

Damage, recovery, and the geographies of military–civil entanglements

Rachel Woodward, K. Neil Jenkins & Michael Mulvihill

To cite this article: Rachel Woodward, K. Neil Jenkins & Michael Mulvihill (17 Oct 2023): Damage, recovery, and the geographies of military–civil entanglements, *Space and Polity*, DOI: 10.1080/13562576.2023.2267993

To link to this article: <https://doi.org/10.1080/13562576.2023.2267993>



© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 17 Oct 2023.



Submit your article to this journal [↗](#)



View related articles [↗](#)



View Crossmark data [↗](#)

Damage, recovery, and the geographies of military–civil entanglements

Rachel Woodward^a, K. Neil Jenkins^a and Michael Mulvihill^b

^aSchool of Geography, Politics & Sociology, Newcastle University, Newcastle upon Tyne, UK; ^bSchool of Social Sciences, Humanities and Law, Teesside University, Middlesbrough, UK

ABSTRACT

This paper explores two forms of entanglements between military and civilian phenomena and activities, in contexts of recovery from damaging events. One concerns global civil–military entanglements in low earth orbital space, where recovery from damage is necessary for sustaining the civilian and military service support systems on which we increasingly depend. The other uses the damage caused by the UK state’s regimes of financial austerity to highlight how gendered, spatialized forms of personal labour through military Reserve forces sustain recovery. Both suggest ways in which military and political geography and geographers can find new ways of thinking through civil–military entanglements.

ARTICLE HISTORY

Received 13 February 2023

Accepted 2 October 2023



KEYWORDS

Civil–military relations; entanglement; military; reserves; space; nuclear

Introduction

This paper originates from an invitation to present the *Space and Polity* plenary lecture at the 2022 Royal Geographical Society–Institute of British Geographers annual conference, and the conference theme of ‘Geographies Beyond Recovery’. This invitation arrived in early February of that year, and by the end of that month, Russia had invaded Ukraine, marking the start of a conflict that is still on-going as we write. Watching the war progress brought civil–military inter-relationships and interdependencies into very sharp focus, not least because along with all the effects of this war for Ukraine and its people, for Russia, for neighbouring states, and for wider global political and economic systems, the mediatized version of the war available to the UK public centres on those relationships. This paper is about such civil–military interrelationships and interdependencies which we refer to as ‘entanglements’, and their ‘geographies of entanglement’. The metaphor of entanglement we use could draw on the chaotic entanglements of a ball of string, but equally, we are alert to the idea of ‘entanglement theory’ originating in quantum physics which describes relationships between pairs of particles irrespective of the time or space between (Muller, 2022).

As Cancio et al. (2020) make clear, in an article about the experience of Ukrainian military participation in the war in Crimea and Donbas from 2014 following the

CONTACT Rachel Woodward  Rachel.woodward@newcastle.ac.uk  School of Geography, Politics & Sociology, Newcastle University

© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group
This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

Russian invasion, individual participation in armed conflict by military personnel lies at the heart of the construction and reproduction of wider militarized national identities and imaginaries by civil societies. War is fundamental to civil–military relationships. Yet as scholarship by ourselves and others has argued for a number of years, it is also the things that make war possible in the first place that require our attention if we are to fully comprehend how civil–military relationships work. Geography as both observable reality and as a practice, is part of that process of comprehension (Rech et al., 2015; Woodward, 2004, 2005).

We start with this observation to underscore the point that thinking about civil–military entanglements involves thinking about space and time. These relationships are dynamic, situated, and complex. In this paper, we explore civil–military relationships and their geographies using the idea of recovery as an entry-point to discuss civil–military entanglements. We examine the languages and concepts used to think about civil–military relationships and the utility of talking about entanglement. We then discuss two examples where civil–military entanglements come into sharp focus. The first example is about civil–military entanglements in Space, specifically the monitoring of Low Earth Orbit, the origins of this in military-related events in the late 1950s and the practice of space monitoring in the present, and what we can understand about civil–military entanglements as a result. The second example is about Reservists, military personnel who (in UK contexts) hold a regular civilian occupation but also work as paid military personnel, and what we can understand about civil–military entanglements by looking at the experience of being a Reservist. We conclude with observations about how as geographers we might explore civil–military entanglements, as part of a broader project of reading military activities and phenomena geographically.

Although this paper draws on examples that centre the UK experience of civil–military entanglements, it is important to note that this is solely a reflection of the location of the empirical and conceptual research from which this paper draws. There may or may not be direct parallels and correspondences with civil–military entanglements in other contexts and in other places, but that is an empirical issue beyond the scope of this paper. By focusing on the UK, we are not suggesting that the UK experience is exemplary of any one thing. Our conceptualizing of civil–military relationships and their geographies is about suggesting possible approaches to understanding observable socio-spatial phenomena, rather than developing universally-applicable theorizing. It is also pertinent to note from the outset that a number of the ideas with which we engage here are informed by very long-standing threads of scholarship in the discipline of Geography and elsewhere in the social sciences. This is indicative both of the ever-present salience of civil–military relationships (in the form of their entanglements) in shaping social life, but also the centrality of geography and of thinking geographically to our understanding of these relationships. Civil–military relationships (and their entanglements) are ever-present in scholarly as well as social life.

Thinking about ‘recovery’ in military studies contexts

As we have already noted, this paper is based on a response to a conference theme which suggests that we critically interrogate the ideas and the practices of recovery, across scales and contexts. In the context of military-related research and writing in geography and

across the social sciences, the practice of looking at ‘recovery’ from military events and activities is embedded into the temporality and periodicity through which military phenomena are studied. The examination of war and conflict is not complete without the study of post-war and post-conflict spaces and times. These are conceptualized through fuzzy temporalities associated with reconstruction, renewal, resolution, and change (Kirsch & Flint, 2011). For example, we talk of a post-war period that followed the end of the Second World War in 1945 as if a defined start and end were identifiable. In the UK, this was in many ways a time of reconstruction and progressive change; significant health, education, welfare, social security, and planning reforms and legislation that continue to shape the geographies of the UK date to this point. But this period of post-war recovery was still a time of violent conflict, of a superpower cold war and numerous hot wars-by-proxy. Implicated in the idea of recovery is a suggestion of a *status quo ante*, of return to a pre-existing condition; as geographers and social scientists know, this is never the case in the aftermath of armed violence. The names we use, retrospectively, to denote specific episodes of armed violence and the very fact of naming a specific instance of armed violence-in-place as a war, are themselves indications of a process of dealing politically and socially with recovery in the aftermath of violence and change. The multiple ways in which those aftermaths are themselves periods of violence or its threatened use, are a core component of the study of the geographies of peace-building and peace-keeping, peace-support, and post-conflict intervention. Inherent within our commentaries and theorizations of recovery after armed conflict are people, infrastructures, economic networks of trade, reproduction and transference of modes of governance, and so on, which operate in complex ways that themselves can initiate further conflict (for an overview, see Cohn & Duncanson, 2020; Koops, 2015). Post-conflict geographies and temporalities are marked by reinvention and reinvigoration, but also by entanglements of resentment and retrenchment. ‘Recovery’ is therefore complex in these contexts. Think, for example, of the idea with reference to the most recent Afghanistan war: recovery of whom, from what, when, with which outcomes and consequences? Should we not also consider the entanglements of the war in Afghanistan which included issues from the first and second Afghan wars initiated by colonial British regimes in the nineteenth century and the invasions of the USSR and the US response in the twentieth century?

In this paper, we use the term ‘recovery’ to signal changes which in turn lead to new formations in civil–military entanglements and their geographies, and see the starting point from which that recovery takes place as some kind of disruption or damage to established orders or understandings in place at a particular point in time. We note that such disruptions in turn happen amidst extant and emergent entanglements. If we are to critically interrogate recovery in the context of civil–military relationships, the objective has to be the development of tools and concepts which in turn can help us better understand the geographies of military phenomena and activities and their role in the entanglements that exist.

From civil–military relations to civil–military entanglements

We use the term ‘civil–military entanglement’ quite deliberately, drawing on the work of anthropologists Birgitte Refslund Sørensen and Ben-Ari (2019) articulating a term and

metaphorical image borrowed from quantum physics. We do so as a means of moving beyond the inheritance and utilization of the more common term 'civil–military relations'.

The idea of 'civil–military relations' as a defined area for study emerged in mid-twentieth century military sociology, itself a growing field within the social sciences of that time orientated towards the production of sociological knowledge about military formations and personnel with the express intent of facilitating greater military efficiency (Caforio, 2006). Military sociology was (and still is) financially supported by the US military, and concerned with its interests. The discipline was (and largely still is) framed epistemologically around ideas from positivism and that approach's adaptation of the scientific method to the social sciences, and facilitated by emergent tools and techniques for the statistical analysis of large data sets (Jenkins et al., 2010). Itself a response to the pre-war conditions of economic depression and the New Deal, themselves entanglements emanating from the First World War, military sociology from the outset saw itself as a social science with a contribution to social improvement. Military sociology, as Higate and Cameron (2006) put it, is constituted by an 'engineering' rather than 'enlightenment' model of social science.

Civil–military relations theory has its roots in a politics which feared the intractability and effects of governance systems dominated by military personnel and objectives. Early writers such as Samuel Huntington (author of *The Soldier and the State* [1960]), Morris Janowitz (author of *The Professional Soldier* [1975]), and Sam Sarkesian (author of *The Professional Army Officer in a Changing Society* [1975]) had themselves been enlisted in the US Army in the Second World War and had trained as young scholars in a context which associated the rise of a powerful military class in governance with the experiences and outcomes of Spain, Germany and Italy in the 1920s and 1930s. Relations between civil society and the military have been a key area for investigation and theorization by military sociology from the start. With its macro-level ambitions, universalizing intentions and empirical focus on the US experience, civil–military relations theory revolves around concerns about, simultaneously, the necessity of military exceptionalism and the necessity for civilian oversight of military power (Mills, 1956).

Civil–military relations theory continues to attract scholarly attention. This conceptual model defines the categories of 'civil' and 'military' in relational terms. 'Military' is a category that includes the people, practices, materialities, and technologies through which lethal violence is exercised through the authority of the state (the classic Weberian definition that is itself reflects its nineteenth century European context). 'Civil' is defined as that which is not military. The focus of a great deal of theorizing within this field is on relations between these two distinctive spheres, and the terminologies of 'gap' and 'binary' are often used. A good example is Rahbek-Clemmensen et al.'s (2012) paper in military sociology's flagship journal *Armed Forces & Society*, which argues for more differentiated theorizing on civil–military relations – whilst still maintaining a model with this binary at its core.

A more critical approach to studies of the military in Anglophone social science (self-identified as a Critical Military Studies framework) has, over the last three decades or so, questioned this binary framing of civil–military relations. For a start, the sheer multiplicity and complexity of relationships between military capabilities and states, not least through the economies of production of weapons and tools of warfare, troubles a

simple binary. The evolving conversation around security, what it is and might be, and its relationship empirically and conceptually to the means through which state-legitimized violence is executed, in turn troubles the category of ‘military’ (and see, for example, Bernazzoli and Flint [2009] – ours is not a particularly novel observation). The use of armed violence by non-state actors, organized in ways which echo state military institutions, is also troubling for civil–military relations because of the question of placing the category of ‘paramilitary’.

In tandem with critical military scholarship, the exclusionary effects of this category of military are also under question. Although military specificity in itself is often seen as legitimate, there is a wider debate about the extent and limits of the military exceptionalism that follows the effects of binary categorization. This debate, in the UK, has been playing out within the UK armed forces for at least the last two decades, and its focus is on personnel (see for example Dandeker & Mason, 2001). For example, an argument about military exceptionalism that emerges from time to time questions attempts to ‘civilianise’ the armed forces through the inclusion of more diverse recruits that are better representative of the UK population, particularly younger age groups. A counter-argument, of increasing salience, sees the traditional recruitment pool of white men, bifurcated by class into Officer or Other Rank categories, as both diminished in size and diminishing of functioning armed forces. The inclusion into the armed forces of women, and/or people of colour and/or of people who identify openly as gay or queer, and/or of people holding a range of different faith beliefs, is regarded as not happening quickly enough and is a cause of genuine concern for some within the senior leadership of the UK armed forces. This concern, framed as an argument about representiveness and aligned equalities, is partly driven by basic manning requirements but is also a concern with the future legitimacy of the armed forces as overwhelmingly white and male in the UK which is not. The category of military as exclusionary of and in contrast with a wider civil society is increasingly problematic. Other examples of the effects of this exclusionary imaginary include the normalization of racialized and sexualized violence within military institutions (Aaron Belkin’s *Bring Me Men* (2012) about male-to-male sexual violence in the US Army is instructive). This exclusionary imaginary around the category of ‘military personnel’ has also shaped the responses of some strands of feminist IR scholarship within debates about women’s military participation, with an essentialized ‘othering’ of the military (see Duncanson and Woodward [2016] for a critique).

There is a final point to make here about the civil–military binary and its effects on our thinking about military and civilian phenomena. The language of militarization – whether intentionally or not – encourages a conceptualization around this binary. Military influence may be seen as a linear process of contagion through which a hitherto peaceable civilian world becomes infected with violence because of military associations. As we and others have argued, in some contexts this conceptualization crumbles when examined in detail (see the example of the university armed service units in Woodward et al., 2017). As Mia Certo (2022) argues, queering civil–military relations as a conceptual and empirical exercise reveals the endless work of discursive production and reproduction through which these categories, and the gap between them, are maintained. The shaping of the economic, social, political or cultural world and its geographies may well happen as a consequence of state priorities for the preparation and deployment of military capabilities. However, to see this purely in terms of the priorities of military

institutions infecting civilian life is increasingly very limiting as a means of explanation. As a descriptive term, militarization may still have a use; analytically, we are less and less convinced of its utility.

With these ideas in mind, in this paper, we use the term ‘military–civil entanglements’ to talk about civil–military relationships, interrelationships, and interdependencies, and to progress beyond the limits of binary thinking. Refslund Sørensen and Ben-Ari’s (2019) exposition of this idea is informed by their sensibilities as anthropologists and seeks to centre the co-production of politics and economies, cultural practices, and social relations relating to military phenomena through the endless and continuing intertwining and entangling of people, lived experiences, materialities, institutions, and events. Rather than pursuing dichotomous thinking that reduces phenomena to an either/or binary of civilian and military, they argue that our attention should be directed towards the disaggregated constitutive elements – the actors, sites, discourses, technologies, and materials – through which military–civilian entanglements come into being. In turn, this suggests that thinking about entanglements means thinking in terms of assemblages. It also suggests that understanding and explaining civil–military entanglements is as much a question of empirical discovery and narrative production as it is of conceptual refinement.

Entanglements thinking points our attention to the constant processes of production and reproduction of discursive and other cultural practices through which military phenomena are made visible, explained, and understood. It directs our attention to the connections between phenomena – the points of contact, the knots. It recognizes an epistemological reality of categories of military and civilian, whilst refuting anything essential about these categories. The military–civil relationship is already assumed. The task is to consider how these entanglements evolve, and what their consequences might be. While the process is important, as the metaphor of entanglement suggests, the linearity of process-orientated accounts (particularly those that seek to trace militarization) can be questioned, particularly those that celebrate a definitive temporal starting point.

In the remainder of this paper, we examine two rather different civil–military entanglements – those of Space and those of Reservists. To return to the idea of recovery with which this paper originates, we frame these two examples around damage, recovery, what the example can tell us about civil–military entanglements, and what the specific civil–military entanglement in question suggests about how we think geographically about such things.

Civil–military entanglements and Space.

Our observations about Space, civil–military entanglements, and what this might mean for understanding the geographies of military activities, start with a particular place, RAF Fylingdales.¹ RAF Fylingdales is a UK Royal Air Force (RAF) base located on moorland just inland from the coast of North Yorkshire in northern England. There has been a military presence here on the moors since a c.10,500 ha (26,000 acre) area was requisitioned in 1939/40 for Army training and civil defence purposes. This kind of moorland, often viewed as a kind of wilderness, is actually a landscape created over hundreds of years by extensive stock grazing and iron ore and other mineral mining, and upland management, such as the creation of heather monocultures which require periodic

burning for new growth, water drainage, 'pest' control, and the construction of unmetalled tracks and butts for grouse shooting, one of the favourite sports of the English landed gentry, since the late nineteenth century. Although sited within the North York Moors National Park, in a locality popular with walkers but poorly served by transport infrastructure and with low population densities, it was part of a large area of military use consolidated post-war as an Army Practical Training Area in 1947. The site was passed to RAF control in the late 1950s and a small 800 ha (2000 acre) portion of the site was retained for military use.

RAF Fylingdales is not usually presented as the outcome of a damaging event, from which recovery can be charted and through which we can start to talk about civil–military entanglements and their geographies – although common land was lost in its creation. Instead, RAF Fylingdales is presented as one of three northern hemisphere Ballistic Missile Early Warning stations (BMEWs), partnered with similar stations at Clear in Alaska, and Thule in Greenland. Together, they scan Low Earth Orbits up to 5000 km from Earth, monitoring Space for ballistic missiles and satellite activities. At Fylingdales, from a building housing a Solid State Phased Array Radar (SSPAR) (and previously from radar housed in three large geodesic domes – the 'golf balls'), radar data is processed and simultaneously relayed to military and civilian staff at RAF Fylingdales, United Kingdom Space Command Space Operation Centre (SPOC) at RAF High Wycombe, and United States Space Force Delta 4 Missile Warning Wing based at Buckley Garrison and USSF Cheyenne Mountain Complex, Colorado. Operatives monitor the feed for indications of ballistic missile launches and for a range of purposes around monitoring, assessment, location, and deconfliction of the thousands of satellites now orbiting earth.

Space surveillance at RAF Fylingdales is a recovery response to an event, and the event was the launch of the Sputnik satellite into orbit by the USSR in 1957 (Mulvihill, 2019). This was a Cold War event. The launch of this satellite and its ability to orbit Earth made clear to the USA the technological capabilities of the USSR to manufacture and launch a nuclear warhead attached to a ballistic missile, militarizing Low Earth Orbit. The monitoring capabilities built at RAF Fylingdales came into being in order to give the US government and military an advance warning of up to 15 min of a nuclear missile strike by the USSR on US territory. A BMEW's site was required in Europe, and the site on Fylingdales Moor was selected, used by the Army in the Second World War, and a designated site for military training post-war close to but just out of sight from the North Sea coastal waters to the east. RAF Fylingdales and its BMEWs and satellite monitoring functions remain fully operational to this day.

The core principle of BMEWS is to distinguish incoming nuclear warheads from a range of human and non-human phenomena including meteorites, the aurora that forms at the same altitude as incoming missiles over the North Pole, the multiple satellites in orbit around Earth, and the Moon. In the original iteration of BMEWs at RAF Fylingdales, the task of distinguishing between objects was done by two powerful IBM 7090 mainframe computers that interpreted data from the radars and correlated this against a database of known objects in Low Earth Orbit. An anomaly raises an 'environmental alarm' alerting human systems engineers to identify any potential faults in the radar and computer systems, and alerting space operations personnel to locate known satellites that have drifted off course or space weather events. If the systems checkout

identifies that they are functioning normally, and if orbital anomalies are ruled out, then an alert is sent to a high command level that in turn issues a missile warning. Although the technologies to do this have advanced over the decades that RAF Fylingdales has existed, the principles remain unchanged. In the SSPAR building, the radar and 24-hour broadcast news feeds give the operations crew a picture of emerging geopolitical events that aid their ability to distinguish between a false alarm and an actual missile attack.

Although the BMEWs function has stayed consistent, RAF Fylingdales' role in space monitoring has expanded very considerably. Space monitoring is the practice of observing the military and commercial satellites in orbit in order to plot locations and watch for collision (with over 8,000 satellites in orbit, excluding StarLink and OneWeb constellations, the results of collision would range from inconvenient to catastrophic). Multiple life support systems on Earth, and multiple military activities, are dependent on satellite connectivity and satellite-based observation practices. Space monitoring also therefore includes observation of anti-satellite activity. In addition and as a consequence of over six decades of Space activity by humans, a considerable quantity of space debris (space junk) also orbits Earth – estimates vary according to the size of individual pieces to be counted, which range from flakes of paint to intact, defunct satellites, but the United States space Surveillance Network current tracks 56,450 items larger than 10 cm. Of these, 28,160 are classed as space junk. There are also millions of pieces of space junk smaller than a penny. Space monitoring is also therefore about space junk monitoring and the dangers of overcrowded low earth orbits.

In terms of civil–military entanglements, we have two observations about space monitoring at RAF Fylingdales. First, space monitoring has always been a civil–military enterprise. The entanglement of military objectives and civilian provision, geopolitical ambitions with civilian technological innovation, military deployments with commercial opportunities, state security imperatives with the imperatives of capital accumulation, have existed together in space monitoring and at RAF Fylingdales since its inception. RAF Fylingdales along with the other two early warning stations in Greenland and Alaska were designed and built by Radio Corporation of America (RCA). RCA was a major defence and aerospace contractor for the US Government but is probably better known for its consumer electronics and the RCA Victor record label, which still operates today (Mulvihill, 2021). RCA Service Company provided operations and maintenance services for RCA's defence and consumer electronics divisions, which included television repairs and maintenance of the Apollo tracking facilities at the Cape Kennedy space launch complex. At RAF Fylingdales, RCA systems engineers maintained and operated the radar and computer systems, and provided operational continuity for BMEWs' military and governmental service users. The central role of civilian RCA systems engineering meant that when RAF Fylingdales was identified for upgrade and installation of the SSPAR, RCA Service Company managers at the base formed SERCO. The name is a compound of 'SER' (Service) and 'CO' (Company). The company tendered against Raytheon, which designed and built the SSPAR. Today, SERCO has become a global contractor providing government services that range across transport, border control, health, and education. The company's initial expansion came with the provision of space surveillance and deep space tracking services for the European Space Agency. At RAF Fylingdales, SERCO engineers are still central to space surveillance and early warning practices.

This includes 24/7 human orbital services that support military operators by identifying lost satellites and anomalies produced by new orbital technologies such as Space X's vast Starlink satellite constellations. The staff monitoring the screens in the SSPAR are RAF personnel, who work in tandem with civilians. A wider UK space monitoring industry draws on personnel trained at Fylingdales as civilians and as military personnel. To observe, as the US Defense Intelligence Agency (2022) report did, that 'Space is being increasingly militarized' (p.iv), is to ignore a 60+ year history of collaborative military-civilian activity in space. Although the nature of the entanglement has seen the participants in the civil-military partnership assemblage transform their relationships with each other, develop and integrate new participants, and diversify their interests and concerns, that entanglement has always been there.

Second, but related, the privatization of defence, a short-hand term for the civil-military entanglements that have evolved around the sub-contracting of military functions to commercial enterprises for military benefit and private financial gain, while not new, has compounded these entanglements. It begins, for the US military, with BMEWs which grew out of an academic research endeavour at MIT Lincoln Laboratory and was mobilized by the vast industrial network of RCA, whose customers entwined military, government, and civilian consumers through the RCA Service Company (which became SERCO). In the UK, where patterns of privatization had existed (for example, in armaments manufacture) but had been quite contained, the process of privatization of operational and technical capabilities becomes consolidated at Fylingdales. There is of course the existence of a parallel debate to note, about defence as a public good, the role of the state in providing this, and the political consequences that follow the hollowing-out of this function. For our arguments here, the important point to note is the civilian commodification and commercialization of this military function, of which this is an exemplary case. The contemporary space monitoring industry is an outcome of a much older process of privatization of military space monitoring, and ballistics development itself.

To conclude on RAF Fylingdales and civil-military entanglements, we now turn to the question of what this particular example might indicate more broadly about how we might think geographically about military phenomena and activities. Working at RAF Fylingdales, the significance of scale becomes obvious in ways that have not been as evident to us elsewhere. An exercise over the last two years, in walking both the ground of the current RAF base and the ground and perimeter of the larger former Army military training area, has not only shown visibly in the landscape the materiality of many of the civil-military entanglements brought into being there, but has also clarified the scale of the site, its temporal development, its impacts, and its reach. For example, the large, strangely shaped, and idiosyncratic SSPAR building is capable, through its design and positioning, of distorting a sense of scale in the moorland landscape not just from beside the building but when perceived from a distance. The scales at which Fylingdales operates, and at which its outputs are used, range from the individual and embodied, through the local and national infrastructures, to the global world order. Our purpose in this paper is not to detail how, exactly, we can conceptualize scale in terms of civil-military entanglements – although the work of assemblage theorists in geography will be useful of course. We are not alone in recognizing that scale has significance for our understanding of entanglements; Sorensen and Ben Ari (2019) mention how entanglement thinking has to consider the views and experiences of

different groups and nations, even while still holding on to recognition of the positioning of different groups or nations in transnational or global settings. We concur, and add that there is always a politics to the perception and experience of scale, and this is to us an indicator that scale seems important to the geographies of civil–military entanglements.

Civil–military entanglements and the reproduction of the military Reservist

The second example concerns the civil–military entanglements through which Reserve military personnel are individually and collectively produced and reproduced.² This example focuses solely on the UK experience over the last decade or so, and it is important to note from the outset that the use and reproduction of Reservists varies enormously between different national armed forces. The following comments may or may not be pertinent to the lived experience of Reserves participation in other contexts. However, it is possible that the conclusions might spark recognition and thought amongst those outside as well as within the UK with Reservist experience.

The British armed forces, from the early twentieth century, have had Reserve forces (variously titled), which have worked in parallel with regular armed forces. This reserve army of military labour, in its post-1945, post-conscription, and post-National Service formations was for many serving personnel regarded as something of a joke. Its full strength under various iterations has risen and declined over the century, but for many participants, it felt valuable – whether socially, economically, or personally – despite often negative portrayals in popular culture and the popular imagination. Members of the Territorial Army in the UK (by far the largest of the three Reserve forces) like other services' reservists, may have been very alert to their lived realities of civil–military entanglement, but for the majority of the population this experience was neither widely known nor recognized. (Whether that has changed over the past two decades is a moot point, but certainly their role and self-image shifted with deployments to Iraq and Afghanistan when this reserve army of military labour was actually called-up and deployed.)

Returning to the idea of damage and recovery, most commentators on the Reserves (and certainly most academic commentators) would identify the 2008–09 global financial crash and economic crisis as the disruptive or damaging event to an established order, which in turn initiated a form of recovery in terms of new formations in civil–military entanglements and their geographies. In the aftermath of the crash, a Conservative-Liberal Democrat Coalition government under Prime Minister David Cameron and Chancellor of the Exchequer George Osborne initiated a programme of financial austerity. This centred around significant cuts to a range of public services. The Ministry of Defence and UK armed forces were not excluded.

The UK Strategic Security and Defence Review 2010 included statements about the need for a reduction in the number of serving personnel (alongside a range of other measures around organization, equipment, and basing reductions). To ensure continued capabilities (the UK armed forces were still actively deployed in Afghanistan at this time), the Reserve forces would be rebranded, reorganized, and expanded. For the British Army, the target was for 30,000 fully trained Reservists working with around 90,000 (later 82,000) Regular Army personnel. The wider consequences of the *Future Reserves* and subsequent *Future Soldier* programmes for defence capabilities and the demographic profile of the

armed forces, and the troubled roll-out of these programmes in a context of on-going under-recruitment, mis-guided private subcontracting of recruitment to Capita, and cultural challenges around integration of Regulars and Reservists, are not for discussion here (see Bury, 2019; Edmunds et al., 2016). Nor is there space to talk more broadly about the civil–military entanglements initiated through practices, discourses, and material actions to enable expanded Reserves to function with the support of employers and a wider populace. We will focus here instead on the body of the individual Reservist.

The civil–military entanglements embodied by Reservists are inherently biopolitical. They are about the management, regulation, and governance of the individual. This individual body is a military operative and therefore subject to the regulations and surveillance which govern all military bodies in terms of physical ability, uniformed and groomed appearance, and deportment. This body is also a civilian, ostensibly for the majority of their time beyond these regulations and this surveillance. The reproduction of the individual military body speaks to the idea of entanglement as transactional; in return for pay, which is most usually a financial benefit in addition to a regular civilian job's remuneration or unemployment benefits if unemployed, the Reservist produces and maintains a body fit for military service. In the Regular armed forces, time and exercise facilities are provided for use during a working day to maintain a service-ready body. However, this is not usually available to Reservists who may attend their military units as few as 25 days a year. Although access to physical training equipment and support is, in theory, available to Reservists, the complex time geographies of civil–military entanglement that Reservists embody may preclude the use of (free) military physical training facilities for many of them. Reservists usually pay gym membership fees from their own pockets, in order to maintain a level of physical fitness required by their branch of the armed forces. The biopolitics of civil–military entanglements play out daily, and quite literally, through the body of the Reservist where the military body is trained in the civilian gyms, and other social spaces, where non-military bodies being trained for ostensibly different purposes. We note too that military training practices have entered civilian practices through militarized exercise regimes – often run by ex-service personnel, held in open air spaces, often with military-themed sportswear. The influence runs the other way too with much of military training, especially fitness training, adopting civilian clothing technology and training schedules. These have a trajectory through time and space influenced by the cultural consumption of sports and sporting identities, as well as changes in geo-political situations.

The civil–military entanglements that Reservists embody are in turn productive of social relations and divisions of labour, both military and civilian, work and non-work. Reserves participation may only become possible for the individual Reservist because the domestic labour required for daily reproduction of the functioning Reservist body (shopping, cooking, cleaning, laundry, and so on) is provided by a spouse or other family member. The separation in the reservist household between the civilian and the military is not simple binary practices, or a split between the individual in the military and those non-military family members. Reserves who have dependent children or elders may be reliant on the caring work provided by a spouse or other family member, particularly given the evening and weekend commitments for Reservists and the absence in the UK of available, affordable childcare outside the hours of 8am–6pm, Monday to Friday. Even without such commitments, Reservists may be reliant on domestic and caring work, undertaken by others to enable the maintenance of their military body. The

availability of the Reservist free of other commitments and the presence of that Reservist on a military site to undertake military duties, is often reliant on support work, most usually gendered female. As Basham and Catignani (2018) argue, it is this gendered labour which facilitates and underpins the ability of Reservists to be Reservists. Whether gendered or not, it illustrates the civil–military entanglements that Reservists embody, relies upon and in turn reproduce and maintain as part of their military employment. This is of course not restricted to Reservists; very specific sets of civil–military relations exist in the Regular military, for example through the work of military spouses of Regular service personnel in the production of the military body.

The civil–military entanglements that Reservists embody also speak to the hidden webs of financial support which flow to defence. Funding for Reservists when deployed is paid to employers, and this is highly visible as part of the UK defence budget (around £44 billion in 2021–22). But there are also hidden mechanisms by which additional support flows to the Reserves from employers. This is extremely difficult to quantify as financial value with any accuracy, but we know it happens. This is not necessarily a question of skills transfers from the civilian to military worlds; this was touted as a benefit of the revamped Reserves programme after 2010, but as we note elsewhere this was very limited (Woodward et al., 2022). What is more evident is what might in some contexts be defined as workplace theft; we think of this as civilian employer subsidy. This includes, for example, time-theft through the completion of Reserves tasks such as paperwork during civilian working hours, or the use of civilian workplace equipment and materials for the completion of Reserves tasks. For our purposes here, thinking about civil–military entanglements in the context of the Reserves, our observation is about both the scales at which these entanglements work and the value (including financial value) which these entanglements represent. In turn, there is a wider argument (see Jenkins et al., 2019) about the expansion of the Reserves as indicative of the privatization of provision of defence as a public good, whereby the costs of doing so become increasingly socialized and beyond defence budgets. This privatization facilitates the increasing distance of civil actions from their identification as directly causal upon military imperatives, and vice-versa.

In this example, we have looked at issues exemplifying civil–military entanglements caused by the UK state’s regimes of financial austerity, how this applies to military budgets, and how this results in visible changes to established modes of military manning as a consequence of the increase in the Reserves and the ways in which modes of civil–military entanglement can be read from the bodies and lived experiences of Reservists. This then impacts the civilian world of the Reservists’ employment, on their managers, co-workers and employees; training for participation as a Reservist includes time away from work that must be covered by other employees, with impacts in turn on them and their families. This is most evident when reservists are deployed full-time on operations with Regulars and may be away from their civilian workplace for six months or more at a time, and on more than one occasion.

To conclude this section, we return to the original question about the ways of thinking geographically about military phenomena and activities which the idea of civil–military entanglement suggests. What is evident from research on Reservists and their lived, embodied experience of civil–military entanglement, is the complex mobilities and associated spatialities and temporalities of these entanglements. Living as a Reservist is to live a geographical challenge, a constant process of negotiated mobility between

home, a civilian workplace, and a military base – and potential deployments away from the base on training or combat activities. We have necessarily had to gloss over the full scope and actual details of these civil–military relations and dependencies, as their practices and the details of entanglement phenomena, and the exploring and understanding the detail of this geographically challenging life, is challenging to describe through words alone. Cartographic visualization techniques might help. This requirement is important, and its adequate solution is more than an academic methodological puzzle about the possible visualization of data, important though such questions are. These geographies of civil–military entanglement are significant for the maintenance of UK defence capabilities, and understanding these through an idea of civil–military binaries as an explanatory tool is largely a redundant approach in the twenty-first Century. Our point is an argument about the need to understand civil–military entanglements as inherent to the sociology and geography of military phenomena, and the challenges that this then produces for communication of that understanding.

Conclusions and discussion points

In this paper, we have taken the RGS-IBG 2022 conference theme of ‘geographies beyond recovery’ and used it to think through the geographies of civil–military entanglements. We have taken this idea of entanglements, in relation to the civil–military binary, as a way of envisioning their interrelationships and interdependencies which we argue are necessary as the antecedent to recovery from the instabilities of militarism and militarization and its socio-geo-political consequences. We identified entanglements in relation to two contexts: the damage and recovery that followed the development of nuclear-armed ballistic missile technologies, and the damage and recovery that followed financial austerity impacts on military personnel strategies. In each case, the ‘recovery’ is not a return to the old normative understandings, but the creation of new normative practices and relationships which can tell us something about civil–military entanglements and their geographies.

In conclusion, we want to broaden the question out to suggest three possible directions of travel for a more developed understanding of what thinking geographically about military phenomena and activities might mean. As we have argued elsewhere (Rech et al 2015, Woodward, 2004, 2005, 2014, 2019), we know in broad conceptual terms how military geographies are constituted and expressed through space, place, environment, and landscapes, and how military phenomena and activities are themselves constitutive of these. But exploring civil–military entanglements suggests something about how we might do this.

First, scale seems important. There is of course a growing literature on scale and assemblage in Geography (Anderson & MacFarlane, 2011) and other disciplines (see Harris 2017 for a summary from Archaeology), which points to the opportunities that assemblage thinking opens up for scalar thinking, but also to the difficulties of reductionism whereby the nesting of different scales implicitly or explicitly risks prioritizing one over another. For civil–military entanglements, this is an important political question, about how negotiated orders of priorities emerge, coalesce, and conflict at different scales. We do not have an easy answer here, beyond highlighting this as a future focus for sustained academic inquiry.

Second, finding methodologies through which we can explore these entanglements and their geographies is important. Methodologies (whether explicitly ‘geographical’ or not) are

central to the ways in which we account for the spatialities and temporalities of civil–military entanglements, and are highly influential on the means by which we can then communicate our ideas. Work by colleagues in Geography at Newcastle University is indicative of future directions with the adoption of an explicit creative research practice. The focus of much of this work is not on the observation of the creative practices of others to understand military phenomena (although this in itself is valuable). Rather, the focus is on the doing of a particular practice as a means of generating ideas (concepts, theories) about how a phenomenon works. Examples include Alice Cree and JoJo Kirtley’s development, writing, and co-production with military spouses of the play *Magnolia Walls* as a means of understanding the intersections of military conflict and domestic intimacy; Chloë Barker’s production of the Fylingdales Archive as a means of understanding how institutional memories within military organizations operate; Michael Mulvihill’s work with the band One Key Magic and their album *Worldly Noise and Electronic Atmospheres*, translating radar frequencies into musical soundscapes as a means of making audible the electromagnetic practices of nuclear deterrence; Hannah West’s writing, performing and filming of songs such as *She’ll Hold Her Own* as a means of understanding and making visible her experience of leaving the Royal Navy; or K. Neil Jenkins and Rachel Woodward’s practices of walking on the North York moors as a means of apprehending the temporalities and scales of current and former military landscapes. There is an added value to creative methodologies, too; they are usually productive of a material object or event or experience that can be shared more widely beyond academic circles.

Third, explorations of the geographies of civil–military entanglements make very explicit our accountabilities as researchers (Woodward et al., 2020) – our own entanglements. We are of course accountable as university employees, as members of disciplinary and topic-led research communities, and as recipients of public funds in order to conduct research. We are accountable to our research respondents, participants, collaborators, partners, and co-producers. For those involved in military research, there are very often accountabilities to military institutions, organizations, and personnel with some researchers being former, or even current, members of military organizations, shaping relationships which may inform how we investigate civil–military entanglements (Jenkins, 2018, 2022). There is a politics that is ever-present for military researchers, about the necessity for and limits to that accountability. Negotiating through that politics is difficult, but always necessary.

Notes

1. Information on RAF Fylingdales and its functions comes from an AHRC-funded project, *Turning Fylingdales Inside Out: Making practice visible at the UK’s ballistic missile early warning and space monitoring station*, Rachel Woodward, Chloë Barker, K. Neil Jenkins and Michael Mulvihill, 2020–23, grant reference AH/S013067/1.
2. Information on the UK Reserves taken from *Keeping enough in Reserve: The employment of hybrid citizen-soldiers and the Future Reserves 2020 programme*, Rachel Woodward, Antonia Dawes, Tim Edmunds, Paul Higate and K. Neil Jenkins, 2014–18, grant reference ES/L012944/1.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This work was supported by Arts and Humanities Research Council: [Grant Number AH/S013067/1]; Economic and Social Research Council: [Grant Number ES/L012944/1].

Notes on contributors

Rachel Woodward is Professor of Human Geography in the School of Geography, Politics & Sociology at Newcastle University, UK.

K. Neil Jenkins is a Senior Research Associate in the School of Geography, Politics and Sociology at Newcastle University, UK.

Michael Mulvihill is a Vice Chancellor Research Fellow in the School of Social Sciences, Humanities and Law at Teesside University, UK.

References

- Anderson, B., & MacFarlane, C. (2011). Assemblage and geography. *Area*, 43(2), 124–127. <https://doi.org/10.1111/j.1475-4762.2011.01004.x>
- Basham, V. M., & Catignani, S. (2018). War is where the hearth is: Gendered labor and the everyday reproduction of the geopolitical in the army reserves. *International Feminist Journal of Politics*, 20(2), 153–171. <https://doi.org/10.1080/14616742.2018.1442736>
- Belkin, A. (2012). *Bring Me Men: Military masculinity and the benign façade of American empire*. Hurst.
- Bernazolli, R., & Flint, C. (2009). From militarization to securitization: Finding a concept that works. *Political Geography*, 28(8), 449–450. <https://doi.org/10.1016/j.polgeo.2009.08.003>
- Bury, P. (2019). *Mission improbable: The transformation of the British army reserve*. Howgate.
- Caforio, R. (ed.). (2006). *Handbook of sociology of the military*. Springer.
- Cancio, R., Kuptsevych-Timmer, A., & Omori, M. (2020). Perpetual war with the Brother Nation: An analysis of Ukrainian veterans, cultural identity and historical trauma. *Journal of War & Culture Studies*, 13(3), 219–236. <https://doi.org/10.1080/17526272.2018.1558536>
- Certo, M. L. (2022). *Queering civil-military relations: The cultural work of recognition, recovery and reproduction* [PhD thesis]. Dept. of International Relations, London School of International Relations and Political Science.
- Cohn, C., & Duncanson, C. (2020). Whose recovery? IFI prescriptions for post-war states. *Review of International Political Economy*, 27(6), 1214–1234. <https://doi.org/10.1080/09692290.2019.1677743>
- Dandeker, C., & Mason, D. (2001). The British armed services and the participation of minority ethnic communities: from equal opportunities to diversity? *The Sociological Review*, 49(2), 219–235. <https://doi.org/10.1111/1467-954X.00253>
- Defence Intelligence Agency. (2022). *Challenges to security in space: Space reliance in an Era of competition and expansion*. DIA.
- Duncanson, C., & Woodward, R. (2016). Regendering the military: Theorizing women's military participation. *Security Dialogue*, 47(1), 3–21. <https://doi.org/10.1177/0967010615614137>
- Edmunds, T., Dawes, A., Higate, P., Jenkins, K. N., & Woodward, R. (2016). Reserve forces and the transformation of British military organisation: Soldiers, citizens and society. *Defence Studies*, 16(2), 118–136. <https://doi.org/10.1080/14702436.2016.1163225>
- Harris, O. J. T. (2017). Assemblages and scale in archaeology. *Cambridge Archaeological Journal*, 27(1), 127–139. <https://doi.org/10.1017/S0959774316000597>
- Higate, P., & Cameron, A. (2006). Reflexivity and researching the military. *Armed Forces & Society*, 32(2), 219–233. <https://doi.org/10.1177/0095327X05278171>
- Huntington, S. (1957). *The soldier and the state*. Belknap Press.
- Janowitz, M. (1960). *The professional soldier: A social and political portrait*. The Free Press.

- Jenkins, K. J., Woodward, R., Williams, A., Rech, M., Murphy, A., & Bos, D. (2010). Military Occupations: Methodological approaches and the military-academy research nexus. *Sociology Compass*, 5(1), 37–51. <https://doi.org/10.1111/j.1751-9020.2010.00340.x>
- Jenkins, K. N. (2018). Unique adequacy' in studies of the military, militarism and militarisation. *Ethnographic Studies*, 15, 38–57.
- Jenkins, K. N. (2022). Critical veteran researchers' unique adequacy: Accounting for friendly fire and fratricide. *Critical Military Studies*, 9(1), 40–58.
- Jenkins, K. N., Dawes, A., Edmunds, T., Higate, P., & Woodward, R. (2019). Reserve forces and the privatization of the military by the nation state. In O. Swed, & T. Crosbie (Eds.), *The sociology of privatized security* (pp. 107–136). Palgrave.
- Kirsch, S., & Flint, C. (eds.). (2011). *Reconstructing conflict: Integrating war and post-war geographies*. Ashgate.
- Koops, J. (ed.). (2015). *The Oxford handbook of United Nations peacekeeping operations*. Oxford University Press.
- Mills, C. W. (1956). *The power elite*. Oxford University Press.
- Muller, A. (2022). What is quantum entanglement? A physicist explains the science of Einstein's 'spooky action at a distance'. *The Conversation*, 6th October 2022.
- Mulvihill, M. (2019). *The four minute warning drawing machine: Revealing the assemblages of nuclear deterrence* [Newcastle University PhD thesis]. School of Arts and Cultures. <https://theses.ncl.ac.uk/jspui/handle/10443/4824>.
- Mulvihill, M. (2021). Purple Haze: The psychedelic sound of nuclear deterrence. *Inkstick Media*. www.inkstickmedia.com.
- Rahbek-Clemmensen, J., Archer, E. M., Barr, J., Belkin, A., Guerrero, M., Hall, C., & Swain, K. E. O. (2012). Conceptualizing the civil-military gap: A research note. *Armed Forces & Society*, 38(4), 669–678. <https://doi.org/10.1177/0095327X12456509>
- Rech, M., Bos, D., Jenkins, K. N., Williams, A., & Woodward, R. (2015). Geography, military geography, and critical military studies. *Critical Military Studies*, 1(1), 47–60. <https://doi.org/10.1080/23337486.2014.963416>
- Sarkesian, S. (1975). *The professional army officer in a changing society*. Rowman and Littlefield.
- Sørensen, B.R., & Ben-Ari, E. (2019). Introduction: Rethinking civil-military connections: from relations to entanglements. In B. Refslund Sørensen, & E. Ben-Ari (Eds.), *Civil-Military entanglements: Anthropological perspectives* (pp. 1–20). Berghahn.
- Woodward, R. (2004). *Military geographies*. Blackwell Publishers. RGS-IBG book series.
- Woodward, R. (2005). From military geography to militarism's geographies: Disciplinary engagements with the geographies of militarism and military activities. *Progress in Human Geography*, 29(6), 718–740. <https://doi.org/10.1191/0309132505ph579oa>
- Woodward, R. (2014). Military landscapes: Agendas and approaches for future research. *Progress in Human Geography*, 38(1), 40–61. on-line in. July 2013. <https://doi.org/10.1177/0309132513493219>
- Woodward, R. (ed.). (2019). *A research Agenda for military geography*. Edward Elgar.
- Woodward, R., Dawes, A., Edmunds, T., Higate, P., & Jenkins, K. N. (2020). The possibilities and limits of impact and engagement in research on military institutions. *Area*, 52(3), 505–513. <https://doi.org/10.1111/area.12629>
- Woodward, R., Dawes, A., Edmunds, T., Higate, P., & Jenkins, K. N. (2022). The use of military reservists' civilian skills for armed forces. In E. Ben-Ari, & V. Connolly (Eds.), *Contemporary military reserves: Between the civilian and military worlds* (pp. 146–164). Routledge.
- Woodward, R., Jenkins, K. N., & Williams, A. J. (2017). Militarisation, universities and the university armed service units. *Political Geography*, 60, 203–212. <https://doi.org/10.1016/j.polgeo.2017.07.012>