and hot drinks.

While employment in Tier 1 and 2 companies is typically well paid and often permanent, the production of the means of violence is also built on low-paid internships, student placements, and holiday jobbers, for example, in the dual-use supplier ZF which employs students during holidays (Interview GP1). In the political economy of violence, youth is an important factor, as not only is their labour cheapened until they have qualifications, but most soldiers turn veterans in their late twenties and early thirties. Thus, the armies of the world are made up of people in their early twenties, graduating into increasingly difficult job markets.

Economic push factors therefore do play a role in defence employment. Several interviewees stressed the point that they were not looking for a job in the defence industry but any job in the

context of an economic slump in the 1970s: "So, I mean, I wasn't searching for a defence job, right, I was searching for *any* job. That's the situation for most people [ending up in defence companies, ES]" (Interview GP1, retired engineer at Liebherr Aviation).

But even in very well-paid jobs in Tier 1 companies, fixed-term contracts and agency work is not uncommon complicating the organisation of labour and isolating the workforce. Orders of large military systems occur relatively rarely, and thus each project is fixed-term and the conclusion of a project periodically brings the danger of job losses, especially for the younger generations (Interview GP5). Part of the reason engineers were looking to the Lucas Aerospace Plan for inspiration was the introduction of computer-based design, which threatened to render hundreds of technical draughtspersons unemployed and erode working conditions (Interview GP7).

Casualisation is circulating in the production of the means of violence in various ways, but it is rendered invisible as it blends into the services and struggles that are normalised in the civil. The focus on well-paid jobs in Tier 1 companies means that this precarity is often overlooked, even within those companies: precariousness is rendered invisible and underrepresented. For precarious workers, even more so than highly paid engineers, the defence enterprise is most and foremost a job. The agencies, whether for specialists or generalised services, are notoriously anti-union, anti-organising, and workers take intense conditions in order to keep the job.

So, I want to note the absence of those workers within analyses of liberal war economies – within the scope of this project I did not find out much about the canteen workers, the nurses in military hospitals, and the seamstresses that sew the German Armed Forces uniforms. This is not because their labour is not exploited to produce violence and surplus-value, but it is because their labour is seen as unskilled, reproduceable and peripheral to the production of the means of violence: it is civilian labour. However, rather than being the periphery, the exploitation of these workers is at the heart of the production of the means of violence, and without it, no tank would roll, no stall would be built, no minister be fed.


## 5.6 Chapter Conclusion

Even though the labour of the people I have been speaking to is intricately linked to the production of the means of violence, in their everyday work this link becomes obscured by the necessities and pressures of the job they are performing (in various ways that are job specific). That their work is intimately linked to the production of the means of violence is not to say that they are responsible for the violence of war, it is merely to demonstrate that the violence of

war is dependent on their (civilian) labour power, and to highlight the stabilising role played by the ideology of 'the civil' in depoliticising health risks and unsafe conditions within the civil sphere.

'The civil' as an ideology is not a passive by-product of the military but does important depoliticising work that renders the contribution of workers to the production of the means of violence invisible and integrates violence into broader logics of capitalism. This (in)visibility is not by chance, but needs curating and producing through enforced secrecy, fragmentation of projects, targets, and posing intellectual challenges. Fracturing defence projects into small pieces, lists of requirements, and narrow, tailored projects of components, is designing a workplace of small teams that know little about the work of other teams. Apart from keeping a project secret, it prevents scrutiny or resistance from employees, and risks to deskill the workforce, echoing Marx's alienation through the division of labour.

Silence is produced through perfected mechanisms such as assessment centres and psychology tests, which further personalise the work and thus render the execution of highly political projects into a personal choice. Just as the armed forces have long been dependent on women and aimed to camouflage that dependency (Enloe 1983: 213), so is the dependency of the military on the civil, and the dependency of profit on labour, being camouflaged. What the focus on labour illustrates – and what 'interoperability by design' suggests when taken seriously – is that rather than the military one-sidedly changing the way business is done, business is feeding into military culture and organisation and shaping the military to its needs. In liberal war economies where the means of violence are produced for profit, speculative risk is a powerful marketing strategy and creates a market for new technologies. The problem of war and the means of violence thus cannot be solved while focusing on military agency alone. Therefore, we have to open the black box of the civil and shine much more light into it. This is the aim of the next chapter.

# 6. The Black Box of The Civil: Dual-Use, Fibres, Makeup and Scents

"We turn swords into ploughshares; or in this case, swords … into other swords" (Ploughshares Innovations presentation at DSEI2019).

The black box has been used as a metaphor for democratic models and to describe processes that are complex or unknown. It is also a conceptual short-cut in engineering design to abstract from complexity (Straube 2019, 181). The black box, however, is also a very material thing in defence manufacturing and design: "You can always spot this [the use of civilian technology in defence] when you spot the box; this is where the equipment is put to endure the stress of the environment" (Interview GP7).

Cables and electronic systems are sensitive and prone to breaking. Civilian commodities could not withhold the stress they are put under in a war context. That is why electronics are placed in a black box: "The civilian technology is put into a box – the black box – and this box protects it from the military environment" (Interview GP4). Thus, the civilian agency within defence technology is quite literally rendered invisible by cloaking it with steel and this is how its interoperability with military equipment is achieved.

Civilian technology and agency have so profoundly shaped every aspect of defence, that the lines appear quite blurred. With a focus on fighter jets, bombs and tanks, the everyday products and commodities of the civil are rendered invisible. In this chapter I demonstrate how ordinary objects as mundane as make-up, scents and fibres are in fact essential components of violence. Violence, however, is not an automatic feature of cables, screws, and paint. Someone needs to design and adapt the black box that makes the components fit in the violent context. In defence manufacturing the integration of civilian technology to military use is known as 'spin-in', the reverse process 'spin-out'. At the same time that dual-use is potent in technology, it is not an automatic feature of cables, screws and paint. As Verbruggen highlights, technology spin-in is not happening naturally and can be, and is, resisted by many engineers (Verbruggen 2019).

There are several things to unpack. First, the concept of 'dual-use' technology is a site of semiotic work of the civil, which leads our gaze towards the application of technology. It therefore frames and locates the problem of dual-use technology at the point of use and depoliticises the roles and ways violence has been accounted for in the design and production process. Moreover, in primarily focusing on military to civilian adaptation or spin-outs, research has overlooked the role and agency of the civil by reproducing a narrow definition of dual-use that depoliticises and diminishes the relevance of civilian technology for violence and the ways it integrates violence in its designs. In this chapter I illustrate that dual-use is not a fate of

technology but a policy. The chapter follows the weaving loom, make-up compact and scent-marketing to render visible how civilian technology is "spun-in" to military applications, but rendered unimportant.

Second, the very notion of dual-use builds on the civil/military dichotomy and reproduces a duality of corresponding non-violent and violent spheres that different agents call upon to achieve particular political ends. It is the implied nonviolence of the civil that makes dual-use not only palatable but also difficult to contest. The civil orders dual-use objects into a hierarchy of urgency and (un)importance that forecloses curiosity and scrutiny. The chapter will unpack how the notion of 'dual-use' is mobilising the repertoire of 'the civil' to camouflage not only its contribution, but also the violent intent of the civil designs.

## Design and semiotics of the civil

Looking through the lens of design means thinking about where stuff comes from, what it is made of, and what uses and requirements it has. This means design is a bridge between the material and symbolic. Design allows us to familiarise ourselves with the process of production, the materials used, to sketch the labour that is needed to produce them and trace the worlds and scenarios for which the products are being imagined. While I originally set out to map a significant number of these objects and SMEs that produce them, this quickly proved impractical for a qualitative approach. Perhaps unsurprisingly, given my open approach, I had a zero percent return rate of interview invitations from SMEs, which typically populate the third tier of the defence enterprise. Apart from literature, this chapter is therefore empirically grounded in websites, flyers, news articles, and company profiles. In this chapter, I am arguing that dual-use is part of the ideology of the civil, and is crucial to the circulation of violence through the implied non-violent associations with the civil. The objects I am focusing on have been selected purposefully from my product-collection of dual-use companies, which simultaneously produce cinema projectors and gun projectiles; or rubber mulch for kindergartens and anti-ricochet ballistic panels from recycled tyres. I focus on three that are broadly related to a feminist focus on the body and traditional gendered spheres of the *Beautiful Souls*, but amongst the many objects that people mentioned to me were: specialised pipework for military hospitals, cables, uniforms, and paperwork. I decided to focus on fibres, make-up, and scents because I think they, first, fall outside typical studies on technology which tend to focus on algorithms, navigation, and aiming. Camouflage make-up was intriguing to me, because of its iconic status to represent military bodies, fibres where highlighted in an interview, and scents were the first objects that led me to think about the role of the civil in producing the means of violence. With focusing on fibres, make-up, and scent, I aim to further

demonstrate that firstly, the technologies used in military projects do have a 'civilian' history (the 3D weaving loom); secondly, how civilian technology is rendered invisible while simultaneously producing a certain military look (camouflage make-up), and thirdly, how civilian technologies tend to escape scrutiny (scents).

The method that helps me thinking through these issues is semiotics. Semiotics is at the heart of design. Semioticians conceptualise meaning making as "process of signification" (Deni and Zingale 2017, 1297) which seems appropriate in the world of the civil-military dichotomy which is structured by architecture, movement, texture, colour, sounds and smells as well as text. The unit of analysis are 'semiotic resources' which in turn are defined by social semiotician Theo van Leeuwwen as "the actions and artefacts we use to communicate, whether they are produced physiologically – with our vocal apparatus, with our muscles we use to do facial expressions and gestures, etc-  or by means of technologies – with pen, ink, and paper; with computer hardware and software; with fabrics, scissors and sewing machines, etc" (Leeuwen 2004, 3). In this process of signification technologies are understood broadly, which lends itself to the scope of my project.

Semiotics as understood in sociology/ethnography is concerned with the analysis of the process of signification. Beyond that, however,

*"Semiotics is not only considered a discipline specialised in the study of signification processes, but also in the production of meaning through artefacts. In this field the semioticians work in design projects to understand and construct objects, communication and services able to satisfy the users' needs and practices. First of all, semiotic methods and tools help to analyse the users' practices, to define objectives and purposes of a project; then they help designers to transform these goals into real projects, preserving the values, the implications and the meanings in a way suitable for the stakeholders."* (Deni and Zingale 2017, 1293).

During my research I asked interviewees about components and screws and their relevance for their industry and, where applicable, activism. However, the screw seems to be the prime example of an object that is overlooked. This reflects the lack of research on 'the civil', because "[b]y sheer numbers, the 'civilian' experience of wartime is far more common than that of 'soldier'" (Millar 2019, 240), we therefore assume knowledge about it.

What is it about the screw that makes it so negligible to activism and research? I think part of it is, that it is a seemingly omnipresent object, too small and too reproduceable to make a difference. It is exactly the mundane-ness of the screw (and similar products that are not visible) that should spark interest, however. Through the interviews I found out, that the point

of the screw in a military project, is that it is not like other screws. It has more documentation about it, it is being licensed, it is kept in storage.

A military screw needs to withstand higher temperatures, pressure, corrosion and it comes with its own documentation and storage and standardisation requirements which increases its price or exchange value (Elite Fasteners 2023). The screw thus encapsulates the civil/military dichotomy: while being indistinguishable from the outside, leaving the same factory, the military screw is marketed as harder, stronger, and more efficient than the mass-produced civilian screw. The military context in which the screw will be applied, is therefore already part of its everyday of being designed, produced, and distributed – its martial quality and effect is not 'added on' when applied, it is built in; and in a symbolic and literal sense, it is the hardened version of the civilian screw. However, because its civilian version is readily available and familiar, it seems like a commodity that we know about. 'The civil' is fundamentally mobilising a sense of familiarity and unimportance, as if we knew everything about the screw. The small-scale, powerful objects occupy our imagination, to an extent by which we overlook that without a mass of powerful screws the plane would fall apart. Even more so, the objects become agents themselves, thus obscuring the social relationships that brought them forth and who designed them in order to create profit.

This seems necessary to stress in International Relations where sometimes the meaning objects hold is obscuring the fact that these objects are things made for a definite purpose and for exchange, and where the relations manifested within these objects seem random rather than purposeful and historically grown. The insight of the Marxist concept of commodity fetishism unfolds its full force at this juncture: the commodities appear as a force upon humans, camouflaging the manifested human agency within; and the relations of exploitation that brought them into being make them travel and connect humans with every transaction they are part of, even in death (Joseph 2006, 14).

## 6.1 Swords into Ploughshares: dual-use commodities

Dual-use policies in research and development have been pursued on a more systematic level in response to declining defence expenditures in the wake of the Soviet downfall (Molas-Gallart 1997). Technologies can be understood very narrowly, as anything mechanical and automated; or much broader as including the social relations underpinning the production of artefacts and the reproduction of the social relations themselves (Molas-Gallart 1997, citing Galtung 1987). Thus, production inputs and outputs can be 'dual-use'. This 'mode of production' understanding of technologies is closer to a Marxist understanding. Since

distribution and production are co-constitutive and interdependent, technologies must be understood as both, the artefacts as well as the social relationships producing and distributing these artefacts. Molas-Gallert defines technology as tangible solutions to technical problems and identifying the problems in the first place, which includes both artefacts and skills as technologies (Molas-Gallart 1997: 369).

## Economic Conversion and Dual-Use

Dual-use, originally started as a political concept and problem for arms control and technology transfer. The phrase 'swords into ploughshares' was derived from the bible and seemed to encapsulate the spirit of military to civilian conversion. The quote is attributed to Isaiah, 2: 3-1 and reads:

"Many peoples shall come and say, 'Come, let us go up to the mountain of the lord, to the house of the God of Jacob; that he may teach us his ways and that we may walk in his paths.' For out of Zion shall go forth instruction, and the word of the Lord from Jerusalem. He shall judge between the nations, and shall arbitrate for many peoples; *they shall beat their swords into plowshares, and their spears into pruning hooks*; nation shall not lift up sword against nation, neither shall they learn war any more" (emphasis added).

Military to civilian conversion was therefore envisioned as a societal, broad concept (Melman 1985) and is still a proclaimed political goal for nuclear disarmament (Dumas 1989). The economic concepts underpinning conversion argue (almost) a Marxist case, costing military production as 'noncontributive' (read: unproductive) and thus a drain on the 'contributive' (read: productive) economy in the long-run. In its political approach it is pragmatic, and perhaps consciously so: the question is how to adapt and re-train technologies and people who have been adapted to military logics to the more cost-sensitive civilian markets and develop systems that can deliver the required planning and societal buy-in (Dumas 1989: 11).

In Germany, the Bonn International Centre for Conversion (now International Centre for Conflict Studies) was set up in 1994, funded by the State North-Rhine Westphalia, home to some of Germany's largest arms manufacturers as well as several allied military bases, to advise and research on the changing geopolitical landscape and economic implications in the re-unified republic. In the UK, the wholly government-owned conversion company Ploughshare Innovation was set up in 2005. While privately run, the British commercialiser of military-developed technology has unique access to the Defence Science and Technology Laboratory (DSTL), an agency of the UK Ministry of Defence. In their own words Ploughshare Innovations "ensure UK government innovations deliver real prosperity to the economy, our society,

people's lives, and the environment" (Ploughshare Innovations 2022). In theory, this is in the spirit of 'giving back' to society and thus making sure the intellectual property developed in the military finds civilian applications.

The ten years between the two institutions illustrate how the concept of conversion has moved on from a societal vision to an industrial strategic concept, which is exploring 'dual-use' and spin-out technologies. A lot of the technology in the 20th century had its origins in state-funded research for state-sanctioned violence. The list of spin-out technologies and systems that originated in military research and received public funding is long and ranges most famously from the internet, computer, and most aircraft technology, to lesser-known areas such as the cordless vacuum cleaner, marine biology, enriched baby food, sanitary pads, radar, and the microwave oven (Molas-Gallert 1997). These spinouts have been playing a major role in the public relations work of military budgets, presenting the military, and war, as a major force in driving innovation in an intensely competitive environment. National economies are thus presented as relying on military innovation in a market in which you either "innovate or die" (marketing slogan at DSEI2019, Fieldnotes DSEI2019).

While this trope prevails in public discourse, the reality is more complex and contradictory. As Molas-Gallert observes "the distinction between military and civilian technologies is not sharp and clear-cut" (Molas-Gallert 1997: 370). The more intense global division of labour, creation of value chains and inventions such as the shipping container and with it the redesign of logistics has given the commercial sector a competitive advantage (Cowen 2014). Thus, rather than moving from military to civilian technology, there have been more and more technology transfers from the civilian sphere into the military (Molas-Gallert 1997: 368). As Petermann (2000, 263) states, this has been a well-established trend since the 1990's and is usually attributed to decreasing military budgets. Further automation, such as additive manufacturing, for example, is test-run in the civilian sphere for cost reasons, rather than tested in military applications directly.

In Germany, this trend also gave rise to the first concepts of dual-use capabilities which systematically explored the production of products that were designed with civilian *and* military applications in mind (Petermann 2000: 265f).

At the same time, technology transfer from civil to military and vice versa is not as simple as the statement 'anything can be used as a weapon' implies. This has been a major finding and contribution of economic conversion research (c.f. Dumas and Thee 1989). Molas-Gallert (1997: 372ff) distinguishes several ways of adaptation that enable the circulation of technology within and across units and applications, which he orders into a spectrum of modification. Thus, while some parts can be adapted directly, such as sub-systems in more complex weapon systems, this is not the case for other technologies which may undergo several design

modifications to make them usable in a civilian context. The example Molas-Gallert gives for simple adaptations of military to civilian transfers are the cable manufacturer Raychem, who successfully diversified their production from cables for tanks and aerospace applications to the car industry; Kaman, a US helicopter company developing vibration technology in the 1970's transferred their technology to acoustic guitars; Diehl transferred rubber parts from tracked vehicles to the car industry; and Atlas Elektronik transferred low frequency radar technology to the civilian sphere to get images of underground structures (Molas-Gallert 1997: 373).

However, a lot of military developments are not adaptable: "Many final systems are not dual-use as they cannot be adapted to carry out a task other than the very specific job for which they have been designed" (Molas-Gallert 1997: 371); meaning, 'you cannot butter your bread with a machine gun'. As Dumas (1989: 8) argues, military technology and organisational logics have diverged over the years, so that one can no longer speak of a 'return' to civilian economic models, rather companies would need to reorientate their production. This is the case for some technologies, but less so for others.

Petermann (2000) further argues that a dual-use business model "aims at the early-stage integration and *planned* development of civilian and military applications and technologies" (Petermann 264, own translation, emphasis added). The interesting aspect of these discussions for this thesis, is exactly the fact that these 'multiple uses' have to be imagined and designed for, locating the agency of doing so into a much broader area than 'defence' companies, and highlighting 'dual-use' as the outcome of human agency, rather than an unavoidable, or inherent feature of technology.

Dual-use is therefore not a chance discovery of military applications for civilian technologies, but requires the "conscious and active" (Petermann 2000: 264) imagination and design of their potential in a war (as well as civilian) context. Design "benign or malign, whether politically to the left, middle, or right, is ultimately an effort of intention, often collectively so" (Srinivas and Staszowski 2018, 59). Hence it is not an unfortunate whim of fate that turns ploughshares into swords, but the intentional application of civilian labour power and creativity.

Increasing dual-use capabilities is not only reached by transfer, but also through integration: "generic production technologies may also be used to manufacture both military and civilian products in the same assembly lines; this policy, known as civil-military integration is being actively promoted by the US department of defence" (Molas-Gallert 1997: 373).

This integration is increasingly pursued by liberal war economies and is extended to the social relationships necessary for production. Under the slogan "interoperability by design" for example, experts from the police, secret service, military, and industry highlighted the

challenges and inefficiencies that come with different organisational logics, and legal restrictions at DSEI2019. They thus argued, quite openly, for the integration of business interests into army structures and discussed the accessibility of army structures, such as overseas bases, as launchpad for business interests (Fieldnotes DSEI 2019). One exhibitor framed it like this: "When it comes to the technology they are ahead, but when it comes to organisation military is twenty years behind" (Fieldnotes DSEI2019). Integrated production lines, however, are not only a state pursued project, but commercial actors are actively trying to get into the military market, not only to licence technology but also to open new markets for their products. What we witness is the privatisation and, I would add, 'civilianisation', of military production, but this does not mean less means of violence are produced.

As illustrated in chapter five, moreover, military agents are seen as less cost-sensitive than their commercial equivalents, and therefore there are organisational challenges to overcome in order to make dual-use successful (Molas-Gallart 1997: 383). This is the case for any component and adds to their complexity. Each stage of certification further adds to the cost of components. Which means, often, it is cheaper to get a whole new system, rather than exchange a broken part. This however comes with new training costs for auditors and quality checks.

At DSEI2019 Ploughshare Innovation's presentation focused on highlighting business opportunities for small businesses and startups. It highlighted the "wider benefits of defence" to "commercialise defence" (Fieldnotes DSEI2019). At the time Ploughshare Innovations held fifty licences and had developed thirty spin-out companies with products and services for the "frontline" and commercial market. Ploughshare Innovations' main aim is to "keep intellectual property in the UK and the home market" and the "bolstering of UK defence and security (…) deliver prosperity" which "is no doubt why most of you are here" (DSEI2019 Ploughshare Innovations). However, the products presented – a stand-off breaking grenade to open doors; ceramic armour; defence sensors and the L3 Harris autonomous navigation system, a successor of the Autonomous Warrior18 – had little to do with conventional understandings of 'the civil'. The presenter thus correctly stated to the audience: "we make swords into ploughshares, or well in this case it's not really swords into ploughshares, but swords into … swords. Other swords" (Fieldnotes DSEI2019). Ploughshare Innovations is the broker between government technology and the private market; but as the examples illustrate, often, the innovations stay within the defence enterprise and do not make it into everyday appliances, while 'the civil' is mobilised for adorning the enterprise with legitimacy.

In the interviews it was highlighted that it is not an unusual dynamic for conversion efforts to end up aiding staying within the defence enterprise. This is not only the case for appliances and the technologies that are being developed but is more prevalent in the organisational and

ownership structures of the companies that are set up. In the high-profile campaign "Alternative Produktion", for example, workers were successful in convincing the management board of their innovative ideas that would retain jobs and prevent cuts while producing "products for life, instead of weapons for war" (Interview GP8). However, in several cases, rather than converting to civilian technologies and giving up the defence market, companies diversified their product line, set up subsidies and sold newly set up civilian businesses when they were not as profitable as they hoped (GP7; GP4; GP6, further discussed in the next chapter).

This highlights the ownership structures, which are not fully addressed in economic conversion. The fact that defence still seems somewhat ahead in terms of technology is not an accident. At a public university's research facility, a worker explains "it could be great, but it is defence that has the money, so they buy the patents and the technology and that is why it is so expensive and not available for the civilian sector. It takes years and the patents make a lot of technology unavailable for the civilian market" (Interview EP2).

All this is to say that the conversion of civilian technology to military applications is not a chance development. Neither is the dual-use applicability of an artefact an effect of its properties. The products for war are designed. The lens of design highlights the intentional, tactical, and conscious production of products for war. Thus, there is no mysterious mechanism or property of technology that makes it into a product for war – war needs to be thought of and designed for. It is manifested intent.


The civil in dual-use

Technology transfer and innovation is complex, and the market of the means of violence is equally multifaceted. Depending on the product category a service could be highly specialised and tailored, and production lines could be very small and single-use. This is the case for example with certain pneumatic pumps in aerial systems; or the machine that produces and rivets the fuselage of an airplane in one go. Other products on the other hand are mass-produced and could be produced with relatively low market entry cost, or even 3D printed, such as the screw. However, the machinery that is being designed to produce components is rarely understood as part of the production line of defence – thus the very means of producing violence are excluded from analysis. This not only obscures the way that the martial context is already imagined in the design stages of dual-use technology; but it also reproduces the expectation that 'civilian' uses will not be violent.

In the example of Ploughshare Innovations with its clear agenda of commercialisation, institutions of organised violence and business-to-business trade are recast as 'frontline services', and thus semiotically linked up with imageries of workers in the NHS, schools and other care institutions. The care-work that is being done in public services thus becomes meshed up with the martial work that is being done in the military. Care within this framework becomes linked up with violence and force, and continues to reproduce the hierarchy between those who 'know best' and the subject of care. In the civil/military dichotomy, the care for the civilian is ultimately what inspires the soldier to go and sacrifice their lives. The civilian in turn is called upon to devote their care to the soldier and render themselves dependent on the military protector. It is on this well-established semiotic basis on which producers of components and dual-use technology operate. However, the state's definition of 'civil' service includes services such as the police and intelligence services, making riot control agents, aka tear gas, a 'dual-use' product.

Dual-use therefore does not only cover components and technology but a range of lethal and non-lethal law enforcement equipment as well. The research foundation OMEGA lists inherently abusive equipment, such as spiked batons, thumb cuffs, body-worn and remote-control electric shock bands, amongst the items that have been banned under the EU regulation on torture equipment in 2006. However, in their 2016 report, OMEGA highlighted that illegal and dangerous equipment tends to show up at arms fairs despite the ban (Robinson 2016). Other equipment includes law enforcement tools, such as the restraint chair, already mentioned, as well as chemicals that are used to administer the death penalty, which are under an *export* ban, but in as far as they have 'dual-use' qualities not a production ban within the EU (Omega 2019). Importantly, while the Torture Trade Regulation was a huge success in tackling the import and export of inherently abusive equipment in the EU and led to the founding of the Alliance for Torture Free Trade, the alliance reproduces the same focus on trade rather than the production of the banned products (Torture Free Trade 2022).

Thus, who 'the civilian' is, and what 'the civil' does in liberal war economies, should be under much more scrutiny. What 'the civil' produces and does on a day-to-day basis stands in contrast to the choreographic enactments of 'the civil' in public discourse and there is a cognitive disconnect between the everyday production of the means of violence and the performance of a violence-free, home-making, civilian population. Within this, the civil shows up as a deeply depoliticising force, that forecloses questions about its own contribution in the production of the means of violence.

## 6.2 Weaving the webs of oppression: 3D weaving

The Jacquard weaving machine is another invention which revolutionised not only fabric production but is widely seen as the inspiration for the computer and thus is at the heart of the industrial revolution 3.0 and 4.0. In his history of the Jacquard frame, Essinger (2007) details the history of the frame that was based on punch cards and that inspired the mathematician Charles Babbage in developing a differencing machine. His student Ada Lovelace analysed this machine and provided the theoretic foundations of programming, which a century later were further developed and put into practice (Essinger 2007: 122ff). The Jacquard loom was partly based on the drawloom which was invented in China to weave silk into images and patterns. The oldest fragments of woven material are linen that has been found in Egypt and is dated about 45000 years ago. The drawloom was the key technology on which China dominated the silk market. However, the drawloom needed two people to operate and in the age of the industrial revolution was not only seen as too slow, but also imprecise. Thus, as a son of a silk weaver, Joseph-Marie Jacquard set out to develop a loom that would not only be faster, but also could produce different patterns on the same machine to keep up with changing floral fashions. The famous punch card, with the pattern 'one hole', 'no hole' gave the solution. It is this recognising of a pattern by machine, which was later developed into calculating machines, which then, a century later, were developed into the first computers (Essinger 2007, 7ff).

However, while artificial intelligence and digitalisation of war and society has seen tremendous coverage, it is not only the principle of programming of the Jacquard loom that changed the world, with lethal autonomous weapon systems (LAWS) on the rise (Verbruggen 2019). The more mundane, but ubiquitous everyday technology of weaving and braiding is shaping the look of war – and the gadgets that carry the software.

From ballistic lightweight composites for body armour, to fishing rods, the use of textile composites for industry has changed the looks and possibilities of war. The term "textile" is stretched to describe "an interlaced structure consisting of yarns, although it also applies to fibres, filaments and yarns, and most products derived from them" (Long 2005, viii). While there are a range of different fibres for different applications, the process of spinning fibres into yarn, weaving them into patterns and harden them with a resin, is at the heart of industrial weaving (Bhatnagar and Tam 2006, 189ff). The most widely available fibre is carbon fibre, which was first used in Edison's lightbulb and is manufactured for example by Zoltek, Toray, and Mitsubishi (Gill et al. 2017: 3) – fibre manufacturers that produce a wide range of synthetic fibres, be it for cars or apparel. Edison used bamboo fibres which were baked at high temperatures to induce carbonisation. Inventions in the 1970s used petroleum-based fibres

which were by-products of oil processing (Zoltek 2023). Each of the carbon fibres is only 0.005-0.010 mm of diameter, is made of mostly carbon atoms and is spun into a yarn which can be used on its own or woven into a fabric and shape. Epoxy resin is then added, and the shape becomes lightweight, heat and corrosion resistant, very durable, and sound absorbing. These composites are increasingly replacing composites made of metal in cars, planes, construction and fishing rods, to name a few (El-Dessouky et al. 2016). The driving industry behind the move from natural fibres to synthetic fibres has been the fashion industry in which manufactured fibres have long been developed for apparel, including silver, steel, and nylon (Perera et al. 2021, 2). The new fibres quickly replaced natural fibres that were used in industry, such as for example the reinforcements in car tyres. The material of fibres determines their property and uses – body armour and armed vehicles, for example, use so called ballistic fibres which tend to not only be resistant to chemicals and lubricants, but are also stronger than other fibres and thus slow down or deform a "high-speed projectile" (Wagner 2006, 1), aka a bullet.

The process of braiding, knitting and weaving yarn into firm structures and reinforcements such as a leap fan blade in an aeroplane reduces weight and thus has implications for cost and fuel efficiency (El Dessouky et al 2016). The new fibres, combined with technology that has existed for thousands of years, open new markets for "manufacturers of traditional textiles" (Long 2005: xiv).

Within the last thirty years the technology has moved from 2D structures to 3D structures. This means the structure of the fabric that is woven has an additional axis. A common application of textile-based composites are turbines for off-shore energy generators (Long 2005: xiv). 2D woven fabrics are typically used to reenforce material against rupture and breaking, such as from stabbing, hand grenades, and bullets (Perera et al. 2021: 4). 3D interlaced-woven fabrics have an additional axis, and the added dimension promises to overcome design problems of 2D woven composites such as unevenness and conformability and reduce labour time and material wastage (El Dessouky et al 2016: 2). Often used to make composite preforms, the full potential of 3D woven fabrics is yet to be explored and is shaped by advances in machine design. At a research site, a worker commented: "We regularly have tours with BAE systems, and MBDA (pause) showing the technology and, basically, we are showing them how to make lighter shells. You can weave anything" (Anonymous). The example of the 3D weaving machine illustrates how civilian technology is part of the production of the means of violence. In fact, the first recorded 3D woven structures are baskets presumably used for everyday storage, which have been found at the pre-historic site Guitarerro, Peru, and are estimated to origin from the period 8600-8000 B.C.(Perera et al. 2021, 2).

The history of 3D composite weaving knits together the deeply gendered garment industries with high-tech and illustrates how gendered perceptions of technology shape which aspect of

production we are paying attention to: "The basics of 3D structures have been established in the textile industry for a long time, development began in the 1970s but advances in using 3D woven fabrics in composites started to be developed in the 1980s" (El Dessouky 2016: 2). While complex and using different fibres, the technology of weaving 3D parts is based on thousands of years of predominantly female labour and textile production: "Up until 1780's women dominated in the garment industry and spun thread on either their spinning wheels or using primitive jennies" (Jarrige 2013, 19). Women were, and still are, employed in the textile industry based on gendered stereotypes about "so-called feminine nature, the dexterity of women's fingers, and their supposed affinity with "soft" materials"(Jarrige 2013: 17). The fragmentation of the production process went hand in hand with explicitly gendered hiring practices which introduced not only payment by piece (rather than hour), but also gendered workplaces and industries (Enloe 2014b).

Based on the availability of cotton, which as a raw material was cheapened through slave labour and trade; this early process of capitalist automation also had repercussions in the manufacturing countries. The introduction of large jennies that could spin thread in greater quantity and conformity meant not only that women were pushed out of the thread production into cottage-based weaving, but that through that push into the countryside and home, the female workforce was fragmented and therefore less organised than the now male-dominated workshops. However, women did not get pushed out of the industry without resistance, which is illustrated in their leading role in machine-destruction and a series of riots in the nineteenth century garment industries, which was a form of protest against automation, de-skilling and wage cuts (Jarrige 2013: 21).

The same process applied to the spinners, now predominantly men and classed as skilled labourers, when they saw their labour increasingly automated, replaced, and re-organised. Perhaps the most famous movement of machine destructors were the 'Luddites', which organised around Nottingham, England against the introduction of the Jacquard weaving frames (Jarrige 2013, 23). While their origins are shrouded in myths; their protest of destroying weaving frames is well documented and cemented the protection of property over human lives. After sending in the military, the British state introduced the death penalty on charges of property destruction in 1812. In Nottingham fourteen men were hanged for their participation in destroying the frames, and seven were exiled to Australia for fifteen years (Horn 2015). Because of the gendered concepts of the time about women's emotionality and judgement, women typically escaped the death penalty and trials; but this also means that their role in these movements had been overlooked until recently (Jarrige 2013).

The ever-increasing division of labour and fragmentation of the production process into automated steps and the outsourcing of those, typically to the detriment of labour conditions

and along gendered and racialised lines, can thus be observed in the early industries as much as in the security industries today.

While the exploitation of workers in the textile industry continues, new fibres in liberal war economies are not only woven into uniforms and protective armour, but also warheads. Gendered perceptions about textiles, however, render these new textiles and technology transfers invisible. Throughout history military technology has been gendered and either seen as masculinising or 'emasculating' (Wilcox 2010: 65) depending on how the technology in question fits into current narratives about bravery and masculinity. With the 'gendering of the offensive' (Wilcox 2010: 61ff) we have therefore also seen a focus on masculinised technology. The Jacquard weaving loom did not only produce computers, but is also weaving fibres and thus needs to be seen as part of the means of violence; but because these are often used in 'defensive' capabilities, the technological advances in weaving do not demand the same attention, as 'killer robots' do.

The new fibres seem too sleek for investigation. Their manufacturing process seems automated and human-less, and thus free from the exploitation observed in the garment industry, but also free from agency. As mere building blocks in more deadly structures, the 3D woven fabrics can claim the neutrality of 'the civil' which is disengaged from violence, and only ever produces things that protect. While lightweight ballistic fibres are used to build body armour and armoured vehicles, we should not forget, that 'armoured vehicles' also include the category of "armored combat vehicles" (Bhatnagar and Lang 2006, 383), more commonly known as tanks.

The fibres holding together the offensive and defensive, moreover, illustrate how the civil is obscuring its own contribution: coded and marketed as 'high-performance' the fibres blend into the masculinised scopic regime of war, retelling the story of war as the driving force behind innovation. However, the technological advances were not made in war, but in fashion. As the history of garment workers illustrate, these advances, moreover, were accompanied by riots, resistance, and oppression. At the same time, the fibres are seen as negligible in comparison with the more prominent off-spring of the weaving loom, namely Artificial Intelligence and computing. War and technological innovation are not 'naturally' linked – it is the competition over resources, statutes of secrecy and the control over private property that keep innovation under the sphere of violence. In demystifying the production process of the means of violence, it is also possible to demystify war and with it the soldier. Unpacking the gendered codes that render weaving looms negligible in war production moreover unpacks the normalising and depoliticising work that 'the civil' does in producing the means of violence.

## 6.3 Beat the Heat: The Make-Up compact and the colours of war

Where military and the fashion industry are discussed, this is typically under the theme of camouflage design and uniforms. Military camouflage patterns have been discussed in varied fields, most notably in design and fashion studies, and the camouflage patterns have seen a lot of coverage from hobbyists, military enthusiasts, preppers and exhibitions (Achter and Achter 2019; Carriger 2011; Craik 2003; Ugolini 2010; Wilson 2008). Military camouflage is a relatively recent development, which was first employed by French troops in World War I, became wide-spread in World War II and a global phenomenon since the Vietnam War (Talas, Baddeley, and Cuthill 2017, 2f). Globalising the disruptive patterns comes with dangerous drawbacks, however. Where militaries have focused on concealment rather than recognition, the distinction of different troops in the field becomes harder, which increases the risk of 'friendly fire' (Talas, Baddeley, and Cuthill 2017, 3). While concealment of buildings and vessels became widespread, painting the faces of soldiers seems to have only become a trend during World War II, when first soot, and later green camouflage paint was introduced.

While there are quite a few works on camouflage in the military, and especially the involvement of artists in designing the iconic patterns in 'camoufleurs' corps (Newark 2007; Wilson 2008), surprisingly little seems to be written about the equally iconic camouflage makeup; even though it features widely in depictions of combat and marketing material (DSEI2019 Fieldnotes). The khaki-brown-black painted face of a soldier in combat, lurking somewhere in the wild behind a bush, is an iconic image, not only in military marketing material, but also outdoor-activity facing industries. And yet, camouflage makeup, or rather military face cream to use the industry term, does rarely feature in texts and analysis about the cultural significance of camouflage.

Camouflage makeup[21] and its application is part of the army's dress code and regulations. The German army's field manual includes a section on how to apply camouflage makeup correctly: olive base; then other colours of the pattern follow. Therefore, camouflage makeup in the German army is provided in a make-up compact or with an official hand mirror.

BCB International in the UK sells not only NATO approved camouflage makeup 'to armed forces around the world'; it also has developed a non-irritant formulation for soldiers, the Bushcraft®Camouflage Cream Compact (BCB International 2015). The compact consists of three colours that are marketed as high-performance as they are infrared reflective, have a high sun protection factor, and resist sweat, arctic cold and heat. The cream is not only ph-tested to avoid rashes, irritation and pimples, but also free from animal products. The cream

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[21] Camouflage makeup in dermatology refers to medical makeup that is used to cover skin conditions and scars, developed after WWII to help veterans cover up permanent scaring, and today is also used to cover skin-conditions such as Vertigo. Unless otherwise stated, I refer here to military face paint.

and cream sticks are tested by a commercial laboratory that attests the longevity of the product, which is guaranteed to up to three years. Using a vegetable oil base and natural waxes rather than petroleum based mixes, the cream prevents breakouts while keeping its colour, which come in either Woodland or Multi-terrain as specified in UK/SC/5772 Issue 05 (2008) (BCB International 2015). The case in which the cream comes was established in 1980. The company advertises the strong and recyclable plastic case with an added mirror, which can be conveniently opened with one hand and can double-function as a storage box for plasters after use. While camouflage makeup is sold in tubes and sticks, the army requires the correct application of makeup, and if, due to sweat, heat, or other environmental factors the makeup is running, its re-application, which necessitates the mirror.

The military compact's forerunner is found in the make-up industry and success of Hollywood, where developments in powder and foundation meant women were able to touch up their make-up on the go (Eldridge 2015: 75). Moving on from rather dangerous concoctions based on lead, face creams, powders, mascara, and lipsticks became increasingly available to people during the 1920s. Amongst the modern make-up pioneers of Elisabeth Arden and Helena Rubinstein, Max Factor is credited with developing greasepaint in cream form, rather than a stick and thus revolutionising make-up for film and theatre in 1914. In 1934 he created a product that combined foundation and powder in one, a water-based talc mixture in a reaction to the demands of technicolour films, thus creating pan-cake makeup, which was pressed into compacts (Eldridge 2015: 94). This laid the foundation not only for the company's success, but also military and medical camouflage makeup (British Association of Skin Camouflage 2023). The makeup compact itself became an accessory and marketing feature during the 1920s when make-up used to be refillable. The intricate designs and patented mechanisms, such as mirrors and self-opening lids, which were patented by George Laughton and produced and distributed by companies like the manufacturer of 'delicate women's gifts', Stratton, are now sought-after collectables (Bennett 2017). Shortages in metal and aluminium during World War II eventually forced the cosmetics industry to move to plastic compacts. The Bushcraft®Camouflage Cream Compact, thus is the result of technology transfer from the make-up industry to the military.

Camouflage manufacturing has adapted to the changed battlefields since World War II to modes of sensing beyond the human eye. Thus, in addition to visual camouflage in greens, khaki and black and other disruptive patterns, camouflage has incorporated and responded to thermal detection, sound, and even smell detection. The two ways in which this is achieved is through either deceiving the detector or by reducing the 'trace' – be it heat, smell, sound, or movement. Paint mixes including ceramics and silver play an important role in either reflecting the signal, or leading heat away from the body. The joint project of Revlon Research Centre

with the University of Mississippi to develop heat-absorbing camouflage make-up builds upon these innovations[22]. The formula is based on polymer research and would provide a protective shield against heat, flames and explosions, thus keeping the soldier's face intact (Broadwith 2012). Products like the two-in-one makeup and insect repellent stick made by Amon and DEET illustrate how camouflage and protection from the environment go together (Maj and Debboun 2001). As these examples show, technology and innovation does not only travel from the military to the civil, but from the civil to the military where everyday objects are concerned.

Apart from the physical properties of camouflage make-up, its most notable feature is colour. Camouflage makeup used in NATO forces needs to follow the NATO standard; and thus the colour pigments are standardised and licensed. The colour-palette of armies has evolved, from bright and easy to distinguish colours in the time of the Napoleonic wars, towards a more restricted palette with camouflage patterns that use disruptive patterns and colour-block in order to deceive the human eye (Andersen, Vuori, and Guillaume 2015; Guillaume, Andersen, and Vuori 2016).

Colour is a "variation in the spectral power distribution of light as discriminated by the human visual system. It is qualitative perception of light"(Hanson 2012: 5). It is also a broad-ranging industry, with intersecting strands of pigment and dye producers, material research and chemistry, artists, colour designers, and colour psychologists.

The first synthetic dye is attributed to William Henry Perkin who in 1856 in a quest to produce a cheaper version of malaria curing quinine, oxidised coal tar and produced something black and solid, which turned a purple colour when dissolved in alcohol and dyed silk purple (Abel 2012: 456f). This prototype of mauve was optimised, patented and was a financial success after Queen Victoria wore a mauve dress to her daughter's wedding, and the Empress Eugenie found the colour matched her eyes. Before 1856, colour dye was based on organic sources, such as insects. The revolutionary process of gaining colour from coal tar distils was a major factor in the rise of British dye-makers and challenged the dominant German dye-manufacturers. High-performance colours were in demand from the mid-20th century and are colours that are applied to polymer bases, and neither fade nor melt when exposed to heat, which are now also introduced to cosmetics (Patil and Sandewicz 2013). Additional features are anti-corrosive properties in metal paint.

The make-up industry has developed a range of colours that are not only long-lasting, reflecting light to produce shine and sparkles, but combine them with a variety of materials and "has embraced science and sold it to women in a way no other industry has" (Eldridge 2015: 152).

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[22] Revlon has since removed the case study 'Beat the Heat' from their website (last accessed 15th June 2022). The marketing slogan is currently used to sell summer makeup (Fieldnotes 2023).

The history of make-up and cosmetics is also the history of the intersection of chemistry, colour design and dye-manufacturing. The more questionable beauty practices, like covering the face with lead-based solutions, should also serve as a reminder that these materials are not always compatible with human skin, as the discontinued 1930s radio-active cosmetic lines of Radior and Tho-Radia (Eldridge 2015: 154) or more recently cancerous dye in face paint sold for the football world cup illustrate (Keck-Wilhelm et al. 2015). What this excursion into dye and pigment manufacturing highlights is that the civil plays a role in how the military looks – without the pigment producers' vision and inventions, tanks could not be khaki and stay that way.

Colour psychology is mostly utilised and researched in marketing, where brands aim to subtly manipulate their customers – fast food restaurants for example play at the sense of urgency associated with impulse purchases and thus tend to mobilise colours like orange, red and black (Kumar 2017: 9). While colour association varies with culture, age, and gender and throughout history, the global presence and distribution of products can establish new meaning to colour. Military equipment for example used to be easily identifiable through its khaki and camouflage colour scheme, but smart gadgets and technology typically are sold in a minimalist palette of black and white: White is the colour of robotics and futuristic designs with minimal human traces. In design theory, black and white has been attributed a timeless power (Kumar 2017: 10). In the context of the civil/military moreover, white has been the colour of neutrality and negotiation - most famously depicted in the white flag of truce, which is protected in article 32 of the Hague Convention (Annex to the Convention 1899, Section II, Chapter III). White therefore has been the symbolic colour of the peace movement, derived from the angelic white dove bringing an olive branch (Ziemann 2008: 249). From a semiotic perspective, the messages of a human-less robotic war curiously converge with the symbolic colour of neutrality, and purity of heart and intention. Technology is thus clothing itself into neutral colours, claiming the a-political, innocent, and neutral role of the civilian.

However, the reason the dominant colours of security and military have changed into impenetrable black and elusive white, is not only because of the chromatology of war ( Andersen, Vuori, and Guillaume 2015), but driven by a response to the technology developed in the private sector and art. Paints and fibres are increasingly incorporating stealth technologies which includes radar-absorbing materials and faceted surfaces (Newark 2007, 150). Textile designer Sarah Taylor laid the groundwork for new fabrics that emanate light, which was picked up by the Defence Clothing and Textiles Agency in Colchester, dreaming up an 'invisible' fabric that would reflect the colours of its environment like a chameleon (Newark 2007, 163). The work of artists and designers in camouflage has thus not ended with World War I.

Vantablack, the 'blackest black ever invented' by Surrey NanoSystems, exclusively licensed to artist Anish Kapoor for artistic use, for example is a material based on nanotubes which 'drinks in' light particles and thus reduces visibility to basically zero, adding to camouflage properties (Mellow 2016). When the material is applied to a surface, a 3D shape for example appears two-dimensional, thus eliminating the perception of depth of an object. In the dark, the object all but disappears from visual perception. Vantablack has been patented by the US army making it unavailable to purchase by the general public (Surrey NanoSystems 2023).

On the other side of the spectrum, white reflects heatwaves and thus cools a body and reduces thermal visibility, a feature sought after in drone design and other unmanned aerial vehicles. At DSEI2019, for example, companies, such as UVision presented their new loitering munition systems of the HERO series at a white, sanitary looking stall, complete with white chairs and white flowers, in line with the promise of clinical strikes. A poster depicted the HERO series, the smallest of which can be carried in a backpack (Fieldnotes DSEI2019). On their website, the company advertises the "combat-proven", "lethal solutions" as the cutting edge "with a pneumatic launch, noise and low thermal, visual and Radar signature, HERO is a silent, invisible, surprise attacker – a major asset both in rural and urban battlefields"(UVision 2023). The whitest white invented thus far can reportedly reflect 98.1% of sunlight which could cool down a house by 10kilowatt (Gill 2021). The science behind these colours stretches beyond pigments and is based in material science, researching nanoparticles and graphene, which goes beyond the scope of this project but highlights that focusing on the production of the means of violence requires a broader perspective than focusing on the traditional defence suppliers (Baek et al. 2020; Novoselov et al. 2012).

While camouflage makeup features in almost all military adverts, the digitalisation of war raises the question as to how much camouflage makeup is actually used in combat. Supposedly, fewer and fewer 'foot soldiers' are being deployed; and yet the dominant figure of the 'military' is the camouflage-wearing soldier, who is clearly distinguishable from their civilian counterpart. The camouflage makeup becomes iconic of military, in the imagination of marketing teams, who reproduce the visible distinction between civil/military, where the reality of its production is less clear cut.

## 6.4 Diffusion: ScentAir and The Essence of The Civil

ScentAir is an example of how sensory marketing is expanding into the military market and illustrates how the focus on design broadens the perspective on the actors that produce the military. It is also an example of how the civil establishes a seemingly violent-free sphere. While

the company is a main provider for commercial scent marketing and produces fragrances like "A Walk in the Woods", "Black Orchid", or "Birthday Cake" to help businesses from casinos to gyms to maximise their profits in 199 countries, it is also the proud[23] developer of fragrances of "Burnt Hair", "Oily Machinery", and "Dead Body", a commissioned project for *General Dynamics*. This business partnership started in 2007. The macabre fragrances are purchasable for training purposes, to add "an extra layer of realism to the experience" (Fieldnotes 2019). While the case study highlights a pilot simulation project, where diesel fumes and scents of melting plastic were applied, the testimonial on the project's webpage emphasises its application in training on "Urban Tasks". While the company highlights the functionality of their product for rescuing tasks (a crashed helicopter), the testimonials demonstrate the role of training scents in offensive training at sites similar to the ones displayed in a Vice documentary about SOFEX[24], where the scents were displayed  (VICE 2012). A similar training site, supplied by a different company, SensoryCo is the US Fort Irwin National Training Centre (McSorley 2020: 158).  ScentAir's website is careful to frame the training solutions as focused on training for pilots who experience technical difficulties and thus "prepare soldiers for the quick thinking that will be required on actual missions" (Fieldnotes 2019). In an interview with BuzzFeed, then head of strategy and communications Edward Burke explains "Your sense of smell is so tied to how we perceive experiences and surroundings outside of ourselves. 'Improvise, adapt, and overcome' is one of [the military's] mantras. It's being able to navigate your environment and the situation you are in"(Sharrock 2013). Beyond military training, the pioneer company has also developed fragrances for medical training and other areas with potentially 'disruptive' smells: "My favourite scent is vomit. We do a fantastic vomit" (Burke, quoted in Sharrock 2013).

The mission of ScentAir is to "Turn passive consumers into active customers with a meaningful on-site customer experience and to create direct connections and stronger customer relationships with fragrance"[25] (Fieldnotes 2022). ScentAir does not only provide scents, but has also conducted and commissioned social and psychological research into emotions, memory, sensory reactions and learning, and holds a series of patents of smart diffusion systems that enable the remote and invisible control of an environment (Scentair 2023). Smell "is the only sense that cannot be switched off" and provides the body a steady supply of information about its environment (McSorley 2020: 157). The "sensate regimes of war" (McSorley 2020: 155) sensitise infantry soldiers to olfactory traces of potential enemies as well

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[23] As with Revlon, the case study has now been taken off the website with the deletion of the ScentAir Blog (Fieldnotes 2023).

[24] One of the world's largest international arms fairs, hosted in Jordan.

[25] Deleted Blogpost: "Secret Scent marketing and why it works every time" (https://scentair.com/en-gb/blog/secret-scent-marketing-and-why-it-works-every-time) (Fieldnotes 2022).

as of wind and heat that could give away their own presence in reconnaissance missions and integrates these in immersive training. "As Elaine Scarry (1985: 48) notes, 'smell is a sensory mode that has emerged to watch over the entry of the world into the body'"(McSorley 2020: 157). The purpose of training scents is to harden soldiers against a world hostile and dangerous to bodies. While this can also be used to sensitise soldiers to danger, hardening an individual against the smell of danger could also lead to less risk averse behaviour. Even though companies' advertising messages should be taken with a pinch of salt, scent and memory are demonstrably linked, which is the basis on which scent marketing builds to enhance the memorability of products, increase time and money spent in venues and even change the perception of space (Ruzeviciute, Kamleitner, and Biswas 2020).

The mission to bring the battlefield, and the smell of the battlefield, into the training site blurs the distinction between combat and non-combat, exposing soldiers effectively to more combat situations. Smell and memory are closely connected, so the training with scents should be seen as a rather invasive technology with long lasting and unpredictable effects for the individual. Its effects should therefore be under similar scrutiny as other invasive techniques to suppress bodily reactions such as hunger, and fear, used historically in militaries as well as more recent research into performance-enhancing substances (Wolfendale 2008). However, scent technology is equipped with the repertoire of 'the civil' which builds on the romance of perfume and the fun of bubble-gum flavours and popcorn, which means the tone of articles reporting on the issue is one of amusement and curiosity, rather than scepsis. Meanwhile the soldiering experience is engraved long-term into the bodies who are supposed to 'return' to civilian life. Even though scent training seems a rather powerful manipulation of the soldier body, its civilian-ness makes it seem interesting rather than sinister and somehow less cruel than giving soldiers drugs; even though the emotional long-term effects of training and combat could be quite severe. In relation to simulation training Andersen and Kurti evaluate the rising cases of PTSD and suicides amongst US soldiers and observe: "Emotional detachment is characteristic of virtual killing, but the aftermath of actual combat is something quite different. When soldiers are trained using protocols that trivialise the consequences of death, how do they cope with the realities of war? The answer is not very well"(Andersen and Kurti 2009: 59).

The immersive training sites have their civilian equivalents not only in immersive malls and casinos but try to elevate their cultural contribution through immersive art shows, in which galleries could evoke the sensory landscape of Van Gogh's era to create multi-sensory experiences[26] (Fieldnotes 2022).

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[26] Deleted Blogpost Scentair: https://scentair.com/en-gb/news/scentair-scents-van-gogh-alive-multi-sensory-art-experience (Fieldnotes 2022).

Similarly, the emergence of 'Scent Art', has picked up on the scents of 'dead body' and 'gun powder' as well as the engineering behind it, as illustrated in the exhibition 'The Smell of a Stranger' by Peter De Cuperere (Brooks 2017). The artist has partnered with the industry leading mega company International Flavours and Fragrances, which as a merger of Dutch, British and German colonialist companies has been listed on the stock market since 1966 (IFF 2023). The web presence of both IFF and ScentAir is dominated by cosy homes, perfumes, and a sense of connection – fitting the product they are selling. IFF patented the "living flower" technology in which the scent profile of a flower is measured, digitalised and thus the molecules become decoded and reproducible. However, the reason these companies are among the Standard and Poor's 500 index is not because of their market share in luxury products, but products of mass consumption. Rather upfront, IFF cite their pioneering CEO Henry G Walter[27] with the catchy slogan "We are the industry of sex and hunger" (IFF 2023). The artist De Cuperer takes that literally with his fragrance-producing flowers exuding the scents of sperm, vaginas, and hamburgers.

In 2019 the company merged with the Nutrition and Bioscience section of DowDuPont, the rebranded successor of the chemical giant DuPont, for a reported twenty-six billion US dollar. While IFF plays up its fun business of optimising flavours, there is a more serious side to the production of "scents, tastes, experiences, ingredients and solutions for products people *crave*" (RecruitMilitary 2023, IFF Job advert, emphasis added). The emphasis of creating cravings, experiences, and 'unforgettable' encounters, give the impression of calculated manipulation dressed in seductive subtlety. The desire that these companies create is for their food, their flavour, and their patented products, which range from meat alternatives to cinema snacks.

Engineered flavour and fragrance is not risk free, as illustrated by the lawsuits against IFF of popcorn factory workers, who suffered from bronchiolitis obliterans, or 'Popcorn workers lung' (Geis 2007). 'Popcorn workers lung' is an inflammation of the lung which results in scar tissue that limits lung capacity irreversibly and lethally, with limited success of steroid therapy and lung transplants. Other workers who report this disease are nylon-flock workers, workers who spray prints onto textiles with polyamide-amine dyes, battery workers who are exposed to thionyl chloride fumes, workers at plants that use or manufacture flavourings such as diacetyl (banned in the UK and EU for vapours), which is mainly used in butter flavourings for popcorn, but also many other sweets, vapours, and foods (Geis 2007). The workers affected, claimed that they were inhaling the fumes without adequate protections, and that IFF knew about the risk for workers in inhaling the flavour. A court fined IFF 12million dollars for knowing about the risk and neglecting health and safety of workers in 2008 (Food Navigator 2005).

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[27] Husband of Rosalind P Walter who is speculated to be the inspiration for the US World War II icon Rosie the Riveter (Berger 2020).

Marketing scents and fragrances are produced by olfactory engineers who analyse and reproduce molecules. The design of training fragrances follows those established in century old art and industry of perfume making. The 'Burnt Flesh' aroma of SensoryCo has a top note of fruit and sulfur, middle notes of spice, and bottom notes of medical, cookie and woody to create a "strong sulfur smell infused with a hint of cloves"(SensoryCo 2023). At DSEI2019 a stall for flash-bang and sting grenades, chemical irritant munitions, and other "less-lethal options" builds on the closeness of the diffusion technique and advertises its products with the slogan "You only get one chance to make a first impression", reminiscent of perfume advertising (Fieldnotes DSEI2019).

Diffusion technology and sensory detection are adjoining markets of scent marketing. Wine tasting is one of the more jovial fields in which sensory detection has been experimented with (Baldacci et al. 1998). As McSorley points out, during war the sense of smell of other species has been made use of, most notably dogs in canine sections of the military and police (McSorley 2020: 159f). Dogs do not only play an important role in detecting explosives, but during the Vietnam war were also used to alert their handlers on the presence of Viet Cong forces. In contemporary war, dogs are also employed to bring out the cute side of the military. The Bundeswehr YouTube Channel, for example, has a five-part series on its war puppies, their training and development which features amongst their most viewed videos reaching 1.3 million views (Bundeswehr 2018). While themselves classed as 'equipment', the puppies allow the military to foster the message of care and play for soldiers and build bridges to the disengaged public. The dogs moreover are an asset, and the Diensthundewesen (service dogs department of the Bundeswehr) is not only tasked with buying them, but also breeds and exports them (Bundeswehr 2023).

However, this fluffy picture obscures the objectification of animals, in the taste and smell sensor cyborg industry. Through nano-surgery, insects, rats, and sharks are turned into live scent-sensors through a chip that collects data of the brain waves activated by the animal's smell sensors. The scenarios in which these experiments are conducted tend to focus on crisis relief, such as after earthquakes. However, research reportedly works on controlling the reactions and movements remotely and has been incorporated into the US army's research agenda (Wang et al. 2015, 316f). This expression of the ultimate control and conquest of men over nature is only thinly covered in notions of care for the animals, as the surgery is aimed to be 'minimally invasive'.

The network of companies, revenues and knowledges that contributed to the production of the General Dynamic scents is therefore broad and not restricted to the "arms industry" in a narrow sense. It is based on marketising the very process by which living organisms navigate the world. It is thus civilian technology applied to the context of war; and the fantasy of controlling

bodily reactions to the environment, with sometimes deadly outcomes, through which the civil is producing military. However, the technology can build on and mobilise the semiotic repertoire of romantic nights, the purity of flowers and the joy and nostalgia that comes with certain fragrances to cover its tracks. Fragrance companies reproduce a decidedly feminised space, where not only women's bodies are objectified to sell their product, but where feminised ideas about beauty, home, wellness, and personal care are meshed into one, and distilled into the essence of 'the civil' where consumerism is packaged in whiffs of luxury. The industry does not leave visible traces on the soldiers, or customers. Even in the battlespace there is no trace of this civilian technology – it is through labour and the lungs of workers through which its violence is rendered visible.

## 6.5 Chapter Conclusion

In this chapter I have demonstrated two things. The first concerns technology transfer. I have explored commodities and technologies that were developed not as means of violence, but which knit together the civil/military markets. I have also explored the notion of 'dual-use' and highlighted how it reproduces the implied non-violence of one side of the 'dual' use, and have illustrated how this mobilises the repertoire of the civil in a way that turns the political project of 'military conversion' on its head.

Throughout the thesis thus far, I have argued that the production of the means of violence, the arms trade and militarism, is not confined to a special site of defence and security industry and state actors, but includes a much broader field of actors.

The language of design in the context of the civil/military dichotomy is crucial in foregrounding 'care' for human users and problem solutions to design challenges. If the model user for example is a drone pilot, the questions that come into focus through designing are not ethical, but functional to the task that is being asked of the pilot. It is a long journey from ergonomic controls and eye-friendly screen lighting to questioning what these technologies assist one to do, and asking who is employed making sure a drone pilot does not get cramps or other pains in their trigger hand. Design, then, is the constant juxtaposition of caring for the soldier body that is employed to ensure the destruction of other bodies. It is on the one hand this sphere of 'care' which has its political and state-orchestrated expression in 'the beautiful soul' and the still prevalent re-enactment of gendered remembrance and mourning that 'the civil' can latch onto, and which provides businesses of all tiers with the social capital of not being involved in producing the means of violence. The companies which are manufacturing training scents and camouflage makeup highlight the protective function of their products, eager to down-play

combat uses. It is further the functional neutrality of design that builds upon and mobilises the neutrality of the civil and downplays its role in the production of the means of violence.

The civil/military dichotomy is reproduced in a way that "civilian" companies seek to emphasise the support and care dimensions of their products, whereas defence companies tend to reproduce the heroism of traditional hegemonic masculinity. Within this gendered hierarchy, care and support are linked to notions of the civil in the production of the means of violence and thus escape public scrutiny and are not a subject of antimilitarist activism. Care and support are feminised categories that operate within the logic of universal goods, linked to ideals about what human relationships should be built upon, and are closely linked to a liberal notion of the "civilian". Thus, the political questions of care and support, to whom and to what purpose, are side-lined and reproduce an apolitical civilian sphere in which companies merely take on another commission. The very notion of 'mobilising' for war entails an affective moment, through which people are moved to die for this or that cause. Much of the work on emotional war labour has been focused on bereavement, volunteer work and unpaid labour, such as knitting socks, hats, and duvets. Emotional labour is however not confined to times of intense war mobilisation but continues to play a role during armed peace. Through the technocratic world of supply chains and components, shines the work of advertising experts and industrial designers who identify new needs of care and support for soldiers, machinery, and companies.

The gendered performance of civility camouflages the many ways the civil is producing the military. The efforts to civilise war led to its codification and tends to re-produce civil society as apolitical humanitarian effort. Critically, society still applies and identifies the civil/military, with a focus on arms-producers and the military as an institution. Smaller businesses, supply chains, universities, and military hospitals – and the civilians producing the military – escape our gaze. Thus, while arms fairs and the "privatisation of security" have seen debate and protest, the supply chains and the spheres of the beautiful souls remain hidden, unaddressed, and unchallenged.

# 7. The Politics of the civil

*An employee from the Australian chamber of commerce asks me over lunch, whether I have heard about those protesters revealing a banner somewhere and says somewhat paternalistically "this is just not the place to do it. We are not warmongers" (Fieldnotes DSEI2019).*

Civil-military relationships are neither easy nor uncontested. Rather, they are negotiated, navigated, and policed in everyday life, thus establishing spheres of competence and authority of meaning-making (Tidy, 2016: 100). In this chapter I explore how 'the civil' is articulated within sites of contestation and in what ways it mobilises, but also penalises contestation.[28] The chapter is doing two things: in exploring the literal work of the civil, I am tracing what policing, disciplining, and victimising work the civil is doing when the dichotomy of civil/military is contested. In an ideological sense, I follow the contradictory path of the civil's work in creating a homogenous and apolitical space that tends to individualise war and its production. As a by-product of this work, I am highlighting the everyday as site of contestation and knowledge production beyond academia.

I am taking a closer look at three very distinct dimensions of contestation: the workforce and production; public protest; and art as protest. I am revisiting the workplace as a site because workplaces do not only produce the means of violence but are also sites of contestation and struggle for alternative futures. This is illustrated in the example of the Lucas Plan and Alternative Produktion, a sister project in Germany. They tell an empowering story of collective agency, but also draw attention to the material limits of this agency. The civil here, acts as a mobilising force that makes an alternative to war production feasible. With that, however, we can also see the depoliticising demands within the civil and its commitment to capitalist property relations which cannot be crossed without destabilising the apolitical vision of 'the civil'.

I am then looking at the traditional site of contestation in liberal war economies, which is public protest and campaigning. Through participant observation at two arms fair protests and interviews with activists, I am exploring in what ways 'the civil' is shaping protest in a framework of respectability. In so doing I am thinking through the complicated task of challenging structures with 'the civil' as a point of reference. I am focusing on how these relationships are

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[28] Both the UK and Germany have seen the controversial expansion of police power and an increasingly restrictive approach to protest in recent years, with important implications for these contestations. Policing plays an important role in circulating violence and policing can be understood as a continuation of colonial practice targeted at the 'homeland'(Neocleous 2015) .My focus here, however, is on pre-news organising, and penalising that is *not* done by agents tasked with the defence of the monopoly of violence.

contested and re-made in everyday 'civilian' life, how the civil is mobilising, but also excluding, disciplining, and system-stabilising.

Finally, I continue the reflections on how the civil is ordering contestation into a framework of respectability by turning towards art as protest. Art as protest is interesting in this context because art can articulate and reproduce possibilities as well as the limitations of the civil. Art is often depicted as the ultimate counterposition to war: art is the manifestation of the creative force, in opposition to and in the face of war's destruction. Through considering artwork that situates itself critically to war, I reflect on the role of the civil in shaping expressions of contestations in liberal war economies.

This highlights that the perceived distinction between the civil and the military is contested in the everyday, and at the same time where this dichotomy is contested, the civil emerges as an ideology that upholds the distinction and keeps protests and political projects within a definite structure that continues the inevitability of war and reaffirms the necessity of armed, depoliticised peace. In each of these sites the civil is invoked in different ways and each context gives way to different articulations of the civil; but in each context we can observe the (de)politicising effects of the civil and its ordering force that marks the remit of legitimate critique.

## 7.1. Production and Contestation: The Lucas Plan and Alternative Produktion

Having outlined how the site of the workplace is crucial to shed a light on the production of the means of violence, it is time to focus on the means of workers to challenge the order. I therefore consider the Lucas Plan and a German sister project, Alternative Produktion which interviewees pointed out to me.

The Lucas Plan was published in 1976 at the Lucas Aerospace company, a British company producing mechanical and electrical systems for planes, such as fuel management, and combustion systems (Elliott 1977, 3). Employing 13 000 workers stretched over seventeen UK sites, fifty percent of the company's production was supplying military contracts which were dependent on government funding. Faced with extensive cuts to jobs due to the economic crisis of the 1970s and the restructuring of the aerospace industry, the Lucas Aerospace Combine Shop Stewards Committee produced an alternative corporate plan with the democratic participation of the workforce.

The origin of the alternative plan was a meeting with then Minister for Industry Tony Benn in 1974, where the minister conveyed the possibility for further cuts for military and aerospace

projects. Lucas Industry, the multinational parent company of Lucas Aerospace had already restructured the UK business and fired 5000 workers in the years 1970-1974 (Elliott 1977, 4). Threatening further budget cuts, Tony Benn suggested the exploration of alternative products to the Combine Committee. The Committee had argued for nationalising Lucas Aerospace, but after the definite 'no' from the government they set to work. After limited responses from outside bodies for product suggestions, the Combine distributed questionnaires in the workforce who came up with one hundred and fifty products that would utilise the existing skills and technology and serve society, ranging from systems for the production and storage of renewable energy, robotics, medical equipment and transport vehicles (Salisbury 2022).

The workers of Lucas Aerospace set a precedent for other workplaces. The strength of the Combine organisation was such that over years the committee engaged workers, set up international networks and re-envisioned community-based and human-centred production (Cooley 1987). The workers not only brainstormed, designed, and proto-typed products ranging from electric bicycles to dialysis machines, but in centring on their work they re-imagined the design and production process as a whole. Through their enforced self-reliance, workers were able to structure their alternative plan around their skills and grievances. Amongst those were the increasing fragmentation and de-skilling of the workforce brought about through automation. Their alternative corporate plan did not only shift focus on producing use values, but changing the process of production, educating and re-skilling the whole workforce and thus empowering "all the members of the workforce to exert a real degree of influence not only over the production process but over the aims, goals and priorities of production" (Elliott 1977, 8). Focusing on the skill and experience of workers meant for example that a design process was created which made sure technology would aide the human, not the other way around. Products and technologies were designed to make them robust, reparable, and easy to access and understand, which was guided by a vision to democratise technology and production (Cooley 1987, 150f). As Mike Cooley put it "[p]roducts and processes should be regarded as part of culture, and as such meet the cultural, historical and other requirements of those who will build and use them"(Cooley 1987, 155). While the combine itself did not set out to define what was 'socially useful', in constructing alternative products, workers linked their skills to environmental and social issues and set up cooperatives and community networks to co-produce the products needed by the community. These workshops were consciously not based at university sites but independent workshops and polytechnics in an effort to recast knowledge hierarchies.

The Combine Committee was born out of the necessity to fight redundancies. This was stressed not only by commentators of the time, but also in the conversations about the German sister project Alternative Produktion. Lucas Aerospace had organised its workforce over

seventeen sites and in thirteen different unions, the result of a combination of UK trade union tradition and legislation around union recognition in the UK. The Combine Committee was set up as a cross-union, cross-site structure which would meet quarterly, draft and vote on strategic and tactical recommendations relevant to the breadth of the workforce. Each site elected a representative to the committee who would bring the recommendations to their workplaces where they were discussed and voted on. Collective bargaining continued within each union, but this democratic method of cross-union organising was a means to coordinate union policy across the workforce and thus increase the leverage that comes with unity (Elliott 1977, 3).

Through the union network, the campaign reached trade unionists in other countries which were under attack as well and held workshops in Australia, Sweden, the United States and Germany. In Germany, Bremen, which today is a major production site for Airbus and its various predecessors, was one of the hubs for the campaign. The fall of the Berlin Wall in 1989 created a unique window of opportunity, spurning on the agenda for de-militarisation, not only because of the expected decrease of military budgets, but also a sense of optimism in West Germany.[29] The working group was mainly coordinated through IG Metall (IGM) the metal workers' union, in the working group Alternative Produktion (alternative production) and the works councils (Betriebsrat) in different companies (Interviews). German works councils can be elected in any workplace with five or more employees, they have legal rights to information, participation, and decision-making in the company, for example with regards to introducing new software, or health and safety rules. The biggest difference to the UK shop steward committee is that union membership is not required to be elected to the council and the works councils do not have collective bargaining power or the right to call strikes. These rights lay with the unions in Germany, which are typically negotiating sector-wide terms and conditions with employers' associations, rather than individual workplaces (though 'Hausvertraege', ie company tariffs are possible where the company in question is not part of its employers association). The union agreements are legally binding to all employers within the sector association, and thus all employees, regardless of their union membership are entitled to the terms and conditions agreed (DGB 2023). While not a legal requirement, works councils often have a majority union membership and are an important element of union influence within the company.

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[29]The same optimism could not be felt by many in East Germany, where the reunification meant existential instability. The Treuhandanstalt ('trust agency') set up to integrate the planned economy of the German Democratic Republic (GDR) into the capitalist market economy of the Federal Republic of Germany, broke up and sold off vast assets, laid off 2.5million people within one and a half years, and left the new federal states largely de-industrialised, which means there still is a wage difference between East and West of 20% today.

The working group Alternative Produktion thus had to link up and convince a variety of company councils, unions, and workplaces but had the advantage of already having the right to make suggestions to company management; something the Combine had to fight for. In one German company, it was thus possible to win over the management board to realise some of the products the workforce came up with: "They were actually impressed with what we had worked out, and we had the support of the highest level there" (Interview GP8).

At its height the working group set up networks and workshops across the country as well as in Brussels, invited activists from the Lucas Plan to share experiences, and won not only a chair for industrial conversion at the University of Bremen but also a grant from the EU to research and develop non-military products (Interview GP8). In cooperation with the University of Bremen a product library was set up, aiming to not only collate but also educate the wider public about the technological possibilities for a more environmentally friendly production. "We had 80% of the company organised at the time, and behind the products we suggested. That was huge" (Interview GP7).

While taken up enthusiastically by some activist groups of the environment and peace movement, as well as academics, this interaction was not without challenges as the careful approach of the topic in the interviews illustrates. Interviewees who participated in Alternative Produktion distinguished themselves politically from pacifists, though they were sympathetic to the sentiment. "You had to convince people that something different is possible in practice and that they can participate in that. No moralising! I'm not a pacifist per se, you know. I think when peoples are being robbed and exploited, they have the right to defend themselves. But I think technology should be developed with peace in mind. And for the environment, especially" (Interview GP8). Another interviewee carefully sketched out their politics: "I have perhaps a viewpoint which is just about acceptable, which is that we live in a world where military power is a reality, and in this reality, you should be able to defend yourself if necessary. But I don't want the trading and selling for profit. But no, I'm not a pacifist" (Interview GP6). A third interviewee found slightly stronger words: "Some wanted to make it all about peace. But you have to understand – most and foremost we wanted to save jobs. Future-proof jobs, in alignment with the environment and people. It was really important that you didn't get in there with, like a moralist agenda. Technology is always about conversion, it's not just about peace" (Interview GP7). The debates over the definition of conversion, whether conversion should be understood as specifically a peace project, or whether it was an inherent property of technology and should be explored to diversify products and make them environmentally sustainable, at times strained the relationship between academics and workers. "Well sometimes it is also just a question of agenda setting, you know. Well, and of course professorships pay well…But in my opinion, conversion should be seen as part of all technology" (Interview GP7). In

contrasting their position and approach to pacifist ideals, the interviewees highlight how the articulation of the civil within anti-militarist activism can set limits to organising. The workers involved in Alternative Produktion and inspired by the Lucas Plan saw the problem of technology in much broader terms than the problem of civilian technology and military technology. It was a problem of de-skilling the workforce, and accumulating control over technology by corporations through automation.

This was partly addressed in the publications of the Lucas Plan activists, who reflected on the challenge and limitations within the project. While they at first reached out to campaigns and pressure groups to ask for help for their alternative plan, the campaigns' silence was seen as disappointing. Equally emphasising how the project was first and foremost a job-saving campaign, the British discourse seems to have been dominated with systemic questions. "At the ideological level there were those on the left who argued that the campaign was 'collaborationist' and those on the right in the union who said that it was not the responsibility of a trade union to choose new products"(Elliott 1977, 10). Much more openly leaning towards a Marxist analysis, Mike Cooley and others pointed towards the transformative power of struggle and named raising class-consciousness as one of the goals and successes of the campaign (Cooley 1987, 139f). While the prime motivator for many workers was the fear of redundancy, the recasting of production for social needs quickly raised the question of workers' control and power in the UK: "…the pioneering efforts of the Lucas workers has put the fundamental political question of 'who decides what should be produced and in whose interests' firmly on the agenda of the British Trade Union movement" (Elliott 1980, 95). Thus, while aiming to challenge corporate hierarchies, the workers encountered the power behind the hierarchy of the control over the means of production, which cannot be challenged without challenging the system of property relations.

The workers in Germany, while not using those terms, came to the same conclusions. Asked about why they thought the project did not succeed, workers pointed to the profit margin and a lack of workers' control: "it's profit. Just look at what it throws at the stock market – you can't get deals and conditions like that with any other product" (Interview GP8); "In no other market do you get dividends like in defence. And well we suggested it [the alternative corporate plan], but it wasn't our decision" (Interview GP7). "Ultimately, it's your job, it's your livelihood. We don't have the decision-power. We don't own it" (Interview GP6).

Thus, to be successful in achieving a move away from arms production, the ownership structure of the economy would need transforming too. The campaign had a huge impact on the labour movement of the 1980s and 1990s, established community based innovation hubs, and lives on in campaigns such as the New Lucas Plan, Labour for a Green New Deal, and the concept of a just transition towards a climate compatible economy. The interviewees were

clear about the material limits to their power within the confines of the system: Tougher management protocols and the enforcement of corporate identity also meant that the scope for political debates have been reduced at the workplace. Moreover, many expressed the view that limiting the campaign to a campaign about civilian versus military production would downplay the ambition of these campaigns who sought a new relationship between design, technology and society, in which humans and the needs of the environment feature as the centre of those relationships. The civil/military dichotomy, in this context, is depoliticising the property relations as well as the question of power, in not addressing the power relationships within the civil.

Economically, and operationally speaking, conversion was successful: Several product lines were picked up by management, funded and realised in Germany. However, this had not the intended consequences of transitioning the production lines from the military sector towards socially useful products and towards human-centred processes as envisioned. In the UK, the alternative plan was outright rejected by the management, in a struggle for power over the decision making structures (Cooley 1987, 140). While several sites managed to fight off redundancies in the 1970s, the lack of political support, the military response to worker's organising under Thatcher in the 1980s, and the determination of the management not to yield to workers' organising, meant that the plan was not realised. Parts of the business were sold off and terminated and today are part of Northrop Grummen and the Blackstone Group, amongst others. Brian Salisbury, a former Combine member, draws the conclusion that it was a combination of the lack of political will and accountability that sealed the fate of Lucas Aerospace and the alternative plan:

*"there was neither the structures in place, nor the political will, to put pressure on Lucas Aerospace management to negotiate with the Combine to implement the Plan. An opportunity was lost to make a company receiving public money accountable to the community in which it served (…) Lucas Aerospace was a victim of poor, unaccountable management, and a sad lack of successive governments' industrial strategy"* (Salisbury 2022).

Similarly in Germany, the alternative plans did not meet their goals: "In the end they funded some and there was one company which tried it and then they went bankrupt a couple of years later. Or you know, some they would start and then sell when they felt that would be more profitable" (Interview GP7) – rather than moving and reorientating production towards 'products for life' and workers control, companies diversified their product line and expanded their network of subsidiaries. Further sales and acquisitions meant that the collectively produced intellectual property has subsequently been privatised and can be kept in storage for a more profitable day: "I once picked up a catalogue in the tube – someone had forgotten it there. But

that was very interesting to see what products were under discussion and how many had been designed – but then they never got realised" (Interview GP7).

New initiatives in the tradition of the Lucas plan and Alternative Produktion are experimenting with a different route, with a mixture of campaigning, and policy recommendations. One project is the certificate "Ziviler Betrieb" (civilian company), a certificate that is being supported by the German Protestant church (Interview GP8). By subscribing to the certificate, a company declares that it is not delivering, supporting, or using products that are being produced by companies that also produce weapons or work with the military. It thus is specifically informed by the lesson of Alternative Produktion which saw a diversification of production to more dual-use and the realisation that the production of the means of violence takes place well beyond tank and steel companies. Initially directed towards the care and education sector, such as nurseries, for example, the campaign invites small businesses, bakeries, and caterers to sign up. At universities the campaign of the "Zivilklausel" (Civilian clause) works in a similar fashion and commits universities and research sites not to produce or make available research for military purposes and to not take money from companies involved in the production of weapons. With an increasing push to acquire external funding, this has become more challenging over the years.

There are two things to draw out from the above. The first is that operating within the civil/military dichotomy can easily lead to moralist politics which leads workers to disengage with potentially transformative projects. When focusing on production such a clear moral line cannot be drawn and is not productive as it does not offer an alternative income. The moral landscape that is painted by demands to 'shut down' an industry demands workers to choose between redundancy and a clear conscience, with no apparent guarantees for their wellbeing. As outlined in chapter four, this critique has been taken up by some anti-militarist activists, who aim to avoid this dilemma by instead focusing on the trade of arms, rather than production. This, however, tends to reproduce not only the civil/military dichotomy, but also eschew production as a whole and therefore does rarely get to the questions raised within the campaigns of the Lucas Plan and Alternative Produktion. Highlighting the *production* of the means of violence, however, is where the social and political significance of the Lucas Plan and Alternative Produktion lies. By focusing on the skills and creative power of the workforce, the project built a potential bridge between campaigns and unions, unions and automation and raised the question of workers' control. As such, the projects set an important precedent of transitional politics.

Second, as the Plan aimed to set aside the civil/military dichotomy and focus on the labour and skills of workers, they came face to face with the power and politics that are being depoliticised through the dichotomy. Thus, the workplace was highlighted as a deeply depoliticised site; and

framing the problem *not* as one of civil/military technology, meant to upset the very basis on which the dichotomy rests. In the course of trying to move beyond the civil/military dichotomy, the role of the state and its institutions in keeping production depoliticised were illuminated (Cooley 1987). The civil thus is not an unproblematic point of reference to organise around; rather it tends to depoliticise the very power dynamics on which it rests.

Where the transition from the production of arms towards production of socially-useful products was framed as moving from military to civilian production, the question of workers control and the transformative potential of raising the political question over who owns, controls and has meaningful decision-making power over the means of production, did not arise as sharply. In this framing, the civil is cast as a neutral sphere, untouched by violence and unproblematically operating within the profit-driven liberal economy. The trend towards diversification rather than industrial conversion highlights the deep link between civilian and military production, which is based in its property relations. 'Conversion light' was accepted where it iterated the business interest from an apolitical standpoint: socially useful profitable products, in exchange for destructive products with uncertain government funding. But it then was also limited in the demands it could formulate with regards to workers' control and transforming the processes of production, thus avoiding the question of power. Because the mode of production is political, and the ways labour is organised on a societal level is political, rather than being transforming the new plan was absorbed. The civil is thus obscuring the relations of power that are cast into the property laws that govern production and set legal limits to industrial democracy.

This also means that the problem of production for profit remains unresolved; which in Marxist economics leads to a saturation of markets, a collapse of prices, withdrawal of investment and thus recession, or increased borrowing, which can spiral into increased interest rates, a debt crisis, inflation or all three, and has as a result redundancies and bankruptcies. In other words, crisis. As one interviewee, not part of either campaign, put it:

"…and what products should they produce? The market is overloaded with everything! Like, those medium sized businesses, what on earth should they produce? Pots? Civilian cooking pots, or bicycles, or what? There is almost no space for new products, *profitable* ones! That's the misery. To some extent they are also chased, they can't produce anything else as what they have the machinery for, and that's where you get a vicious cycle" (Interview GP2).

This is the hard question liberal war economies are facing: their business with fear and risk is exponential and thus fits perfectly into an economy that relies on growth every year, spurring each other on. With this dynamic the question of 'what else' becomes difficult within the confines that are set.

The conclusion that many interviewees thus have drawn from their experience, was that production is a societal problem.

"It's society! Educating society and making the decisions collectively. There is the power" (Interview GP7). Thus, they point to concrete limits of their industrial activism, where meaningful democracy and collective ownership were absent.

## 7.2 The Politics of the Civil

*"I don't want to be part of the problem in the first place!" (Jeremy Corbyn, at Liverpool Demonstration 2021).*

The civil in contesting war plays out in contradictory ways, and in this section, I discuss the politics of the civil and its semiotic work. The politics of the civil mobilises against war and projects unity of all peace-loving people. Where the military's allure is the one of initiation into secret, and powerful knowledge that reaffirms a sense of importance and consequence (Cohn 1987), the civil's allure is the comforting knowledge of being on the right side, on 'not doing bad' and not compromising moral integrity. This is deeply entrenched with liberal imperialism which has long used the language of peace to justify and depoliticise its violence (Neocleous 2010, 9). With these moral foundations the civil not only smooths over a variety of political projects but disciplines projects that point beyond the system of war by linking the occurrence of war to the economic interests of liberal war economies. The moral appeal of the civil projects an abstract and an apolitical vision of peace, and in so doing, depoliticises its own disciplinary force with which it is policing frictions and challenges to the dichotomy.

The material that I am basing my analysis on has been collected in interviews and participant observation. Owing to their self-selection, many of my interviewees were also activists, and thus came to the interview with an understanding that this would be part of the conversation too. I also draw on the participant observation of the protest against the AOC 2021 in Liverpool which had been rescheduled to Liverpool after it was successfully blocked by protests in Seville, Spain. The Liverpool protest mobilised a whole range of tactics over a year and a half in order to stop the event from taking place: demonstrations and rallies, boycotts, vigils, direct action that disrupted the running of the event, legal challenges, and electoral campaigns for a new board of directors. My participant observation took place at the national rally in Liverpool in the run-up of the event in September 2021.

At the AOC2021 protest, I walked through the crowd and asked the demonstrators what motivated them to join the demonstration, what they view as the core issues, and how they found out about the protest. It is a mix of political, often socialist activists, trade unionists, and friends of activists. Two women have come to see Lowkey and Corbyn speak. One communist activist asks about my research and seems stunned when I frame it in being interested in civilian's contribution to war as well as its contestation: "I don't think of myself as a civilian, really" (Fieldnotes 2021). It is the fourth space of the engaged public, and people who want to change the world, that does not allow for an easy integration with 'the civil'. At the demonstration, really there were no civilians at all, but activists with a variety of political views and thus, from the point of view of the civil/military dichotomy; potential partisans. I thus catch myself trying to find the 'real' civilians and walk up to the people who have come to shop, sit in a café as the march is passing, or those in the crowd who don't hold a placard or flag. However, the bystanders have of course politics too – some open their windows and wave and clap. In my brief conversations with people around the demo, the views ranged from outright rejection of political activity beyond the ballot box, enthusiastic support, to critical engagement with the symbolism chosen by some of the groups ('It's against war? Why do they have Stalin flag then?'; 'Oh god, Che Guevara, he's a murderer! You know that?!', Fieldnotes 2021). Thus, there is no escape from politics as the civil as an ideology is trying to make us believe. Accepting the notion of the civil is to accept the legal apolitical framework, which is a social construct. The civil sphere, far from being a sphere of collective organising and imaginative futures is the depoliticised sphere of objectification of society.

As potential partisans, activists are seeing their agenda and actions policed and disciplined in the name of 'civil' and 'orderly' conduct.

A second demonstration joins the crowd and is welcomed with cheers. There are two starting points for the rally, and I later find out that it has to do with the politics of the coalition. I miss the introduction of the rally convener who starts the rally from the top of a fire engine which serves as a stage, who welcomes all present to a 'civilised' and 'orderly' protest. She explains the context and politics of the protest. The newly elected mayor of Liverpool, the first woman of colour to be elected to the office, was originally supportive of the idea to cancel the arms fair and promised to introduce an ethical charter that would prohibit the fair to take place. But they since found that the Council had no power to prevent the event from taking place. There were two motions on it in the City Council, one brought forward by the Labour councillors, which decided that the council will look into ways to prevent similar events from happening *in the future*, and an emergency amendment brought by the Green Party which stated that the council will do everything in their power to stop *this years'* event. Under pressure of the Labour leader, Keir Starmer, the Labour held city council was 'whipped', meaning, the Council leader told the

council to not vote against the event (Dropkin 2021). Breaking the whip is a serious offense against the leadership and can lead to disciplinary action against the whip breaker. The majority of Labour councillors supported the decision of the mayor, and only two councillors broke it, voting with the Green Party. They both come to the stage to tell the gathered protesters how they could not in good conscience abide the whip. As the march sets off, the demonstrators are again reminded to walk 'orderly'.

In a conversation with an activist later that day, I find out more about the micropolitics of the protest which resulted in the two starting points of the protest[30].

The original plan was to have it start in a neighbourhood where many refugees and displaced people live, to raise awareness and include the people affected by war into the protest against it. Parallel to that the Labour Party leadership had increased the pressure on local councillors and the mayor, and as a result the promised ethical agenda was postponed, and the mayor declared that the council had no powers over the venue. Having researched the ownership relations, an activist sent a letter to the council stating that yes, while technically the ACC was not run by the council, the board of ACC is appointed by the council, giving the City Council the power to dismiss a board whose decision it does not agree with and elect a new one. This led to the two motions which split the Council. The mayor explained her decision not to oppose the event with the fact that she was the first woman of colour which meant that she did not want to risk losing the opportunity to represent people of colour over challenging Labours' National Executive Committee's support for the event. In the ensuing discussion about the judgement of the Council's powerlessness in the matter, race was mobilised in order to criticise the mayor speaking on behalf of people of colour, but also, to criticise the people challenging her judgement, arguing they put their politics over the interest of people of colour to be represented. In this increasingly unproductive exchange, one group of the protest coalition felt that having the route start in the proposed neighbourhood would unnecessarily draw attention to race and thus be seen as divisive. They thus started to print their own leaflets promoting a different starting point at the Cathedral (Interview EP3).

Moving into action, the fragility of 'the civil' becomes visible: while it can be a broad and vague reference point opposing martial politics, it is crisscrossed as different politics and visions come to the fore and play out in not always the most constructive ways. Coercing the mayor into a choice between representation and anti-war politics sets the stage for division and is divide and rule by civilians. The civil draws a powerful line of respectability in which it threatens to withdraw the label of respectability from the mayor and thus continue in her office effectively.

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[30] This section is anonymised to protect the political activism of the people involved. The Labour leadership since 2021 has taken severe disciplinary measures against activists who disagree politically with the Keir Starmer line, including suspension of and public campaigns against long-standing activists.

Underlying this threat is a discourse of racialised loyalty, not only to the Party, but to the marginalised group with which the mayor identifies and whose (future) interests the mayor wants to represent. These anticipated interests cannot be formulated in the concrete – as e.g. positioned against war – but remain vague. Thus, the civil is projecting interests into the future for which anti-war protest is a potential hindrance.

In the politics of peace, the depoliticising work of the civil comes to the fore – and simultaneously demonstrates its powerful allure that underpins it as a key reference point with the promise to end up on the right side of history, playing different, but not incompatible, interests against each other.

This has led to at times difficult relationships between anti-war activists and unions, which is illustrated in two campaigns in Germany, both organising in the Lake Constance region to challenge the unnoticed production of dual-use goods. Originally the same campaign, they experienced a split over the mode of action in recent years. The older one of the two, Keine Waffen vom Bodensee (engl.: No Arms from Lake Constance, KWVB) has been publishing maps and company reports on businesses that include defence in their portfolios for the last thirty years and combined this with direct action performances at the gates of big local players, guided by the campaign's slogan "A Voice to the Victims – A face and name to the perpetrators". The campaign has accumulated an impressive archive on company mergers, product lines and changes in executive boards, with very limited manpower and finances (Interview GP1). The direct actions range from graphic performances at the gates, where "we try and bring the horror back to where it comes from" (Interview GP1), to fly-posting, bicycle-tours and demonstrations. In one performance, for example, the activists laid body bags covered in red paint in front of a company entrance, to "show the workers, what these products really mean" (Interview GP1).

The second campaign, Friedensregion Bodensee (Peace Region Lake Constance, PRLC) has taken the path of networking with existing campaigns, such as Mayors Against Nuclear Weapons, and high-profile events, such as the Bundes-Garten-Schau (a horticultural show travelling through German cities), to raise awareness and educate the broader public about the structural embeddedness of military production and war. Amongst their initiatives is a Peace Museum, that aims to raise awareness about war as a system. However, while higher visibility does acquire more funds, both campaigns struggle with linking their work to the workforce.

While union networks can be a pillar of support for anti-military mobilisation, as seen in the Liverpool demonstration, the Lucas Plan, and Alternative Produktion, and are seen as important agents within the activist movements, activists in Germany had mixed experiences with unions, as well as politicians: "they [unionists and politicians] are not free to act as they

please. They want to save the jobs and their jobs, after all, and when you speak up, you lose your position" (Interview GP2). Union activists themselves highlighted the material limitations of their anti-war work within the union:

"It is relatively easy to reach a common statement, but almost impossible to implement them: this is blocked by the big arms producers who say, this would harm us (…) This is even worse with dual-use – how do you define it, where to draw the line? As trade unionist you walk around with a guilty conscience, and say, at least we fought for the interests of our colleagues" (Interview GP6).

Inter-union competition, as well as different visions of unionism also posed challenges for the Lucas Plan; where the horizontal networking of workers was seen as challenging union hierarchies; and where the experience with the Labour government of the time, highlighted to the people involved, just how much political support the arms company could rely upon (Cooley 1987).

In Germany, activists have experienced formal support for their campaigns, but resistance towards their local campaign goals for a "peace region Lake Constance", which envisions the delinking of the local economy from war. Union activists in the region are under immense personal pressure and at times face outright aggression for their political engagement beyond the struggle for terms and conditions. This was the case for a regional official distributing flyers for an event of one of the campaigns.

"But they didn't think about what it would mean for her to come out in support of the campaign. And what it means when she is known and campaigns on the street against the arms industry, and then former colleagues walk by, and they spit on her and say things like 'what a filthy pig you are; first you earn the big money and get a nice pension from us, and promise us all the nice things, and once you're out you stab us in the back' (pauses and nods heavily). You understand?" (Interview GP1).

Reacting to verbal and physical abuse, and discussions about to what extent these come with positioning oneself, or whether other forms of campaigning are needed, contributed to the split in the campaign. Both campaigns, however, still highlight the importance of politicising peace. A spokesperson of the PRLC campaign explained "Peace and War are systemic issues and we need to communicate them as that. (…) It's important to make the structural context visible, not just individual managers" (Interview GP2). This points to another split-inducing difference, and a turn from direct action towards cultural action. While the cultural action group has built links with campaigns such as Mayors against Nuclear Weapons and received news coverage, the direct action group reported hostile and abusive behaviour from the public and interpreted the split as a turn towards less confrontational protest.

"We don't do the 'classic' peace work, which is of course very easy and well regarded. Everyone takes part in peace work. The churches too! No, you don't get into trouble if you are for peace. But we are against the defence industry! (…) You need to understand this, and that you might experience something unpleasant, when you position yourself" (Interview GP1).

While the reasons that led to the separation of the groups surely are more multi-layered and complex than can be discussed here, they illustrate how conflict-laden and political the everyday is and how campaigns that are perceived to transgress the boundaries of respectability are policed in the civil sphere. Abstract notions of peace are often utilised and find widespread support, from Churches, unions, and political parties. However, the closer to home demands for de-militarisation get, the more difficult it is to overcome the contradictions that are posed by liberal war economies.

This is illustrated by the story of a Church worker (Anonymous). When they moved to the Lake Constance Region and discovered the military side of the dual-use companies in the region, they initiated and organised the collection and distribution of information and started to make these available to the public. Using pseudonyms, they published articles in newspapers and national outlets such as Die Zeit, and started to locally campaign against the cooperation between churches and the military and especially the contribution to the arms trade. Instances of cooperation between churches and the military are for example the Kirchentag military church service, but also religious pastoral care in the military. Donations by dual-use companies to Church-run youth centres and childcare are other forms in which the civil is bribed into acquiescence (Interview GP2). This activism led to a series of disciplinary interviews and hearings: "The interviews were horrible, interrogations, really. He [the line manager] implied that I was putting myself over the defence workers, morally. He was worried that the defence workers would leave the church. He urged me to focus on my core competencies (funerals, weddings, christenings, community visits, etc). He threatened me with suspension" (Anonymous). Shortly thereafter, the worker received notice of their disciplinary transfer to another region, they and their family endured repeated disciplinary interviews and visits. The church required them to take a six-week leave of absence and therapy in a church-run venue, unilaterally diagnosing them with a mental breakdown. The disciplinary language reflects the one put on the mayor in Liverpool, where political views are set in contrast with the needs of constituents. This establishes a relationship in which workers and constituents are reimagined, not as political conscious beings, but as 'vulnerable' groups and dependents that need protection from politics. It is the civil's semiotic repertoire of care that polices the terrain of political neutrality and camouflages discipline through care. In the case of the mayor, her constituents depend on her to represent them; in the case of the church worker, other workers

are dependent on moral neutrality. In addition to the assessment centres in workplaces, the disciplining repertoire of the civil includes emotional force and medicalisation.

The civil in contesting war plays out in contradictory ways. As a mobilising rallying call, it assembles all those who are against the violence of war, and for peace. Within the dichotomy of civil/military, calls for peace and an end to violence are respectable. But the politics of the civil also highlight that drawing attention to the circulation of the means of violence in the abstract is acceptable, whereas drawing attention to their production and local trade, is not.

While regulations for the export of the means of violence exist – no matter how insufficient one thinks them – the fact that there are regulations highlights the respectability of limiting the circulation of the means of violence. In so doing, the civil charts the opponent as people who circulate war, and profit from war, casting the business of war as a choice. The moral force of the civil in opposing war, however, is limited to condemning the profits in the pursuit of war, ignoring the logic of competition within capitalism, that makes production exclusively for the home-market unviable as a business strategy.

'The civil' that is mobilising activists to anti-war campaigning creates a space of one-ness, and demarcates the opponent, which are the evil regimes and big arms companies. It writes itself out of the production process and thus, simultaneously denies its own agency (and ownership) in producing the means of violence. Where local production sites are politicised, activists experience intense defensive reactions and abuse. To avoid offending people whose existence is dependent on war producing, the arena of production is therefore often passed over altogether. But where activists are formulating their agenda with a definitive reference point that is anti-war, rather than abstract peace, this more concretely positioned politics is rendered precarious, and with that the civil reaffirms its political neutrality, casting a line between the activist and the silent supposedly apolitical civilian bystander. Thus, the civil is ordering which protest is seen as legitimate and respectable.

Critique within lateral relationships, such as amongst workers in different sectors, is seen as unacceptable, recognising the limited decision-making power of employees, as well as the working class as a whole, in participating in wage-labour. Organising within this dichotomy, thus runs into codes of respectability that cannot easily be crossed. This is why campaigns tend to criticise the leadership of companies, out managers and 'the big' companies, which are seen up the hierarchical ladder. Alternatively, campaigns highlight the systemic nature of war as a system, and thus tend to avoid the direct confrontation with local companies.

In an effort not to morally criticise workers and to anticipate the disciplinary repertoire of the civil that alone holds the definition over what is morally acceptable, the workplace and the role of labour is approached carefully, as illustrated in the speeches at the Liverpool demonstration.

Imagery of workers 'feeding their families' and 'making a living', rather than opening conversations, evoke a somewhat compromised silence, like an inappropriate relative at a family reunion. The at times difficult relationships between activist groups and unions highlight the depoliticisation of labour that is sacrosanct. The workplace and the very mechanism of exploitation is shown to be deeply depoliticised. It is only the workplace of the defence workers that is morally implicated in the production of the means of violence, rather than the mechanism of exploitation in capitalism. The workplace at the same time has moral protection – in the effort to bridge and transcend the potential animosity between activists and workers that is being created through 'the civil', their shared experience under capitalism is highlighted. Everyone has to work, so we cannot criticise the individuals for doing what is necessary.

Rather than seen as important partners in organising, respectability demands that workers are rendered into vulnerable groups that need protecting from the activists and the economy – as if a person would ever hold only one subject position, as if identities where fixed and not constantly re-made and shaped by society. Within the civil/military dichotomy the hierarchy that the dichotomy protects and camouflages, is not challenged. This is 'the civil' operating as a powerful tool cutting through potential common interests, creating simultaneously a moral high ground of 'good' capitalism, and 'bad' capitalism, singling out workers in defence industries to be talked about, but rarely talked and organised with.

Within the civil/military dichotomy, critique is either channelled into individualising war as a moral choice of managers, or people who have effectively immunised against the implications of their work; or into systemic approaches which struggle to establish a local link. While there are of course individual decisions to be made, such as Verbruggen (Verbruggen 2019) highlights in her study on engineers refusing to develop 'dual-use', the examples in this thesis have also highlighted that the individual's everyday decision-making power is materially limited by the ownership structures of the means of violence. This is a fundamentally political question and raising it will lead to political responses.

Here, 'the civil' commands its moral imperatives in which agency is collapsed with responsibility. Rather than turning critique towards the common denominator – wage-labour under capitalism; critique is focused on the products of that labour. In turn and for fear of giving offense, workers in defence become 'untouchables', and through that their agency is rendered invisible. However, as we have seen in the previous chapters, the production of the means of violence is spread far beyond the traditional tank and plane companies. It is the depoliticisation through 'the civil' that integrates violence into the logic of capitalism. Scratching the surface of 'the civil', shows moral codes of respectability, and the untouchable sphere of the quintessential 'civil' activity of wage-labour. Organising with the civil as reference point, also means that the opponent is war – rather than the system of exploitation that war rests upon.

This is frozen struggle, however, and politicising 'the civil' needs to extend to the very mechanism of exploitation, on which it rests. Rather than being a point of awkward silence, the field for politicisation has broadened.

It also illustrates the complicated situating of anti-militarist protest within the civil/military dichotomy: while aiming to mobilise against the military, protest is forced to position itself along a spectrum of loyalty that can create division amongst otherwise compatible goals, and thus reaffirms, rather than transgresses the system that both categories are built on: capitalism.

The perceived differences between unions and activists coalesce around the same challenge – as unionists in the workplaces face definite limits as to what extent they can challenge the basis of the business; campaign groups hit a wall of resistance when they challenge the basis of the business. They are mutually dependent on each other, rather than on opposite sites but this requires to re-articulate the agenda to include the question of who decides over the means of production in a way that links both arenas and aims to transform the existing hierarchies, rather than reaffirming them. Without winning over the labour force the campaigns will not be able to deliver their goals; and without the campaigns, unionists face difficulties to raise these questions in the workplace. Finally, both face the problem of a legal framework that treats the economy as a separate sphere from the political, where democratic decision-making has no place; and as another interviewee put it "In the end it is simply about property rights. Who owned Lucas? Did the workers own the plant? No, they did not" (Interview GP 7).

## 7.3. The art of protest or protest art

From the arms fair I went to the Art the Arms Fair protest exhibition; from the steel and glass halls of DSEI2019 to murky red brick and abandoned factory buildings, where autonomous counter-culture aims to reappropriate the narrative about war through visual art. About a forty-minute tube ride away from the arms fair, the exhibitions are spread across several venues, linked by the intention to counter war's destruction, with the language of creation. Knitted white poppies guide the way to somewhat off the grid sites. The white poppy is a UK symbol of peace, in rejection of the 'red poppy' used in Remembrance rituals of WWI which is seen by many as entrenched with a nationalist agenda, rather than a peace agenda (Basham 2015). This already, hints at the politicalness of the field we are about to encounter. Art the Arms Fair is a collective of volunteers who organise visual artists, poets and performers with the expressed intention to "expose the arms fair" every two years when DSEI is held in London. The exhibition, events, workshops, and auctions raise money for the Campaign Against the Arms Trade (CAAT).

Art and protest are often seen as going hand in hand, working on an emotional and societal level to bring about change and communicate the agenda of movements (Duncombe and Lambert 2021). While 'fine art' historically has been employed to legitimise and glorify (won) wars, art has also been set in contradiction with war, as encapsulated in the slogan 'make art not war' (Brandon 2007). Artists have of course varied politics and intentions with their work whether that is "satire, memory, resistance or resilience" (Al-Ani et al. 2014: 7). It is hardly surprising then that in the field of visual, anti-militarist art there are many things happening with the civil. In reflecting about the ways in which, on this structural level, the civil is doing depoliticising work, I want to share some observations that I think are highlighting how this work is being done. These reflections have been inspired by reading about anti-militarist and protest art, as well as considering the artwork at the Art the Arms Fair exhibition itself. As a piece of writing, the next section is on the impressionist side, owing to the openness of artwork, which allows for many interpretations. I am offering my reading of these works in the context of this project, which explores the agency of the civil, which shapes my interpretation. I am thus considering the agency of the civil through art and artwork.

In contrast to the protest camp, that has been taking place in the week leading up to the arms fair, the exhibition takes place during DSEI2019; albeit somewhat removed from the action.

In anti-war art the civil is articulated as decidedly non-military and non-state and presents visions and counter-hegemonic narratives to more powerful (state-sanctioned) ones (Ziemann 2008). It centres the victims of war and thus at times blurs the lines with documentaries (Al-Ani et al. 2014). This is seen as a political act, to render visible the ones who suffer under war. The exhibition is a powerful demonstration of the silence that the arms trade and war induce.

In the Art the Arms Fair exhibition, Zehra Doga's acryl on canvas "Silence", for example, depicts three figures, a man, a tall woman, and a girl, staring into the sky with open mouths, hands apparently tied behind their backs, awaiting three falling missiles, that look as if they will fall into their mouths. The figures are powerless in this situation and their screams, we know, will be silenced through the missiles. The artwork does not comment on where the missiles come from or who has been launching them, and thus the figures are the only cues we get from the artwork as to the context of the violence.

The mixed media installation "Ordinary Life disrupted", assembles a three-metre long wall of things people surviving and fleeing from war wish they had taken. A map, a phone, a cup. There is a graphic depiction of a war-torn t-shirt, red-edged holes ripped through the white material, with the words "I was playing when the bombs dropped" just legible (Langrish et al 2019). The shock of war and the disruption of life through bombs represented in the objects we need for everyday life. It leaves me sad and angry and feels like a memorial wall for the victims of war.

Carl Godfrey exhibits a traffic sign, a red triangle warning of children crossing, bullet torn, titled "Caught in the Crossfire". The description "sign with bullet holes" provides little information about the history of the sign – is it real, is it made, but in the end, does it matter that much? Context seems irrelevant where bullets hit children. In death, and in the face of war, that is the message, all civilians are equal. In not being prescriptive and contextualising the sign, it is left to the spectator to imagine on which street this sign was placed.

Piers Secunda's work, consists of cast industrial floor paint and is titled "Taliban bullet paintings". In its abstraction, it uncomfortably reminds me of the BAE systems stall. I see four white rectangular slabs with random-patterned holes in them, on various depths. The slabs communicate that they want to be considered as art through the carefully measured space and angles between the slabs themselves, and the lighting of the space. The title gives us a clue about the context the piece is commenting on, but also leaves open the exact comment it wants to make about it: It is implied that the audience is going to be critical of Taliban bullets, and at the same time the fact that we need to be told whose bullet 'paintings' we are looking at, also implies that bullet holes are hard to distinguish. In its subtlety, the artwork keeps its purely aesthetic features, and without the sign, could also easily be a decorative piece in a minimalist interior – not too dissimilar to the warmly-lit, perforated steel plate I saw just a few hours ago at DSEI2019.

Other works aim to appropriate the objects of war and turn them into beautiful things and critique, and thus follow the spirit of turning pain into power. The mandala print "Rise Above", at closer inspection consists of deconstructed machine guns, asking us to rise above violence and its means. A gun made out of lego cubes, makes not only a link between militarised toys, but also displays knowledge about gun design.

A video installation depicts a pregnant Barbie bursting hundreds of miniature soldiers, a critique of the early socialisation of children into militarised gender stereotypes; and the objectification of women as birthing machines within liberal militarism. At the exit we are reminded of the intricate link between war and companies, such as depicted in a poster print by Darren Cullen. It shows an aerial image of a sandy beach with blue water, and a khaki green aircraft at the bottom left of the page; with the text "Whether you're discovering new holiday destinations… or wiping them off the face of the planet – Airbus". Aiming to turn the marketing slogan-logic against the marketers.

A lot of the art reflects the move to the 'objectness' of war and tries to visualise the materiality of war. What the exhibition demonstrates too, is the simultaneity of protest and production, war and peace; not only globally in an unspecified sphere; but in the everyday, at the sites of production and circulation. The exhibition has tried to recreate the representation of a continuum of violence from DSEI2019 to its critique and to address the circulation of violence.

Trevor Paglen's 'Negative Publicity' is investigative photography which focuses on the sites of torture in the War on Terror and the infrastructure that made it possible, aiming to render visible the war that is being waged in the midst of supposed civilian spaces in liberal war economies. It is an artistic expression of the recent turns to the materiality of war that follows the objects of war, and thus renders visible its preparation, similar to Edmund Clark's photography of surveillance infrastructure in the war on terror (Gadinger 2020).

Paglen's photography is equally banal and unsettling and challenges the audience to become active. As Moeller argues, "it renders visible military installations which are normally invisible, but the resulting visibility does not result in knowledge in any conventional sense (…) it demands thorough engagement with the image. As such it reflects recent trends in visual art that 'complexify the perceptual experience of the spectator'"(Möller 2013: 16). Blending in without being noticed is the very heart of camouflage; war fighting parties have used the civilian structures and aesthetic effectively to, for example, camouflage weapon transports as medical assistance, or hide sites of arms production under fake houses and lush vegetation, such as the Lockheed site in Burbank, California (Newark 2007: 109).

The artefacts collected in 'Negative Publicity' are printed on ordinary white paper, they look a bit battered, and evoke a sense of neglect and everyday-ness that is aimed to highlight the routine of torture and abduction labour – it seems like the ultimate expression of alienation of labour, that demands justice for its victims. And it is exactly the banality and everyday-ness that meant it was 'hidden in plain sight'.

At the same time there is an attempt to appropriate and teach about the means of violence through art. The deconstructed depiction of guns requires intimate knowledge of the various parts, for example. Rendering visible the infrastructure of war, requires knowledge of heat signals, the significance of cables, the meaning of pigments. This is what Tidy has termed a maker's point of view (Tidy 2019). Adding a Marxist reading of Paglen's investigative photography, I would argue that highlighting the infrastructure and the spaces in which remote warfare is being waged cuts across the narrative of ever more centralising state power in which the individual is exposed, but powerless. In identifying the agency within structures, and with a focus on collectively challenging the structures, the sites of possible organisation have multiplied.

Wandering through the art I ponder on the curation of absence – we see the belongings of victims of war, we see the places they have lived and been transported to, we see means of violence, such as a 'punch suit' which highlights where to hit a protester, and tools of war deconstructed or appropriated. The impact is haunting. The victims of war have been 'wiped off the planet' and what is left is deconstructed, dis-assembled objects. In that I see the powerless-ness in war, which centralises decision-making in the hands of a very small group of people and exposes the rest of the population to their powers of decision-making, personal flaws and (mis)conceptions.

Visuality of war, has been at the heart of debates on the new wars and digital, or hybrid wars, which are fought not through the drafting of large sections of the population, but through drones, cyber-attacks, special forces and PMSCs. In this context, the visualisation of violence, and war has been re-politicised (Tidy 2017: 99f).

The focus on the drone pilots within this discourse, tends to have an individualising effect on concepts of war. As Gregory (2011) has highlighted, remote warfare needs more than an individual soldier turned 'hunter-killer'. As any mode of warfare remote and hybrid warfare is based on a system, it requires logistics of surveillance, infrastructure like undersea cables, power stations, hardware like microchips, and software – even cars or means of transport by which the commuter soldiers reach their workplace. Individualising war and focusing on drone 'hunters' is perhaps an apt description of what is happening on an individual emotional level, but it also risks individualising war on a conceptual level where we see individuals, but not the states and classes that are at war. It is moreover important to recall the notion of 'hybrid war' discussed at DSEI2019 in chapter four, which goes beyond the understanding of digital/physical space and includes economic and diplomatic structures. Embargoes and power cuts do not rip through house walls but induce indirect death through economic weakening, or hunger; or as a panellist at the Electronic Warfare panel at DSEI2019 stated "We want soft kill. Hard kill is ugly, hard kill is killing people; everybody loves soft kill" (Fieldnotes DSEI2019).

Visual (artistic) representation of war is political in more than one sense and has seen increased coverage in recent years (Schlag and Geis 2017). As Kinsella points out, visibility is shaped by imperialist policies (Kinsella, 2011: 149). This can be used either to subvert imperialist politics, or re-inforce the imperialist gaze. The tactic of Algerian women in the French-Algerian war, who "unveiled" in order to pass as "civilised" and thus, loyal to the French imperialists shows how this reliance on the perfect sight can be subverted and turned against the imperialist and highlights that tactics of hiding in plain sight can be hugely effective.

It is not just about who is being portrayed as the good guys. Professional anti-war art fights against the suspicion of either fetishising suffering (Versteeg 2018) or complicity in upholding the moral superiority of liberal war economies.

As Möller (Möller 2017) discussed, pictures can document and scandalise acts of war, but the circulation of the pictures, for example of the victims of the torture in Abu Ghraib prison, protected through copy-rights but circulated without the consent of the victims; produces ethical problems in itself. "Visual representation of people in pain requires people in pain (…) academic reflection on such representations also requires people in pain; but using people in pain as 'data' for academic theory-building is obviously problematic" (Möller 2013: 12). In rendering visible the sufferers, the ones who have been rendered visible by the imperialist technology are now being circulated again, as victims to be talked about and to comment on the violence, but not as political agents who may have organised against that very violence, as agents with political projects.

Not documenting war and its effects silences its victims and sanitises liberal war economies; but documenting without doing something could be read as failure to render assistance. Where narrative context is removed, the depictions reproduce the apolitical focus of the civil in which violence is a natural disaster, not the outcome of decidedly human, and thus preventable actions (Versteeg 2018). Violence and war, thus appears as beyond politics, rather than the result of politics. Ultimately, thus, "photographs do not stop wars" (Versteeg 2018) (and we may be tempted to add, neither do academic writings) and can allow a dynamic where "passive remembrance, it seems, takes the place of active political engagement" (Versteeg 2018).

This highlights the troubling relationship of art, even critical and politically intentioned, and capitalism. In a deeply political context, removing this context from the visual representation is rendering the artefact ahistorical and is therefore an act of sanitising history, and making suffering consumable. So, while there are limits to the word; there might be simultaneously limits in methods beyond the word. Art intended against conflict and war is very aware of these conundrums in depicting suffering. Thus, art tends to not depict the suffering but focus on visualising how conflict feels, and talks about 'what war is like'.

The question how to visualise war, and an alternative has been discussed in the peace movements who in their campaigning struggle to depict transformative action; rather than static symbols or destruction, and thus have moved towards depicting activists in action (Ziemann 2008). It is in these more explicit protest posters, that we can see the work of the civil within contestation. Crafting, hand-making and the arts are coded not only as civil, but also specifically feminine and are often feminised sectors of labour or charity work – they seem to be the prime spheres of the Beautiful Soul.

In many ways, the civil is framed as the sole agent in art – openly politically motivated art and state-produced aesthetic artefacts are typically classed as propaganda, arguably reproducing an apolitical concept of the market (Groys 2008: 5). This is despite the fact that in most countries, public funds make up a significant proportion of art funding; and of course, private,

company sponsorship of art is no less impactful in shaping the arts (Alexander and Rueschemeyer 2005a). As Gibbon remarks in her observations at the arms fair, art "has an ethereal aura that at times provides a cloak for corruption"(Gibbon and Sylvester 2017: 251).

In contrast to the protest camp near the Excel centre, which ran in the week leading up to the arms fair and culminated in the attempt to block the road for the lorries carrying the stalls and products for DSEI2019 (Stone 2021), the exhibition is taking place during the arms fair. The protest camp is part of years of campaigning (Rossdale 2017). Oriented towards direct action to which participants ascribe transformative powers, it is a festival of talks and workshops in which direct action tactics are being discussed, political activists from war torn regions and occupied territories share their experience and campaign groups raise awareness on the embeddedness of war, capitalism, race, and gender (Protest Camp programme). [31] Temporary kitchens, tents and activist spaces are testimony to the creativity and inventiveness of the activist spaces.

The activist, researching the topic, moving on the streets is always bordering on the uncivil where they risk to be subject to state oppression and get into situations that can turn dangerous and even deadly because they are informed and take a position. As Kinsella has argued, at the core of the civilian subject position lies the loyalty to the entity they happen to be born in or aspire to become resident of. This points to the continued precarity of the status of civilian within liberal war economies, who have to prove their harmlessness to state power (Kinsella 2011). Thus, lay-ness seems to be an important feature of the civil that keeps the civilian inherently dependent on the professionalism of more capable agents, while at the same time rendering the activist into a potential legitimate target. Giving up on being a lay-person – or the appearance of it – moves the civilian into the sphere of activism which is a sphere of contested knowledge and expressed agency.

In a short conversation at one of the exhibition venues I learn that seventy artists have been involved in 2019 and all profits go to Campaign Against Arms Trade (CAAT). "We do cultural action, rather than direct action", explains the volunteer at the door. There is a sign at the old building "enter at own risk", and I am unsure whether it is part of the exhibition, or an actual warning sign. I take notes, I take pictures, I ask questions about the impressions people have and how the venues were chosen. In a small venue, I exchange cards with a journalist who half joking remarks "I could also think you're a spy from the arms industry". This gives me pause, and I realise that I am still wearing my arms fair outfit, looking too professional, and I am asking too many questions. Indeed, two out of three exhibition sites I visit seem to be created as a space of individual reflection – it is not a space to ask questions, the art is

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[31] I was not able to participate in the protest camp itself in 2019 and had planned to visit it in 2021 which was cut across due to the pandemic.

designed to speak for itself, to depict silence and anger. The voices at the venue are measured, low, earnest; a stark contrast to the 5pm drinks and laughter at Excel that I just left. The largest site is curated around the idea of everyday objects and the simultaneity of arms and commercial interests.

Thus, where direct action creates a space for conversations, cultural action creates a space of silent reflection. The Art Fair itself is rendering visible civilian agency: it is civilians' coping with war, scandalising its occurrence and raising money for anti-war campaigns through selling art. The campaigns again, position themselves as pressure groups, lobby governments and local politicians for a peaceful world and bring together community groups – and while having mass appeal and discursive power, year after year the arms fair takes place, nonetheless. Is this not reproducing the beautiful soul all over again? We protest war, beautifully, with grace and righteous anger, and in an aim not to reproduce the opponent's oppressive nature, we are perhaps shying away from the sites of power, the spheres in which decisions are being made in the first place, so as to not be tainted by association.

Speaking figuratively, leading up to the exhibition we can see and hear activists, and as the event (or, continuing the analogy: war) starts, the politically engaged people are cleared off the site and we are left with the silent mourning of the victims. This is a powerful analogy of 'civilianness' in the face of war.

In practice, of course all these artificial distinctions fall flat: it is the same people being on the protests who also produce art about the arms fair, visit the exhibitions and thus see art as an extension of their activism – the subject positions are not fixed. But while the direct action activists who unroll a banner in close proximity to the ExCeL centre can be removed and policed because their action transgresses the 'civilised' expression of dissent, art is so inherent to the civil that it cannot be moved or forbidden within liberal war economies and thus has carved out a space for reflection and comment.

The audience is not the workers at the arms fair; but the broader public. The protest posters displayed at Art the Arms Fair remain in place during DSEI2019 as artwork and as a comment on the arms fair. Where art allows many interpretations and does not direct a certain action, activism is bound to communicate a definite idea and act: thus, the commitment to that action, also means that activism becomes policeable. The civil is doing depoliticising work and draws a line between acceptable expression and affective response to war, and policeable responses to war.

At the same time, art and protest art specifically, effectively subverts its space of being the beautiful comment on war; and makes very material use of its designated space. Protest art has a very real material impact: Art the Arms Fair raises money for the Campaign Against the

Arms Trade; denunciatory wall hangings funded clandestine community support manufactures, Vicarias, under Pinochet's dictatorship (Adams 2006); street art in the bombed cities of Yemen are acts of resistance that remember the dead and give hope to the living (Battaglia 2018).

The depictions of the infrastructure of remote warfare, and the objects of war are a good reminder: The power of individuals rests on the cooperation of a vast amount of people – all of whom hold parts of the system in their hands, all of whom perform labour within the liberal war economy. Rather than being rendered powerless, the civilian labour on which the military relies upon presents infinite opportunities for organising.

## 7.4 Chapter conclusion

In this chapter I have been looking at sites of contestation and the way they are policed. The challenges that these attempts encounter and the contradictions they have to navigate highlights the depoliticising work of the civil, which escapes specificity and smooths over the fractions within the civil/military dichotomy. Like the smooth design that renders invisible civilian's labour, the civil renders invisible the politics within. The existence of the gendered code of civil/military does not only establish a dependency between soldier and civilian, masculinised and feminised people, but also a dependency of both on the system which gives rise to these categories: capitalism.

The civil reproduces a definite way of respectable organising and expressing dissent, which while on a spectrum of action, finds its limit in challenging existing capitalist power. The outcasts of the civil are campaigns that politicise the very mode of exploitation on which this power rests and envision a different distribution and control of this power. Within the civil/military dichotomy, where power is always already imagined to be with the military agent, challenging power and controlling it becomes unthinkable. Underlying the civil is thus a dis-empowering notion of power; power already tainted with militarist authoritarianism, from which the civil is removed. The overarching framework of the civil as a harmonious sphere is achieved through disciplining action and coercion within, the disciplining and marginalisation of revolutionary politics. The civil, thus not only writes out its own policing of the civil sphere, but also depoliticises power.

The semiotics of the civil in contestations reflects its staying away from power and proficiency. Organising within the civil/military dichotomy has limitations, and assigns supposedly stable subject positions, that do not hold up to scrutiny. The disempowering message of the civil is wrapped up in this, thus keeping the civil stuck in a catch-22 where action taking, organisation

and professionalism are implicated with the market, violence, and military. In its emphasis of the banal, proficiency and being informed are referred to other actors, namely activists. In demonstrating knowledge and engagement, activists are rendered outside the civil and turned into policeable agents. The civilian cannot act on their own accord – only where they are rallied around the nation's military cause is the creativity and proficiency of civilians lauded. Thus, the civil plays no role in the decision-making process of war and only ever serves as the support act. At the same time, it depoliticises the agency and collective decision-making power in the everyday production of the means of violence.

'The civil' depoliticises the production of this system, and thus needs to be unpacked. It rests on the assumption that war does not discriminate. A stray bomb or bullet will destroy life and habitat of rich and poor, Black or white, Muslim or Christian, cis or non-binary equally. The empirical practice of war shows, however, that this is not the case. War is being waged in overwhelmingly Black, Muslim and poor regions of the world, and within these it is the most marginalised who are not able to flee, are being drafted into the fighting, and penalised for not adhering to gender norms that underpin those militaries. The civil, while abstractly inclusive, polices the politicisation of the material basis on which it is built. It is in this sense that the civil is an ideology in the Marxist sense where "ideology helps society to function (…), as a social cement that holds together the different parts of the social system. Ideology, therefore, is concerned with the unity and reproduction of the social system, generating the necessary beliefs to ensure that humans act in the right ways" (Joseph 2006: 14). Thus, the civil is the fastener holding together liberal war economies.

## 8. Conclusion

*"It is time we call out hypocrite honorings and fill the void with social justice. It is time we cast all medals into spearheads of revolution!", Pia Klemp, 2018*[32]

Throughout the thesis I've been trying to shine a light on the way civilians are enmeshed with the production of the means of violence. In doing so I have aimed to unpack the perceived banality of *the civil* in the production of the means of violence, which goes far beyond enemy narratives, national defence discourses and multinational arms manufacturers. Instead, capitalism as a global system of production and distribution is intricately linked to the violence that seems so removed from notions of civil society. In fact, *the civil* as an ideology is part of the alienation from the violence and the means of violence that are being produced routinely and on a daily basis in liberal war economies. I have argued that *the civil* and the military are co-produced within the logic of war, and that rather than being a passive by-product of militarisation, *the civil* does important depoliticising work. To analyse this work, our focus should be on the production of the means of violence and this thesis makes an explorative contribution to this agenda from a Marxist and Feminist perspective.

In other words, and to paraphrase Xhercis Mendez (2016), I have asked to what extent the civil keeps us from examining the production of the means of violence in liberal war economies? In what ways is the civil putting forward assumptions that, no matter the intention, reproduce an individualising notion of war production and its own powerlessness in preventing destruction and war? And in what way does the civil restrict and police protest in a way that contains protest and transformation?

The ideology of the civil works in two ways: first, it co-produces the distinction between military and civil, which as I have aimed to demonstrate through various examples, is not that clear-cut once we start focusing on the production of the means of violence. Second, it depoliticises whichever product, organisation, discourse, or institution it is attached to, by continually reproducing the trope of a non-violent and innocent sphere that is defenceless in the face of aggression. I have suggested that by focusing on the design of the means of violence, the sites, labour, and intentionality in the production of the means of violence are rendered visible.

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[32] Human Rights Activist and Captain of the ship Iuventa at Human Rights Awards of the City of Paris in 2018. Between 2016-2018 her crew rescued 14,000 people from drowning in the Mediterranean Sea, she herself was involved in the rescue of 1000 people. She refused the medal of bravery presented to her, stating it was not on states to determine who was a heroine and who was an illegal immigrant. At the time of writing, she is indicted for assisting in human trafficking by the Italian state and faces twenty years in prison (SKY tg24 2023). In 2023 NGO ships have all but disappeared from the Mediterranean Sea, due to the criminalisation of non-state sea rescue missions.

This exploration starts with the design of hybrid spaces where war and peace, *the civil* and the military blur. By examining the design of arms fairs, and their curation, I have highlighted first, that production and circulation can not be considered separately from each other. Second, it is the depoliticisation of *the civil* that is crucial for delivering "interoperability by design" (Fieldnotes DSEI2019).

The screw served as an example to illustrate not only how technology travels from the civil to the military; but also served to illustrate how a focus on industrial design, innovation and the economy of supply chains can start to illuminate how the civil's contribution to the production of the means of violence is rendered invisible. Because it is seen as reproducible and not costly, the fastener that holds together tanks, planes and launching systems is overlooked. However, their development is full of power struggles, gendered imagery, and profit. Therefore, the screw is an apt metaphor for the civil, which is omnipresent, highly functional, and overlooked. It shapes the form military technology can take.

Building on Deborah Cowen's work who has highlighted that military and security policy follows the needs of supply chains, and thus the market, I have illustrated how supply chains are shaped by industrial design, and how these supply chains are managed, not only through more efficient technology, but also emotional pressure within hierarchies. At the same time, I have reflected on the limitations that come with focusing on the circulation of the means of violence alone, building on anti-militarist speeches and thought. The distinction between the 'evil' seller and the 'honourable manufacturer' holds only some truth. The role of the civil, the way the civil is smooths over the violence within it and the logics that drive the expansion of markets, and undermine labour organising, need to be scrutinised. Rather than challenging the entirety of the arms trade, the focus on the circulation of the means of violence tends to construct moral geographies which map onto the strategic map of liberal war. The goal is formulated as stopping the delivery of weapons to customers who are seen as questionable; thus, some formulations of critique map onto the strategic interests of the liberal war economies and reinforce liberal narratives of rogue states. These critiques often eschew the family-run businesses that dominate component design and development, and thus, albeit unintentionally, stabilise the enemy imagery on which liberal war economies build. Without scrutinising the *respectable* customers and producers of the means of violence, the critique reproduces the strategic map of liberal war.

Workers fleeing from conflicts or veterans returning from conflicts provide cheapened labour that circulates the means of violence across the globe, and the depoliticised products of their labour are integrated into the broader system of capitalism.

The civil as an ideology is crucial in not only camouflaging and depoliticising the deep interconnections between civil and military production, but also in producing the civil as

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harmless. The semiotic repertoire of the civil with its gendered notions of family, care, and support, obscures the hierarchy that is established by rendering agents into vulnerable dependents. Thus, the ideology of the civil is crucial to legitimising the military and reproducing the civil as a non-violent sphere, that is removed from the violence of war. It, therefore, deserves much more attention than it has received thus far.

The labour in the defence enterprise shows not only that behind the civil/military dichotomy lies a dichotomy of capital/labour, but also how this site of the production of the means of violence, the workplace, is depoliticised. In scoping out the defence enterprise in much broader terms, the labour of lawyers, human resource managers, design and sales teams comes into focus. Roles and skills are therefore not limited to engineering or close relationships to government. Instead producing and selling the means of violence is an enterprise that mobilises a much wider skill set than the focus on CEOs or engineers suggests. Through project fragmentation, division of labour and the language of design the production of the means of violence is depoliticised in the everyday labour of workers. This is backed up by enforcing secrecy and rendering precarity invisible. However, as the data gathered through my interviewees suggests, secrecy should not be seen as the prerogative of the state. Rather, the civil has developed its own effective tools of secrecy in the form of assessment centres, patents, fragmentation, and codes of politeness. These codes of politeness are guided by care for the lateral relationships between colleagues and individualise the navigation of a complex political and societal fields into personal choice.

Moreover, where technology development is concerned, which is supposedly at the heart of the requirements for secrecy, the interviews suggest that secrecy is a mere academic debate. Intellectual property is increasingly held by companies for profit, rather than the state, and private companies claim to outperform the state in delivering the means of violence. Knowledge transfer, though restricted, takes place in formal and informal ways and at times independent of legal frameworks. Rather than patents, standards and certificates were seen to be the more effective tools of market control, albeit technologically unnecessary. It is thus not only the threat of state intervention that keeps the production of the means of violence secret. Rather, the labour of secrecy includes the labour of lawyers, employment agencies, translation services, and human resource managers, and thus, from a political economy perspective, should include a much broader set of sites to investigate than a focus on militarised labour suggests.

Military and civilian production differ, due to the government funding of many military projects. For the labour in the defence enterprise this meant that the civilian market was structured by more intensified work, less scope for innovation, and less scope for error. This intensification of work is however normalised in the civilian sector. Precarity, pseudo self-employment,

exposure to heat, noise, and falls, are thus risks to health and safety of workers that go unnoticed in the production of the means of violence.

The agency of the civil is cast into the commodities it produces for war from screws, fibres, pigments, to scents. The traces of the civil are invisible on the soldier body, and effectively camouflaged. Brittle civilian technology is literally cloaked by a black box, which helps the technology not only to sustain the stress of the environment but renders the contribution of the civil invisible. Discussions on dual-use technology have tended to focus on spin-outs, that is on technology transfers from military development to civilian applications. This ignores the many spin-in technologies that are adapted for military purposes and shape how the military looks and acts. By reflecting on the concept of dual-use technology, I have highlighted that dual-use is not a random outcome of technology, but needs to be anticipated in the design of machinery, production processes, documentation, and training. It is therefore an industrial policy. Meanwhile, in the framing of 'dual-use', the civil is anticipated as non-violent and unproblematic, which ignores how law enforcement agencies call up the civil to differentiate themselves from the military as an institution. The implied civilian use in dual-use should therefore be under much more scrutiny. Thus, the thesis has highlighted that the civil is anything but removed from the production of war and stabilises liberal war economies in a much broader sense than a focus on the companies that produce planes and tanks, would suggest. 'Business is business' is the verbal equivalent of the smoothness of the design, the non-colours of black and white in which security is clothed and technological fixes become reasonable solutions for political relationships. It is a fatalist tautology that disinvites curiosity, and inquiry. To disentangle those networks, render them visible and highlight the contradictions within these structures has been the aim of this thesis. It is the gendered configuration of labour and the contradiction of the extra-ordinary turning into a everyday routine which makes the sphere so seemingly shellproof. And yet, it is these same contradictions that give rise to resistance.

As illustrated in the history of the Jacquard loom, as well as the Lucas Plan, the introduction of technology and automation has been accompanied by contestations over the form this technology takes, what it produces and how it changes the relationships within the economy, and society more broadly.

Where this resistance in organised in the workplace, the agents of change encounter very real material limits to their campaigning. The alternative products that have been suggested in projects such as the Lucas Plan and Alternative Produktion, did not lead to a fundamental reorientation of the company in question, but often led to the diversification of the product range, subsidiaries, and new streams of income for the company. The element of workplace democracy that was introduced, found its material boundary in the property relations of

capitalism, in which production is socialised and yet accumulation, and the means of production are privatised. The activists of the Combine Committee were well aware of this trend and their proposals tackle this particular issue, by focusing on processes that democratise knowledge about production, and thereby empower more people to take part in informed and meaningful decision-making.

The example of the Lucas Plan highlighted, that the civil/military dichotomy could not be challenged without challenging those very property relations; highlighting how integral the civil is in stabilising capitalism as a whole. Thus, the production of the means of violence rests upon the depoliticisation of the means of subsistence and the form this takes under capitalism. The civil depoliticises and renders unimportant the very real risks to workers health, life and safety that regularly occur in the course of producing profit. This depoliticisation helps to integrate violence into the broader logic of capitalism. It is in this sense, that Marx speaks of class war: the violence against the working class which is wrapped into language and clothes of freedom.

The pressure to 'not make it political' meant two things. First, it meant that workers were won over and felt not morally compromised for ending up in a profession that produced the means of violence. Second, it meant that the very basis on which they ended up there could not be articulated. The main effort was to save jobs, not to end war. Thus, the workplace is rendered into an apolitical space, detached from war. Codes of respectability in lateral relationships demand, that critique does not include the basis on which the company accumulates profits, which would pose a risk to the economic well-being of colleagues. The semiotic repertoire of the civil therefore shapes how critique can be articulated.

Where workers are formally or informally silenced to speak about these topics, public protest is crucial to raise awareness. Public campaigns provide an opportunity to raise ethical questions in the workplace. But the way the campaigns can raise critique is also subject to the codes of respectability. Every stopped project, in which workers are not the main actors, poses the threat of job losses, which is used to put pressure on campaigners. Claims to respectability and morality are put on them, in order to refrain from criticising the source of profit. Where campaigns aim to integrate and anticipate these concerns, they are forced to formulate their critique in more abstract terms: not naming concrete companies, but referring to arms industries in the plural and general. Thus, campaigns either risk alienating workers without whom they cannot transform production, or by omitting concrete workers altogether. What has been highlighted in these debates is, that labour is at the heart of the production of violence, and it is the depoliticisation of labour that is guarded by the civil.

Individual workers may refuse to work on a certain project or to participate in military projects altogether; but because they do not own the product of their labour, they do not have control over how their labour is contributing to these projects. In addition, as we have seen, individuals

are disciplined in management schools, through transfers and promotion bans, where they do not adhere to the role of the apolitical worker – and thus the prime civilian. The medicalisation of political engagement is perhaps the most worrisome manifestation of this, and again points to the way in which care is mobilised to discipline. In the context of PREVENT, where citizens are increasingly roped in as agents of security institutions, and discipline is clad in the language of care, this aspect should demand our attention. Care is a key semiotic resource of the civil: care does not only go into the production of the means of violence, but also into disciplining those who challenge the depoliticisation of their environment; and people practice silence out of care for their collegial relationships. This is individualising war and the production of the means of violence.

For companies and militarisation this means that the market for force is sometimes profitable. This may or may not be because individuals in this context believe in the necessity of violence, or the inevitability of war, or the dependency of their company's wellbeing on military spending. As the Lucas Plan experience highlights, companies sometimes hold onto producing for war, not because they fetishise the military, war, or national defence, but because doing otherwise would be making a concession to workers' organising. Mergers, subsidies, and rather obscure holding structures means that even though companies can hold patents for military products, they may want to keep them as far off their image as possible, as in the case of ScentAir's vomit fragrance for example. By focusing on the agency of the civil, we can start to highlight more systematically the many ways in which the civil produces the military and for war.

This change in perspective does not mean, in my opinion, that we need to dismiss militarisation entirely, or, that we can. In pointing us to the everyday, and the way in which soldiering is gendered, and the military is dependent on a carefully managed relationship with feminised women; the concept has done much useful work to build on. At the same time, the critiques of reproducing a liberal notion of the state and society, such as through the concept of *martial politics*, raise an important issue that needs to be addressed. My approach to navigate both, was to suggest a dialectic perspective, which is informed by Marxist theory. Perhaps just as much as there is *militarisation* happening, we should focus on the *civilianisation* of the military, to capture the transformations that seem to go beyond outsourcing and privatising military tasks within the defence enterprise.

The notion of the *agency of the civil* has allowed me to follow the movement of the civil/military dichotomy; trace where, when, and how people call upon the distinction, and helped me to stay attuned to the labour and design that go into the production of the means of violence. In focusing on labour, the socially constructed nature of this distinction has become visible. As any social structure, this structure has material effects and basis. Unpacking the way in which the civil is depoliticising its contribution, has also highlighted its crucial role in depoliticising the

very mode of production and the control over technology and labour in capitalist economies. It is in this sense, that I think we can talk about an ideology of the civil, emerging from its mode of production and just as the screw, seamlessly holding together violence and nonviolence. From this perspective, I believe, the effort to re-align Political Economy and International Relations can focus much more on the way economic interests and needs shape contemporary conflicts, and the way the semiotic repertoire of the civil is mobilised to justify and depoliticise those interests. While defence giants such as BAE systems, Airbus, or Boeing certainly have big political clout; I think that companies such as the component supplier WurthGroup are just as worthy of attention, if not more. Further research should also build on the suggestions to link Political Economy and International Relations much more systematically. Unions as sites of everyday organising are an important avenue for researching the production of the means of violence. Agencies hire not only waste management and hospitality workers but are also recruiting industry experts, translators, and carry out security clearances. While militarised labour in PSMCs has been addressed, labour should play a much bigger role in the analyses of war and war preparedness. Thus, I think that we need to go beyond concepts that reproduce the distinction between unethical military contractors and unproblematic civilian exploitation and work towards highlighting what links them.

In this contribution, I have remained focused on the part of supply chains mainly located in the political North – I have not travelled along the whole of the supply chain to the labour that extracts raw materials, such as oil, steel, and graphene. I have focused instead on industrial design, predominantly skilled labour, and labour organising. As a stylistic device, this was intentioned to highlight the depoliticising work of the civil which is trivialising violence in the liberal everyday; and an attempt in not reproducing analyses which locate the occurrence of violence outside of liberal war economies – thus, I have tried to focus on where the means of violence are produced, rather than applied. I have also privileged an indirect and structural concept of violence over direct, physical violence, though I think that the work intensification that threatens lives, and criminal neglect of health and safety, can justifiably be seen as violence. As mentioned in chapter five, the analysis on precarity is limited by a lack of data, and throughout the thesis, my limited knowledge of engineering will be blatant to industry experts. In spite of these limitations, I do think that the change in perspective that I am offering with the notion of the *agency of the civil* can contribute to the conversation on militarism and war preparedness and highlight the civil as a productive force of the means of violence.

Legally, the civilian is a precarious figure and the protections granted towards the status of civilian have never been all-encompassing, or trumping military objectives. The ongoing[33] state-assisted mass drowning in the Mediterranean Sea, and along the European borders, highlights in the plainest way possible, that the subject position of the civilian is a passive one: they ought to stay put and wait until their military rescuers have sorted things out. As soon as the civilian dares to act – whether it is for life-saving purposes or political beliefs, the status of civilian is revoked, and the very same people are turned into illegal immigrants, potential terrorists, partisans, or human traffickers. The civil, then, scopes out a space to talk, but decidedly not to act. As a point of reference to organise around, the civil in civil society has therefore severe limitations.

This has implications for activism, where I think, it will be important to cut across the semiotic repertoire of the civil. The narrative of vulnerability and care that dominates in the representations of civilians in war, allows for affective responses and emotional connection, but it is too easily absorbed into a state-discourse where agency is located and legitimised in institutions, rather than with people. Vulnerability therefore does not raise the question of power and does rarely challenge the position of the civilian as an object of intervention, rather than a subject acting to change their conditions. As many others have written, war is neither a fate nor a natural catastrophe, it is the outcome of human design; and at heart of the drone, it is the product of labour that keeps it flying in war zones. The democratic control over these products, and the means of their production must be firmly back on the agenda.

The climate crisis and the potential direct military confrontation of nuclear powers, whether over Ukraine, or Taiwan, render the success of ambitious socio-political projects such as Alternative Produktion and the Lucas Plan all the more important. For future projects to be successful, it will be necessary to scrutinise the work of the civil much more closely and to cast the means of violence into spearheads of revolution.

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[33] According to the Missing Migrant Project, 604 people drowned since the start of 2023; between 2014-2023 24,478 people have confirmedly drowned in the Mediterranean Sea alone; underreporting means this figure is likely higher (Missing Migrant Project 2023).

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