Social Science & Medicine 67 (2008) 1641–1649

Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

Early accounts of Gulf War illness and the construction of narratives in UK service personnel☆

Simon Cohn [b], Clare Dyson [c], S. Wessely [a,*]

[a] Psychological Medicine, Institute of Psychiatry, King's College London, London SE5 9RJ, UK
[b] Department of Public Health, University of Cambridge, Cambridge, UK
[c] Department of Anthropology, Goldsmiths, University of London, London, UK

ARTICLE INFO

Article history:
Available online 29 September 2008

Keywords:
Illness narratives
Gulf war syndrome
Veterans
Rumour
Contested diagnoses
Military health
UK

ABSTRACT

"Gulf War Syndrome" has become firmly established in public and political discourse, and considerable numbers of veterans of the 1991 Gulf war now see it as part of their identity. In this paper we draw on open-ended questionnaire data drawn from a large, random sample of UK Gulf veterans, collected in 1996 and 1997. Whilst there is already some literature focussing on coherent personal narratives of some veterans and campaigners, we suggest that they are preceded by much more fragmentary, shared accounts. We take the idea of rumour as a way of encapsulating how these partial ideas swiftly gained value by reflecting and reproducing social ties. Accounts describing fears about this mystery condition simultaneously made reference to concerns about their role as a soldier, about the purpose of the conflict, and rising mistrust of their commanders. As doubt over soldiers' function increased, informal social networks became increasingly significant, perhaps also linked to an erosion of respect for formal military hierarchy. At the same time, rumours of "Gulf War Syndrome" began to circulate, reinforcing the idea that the cause was elusive, and invisible, whilst undermining both the unity of the military force and the individual soldier's body. We suggest that the nature of Gulf War Syndrome as a topic of contestation in the years after the conflict was keenly shaped by these early rumours, which entangled specific ideas of the illness with feelings of betrayal, distrust and ambiguity. Informed by the general literature on illness narratives, we explore how the transmission of ideas and causal theories were themselves instrumental in the emergence of the condition as it was experienced.

Introduction

This paper will explore the relevance of the concept of illness narratives in the context of "Gulf War Syndrome" (GWS). Much important work has been done that describes narrative construction as a personal endeavour, which can offer meaning and even therapeutic relief from the experience of chaos that suffering can induce (see for example Mattingly & Garro, 2000). We wish to compliment such approaches by emphasising how, in the early period of health fear and suspicion prior to the full emergence of GWS, ideas which would eventually coalesce into more stable accounts initially circulated in a social environment.

☆ The construction of the qualitative data base and Miss Dyson's salary was funded by the Leverhulme Trust. The larger epidemiological study that included the free text responses was funded by the US Department of Defence. No funding body had any input into the design, analysis or interpretation of the study. No funding body has seen or commented on the manuscript. The study received ethical approval from the Ministry of Defence (Navy) research ethics committee and the King's College Hospital local research ethics committee.

* Corresponding author. Tel.: +44 207 848 0448.
E-mail addresses: simon.cohn@medschl.cam.ac.uk (S. Cohn), clairedyson@hotmail.com (C. Dyson), s.wessely@iop.kcl.ac.uk (S. Wessely).

0277-9536/$ – see front matter © 2008 Elsevier Ltd. All rights reserved.
doi:10.1016/j.socscimed.2008.09.004

This collective aspect, typified by the constant flow of rumours and anxieties, provided not merely the context out of which individual narratives would eventually transpire, but actually shaped the way they would be constituted and the meaning that they would contain. In this way, the early circulation of fears and ideas concerning a possible health threat not only catalysed individuals to be concerned and start to perceive their own health and body differently, but also served as a significant causal agent in its emergence and vector for its transmission.

Six hundred and ninety seven thousand American, 51,000 British and 4500 Canadian men and women served with military personnel from many other countries during the 1991 Gulf war. Shortly after their return, some of them started to complain of unexplained symptoms, including fatigue, muscle pain, memory loss, headaches and insomnia. The numbers of sufferers rose over the next five years; initially only cases in the USA were reported, then subsequently amongst UK, Canadian, Danish, Australian and finally French forces, with the only exception being the Saudi National Guard (Gackstetter et al., 2005). A decade later, between 15 and 20% of those who served in the Gulf war believed they suffered from GWS (Chalder et al., 2001; Steele, 2000).

There is now a considerable medical literature on Gulf War health issues. The current medical consensus is that there is indeed an increased burden of illness in veterans, but that this does not reflect a discrete condition or syndrome. Likewise, there is agreement that this has no single cause. For example, we have reported an association with the particular pattern of vaccination used to protect UK service personnel against the genuine threat of biological warfare (Unwin et al., 1999), but this too remains contentious, and may only refer to the UK example since other countries used other agents. Further, Danish troops serving in the Gulf received no vaccinations or any other medical counter measures, but have also suffered a similar decline in health. Readers wishing to learn more are referred to the nine exhaustive reports produced by the US Institute Of Medicine (see http://veterans.iom.edu), or the edited collection of reviews published by the Royal Society (Anonymous, 2006).

But whilst some now see GWS as either a psychological disorder, such as Post Traumatic Stress Disorder or a variant of previous post-conflict syndromes (Hyams, Wignall, & Roswell, 1996; Jones et al., 2002), and others see it as the result of contemporary socio-cultural forces (Showalter, 1997), most veterans who consider themselves affected argue, often vehemently, that it is a physical disorder caused by exposure to some toxic substance either shortly before or during the conflict. Sick veterans and their supporters have proposed a large number of possible agents, ranging from exposure to biological or chemical agents, pesticides, adverse reactions to the vaccines and other drugs administered to protect troops, environmental factors such as smoke and kerosene fumes, and radioactive poisoning from depleted uranium used in anti-tank missile casings. Some argue that there has been an international conspiracy and that all "official" medical research that fails to confirm a biological basis must also be part of the cover-up.

Rather than discuss current debates and the ways in which GWS has for some become a fixed concept, particularly in the light of political and legal struggles for recognition (see for example Shriver 2001; Zavestoski et al., 2004; Zavestoski, Linder, McCormick, & Mayer, 2002), this paper will chart the shaping of the syndrome in individual accounts at an earlier stage, when the condition was an emerging entity. It will examine the way in which individual experiences were imbued with uncertainty, fear and mistrust, while any singular concept of illness tended to be ambiguous, fluid and unfixed. Previous research by social scientists has focused on those veterans who unequivocally state that they were suffering from the condition (see for example Shriver, Webb, & Adams, 2002; Shriver & Waskul, 2006), on UK veterans group (Kilshaw, 2006), or on veteran activists (Zavestoski et al., 2002). In contrast, this study draws on accounts given by UK Gulf War veterans in 1996 who took part in a large scale survey carried out at King's College London and funded by the US Department of Defence to investigate possible health consequences of Gulf War service which generated a representative cohort of all those who served in the 1991 conflict (see Unwin et al., 1999 for details). In this study data collection took place between 1997 and 1998, and obtained data from 8195 serving and ex-serving personnel, representing the three Armed Services, a response rate of 65%. As far as we know there has been no previous study that collected data from a representative sample suitable for qualitative analysis, but although these are indeed "early" accounts, we have to acknowledge the five year gap between the end of hostilities and the observations that form the basis of this analysis.

Amongst the quantitative measures were a number of open-statement/'free text' sections that provided an opportunity for respondents to describe their experiences during the war and relate these to ideas about their health and illness. All text passages longer than a single sentence were entered into an editor and then imported into the qualitative software application, NVivo. Of 2735 completed questionnaires from those who were in the Gulf, 1100 (40%) were fully analysed on the basis that they contained significant amounts of qualitative responses. Because of the freedom given to respondents by the open invitation to write in detail it is impossible to ascertain whether those veterans who chose not to provide text accounts had significantly different views or experiences. However, whilst it could be argued that the qualitative dataset might not be representative, no variable from the questionnaire, including those relating to measures of health status, was statistically associated with these submissions of free text responses.

Individual text sections were provisionally coded and cross-referenced with other passages written by respondents in order to establish a robust set of topics for analysis. Reiterations of the data allowed these to be classified into a hierarchy of themes, and establish associations with each other. We consequently reflexively drew on the material to ground our analysis in the emerging themes (Glaser, 1992), using the qualitative software to build up a comparative framework of general categories. Quotes and sections of quotes provided in this paper are representative examples of a much larger subset of these passages.

As an initial overview of the responses, virtually all accounts infused in this early stage reflect both the search for more information about the risks and exposures encountered and a sense of hesitancy about its very existence. This general synopsis reflects a mix of ideas about health risks and possible causes of illness, uncertainty about future health and reproduction, and the on-going fear of contagion. Other research suggests that later contradictions were either resolved or eliminated, in the production of a more secure and strident narrative form (Brown et al., 2001; Kilshaw, 2006). By detailing these initial accounts we will argue that rumour, in these relatively early days of GWS construction, served as the major source of information and consequently was instrumental in establishing some of the themes that became central to the developing narratives. Further, as ideas and information seeped through the rigid structure of the military, the diverse nature of rumour itself served to supplement the perceived ambiguity of the condition. Thus, the study of narrative around GWS is not solely one of content, but also of the form by which the ideas were initially transmitted. This paper will consequently suggest that there are important metaphorical associations embedded in the accounts of GWS which, via the flow of rumour, linked such aspects as beliefs about contagion and ideas of vulnerability to a general sense of uncertainty about the role of the soldier in modern-day warfare.

Rumour and illness narratives

Concern that rumours might damage morale amongst US military personnel during the Second World War inspired Allport and Postman (1947) to study the way that they serve both to heighten fears and raise false expectations. More generally, the work by Rosnow and Fine emphasised how rumours have a particular role in alleviating anxieties and can serve as a make-shift coping mechanism when people are faced with uncertainty (Rosnow & Fine, 1976). But beyond the impact of rumours at an individual level, this paper will argue that part of their veracity arises from their inherent social nature and they way they can actively create camaraderie and community. Although Gluckman (1963) and Kapferer (1990) argued many years ago that gossip frequently functions to strengthen social cohesion, studies of illness narratives have largely dismissed the role of rumour as peripheral to its central focus of describing more stable and coherent beliefs and attitudes.

It is a common idiom to liken the spread of ideas to an epidemic. For example Strong described the rapid spread of fears associated with the outbreak of AIDS during the 1980s through micro social interactions as an example of 'epidemic psychology' (Strong, 1990). Since Daley and Kendall (1965), there have even been attempts to apply statistical models from epidemiology to their distribution and proliferation (Cane, 1966; Noymer, 2001; Pittel, 1990). Instead of pursuing this focus, however, we wish to explore the association between rumour and epidemic in a different way. Rather than merely liken rumour to an epidemic metaphorically, we will address to what extent it might actually be instrumental as a catalyst for self-diagnosis, and hence directly affect the expression of illness. Recent work by Christakis (2008) and Christakis and Fowler (2007) on the way social networks can be shown to have a direct influence on such varied things as the prevalence of obesity or illegal drug use persuasively demonstrates how the distribution of ideas can be directly related to the spread of illness. The general suggestion is that many illnesses are inherently complex manifestations of symptoms, expectations, beliefs and behaviours. This does not imply that they are any less real, but that all these factors converge to create a particular occurrence. We take this as our starting point, and go on to suggest that the content of rumours emerging about GWS reflected the nature of their transmission; notions that it was ambiguous and transitory, and that it was caused by diffuse, shifting and ephemeral agents. We also argue that these fragments served as a weak proxy for many soldiers who experienced the war as one that undermined their own social identity within the military.

Considering the flow of rumour as instrumental in the epidemiology of GWS is potentially significant for anyone with a wider interest in illness narratives. As has been much debated, narrative can provide a practical, tangible means for individuals to reconstruct, negotiate and make sense of the personal and social experience of illness (Frank, 1995; Hyden, 1997; Kleinman, 1988). Composing a stable narrative not only serves to establish a sense of order and identity that can provide meaning for past events, but it also can legitimate the illness experience for the individual, and potentially for others (Bury, 2001; Good et al., 1994). A lucid plot allows individuals to unfold a series of events leading up to the illness and its immediate effect – its onset, diagnosis, treatment and management. This process of construction and retelling is one of reflecting and recounting the past within the present (Mattingly, 2001). Hence, narratives invariably have a 'performative' character and can contain a multitude of meanings which may alter according to context, intention and time (Skultans, 2000). Overall, however, this literature has tended to regard narratives as either individual or cultural constructions that make sense of misfortune or sickness *after* it emerges, giving it potential coherence and meaning. In contrast, we wish to highlight how narratives, in this case as they are established through rumour, can be central in the production of an illness, serving not only to provide some kind of support for psychological ambiguity, but the very means to express diffuse experiences and physical concerns in a form that makes sense socially, as well as individually. In other words, the emergence of ideas which were to shape the common illness narratives relating to GWS were a central, and very real, part of its emergence.

The relationship between rumour and illness narratives is particularly worth discussing when those illnesses are contested, and consequently are not formally legitimised or stabilised by medical discourse. If the illness remains cloaked in doubt – not only by others, but perhaps by the sufferer themselves – this somewhat linear model is unhelpful. In such situations, if individuals do not have a set of pre-existing understandings to draw upon, or a predetermined vehicle with which to establish legitimisation they are frequently met with doubt or disapproval, and

hence meaning is largely denied (Littlewood, 2002). Accounts remain embryonic, and continue to alter as the sufferers seek some level of resolution. Consequently, not only do sufferers lack existing scripts, but they are also denied one of the major resources for such construction – a reinterpretation and appropriation of biomedical knowledge itself (Dumit, 2006). For example, much research into chronic fatigue syndrome suggests how the ambiguity of illness narratives is itself a source for increased anxiety and anger (Aceves-Avila, Ferrari, & Ramos-Remus, 2004; Wessely, 1994).

Thus, in such cases, the general claim that narrative is about securing meaning should be differently emphasised as one of quest. Sufferers' ideas remain unformed and unresolved. The idea of a 'pre-narrative' phase, during which time symbolic elements are unsystematically amassed, even though no illness label has been applied and no strict chronology has been determined, is not new. Mattingly (1998), for example, has suggested that such a 'proto' period, frequently consisting of 'little plots' (p. 115), serves to mark out a liminal space in which routinised action and drama does not have stability or structure. This fragmented nature can nevertheless be very powerful. Further, accounts can be so intertwined with on-going experience and the self-identification of symptoms that for many, the narrative scraps are themselves part of the unfolding illness. It is here that the concept of rumour is so useful – for GWS it was both a method of communication, and also a significant formative social act. Against the experience of uncertainty and potential chaos, the circulating fragments satisfied the drive to seek meaning, even though the content was frequently contradictory and changing.

Our data repeatedly reflects this unstable nature. When asked about what they thought might be wrong with them, over 90% of the respondents listed a wide range of symptoms, without trying to establish any sort of consistency, for example: 'Anger, depression, forgetfulness, anxiety, loss of interest, self-enforced isolation, lumps, rashes and boils in the genital area' and similarly, 'M.E., epilepsy/seizures, brain lesions, PTSD, incontinence, short term memory… all been confirmed and grouped into my Gulf War Syndrome'. Equally, a similarly high proportion listed an expansive range of causal theories: 'I have become more sensitive physically and emotionally…but there is a percentage of uncertainty. I simply do not know if the combination of chemicals injected, ingested or possibly absorbed has harmed me.' Almost one quarter directly addressed the imagined administrator of the questionnaire, asking them what they should think and feel 'When I decide to start a family are my children likely to be deformed? Am I able to have children?', 'What are all my insides like now I've had all the injections?' The unfixed nature of these partial statements are accompanied by continual requests for more information, and an on-going feeling of confusion as to what Gulf War Syndrome actually is, what may have caused it, and if it even exists. The fragments and 'little plots' provide some kind of on-going meaning, when a singular narrative is just not attainable. Such "pre" narratives and sense of confusion is not unique to veterans of the 1991 Gulf War. A similar inability to make sense of symptomatic experiences, as well as rejection of psychological narratives is reported by many studies of patients with symptoms that cannot be explained by application of a biomedical model (Nettleton, O'Malley, Watt, & Duffey, 2004).

Trying to find the enemy

Perhaps not surprisingly, for sufferers of GWS, like many other accounts in Western contexts, ideas about their body are frequently based on trying to divide it from the self, such as in the statement: 'All the nerves inside me have tightened up which doesn't allow the body to recharge itself'. A predictable extension of this is the use of common metaphors, such as the combustion engine or electric battery that stress notions of work and the body as a resource: 56% of the responses drew on such mechanical analogies as, 'I feel run down all the time. Constantly sweating.' and 'It's as if my body is lacking something and needs a kick-start.' The veterans also draw on a common western set of idioms by describing their health in relation to protection and hygiene; 31% making some reference to defence or cleanliness in relation to their health status. Here the use of many metaphors, including 'attack' and 'strength', emphasising physical resistance and impermeability, has a particular veracity given the explicit relevance to military language: so, in addition to general references to fortification, such as 'The stress has lead me to a lowering of body defences – I was fit, now I'm tired', veterans also include reference to themselves as soldiers; 'I am not as strong as I was – in all senses. I just don't seem to be able to fight off illnesses any more – it's like I am a pathetic soldier'. In this way, cleanliness and dirt are intertwined with notions of order and control as the body is presented as a vehicle or machine that may have been penetrated or corrupted; 'Everything takes longer to heal… I suspect that I have been poisoned. My body is out of control.' For those stating that they suspect they might specifically be suffering from GWS, every single respondent who suggested a cause described the possible agent as unquestionably external to them:

> 'I don't fully know what caused my illness… I don't think anyone does. But something out there in the Gulf has affected me, and thousands of others. And I think your research is important to find out what it was'.

Clearly, to locate the causal agent 'out there' serves to provide a certain moral foundation for attributing blame and responsibility.

However, there are many other descriptions which do not easily fall in this general representation of attack. Frequently given by the same veterans who listed specific causal agents, 38% of all respondents made at least one reference to worrying about unknown causes. Fear, uncertainty and the unknown are, of course, inherent characteristics of any warfare experience and UK soldiers are specifically trained to cope with these natural responses. But the Gulf War, in particular, carried the real threat of an unknown combination of NBC (Nuclear, Biological and Chemical) attack. This possibility was the central concern of service personnel in the build up to the war (Gifford, Ursano, et al., 2006; Marlowe, Martin, & Gifford, 1990). Back in 1990/1991, and unlike the WMD

debacle of 2003, there was no denying that such weapons existed, and had recently been used against the Kurds and the Iranians. Thus, these unknown and unquantifiable, but present, dangers fell outside military training and socialisation, and consequently beyond soldiers' own ideas of expected threats. This fear was magnified by the extent of preventative measures taken, such as the multitude of vaccinations, NAPS (Nerve Agent Pre-treatment Set), BATS (Biological Agent Treatment Set) tablets, and the level of NBC training and equipment. It has been recorded that chemical weapon detectors gave off 4500 alarms – none of which have been subsequently confirmed (see http://www.gulflink.osd.mil/library/osagwi_reports.jsp). Not only did these measures carry with them the effect of increasing anxiety, but crucially they themselves served to confirm the risks were uncertain and uncontrollable.

In the fragmentary accounts analysed, this uncertainty is often recounted by mixing actual experiences of conflict – the sight, smell and noise of war – with aspects of psychological trauma arising from these preventative measures. Approximately 22% of the responses made explicit mention of the feeling of uncertainty. As one typical respondent described:

> '…chemical alarms going off, tight breathing and the uncertainty of it all. The dead and buried bodies especially the smell.'

Fear of possible chemical attack is coupled with comments that reflected broader uncertainties relating to environmental factors, such as contact with depleted uranium, oil and kerosene fumes, and mysterious infectious diseases. Anxieties about these exposures are described in concrete terms by recalling physical occurrences, such as the smell and sight of oil wells burning, the spraying and possible inhalation of pesticides and the lack of hygiene in base camps. What makes these fears so potent is recognition that the risks posed cannot be seen. The possibility of inhaling pollutants produced by oil well fires, of coming into contact with chemical agents, disease vectors, depleted uranium or pesticide fumes are invisible, unknowable and intangible. They are associated with the manmade, falling outside individual control, and hence not legitimate hazards of war (Bennett, 1999). In other words, all these risks cannot be controlled by any degree of training, skill or strength, and lie outside the traditional "military contract" (Dandeker, 2001). It is also significant that the comments relaying possible toxic exposure focus on hazards that originate from 'their' side: Depleted uranium was a munition that is only used by the US and UK Armed Forces, while the NAPS tablets and vaccinations were provided to protect against Iraqi biological and chemical warfare. Any injuries that might result from these hazards are therefore extensions of the concept of "friendly fire" which, as we will discuss later, is a highly potent issue for service personnel (Kilshaw, 2004). The only exposure unequivocally related to enemy action was the smoke from the burning oil fires ignited by Iraqi forces as they retreated from Kuwait, but this potential cause was to disappear from the subsequent, more established, narratives (see Wessely & Freedman, 2006).

These tangled descriptions of the body and threats are paralleled by frequent descriptions of chaotic war experiences. Accounts continually describe the threat of possible attack by unknown means, of having to rely on technology rather than their own skill and not really knowing if they have already been subjected to attack. For example, 16% recount stories of 'friendly fire', of guerrilla enemy intruders, of the disorientating landscape and of breakdowns in military communications. A smaller proportion, less than 10%, also list anxieties about the poor administration of inoculations, the lack of information and the number of unpleasant side effects associated afterwards.

> 'All I know is that when I went to the Gulf I was fit and healthy and now I'm not. It might be the NAPS tablets, injections, the smoke, I don't know… but I am not the same. Something has happened to me.'

Underlying these fragments is a sense that boundaries have been transgressed and that the enemy is not clearly identifiable. The invisible and intangible nature of threat is paralleled by a sense that it was not clear who, or where, the enemy actually was. Consequently, in the listing of possible causes, there is frequently no distinction made between prevention and cause, disease and treatment, or 'us' and 'them'. As a result, it is possible to interpret the responses relating to GWS as a breakdown of process, not an invasion. This is corroborated by the common reference made to the immune system (26%), such as in: 'If… more people are becoming sick, are we all to become ill? It's a question of how long the immune system can take it'. Here, the body is presented as permeable and vulnerable. It is only within this context, of the body worn down by a surreptitious assault, that any psychological dimension is ever included:

> 'I now find that when I'm in a built-up area, cities full of all that pollution, my mental and physical health deteriorates very quickly and I catch colds and flus a lot quicker'

Embedded in all these concerns, from the oil smoke to vaccinations, is the idea that invisible risks and exposures have somehow been absorbed, and become part of the body. Respondents point to environmental exposures penetrating the skin or the inhalation of toxic matter working its way into their body's defence system. Thus, unexpected or 'unnatural' features of modern warfare are experienced as breaching the classificatory system that in the past served to shore up the self from external attack by weakening the immune system, a potent metaphor for the integrity of the body itself (Martin, 1994).

Inter-linked with these representations of fluidity, invisibility and invasion, is the idea that 'illness' is waiting to strike. We coded 68% of respondents who, though stating that they are not 'ill', nevertheless expressed the sense that they did not know if they were 'unwell'. In other words, the feelings of being at risk of developing the condition, even if they currently do not identify any symptoms, generates a sense of mistrust of their own bodies. Illness has now become the enemy within, lying dormant and waiting to be triggered. One of the key ways in which this incursion is encapsulated is in the frequent references to polluted or

contaminated blood, the possible 'carrier' of the condition. As one person put it, with clear allusion to ideas of HIV infection;

> 'Who knows if my blood is clean? You worry about it, about what might be in it. I just can't be sure anymore that I will stay healthy.'

These ideas regarding body fluids are further associated to reproduction and fertility, linking the notion of possessing a future hazard in body fluids with ideas of strength with masculinity, and with the fear that even if the illness doesn't surface in their own body, perhaps it does in someone more defenceless;

> 'On a physical side…since the Gulf my wife has had three miscarriages…it could be something to do with my blood, but I am not a doctor'.

Just over a third of those who suspected they might have GWS also expressed concern that vaccines and NAPS tablets have caused burning semen, deformities in sperm or infertility. Fears about reproduction, virility and masculinity have a long tradition in military communities, but in the GWS narrative became specifically linked to fears about purity and infection. The consequence was a tentative attribution of reproductive and sexual problems that would become more fixed in later narratives (see Kilshaw, 2006). And for those few veterans who have had ill or disabled children after the Gulf, there is a further desperate anxiety that they are to blame, passing on mutated genes. As one veteran states:

> 'I married shortly after the Gulf, on trying for a family my wife lost the first child. My daughter has no problems that I know of. My son suffers from Asthma badly and has had chronic eczema and spent most of his first year in and out of hospital due to the severity of his condition…I put this down to the cocktail of drugs pumped into me in the Gulf.'

In this way, the vulnerability of the body is expressed not only through metaphors of the immune system but also pollution of bodily fluids, which themselves echo the sense that threats are not bounded or solid, but can creep across the barriers of the body.

Accounts described so far present images of physical external causal agents of illness potentially conflicting with veterans' ideas about the body contaminated 'from the inside' by exposure to an unknown and invisible number of risks. Notions of contagion, resisted by strength and defensive action, are disrupted by a more insidious set of ideas in which simply being part of the conflict corrupted the soldier and made him vulnerable and possibly polluted. However, presenting these narrative fragments in isolation ignores a major dimension to the experience the veterans had of the war – that it was a collective episode, and that their ideas arose from the enclosed world of the military unit.

Military culture and rumour

This closing section will draw on a final major theme apparent in the responses we were able to analyse concerning the social basis of the narrative fragments. Embedded in over 80% of accounts of ill health are also issues surrounding confidence in authority, secrecy and trust. These responses all reflect how the soldiers felt their roles during the conflict were unclear and eroding. Consequently, it is apparent in these accounts how uncertainty experienced about the body is mirrored by a newfound hesitation about military service and their role during the conflict. For example, one veteran states;

> 'I didn't get to do the actual fighting. It was impossible to know sometimes, what was really going on. We all got really frustrated and just felt we should get on with it. It was really tough not knowing.'

The point is that concerns made in the questionnaire about GWS are almost invariably paralleled by respondents making at least one comment about frustration or anger with the actions of the military. Yet the nature of military culture is one in which individual expression and openness does not come easily. At all levels, from the general sense of secrecy inherited from the Cold War through to the use of code-names for the vaccinations administered, there are very restricted spaces for soldiers to value openness. Given that rumours are generally born from conditions of ambiguity (Fieldman-Savelsberg, Ndonko, & Schmidt-Ehry, 2000; Kapferer, 1990; Lienhardt, 1975; Shibutani, 1966) it is not surprising to find that they are an integral part of the experience of warfare. The British Army's own unofficial chat site calls itself the Army Rumour Service (www.arrse.co.uk).

Through this, rumour provided an immediate and spontaneous response to conditions of ambiguity and the unknown, reflecting the experience of fears by transforming what was present, although often unseen, into a tangible form of language (Kirsch, 2002: p. 57). By emerging from the social context, as stories began to circulate they provided a conduit for expressing what could not officially be talked about. For example, respondents remark how rapidly ideas that the vaccinations were untested and illegal, or that they produced impotence and incontinence or that needles used to administer the vaccines were dirty, were established even before the conflict began. As one recalls;

> 'I refused to have the injection for plague and I only took 3 NAPS tablets in total after hearing several stories of incontinence and other problems'.

These concerns became a way of questioning the UK Ministry of Defence; suspicion was raised about a potential 'cover-up' and accusations made that government was withholding information. Here too, responses are fragmented and searching; few have clear or single theories; like the descriptions of threats and possible causes, they merely list a range of possible failings and mistakes. But 41% of the responses talk of their military unit in 'chaos' or having 'collapsed', or similar phrases, such as, 'no one know what was happening… we couldn't trust any of the information we were told.'

Two events in particular served to crystallise beliefs and concerns in the United Kingdom – one being an erroneous Parliamentary answer on pesticides, the other being the

discovery of a memo from one government department to another seemingly advising precaution with the use of the anthrax/pertussis vaccine combination (see Lloyd, 2004). Meanwhile, events in the US took a different turn, with most attention focussing on the accidental discharge of sarin nerve gas during the demolition of an Iraqi chemical weapons dump at Khamisayah in March 1991. That event has never achieved the prominence in the UK that it did in the US, and as far as we can ascertain, was not covered in the UK press until after our data collection. Likewise, fears that there had been a deliberate but undetected chemical attack by Iraqi forces during the war itself, a view that lacks any military or intelligence credibility, only came to prominence after our data collection had ceased. A chronological account of the claim and counter claim in the UK can be found in Anonymous (2007) and Lloyd (2004).

Rumours and facts rapidly became so intertwined that many veterans providing responses make little distinction between them. For example, in the following quote the respondent acknowledges how a multitude of potentially unsubstantiated stories is circulating, but reports nevertheless how this is frightening and unnerving;

> 'There is an awful of press, news and rumours flying around that I personally think are causing more problems than they're solving. The abnormalities in babies is a very real and frightening point that myself and other Gulf War Veterans are very worried about, especially as friends of mine have had ill babies which have died.'

In the above quotation, a clear comparison is made between damaging accounts in the media and those that emerge from personal relationships. Many contrast the value they place on getting information from other soldiers with the inability to discuss concerns with superiors or with medical officers for fear of being discharged, downgraded or laughed at;

> 'We just kept hearing different things, everyone had heard stories about it, but nothing was being told officially, so we just felt like we were always in the dark.'

On one hand, this highlights aspects of a military culture that places pressure on troops not to voice anxieties in order to maintain the morale of the fighting unit. In the absence of official forms of information, rumour enabled individuals to concretely experience fear and uncertainty by translating feelings into an evident form, yet because of its fluid and evolving nature it also served to fuel them. Our data suggests that for those who feared illness, rumours were meaningful not according to whether they were assessed as 'true', but according to the paths along which they travelled. Or, in other words, trust, rather than truth, was the primary criteria that endorsed the accounts. In this way, the social networks by which information circulated provided a source of veracity that did not need to be reconciled with trying to ascertain what might be consistent or verifiable.

Rumour therefore shaped many of the narrative passages in the study: The fluid nature of the causal theories – the smoke, the biological agents in the air, and the loss of a visible enemy, all echoed in the way in which they were talked about and conceived. And, like the feared causes – the smoke, vaccinations, radioactivity – theories and speculation spread, passing through the personal ties and networks of the military, and providing a partial relief from the uncertainties of war. For the soldiers, sharing elements was a mechanism of enacting reliance and trust, out of which the more stable theories about the condition were later to be formed. Rumour circulates fragments and mini plots, but they are essentially also dynamic. In the Gulf, they were constantly changing, serving as temporary and fluid explorations into meaning, while consistency and accuracy were less important than their role in providing solidarity.

Conclusion

This paper has set out to provide an insight into the period before more fixed narratives of Gulf War Syndrome were established, and argued how the transmission of rumour was a significant part of the very construction of the condition itself. The contested nature of GWS meant that individuals were effectively denied a clear cultural script from which to draw and find meaning. If the accounts can be considered precursors to stable narratives by their drawing, in an ad hoc fashion, on many of the potential resources with which to build meaning, then the secretive and surreptitious nature of rumour is as relevant as any of the more concrete experiences of the war. Behind both is a notion and fear of 'breakdown', the blurring of boundaries, and a loss of trust and safety – not just in terms of the body and its perceived systems, but in military structure, and a clear sense of themselves as soldiers.

Perhaps most demonstrable of the imperative to find meaning at this stage was the confusion of categories that previously defined friend and foe. What the UK forces called 'blue on blue', or 'friendly fire' – a term also used in immunology to describe autoimmune disease – was one of the largest causes of direct causalities amongst the allies. Though a consequence of all wars, it came to have a significant meaning during the Gulf because it was reconfigured in the experience of the soldiers as a betrayal of the highly advanced technology of the conflict. Here, the inevitability of human error is reconfigured in their accounts of what happened as a story about newly manufactured risk and the role of novel weaponry, areas of uncertainty during conflict, and the erosion of a soldier's traditional role.

The trauma of such incidents has come to provide not only a more general metaphor for the blurring of combat boundaries, but a conceptual ground for those who came to suffer from GWS in that they had been wounded by the medical counter measures they received. The enormous moral and psychological requirements to make sense of illness, especially one that was unknown and unaccounted, were for many enough to overturn the division that normally provides a moral certainty about who the enemy is and where it is located. Yet, we have also shown how this imperative to find meaning is not one that needed to resolve contradictions and establish a coherent narrative, but rather could 'contain' those anxieties and fears and gain significance through the acts of exchange ideas in a social context.

Later, as people came back and left the military, rumour became the means by which social ties could be reaffirmed and established. There are some similarities here to the post-conflict narratives of PTSD after the Vietnam War. The nature of the war and the associated personnel policy, in which people served only one year in theatre (as opposed to "for the duration" in the Second World War) significantly impeded the development of the traditional 'band of brothers' solidarity in theatre itself as military units were continually disrupted and reformed. On the other hand the growing opposition to the war, and the emergence of both Agent Orange and PTSD after the war, created at least some of the social bonds that had not developed during service itself (Scott, 1992; Spiller, 1986).

The immediate aftermath of the Gulf War coincided with one of the largest 'downsizing' of the UK Armed Forces, under a process known as "Options for Change", in which the size of the Armed Forces was reduced by one third. Over 80,000 jobs were lost, of which half were involuntary redundancies (http://www.york.ac.uk/depts/econ/documents/research/rusi.pdf). Hence many personnel returned from the Gulf to discover that their services were no longer needed. As reports then started to emerge of a possible Gulf War Syndrome, rumour may again have functioned to establish solidarity. Spiller's observation that 'in a curious reversal of soldierly tradition, Vietnam veterans may have experienced more sustained fellow feeling with their comrades after leaving the war than they ever had while they fought it' might in this way apply to the Gulf veterans (Spiller, 1986: p. 25), and we also know that most of those who believe they have Gulf War Syndrome have left the Armed Forces (Chalder et al., 2001). From being a consequence of the bewildering war experience the rumours became a resource by which some veterans could establish news ties, in support groups, media campaigns, and the construction of durable and collective narratives about GWS. For the veterans, narrative was not the result of recognising a state of illness, but was central to the process by which they understood and identified they had a shared condition. Over time, seemingly unconnected fragments of health concerns would become less fragmented and more consolidated.

We have described how many of the accounts also allude to the relevance of military structure during the conflict and shortly after provided a social context that both catalysed and constrained rumours which ultimately were condensed and ordered into more stable narrative forms. We have also suggested how the content of these preceding fragmentary accounts reflect this, with ubiquitous references made to invisible, unpredictable and constantly shifting threats. It is the transient nature of such communications, passed along from person to person, and from medium to medium, that gives them a special kind of veracity. Although the organizational constitution of the military, with its emphasis on hierarchy and prescribed individual roles, presents a particularly forceful environment of compression, there are many other social contexts in which similar processes take place, whether defined physically, culturally or even virtually. Though this more diffuse dimension might not be explicit in many narratives that were to be established, the very meaning a narrative may eventually have is likely to be derived from its more hidden social significance.

Beyond the specifics of Gulf War Syndrome, our general contention, therefore, is to emphasise an established point relating to illness narratives; what appear as personal accounts – such as describing causal theories relating to apparently individual events to provide private meaning – nevertheless emerge from an inherently social world. As a consequence, narrativising remains both an individual and a shared search for meaning. Beyond this, however, we have also suggested from our data relating to rumour and how it was central to the production and manifestation of GWS, that the early diffusion of illness ideas can actually serve to shape a condition as it emerges, and consequently should not be regarded as something subsequent to or discrete from what might be considered the 'real' condition. Such a claim implies that comparing the contagion of ideas and the contagion of illness might not always be merely metaphoric, and that in many instances drawing distinctions between what is physiological, what is psychological and what is social is not only unhelpful but actually serves to obfuscate understanding and exacerbate suffering.

References

Aceves-Avila, F., Ferrari, R., & Ramos-Remus, C. (2004). New insights into culture driven disorders. *Best Practice and Research Clinical Rheumatology, 18*, 155–171.

Allport, G. W., & Postman, L. (1947). *The psychology of rumor*. New York: Holt, Rinehart & Winston.

Anonymous. (2006). The health of Gulf war veterans. *Philosophical Transactions of the Royal Society, 361*, 529–730.

Anonymous. (2007). Policy statement of the royal British legion on Gulf war illness. Available from. <http://www.britishlegion.org.uk/content/Gulf-War-Conference-516351.shtml>.

Bennett, P. (1999). Understanding responses to risk: some basic findings. In P. Bennett, & K. Calman (Eds.), *Risk communication and public health* (pp. 3–19). Oxford: Oxford Medical Publications.

Brown, P., Zavestoski, S., Mccormick, S., Linder, M., Mandelbaum, J., Luebke, T., et al. (2001). A Gulf of difference: disputes over Gulf war-related illnesses. *Journal of Health and Social Behaviour, 42*, 235–257.

Bury, M. (2001). Illness narratives: fact or fiction? *Sociology of Health and Illness, 23*, 263–285.

Cane, V. R. (1966). A note on the size of epidemics and the number of people hearing a rumour. *Journal of the Royal Statistical Society. Series B, 28*, 487–490.

Chalder, T., Hotopf, M., Unwin, C., Hull, L., Ismail, K., David, A., et al. (2001). Prevalence of Gulf war veterans who believe they have Gulf war syndrome: questionnaire study. *British Medical Journal, 323*, 473–476.

Christakis, N. A. (2008). What networks can teach us about drug use. *BMJ, 33*, 420.

Christakis, N. A., & Fowler, J. H. (2007). The spread of obesity in a large social network over 32 years. *New England Journal of Medicine, 357*, 370–379.

Daley, D. J., & Kendall, D. (1965). Stochastic rumours. *IMA Journal of Applied Mathematics, 1*, 42–55.

Dandeker, C. (2001). On the need to be different: military uniqueness and civil–military relations in modern society. *RUSI Journal, 146*, 4–9.

Dumit, J. (2006). Illnesses you have to fight to get: facts as forces in uncertain, emergent illnesses. *Social Science & Medicine, 62*, 577–590.

Fieldman-Savelsberg, P., Ndonko, F., & Schmidt-Ehry, B. (2000). Sterilizing vaccines or the politics of the womb: retrospective study of a rumor in Cameroon. *Medical Anthropology Quarterly, 14*, 159–179.

Frank, A. W. (1995). *The wounded storyteller – Body, illness and ethics*. Chicago: Chicago University Press.

Gackstetter, G., Hooper, T., Al Qahtani, M., Smith, T., Memish, Z., Schlangen, K., et al. (2005). Assessing the potential health impact of the 1991 Gulf war on Saudi Arabian National Guard Soldiers. *International Journal of Epidemiology, 34*, 801–808.

Gifford, R., Ursano, R., et al. (2006). Stress and stressors of the early phases of the Persian Gulf war. *Philosophical Transactions of the Royal Society, 361*, 585–591.

Glaser, B. G. (1992). *Basics of grounded theory analysis: Emergence vs. forcing*. Mill Valley, CA: Sociology Press.
Gluckman, M. (1963). Gossip and scandal. *Current Anthropology, 4*, 307–316.
Good, B., Good, M. J. V., Togan, I., Ilbars, Z., Güvener, A., & Geliven, I. (1994). In the subjunctive mode: epilepsy narratives in Turkey. *Social Science & Medicine, 38*, 835–842.
Hyams, K. C., Wignall, F. S., & Roswell, R. (1996). War syndromes and their evaluation: from the US civil war to the Persian Gulf war. *Annals of Internal Medicine, 125*, 398–405.
Hyden, L. (1997). Illness and narrative. *Sociology of Health and Illness, 19*, 8–69.
Jones, E., Hodgkins.-Vermass, R., McCartney, H., Everitt, B., Beech, C., Poynter, D., et al. (2002). Post-combat syndromes from the Boer war to the Gulf: a cluster analysis of their nature and attribution. *British Medical Journal, 324*, 321–324.
Kapferer, J. (1990). *Rumors: Uses, interpretations and images*. New Brunswick, NJ: Transaction Publishers.
Kilshaw, S. (2004). Friendly fire. *Anthropology and Medicine, 11*, 149–160.
Kilshaw, S. (2006). Impotent warriors: the EMERGENCE, construction and moulding of Gulf War Syndrome, unpublished PhD thesis, University College London.
Kirsch, S. (2002). Rumour and other narrative of political violence in West Papua. *Critique of Anthropology, 22*, 53–79.
Kleinman, A. (1988). *The illness narratives: Suffering, healing and the human condition*. New York: Basic Books.
Lienhardt, P. (1975). The interpretation of rumour. In *Essays in memory of E.E Evans-Pritchard by his former colleagues*. Oxford: Oxford University Press.
Littlewood, R. (2002). *Pathologies of the west*. Continuum International Publishing Group – Academic and Professional.
Lloyd, A. (2004). Report of the independent public inquiry on Gulf war illness. Available from. <http://www.lloyd-gwii.com/report.asp>.
Marlowe, D., Martin, J., & Gifford, R. (1990). *Observations and initial findings of the WRAIR stress evaluation team: Operation desert shield: 22 September–6 October 90*. Washington, DC: Walter Reed Army Institute of Research.
Martin, E. (1994). *Flexible bodies: Tracking immunity in American culture from the days of polio to the age of AIDS*. Boston: Beacon Press.
Mattingly, C. (1998). *Healing dramas and clinical plots: The narrative structure of experience*. Cambridge: Cambridge University Press.
Mattingly, C. (2001). *Narrative and the cultural construction of illness and healing*. London/Berkeley, LA: University of California Press.
Mattingly, C., & Garro, L. (Eds.). (2000). *Narrative as the cultural construction of illness and healing*. California University Press.
Nettleton, S., O'Malley, L., Watt, I., & Duffey, P. (2004). Enigmatic illness: narratives of patients who live with medically unexplained symptoms. *Social Theory and Health, 2*, 47–66.
Noymer, A. (2001). The transmission and persistence of 'urban legends': sociological application of age-structured epidemic models. *Journal of Mathematical Sociology, 25*, 299–323.
Pittel, B. (1990). On a Daley-Kendall model of random rumours. *Journal of Applied Probability, 27*, 14–27.
Rosnow, R. L., & Fine, G. A. (1976). *Rumor and gossip: The social psychology of hearsay*. New York: Elsevier.
Scott, W. J. (1992). PTSD and agent orange – implications for a sociology of veterans issues. *Armed Forces & Society, 18*, 592–612.
Shibutani, T. (1966). *Improvised news: A sociological study of rumour*. Indianapolis: Bobbs-Merrill.
Showalter, E. (1997). *Hystories: Hysteria, gender and culture*. Picador.
Shriver, T. (2001). Environmental hazards and veterans' framing of Gulf war illness. *Sociological Inquiry, 71*, 403–420.
Shriver, T., & Waskul, D. (2006). Managing the uncertainties of Gulf war illness: the challenges of living with contested illness. *Symbolic Interaction, 29*, 465–486.
Shriver, T., Webb, G. R., & Adams, B. (2002). Environmental exposures, contested illness, and collective action: the controversy over Gulf war illness. *Humboldt Journal of Social Relations, 27*, 73–105.
Skultans, V. (2000). Narrative, illness and the body. *Anthropology and Medicine, 7*, 5–13.
Spiller, R. (1986). Human dimensions of war in the 20th century. *Military Review, 68*, 16–31.
Steele, L. (2000). Prevalence and patterns of Gulf war illness in Kansas veterans: association of symptoms with characteristics of person, place and time of military service. *American Journal of Epidemiology, 152*, 992–1002.
Strong, P. (1990). Epidemic psychology: a model. *Sociology of Health and Illness, 12*, 249–259.
Unwin, C., Blatchley, N., Coker, W., Ferry, S., Hotopf, M., Hull, L., et al. (1999). Health of UK servicemen who served in the Gulf war. *Lancet, 353*, 169–178.
Wessely, S. (1994). Neurasthenia and chronic fatigue: theory and practice in Britain and America. *Transcultural Psychiatry Research Review, 31*, 173–209.
Wessely, S., & Freedman, L. (2006). Reflections on Gulf war illness. *Philosophical Transactions of the Royal Society B: Biological Sciences, 361*, 721–730.
Zavestoski, S., Brown, P., McCormick, S., Mayer, B., Ottavi, M., & Lucove, J. (2004). Patient activism and the struggle for diagnosis: Gulf war illness and other medically unexplained physical symptoms in the US. *Social Science & Medicine, 58*, 161–175.
Zavestoski, S., Linder, M., McCormick, S., & Mayer, B. (2002). Science, policy, activism, and war: defining the health of Gulf war veterans. *Science Technology and Human Values, 27*, 171–205.