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Risk, rescue and emergency services: The changing spatialities of Mountain Rescue Teams in England and Wales

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Mountain Rescue Teams in England and Wales.

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Abstract

This paper considers the role of the emergency services in society and, in

particular, their role in controlling, mitigating and resolving risk. Using a

network approach, it uses the example of Mountain Rescue Teams to

examine how people, agencies, animals, technology and knowledge are

deployed to resolve emergencies. The paper traces how the changing nature

of risk in rural places and the impact of state regulation on the deployment,

spatialities and practices of the emergency services. In doing so, it argues

that greater attention should be paid to the emergency services by

geographers.

1. Introduction

The emergency services reveal much about society and space. Their work is bound up with the control, mitigation and resolution of risk, which has become an increasingly influential technology in the organisation of late modern society (Beck 1992; Lyng 2005). Risk has been conceptualised as systematic 'way of dealing with hazards and insecurities induced and introduced by modernisation itself' (Beck, 1992, 21). The concept of risk raises questions about what would happen *if* technologies, knowledge and practices fail but emergencies occur *when* risks, be they political, social or environmental, are realised. The role of the emergency services is to act immediately in these situations to prevent damage to life, property or environment (Civil Contingencies Secretariat, 2004).

The provision of emergency services is, however, complex and increasingly fractured. Although the police, fire-brigade and ambulance services are commonly thought of as the main emergency services, there are a plethora of organisations, including the military; civil defence groups; lifeboat crews; and surf rescue teams that contribute towards emergency service provision on a professional or part-time basis. This cornucopia reflects, in part, the cause, nature, severity and geography of emergencies but, more significantly, the cultural construction of emergencies and the social organisation of the emergency services. Consequently, a focus on the emergency services has the potential to reveal the spatial politics of the risk society (Bernstein 1996).

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This paper uses the example of Mountain Rescue Teams (MRTs) to provide a lens through which to view and understand the changing spatialities of emergencies and the emergency services. It has three main aims. First it examines how changing perceptions of risk have shaped the formation, histories and geographies of MRTs. Second, it recounts how MRTs are enrolled into hybrid networks of people, animals and technology that aim to resolve emergencies that occur when risks are realised. Finally, it demonstrates how the relative position of MRTs in these networks is influenced by state regulation and the changing perception of risk. Taken together, these strands illustrate the changing spatialities of Mountain Rescue in England and Wales and, more generally, begin to reveal some of the complexities that determine the geographies of the emergency services. The following section conceptualises the emergency services before focusing on the work of Mountain Rescue Teams in England and Wales.

2. Conceptualising the Emergency Services

No two emergencies are ever the same: the exact causes, nature and consequences of an accident are unlikely to be reproduced in the same way in the same place. Consequently, the ways that emergencies are resolved are heterogeneous and involve different combinations of actors, equipment and skills operating in very particular environmental circumstances. This complexity can be conceptualised through a consideration of the political, social and economic networks that emerge from, across and between

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different spaces and environments. These combine knowledge, technology, environment and people into particular assemblages at particular points to produce moments of stability in an otherwise fluid society (Murdoch 2000, 2006; Whatmore 2002). If these networks fail (Beck 1992), emergencies occur.

A successful sea voyage, for example relies on the technology of a ship, the skill of its crew and favourable sea conditions. When one of these fails, such as the boat hitting coastal rocks due to a navigational error, this network literally breaks apart (Law 1994). In the long term, risk technicians may take action to reduce the risk of these events happening again, perhaps through new technologies to improve navigation, but in the 'here and now' of the emergency it is the in-shore life-boat and its crew that will attempt to rescue those in peril on the seas. Emergency services thus work to repair, stabilise or re-establish these networks and are required to do so on a, quite literally, alarming basis. In England alone there were over six million emergency calls for ambulances in 2006/7 (NHS 2007).

Actor Network Theory (ANT) provides a helpful starting point to analyse how different actors combine to resolve an emergency (Callon 1986). ANT examines how diverse actors are enrolled into networks to achieve particular goals through an optimum passage point (OPP) (see Murdoch 1997; Woods 1998), in this case the site of the emergency. These networks incorporate both human and non-human actors such as search dogs and human handlers. Specialist technologies are also enrolled to such an extent that

particular agencies have emerged to operate them. Ambulance crews, for example, would not exist without their vehicles that, in turn, would be useless without a crew. The nature of an emergency may determine the technologies needed to resolve it and, in turn, which agencies should be deployed to operate them.

These actor-networks operate in relation to, and are even enrolled into, specific environments, be they 'natural', artificial or hybrid places. For example, a surf rescue unit operates on a particular beach and is familiar with its tides, waves and surf. The sea becomes 'known' through the experience and activities of the rescue unit and, at the same time, gives the unit identity and purpose for, without the beach, there would be no rescue unit. Indeed, the value of local knowledge and conditions is highly valued by many emergency services. More broadly, a need for surf rescues arises because of a cultural engagement between people and the sea in the form of surfing, swimming and other leisure activities. This relationship is also blurred as surf rescue teams draw from, as well as support, participants in these hobbies. But if the popularity of a beach is to wane or become unsuitable for leisure through, say, sea-level rise or pollution, then leisure activities and the need for that emergency service will fall. These actor-networks determine, in part, the operational limits of a service and why particular services specialise in certain tasks or places.

Woods (1998) has cautioned against analysing actor-networks without reference to the wider political structures that shape the relative power of

actors within them. Thus, risk can be conceptualised as a technology that is deployed by the state to control people and places after (Foucault, 1979). In some cases the state has attempted to regulate more tightly particular places and practices to mitigate risk through, for example, health and safety legislation (Denney, 2005). In these cases the emergency services serve as a regulatory branch of the state, reflecting formal discourses of risk, and, consequently, they have the potential to impact significantly on places and the lives of people within them. The police are perhaps the most obvious example here, using a range of technologies and practices to make places safer from crime, often in an exclusionary manner (Herbert and Brown 2006). In contrast, the emergency services can open up space for wider use. For example, the presence of a life-guard reduces the risk of drowning at a beach, encouraging more people to use it.

The emergency services have therefore been closely regulated by the state and their growth has mirrored the rise of the risk society. In the eighteenth and nineteenth centuries emergencies were dealt with on a local, ad-hoc basis by local volunteers when the need arose. It was not until the twentieth century permanent, formal, specialised and universal services emerged. In the UK, for example, the National Fire Service was formed in 1938 to standardise fire-fighting practices.

More recently, neo-liberal practices have impacted on risk-management and the emergency services through target-setting and partnership working (Yarwood 2007). Different agencies have had negotiate their position in

networks of services provision *in relation* to other services as well legislative and policy frameworks (Woods and Goodwin 2003; Trudeau 2008; Murdoch 2006; Yarwood 2007). Local partnership-working and alliances have become so important that inter and intra agency working is now the norm for the emergency services. Thus, Search and Rescue Teams in New Zealand have signed a formal agreement with the police to clarify joint working practices (Landsar 2008). More informally, inter and intra-agency differences are often re-enforced through cultures of working that emphasise team-working, loyalty to colleagues and a certain degree of rivalry between units (Lois 2003).

Efforts have also been made to pass responsibility for some risks on to private institutions, the voluntary sector or citizens through a greater emphasis on personal responsibility (Beck 1992, Fyfe and Milligan 2003). Yet the politically reflexive nature of risk (Beck 1992) means that a whole series of competing discourses and institutions have emerged to challenge hegemonic views of emergencies. Thus Cloke et al (2005) argue that soup runs provide an 'emergency' service to homeless people through a deliberate, even defiant, desire to operate outside of government structures.

It is important, therefore, to consider both the national, formalised practices of the state *and* localised, individual practices in the deployment of emergency services (Herbert 1996). The network paradigm envisaged by Murdoch (2000, 2006) provides a holistic, politically aware yet flexible way of conceptualising this complexity and answers Herbert's (1996) call for a theoretical middle ground to analyse the geographies of emergency services. If society is viewed

as a series of political, relational networks that combine humans and non-humans; policies and practices; technology and knowledge in particular constellations between and across particular times and places (Murdoch 2006), then emergencies, be they political, social or environmental, occur when these fail or breakdown. Their resolution relies on the effective operation of other networks that enable and reflect the operation of the emergency services. In turn, it is important to appreciate that emergency services are politically positioned within these constellations as a result of national policy, local negotiation and geographical difference (Woods and Goodwin 2003). Murdoch's (2006) network approach provides a way of understanding how neo-liberal changes in national policy; local actors and the heterogeneity of the emergencies combine to influence the geographies of the emergency services.

3. Methodology

The role and relationship of MRTs[1] with other emergency services has changed significantly since their formation. Consequently, their study allows opportunities to examine changing constructions of risk, the evolution of emergency services and the impact of state regulation on the emergency services. It will draw on three sources of data. First, call-out records[2] published by Mountain Rescue England and Wales (MREW) from1994 to 2006. These data are based on incident reports that record the time, date,

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[1] It is not the intention of this paper to provide an encyclopaedic account of the emergency services. The choice of MRTs does not imply that they are somehow more deserving of attention than other emergency services or that their work is somehow more valuable that other agencies (indeed, many other services are called out far more frequently).

[2] The Mountain Rescue Council for Scotland does not publish annual statistics publically and so Scotland is not included in this analysis. Sharp (2007) provides a discussion of Scottish incidents.

weather conditions and place of an emergency, together with information about its causes and outcome. They are summarised on a regional and national basis by the MREW and published annually in a publically available report (Feeney 2007). Analysis of these records allowed detailed examination of the changing places and nature of emergencies attended by MRTs.

Second, a national survey of thirty-four British teams was conducted in 2006/7. This involved a two-part methodology. First, team leaders were interviewed by telephone using a structured pro-forma to establish quantitative, comparable data on the size, organisation and activities of different teams. Second, semi-structured interviews were carried out with team leaders that probed their relationships with other agencies; the changing nature of their work; how their teams trained and selected volunteers; and aspects of team identity.

Finally, a case study was conducted of the MRT teams of Dartmoor Rescue Group, which were established in 1968 to cover mainly Dartmoor National Park in South-West England. Dartmoor is a moorland plateau rising to 621m above sea level and, while not particularly high or mountainous by international or even UK standards, it contains remote, boggy and often featureless terrain that is challenging to transverse. Although teams continue to deal with lost walkers on the moor, they have been increasingly deployed off the moor in low-land searches for missing people (Figure 1). The study of Dartmoor MRTs thus provided the opportunity to illustrate and examine the changing nature of MRTs in some detail. This stage of the research included

interviews with team leaders, the police, and participant observation at five

training exercises. This included acting as a casualty in a search and rescue

exercise; observing the operations in a control vehicle; witnessing a selection

exercise; walking with dog handlers on a training day and shadowing teams

on a search and rescue exercise. It was not possible, for reasons of safety[3]

and ethics, to observe an actual call-out (but see Lois 2003).

The following sections report on the findings of this research. Specifically, it

examines how the position of MRTs in these networks is established,

contested and negotiated in relation to different practices, technologies,

knowledges, agencies and structures. In doing so it highlights the significance

of studying emergency services and evaluates the value of a relational

approach in studying them.

3. Mountains and Rescue

Mountain Rescue Teams were formed to provide emergency search and

rescue services for walkers and climbers in upland areas of the United

Kingdom. MRTs not only cater for those who participate in these activities but

are also consequent upon the local performances, expertise and technologies

of these walking networks. Their formation extends beyond local networks

and reflects national political and cultural changes in the practices and

performances of leisure these spaces.

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[3] Itself a reflection of the risk associated with having a non-professional at an emergency.

The growing popularity of upland areas of the UK reflects a changing cultural geography of these places (Urry 1995). In particular the work of landscape artists, romantic poets and guidebook writers in the 18th and 19th centuries turned upland areas from spaces from undesirable wilderness to picturesque landscapes that need to be climbed and viewed from height (Cosgrove and della Dora 2009). Walking and climbing also relied on the development and application of different knowledge, from the classification of mountains to rules that guided route planning (Lorimer and Lund 2004). Walking, and hence the need for MRTs, is therefore socially embedded in upland rural places.

Like many emergency services, search parties were initially run on an informal, local and ad-hoc basis by teams of climbers and walkers who lived in rural areas. Their effectiveness rested on the availability of these people and their knowledge of local environments and conditions. There was a need to support this knowledge with technologies that could support rescues effectively. In 1933 the Joint Stretcher Committee designed a stretcher for these groups and to recommend how first aid equipment should be organised and administered on their operations (Mountain Rescue England and Wales 2007). Their suggestions led to the establishment of a series of rescue posts with first aid equipment in mountainous places. These posts were maintained by the First Aid Committee of Mountaineering Clubs that was formed in 1936 for this purpose.

Following the establishment of National Parks in England and Wales in 1949, more people became enrolled into the networks of outdoor leisure activities

(Blacksell 2005) and the risk of accidents in remote areas increased. As these risks were realised and the frequency of these emergencies increased, participants of informal search parties felt that well-trained, suitably-equipped and better-organised teams were needed to co-ordinate and manage searches, particularly as many of these incidents occurred in places that were inaccessible to conventional emergency services. The first permanent search and rescue team was formed in Keswick and, based on its example, a whole series of teams were established in upland areas of the UK from the 1950s onwards. Local walking clubs, with their local knowledge and ready network of people willing to walk and work with each other, were the genus and core of these organisations (Mountain Rescue England and Wales 2007).

Over time, MRTs developed into formally organised local branches whose interests were represented by national umbrella groups[4]. Team retained their independent, voluntary status but were enrolled more closely into networks of the emergency services. Thus, today, MRTs are mobilised by the police and operate in relation to them:

> 'We are controlled by the [name of force] police, so without them we don't
>
> exist .. if they don't call us out we don't work' (Team 33[5])

> 'the police lead as, at the end of the day, we can only be called by the
>
> police' (Team 32)

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[4] In 1950 all MRTs became affiliated with the Mountain Rescue Committee until it was superseded in 1964 by the Mountain Rescue Committee of Scotland (MREWS) and the Mountain Rescue Council (MRC) (later Mountain Rescue England and Wales (MREW)).
[5] Team 33 refers to our coding of teams to maintain anonymity. The numbers have no bearing to the radio call-signs used by MRTs to identify each other. Each quotation is from an interview with a senior member of that team.

The following section examines these emergency call-outs or 'shouts' in more detail. It seeks to reveal the relational nature of an emergency and how the roles of emergency services are negotiated within it.

4. The Hybrid Networks of 'The Shout'

Search and rescue operations draw upon a network of knowledge, technologies and agencies in an emergency (Table 1 and 2, Box 1). A 'shout' is triggered by a member of the public calling the police. The caller may themselves be a casualty or may be an anxious third party, concerned that a friend or relative is lost. Upon receiving a call, the police follow established protocol to search for a missing person (ACPO, 2005). The nature and time of the call will determine if and when they decide to deploy a MRT. If a decision is made to call a team, a call is made to one of its senior members. Information is given about the nature of the incident and a rendezvous point (RV) is decided according to search protocol and local knowledge.

Box 1 here

MRT members respond if they are able. Unlike some part-time emergency services, such as retained fire or lifeboat crews, members are not required to be on 'stand-by' duty nor are not obliged to attend a call-out if one arises. The decision to attend is a personal one and one that must be balanced with work and personal commitments.

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The controllers of an MRT will travel to the RV and set up their base vehicle. This vehicle contains communication equipment as well as the tools needed to plan and execute a search including computers, first aid kits, stretchers, bothy bags, casualty bags and water-rescue kit. Depending on the scenario, the police and MRTs will draw upon a range of established knowledges, practices, and methodologies to plan a search that will optimise the probability of detecting the subject (Perkins *et al.* 2003; Gibb and Woolnough 2007). Consideration is also given to range of factors can that influence the search, including: terrain; weather; time of day; the age, gender and fitness of the subject; the experience, clothing and equipment carried by the subject; how much time has elapsed in deploying the team; what is known about the subject and incident and how urgently they need to be found (Frost 2000).

When the search plan has been devised, the MRT deploys some or all the following resources listed in Table 1. A number of established techniques, such as line searching and purposeful wandering, will be employed to search for the missing people and controllers will calculate the 'probability of detection' using a mathematical formula (Koester 2008). When the casualty is found, the search team will assess the situation, administer first-aid and report the location and condition of the casualty to the controllers. The treatment of the casualty might involve advanced first-aid techniques and equipment such as defibrillators; pain-relieving gas and spinal-boards. Members hold first aid certificates from recognised sources and practice their skills at training evenings.

The operation moves from 'search' to 'rescue' as the controllers and search teams plan the best way of evacuating a casualty. Some may be able to walk to safety but others may require stretcher or helicopter evacuation. At this point other team members may be sent to the casualty site to assist escorting casualties to safety, perhaps using four-wheel drive vehicles, stretchers or helicopters. Following evacuation to a safe place, the casualty may then be transferred to the care of another emergency service, such as the police, paramedics or helicopter crews, for evacuation to hospital. The end of the search and rescue operation is marked by the police and controllers 'standing down' a team from operations. A de-brief is held to exchange knowledge about the operation and, where appropriate, modify operational procedures.

Search and rescue operations draw upon a network of knowledge, technologies and agencies (Tables 1 and 2 and Box 1). Although the skills and drills described above are widely deployed by MRTs, the ways that these elements are combined will vary significantly between emergencies and, as the following section reveals, between places.

5. The Spatialities of Mountain Rescue

Although Mountain Rescue Teams were established to provide emergency services in upland spaces[6], their operational spaces have been changing as the nature of risk in the outdoors has altered. Call-out data reveal that many

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[6] Rescue services in lowland areas of England are provided by fourteen voluntary Lowland Search and Rescue Teams (LSART), located mainly in the south east of England and co-ordinated by the Association of Lowland Search and Research (ALSAR).

MRTs are increasingly[7] deployed in 'non-mountainous' areas including farmland, lowland, coastal or even urban localities (Figure 8). Over three-quarters (77%) of the teams interviewed commented on this:

> We have fewer moorland searches for lost people and more snatches to back up ambulance service on tricky ground (Team 06)

> We are used by the police far more often in 'non-mountain' incidents: missing old people and children, often in urban or semi urban areas (Team 10)

> More urban incidents where we are asked to search difficult terrain with an urban area. (Team 14)

This is so much so that in 2002, 70% of 'shouts' in the Mid-Pennines and 63% in South Wales were answered in lowland environments. The proportion of these calls has risen significantly over the past 15 years (Figures 9 and 10). In 1991, for example, only 7% of the calls to teams in the South West Region were for non-mountain incidents, compared to 84% of call-outs in 2002. By way of example, Figure 1 demonstrates that many of the calls answered by Dartmoor Rescue Group have been outside the Dartmoor National park (an upland moorland area) and in built-up or countryside areas. Teams situated in more remote regions, such as the Lake District, North Wales and North Yorkshire (Figures 9 and 10), continue to respond mainly to emergencies in mountain areas.

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[7] The obvious exception to this trend was in 2001, when the outbreak of Foot and Mouth Disease led to the closure of the countryside to leisure users for much of the year to prevent the spread of the disease. This illustrates state control of space in response to a national emergency. As MRTs were not part of the emergency response to the disease, they spent this period training and working in urban areas.

Changes in the geographies of call-outs reflect first, changes in the natures of emergencies, and, second, changes in the legislation that governs search and rescue in the UK, both of which are leading to a re-negotiation of MRTs in networks of emergency provision. These are explored in the following sections.

6. The Changing Nature of Emergencies

MRTs are used to find missing and lost people. This distinction is subtle but important and reflects an elementary typology used by the police (Association of Chief Police Officers, 2005, p.23):

- Lost Person: 'this is a person who is temporarily disorientated and would wish to be found'

- Missing Person (voluntary): 'this is someone who has control over their actions and who has decided on a course of action'

- Missing Person[8] (influence of third party): 'someone who has gone missing against their will'

These differences are significant as the type of subject will affect the nature and location of the search (Perkins *et al*. 2003; Koester 2008; Gibb and Woolnough 2007). A party of walkers who have strayed from their route in

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[8] MRTs are trained to deal with civil rather than criminal situations. Although they are not generally employed to find subjects who may have been abducted, it is not unknown for them to be used in searches for the bodies of people who have gone missing in these circumstances.

heavy mist or darkness may be considered *'lost'* if they, or anyone else, have no knowledge of their location. These subjects will want to be found and may help searchers by shouting. People may also get lost as a result of mental illness. For example, suffers of Alzheimer's disease may stray from their home or carers with little idea of their location or how to find their way back. By contrast, a person who has voluntarily gone *'missing'* may know where they are, yet their location may be unknown to friends, relations or the emergency services. This situation may apply to people who are 'despondent'; a label given to subjects who may be suffering from depression or mental illness and may be seeking to harm themselves. These subjects may not wish to be found and may hide from searchers.

Increasingly, MRTs are being used to look for missing rather than lost people (Figures 9 and 10, Table 3) due to changes in the geographies of leisure activities; the introduction of new technologies and the geographies of mental health.

6.1 Geographies of Leisure Activities

As an earlier section demonstrated, MRTs were established in response to a growth in outdoor leisure, which itself reflected various cultural, political and environmental changes. Searches in mountainous areas are mainly concerned with leisure pursuits and, to an extent, are proportional to the numbers of people engaged in different leisure pursuits (Figure 11). Thus, hill-walking contributes the most to call-outs in mountainous areas as it is the

most popular outdoor leisure activity in the British Countryside, not because it is the most dangerous (Feeney 2007).

Although some sports, including rock climbing or hang-gliding, have an image of thrill-seeking or adrenaline fixes (Cater and Smith 2003), risks associated with them are low as participants are usually well-equipped and prepared to follow established safety guidelines (themselves reflecting institutional and historic practices as well as what is culturally acceptable climbing behaviour). By contrast scrambling (walking on steep ground that necessitates the use of hands) is usually carried out informally and without safety equipment and, consequently, participants are more likely to be injured. During 2004 over half (55%) of mountain call-outs were triggered by a slip or fall. The physical environment obviously contributes to these dangers and some places, such as Pavey Arc in the Lake District, are deemed to be particularly risky, especially in poor weather. Of course, one person's hazard is another's challenge and so the thrill of walking or scrambling in places with a reputation for danger can lure to them. 'Edgeworking' refers to those that voluntarily tread the boundary between danger and safety in a range of circumstances, be it for financial gain, to resist norms or, simply for the thrill of it (Lyng 1990, 2005). The emergency services, often work in dangerous circumstances when risks or hazards have been realised, very often to assist people who have chosen to ignore or underestimate risk, either deliberately (perhaps by ignoring safety regulations) or accidently (by being unaware of a risk). MREW do not release data on the gender and age of casualties but work in Scotland suggests that young and middle aged men are three or four times more likely

to require assistance than women 'because men are generally higher risk takers than women' (Sharp 2005, p.8).

MRT continue, therefore, to provide emergency cover for outdoor leisure activities and, to an extent, their geographies continue to mirror the geographies of these sports. New technologies have started to impact on the spaces of rescue, as the following section notes.

6.2 New Technologies

Outdoor leisure practices enact a set of knowledges and practices that have changed over time. In more remote places map-reading and route-planning are considered important skills that enable people to travel to remote, mountainous places (Lorrimer and Lund 2004). Over the past ten years, new technologies have become widely available that appear have made a significant impact on the practices of outdoor leisure and, consequently, the number and nature of emergencies. In particular, many people now carry mobile phones and global positioning systems (GPS) in remote areas and use lightweight, waterproof, 'breathable' clothing for comfort and protection against severe weather. These innovations have the potential to improve the safety of people in the countryside and so, as one team leader noted, call-outs have fallen:

> you have things like mobile phones, better equipment … and GPS must have
> had some sort of impact … They have better kit and are more aware of the
> hazards (Team 31)

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The impact of new technologies appears to be complex. On the one hand, some MRTs noted that mobile phones had led to a reduction in call-outs. In the past, a late party may have triggered a search from an anxious friend or relative waiting for them but this is now rare:

> 'Mobile phones are the main thing, they enable people to contact other people to say that they are going to be late and that sort of thing' (Team 31)

> So if people go out walking and get lost they phone their friends, I can see such and such or I am going to be late. I mean phones these days well they are developing they even have a GPS system on them. They only need a moderate amount of training to use their phone and a map and find out where they are. So there is that, I think mobile phones are a big impact on the call outs on the moor (Team 33)

On the other hand, mobile phones have made it easier for people to call teams if they perceive themselves to be in trouble:

> 'We have more 'lost and lonelies - as people have mobile phones they ring up as soon as the cloud comes down' (Team 19)

> 'people with mobiles now call MR out earlier rather than try and navigate themselves down' (Team 07)

> 'Technology has made it easier to ask for assistance to get out of trouble' (Team 28)

Shouts initiated by mobile phones have the potential to be resolved more quickly:

> 'The advent of the mobile phone often means we can talk direct to casualties/friends/informants. In extremes we can triangulate position of last people via mobile signal' (14)

> 'With most people carrying mobile phones now, response times and ability to get casualties quicker is a major advantage' (21)

Despite the more widespread availability of portable GPS equipment, there has been an increase in people getting lost in the countryside (Feeney 2007). It may well be that some people over-rely on such devices and do not have basic map-reading or navigational skills (Spence 2008). This may be crucial if batteries fail, satellites cannot be tracked or the equipment gets broken. One respondent also mentioned the 'The Gore-Tex/fleece phenomena' where improvements in clothing have given people a false sense of security so that that they walk in conditions and places that are beyond their experience or capabilities. The opening of more upland areas to the public under the 2000 Countryside and Recreation and Right of Way (CROW) Act may also have contributed to more people losing their way as many of these places lack defined footpaths.

It is pertinent to note that these technologies have had a geographically uneven impact. While teams based in more accessible, moorland areas have

experienced a reduction in 'mountainous' call-outs, teams in remote locations have encountered an increase in these types of incidents (Figure 10). More research is needed on the reasons for this trend.

6.3 Geographies of Mental Health and Civic Emergency

Many MRTs noted that they were increasingly used to search for people who were lost or missing as a result of mental illness, including depression, stress or Alzheimer's disease. For some teams these kinds of searches now account for such a significant proportion of their work that MRTs might be added to the network of emergency services providing for mentally ill people in rural areas (Parr *et al* 2004). In the view of one police officer, these searches reflect the changing nature of risk in society:

> We have an ageing population and with that comes the ageing population problems such as Alzheimer's … The stats are quite frightening: it's something like 60% of people that have Alzheimer's at some stage in their life will need to be found. So if there are 10 people in the room by the time we get over 60 virtually 60% are going to suffer from Alzheimer's and of that 60% will have to be found at some stage. So it's a hell of a growing business for us … it's not going to stop unless they find a cure for Alzheimer's.' (Interview with Police Officer)

There is an established literature on the where people with mental health problems will travel to (Thomas and Hulme, 1997; Koester, 2008). The same officer went on:

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For instance with Alzheimer's we know that ninety-four percent are found no more than 1.6 miles from the point where they were last seen, so we never search more initially.

Similarly, suicidal people follow recognised patterns of behaviour (Koester, 2008). Pertinently, these are sometimes linked to favourite places:

I am going to kill myself because of my relationship then where am I likely to go? It's likely to be somewhere we were happy together, quite often, believe it or not that's often the case. Or it's often the place where they had sex together. (Interview with Police Officer)

Somebody who is a suicide (sic), they have a pattern that they like to seek high ground and visit somewhere that they have known as a family and they want solitude, and they do set a pattern .. We went to one not long ago at the other side of [name of a town]. A lady must have thought about it drove to the end of the beach got out and shut the car and went into the sea, didn't even think or stop … went to a place, she used to walk her dog there. Not a rigid pattern but there is a pattern to it. (Team 33)

As these comments suggest, call-outs caused by mental illness have contributed to a significant re-mapping of the terrain (literally and metaphorically) of mountain rescue. They tend to occur in lowland areas, including urban places:

I would say 75% of our call outs now are around towns and villages…. And it's mainly despondent people, people with Alzheimer's disease, people with mental illnesses, drunks. The one we had a couple of weeks ago at

[name of place], he had too much to drink and went sleep walking. So

police called us out, luckily they found him as it could have been touch and

go. I would say more and more our call outs now are to help the police with

lost people in and around the towns, people with mental illnesses really

(Team 33)

Consequently teams are being deployed for emergencies in areas that,

traditionally, they were not established to serve. Table 3 highlights that MRTs

are increasingly being used to supplement the emergency by providing people

and time that would otherwise be expensive and hard on the resources of full-

time crews including supporting ambulances (during a world cup final) and

rescuing motorists stranded in snow. This was recognised, but accepted by

many teams:

I think it has become more prevalent now, a lot of that is probably to do

with the availability of police to go searching. Sometimes you think you are

perhaps used as free policemen but we're happy to do it. That's the point: if

someone, goes missing they need to be found; that's that (Team 31)

'It's an understanding of geography. You can apply this in an urban estate

as well as the moor so I am happy to do that' (Team 34)

These quotes hint at the personal and team ethics that drive voluntary

members of the emergency services to participate in call-outs. Members are

willing to help people in need and, as so many people we talked to stated, 'put

something back' into society. Accepting non-mountainous call-outs also helps

to ensure the continuation of teams that had experienced a reduction of

mountain call-outs. While these teams fiercely maintained their mountain

skills, there was a realisation that low-lands calls allowed them to deploy their

skills and thus foreground their value to the police:

> 'I think as the moor becomes more and more accessible I think we could
>
> be struggling to survive [as an organisation]… we will always maintain the
>
> links with the MREW …. But if all teams were concentrated on [name of the
>
> moor] we would be stretched to get more than one or two call outs a year.
>
> We had a couple this last month but that's very rare. We had one in
>
> December in [name of place] which was a hideous night apparently .. now
>
> it could be another 5 or 6 years before something like that comes again.
>
> Which is why you need all the training. I suppose it's a 'what if' scenario.
>
> We train hoping that you will never be used. And I think that could be the
>
> way that we go.' (Team 33).

7. Legislative Changes

Some teams complained that they were being used less frequently for call-

outs or that there were delays when they were called out. This reflects

significant changes to the legal frameworks of searches that have had an

important impact on the relationship between police and MRTs.

The 1998 Human Rights Act was passed in the UK to enshrine the principles

of the European Convention for the Protection of Human Rights and

Fundamental Freedoms. Pertinent to the search for missing people was

Article 2 of this Act that ensures 'the right to life'. This has given the police a

statutory obligation to 'to respond effectively to all reports of missing persons

to minimise the number of incidents that end in loss of life or harm to the missing person or others' (ACPO 2005, 100). Consequently the police are now legally responsible for the safety of a missing person as well as the safety of those searching for him or her. Prior to this act the police had no statutory duty to search for missing people and only did do, according to one officer, because 'it was the moral thing to do' (Rose 2008). This is a significant change that has led to a re-appraisal and re-thinking of the police's search procedures[9] (ACPO 2005).

One officer said that the ACPO (2005) document:

> 'tells us we need to do X, Y and Z. If we don't do X,Y and Z and if something
> goes wrong there will be all sorts of legal action and we will get sued .. Now
> unfortunately that document puts lines of responsibility in there telling us that
> police have got to do this and that (Interview with Police Officer)

Consequently, the police are starting to conduct more searches using their officers, rather than calling on voluntary teams. Police searches for missing person are likely to begin with a search of the places that they are most likely to go to (Koester, 2008). These may include the homes of friends or relatives, workplaces, pubs or other significant buildings. The search may then move to outdoor places and it is at this point that an MRT, with its experience or

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[9] The police are also required to tread a delicate balancing act between a missing person's right to life under the 1998 Human Rights Act and their right to privacy under the same act and the 1998 Data Protection Act. Hence a person has the right to go missing if they are not breaking the law or will not harm themselves or others. Guidance on the matter notes: 'when investigating the circumstances of any disappearance, intrusion into the life of the missing person or his or her family will be taken into account. Such intrusion will be proportionate. It is particularly pertinent where an individual disappears deliberately: the right to do so will be respected, but it will be balanced with the rights of the family and the wider community (ACPO, 2005, p.100).

outdoor searching, may be mobilised and deployed. This may be several hours or days after the person has gone missing (and searches of other locations have been completed) and may involve looking in areas of open ground in countryside, parks or even urban locations (such as car-parks).

Missing or lost people are also classified according to the risk that they pose to themselves or others. When the risk 'is likely to place the subject in danger or they are a threat to themselves or others' then an 'active and measured response by police and other agencies' (ACPO 2005, 19) is required. MRT teams are most likely to be used in 'medium risk' searches that, first, will not place MRTs in danger of criminal activity and, second, can utilise their skills effectively. The police recognise that:

> 'These teams are trained in 'lost' person searches only but provide a useful resource for missing person searching. The responsibility for the search, however, rests with the police service and thus will always retain primacy … The skills of these searchers should be recognised and used in appropriate circumstances that befit their respective abilities but they must be under the direction of the police.' (ACPO 2005, p.28).

As the police are obliged to care for missing people *and* their searchers, the role and actions of MRTs in searches have come under scrutiny and the police have had to clarify what MRTs are capable of undertaking safely. Particular emphasis has been placed on identifying situations that are more appropriate for MRTs than police search teams, emphasising the relational nature of their commitments:

> Our people [the police] are not trained to go onto [the moor] in a blizzard for instance. I would never ever send my search team up on [the moor] in bad weather. I just wouldn't do it because I would lose them, they would die then we would all be up the creak. I would happily send the [name of MRT] up there as they have the kit and they do it. And we wouldn't lose them, we would lose coppers as we are not trained for that. They have got those skills that we haven't got. (Interview with Police Officer)

Consideration has also to be given to ensuring that MRTs can carry out their work without endangering themselves and others. This has lead to some tension because some MRTs feel that they have skills that are not recognised by the police, as this comment suggests:

> If they want to paddle a canoe around on a reservoir and say they have water rescue capability that's fine by me, but putting them in a fast moving flooded area, I wouldn't be happy with that …. I would use them for paddling around a river but not where there is a risk to them because they are not trained emergency personnel' (Interview with Police Officer)

Consequently MRTs and the police are beginning to negotiate and formalise their relationship, mirroring wider changes in the voluntary sector (Fyfe and Milligan 2003). The police in many constabularies have been developing operational practices that recognise when MRT can be deployed. These have been supported by briefing sessions and training events led by the police that have clarified when MRTs can be used.

In turn, MRTs are placing increasing emphasis on being 'professional' in their selection, training and operations. This does not refer to payment (MRT members are unpaid) but, rather, to behaving as 'professional volunteers' that are capable of providing high quality services that are comparable to those supplied by full-time, paid emergency services. Although MRTs have always strived to provide an effective, well-trained service, it has become more important for them to *demonstrate* their 'professionalism' in order to be deployed effectively within the new legal frameworks of the Human Rights Act. As one member suggested, it was important for his team to have visible systems of operation in place so that the police could see the standards to which they operated and would not think of them as 'a bunch of cowboys'.

Professionalization has taken many forms. First, greater attention has been given to the selection of candidates with teams employing a range of criteria to find members. This is significantly different from the rather cosy 'walking club' image of the past:

> 'In those days, after a few months somebody would sidle up alongside and say you are on the call out list. It was so laid back it was unbelievable …. It's got a lot more formalised, it's got a lot more professional. We all have the same jackets when we have a call out … and I just say to people you have got to wear your uniform' (Team 34)

Second, as the quote above notes, teams wear standardised clothing emblazed with team badges that is worn by team members. This is in part to provide re-assurance of member's identity and legitimacy (which is also

supported by a photo-id card) when on an operation but also to present a 'professional' image to the public and other emergency services.

Third, and most importantly, professionalization has become deeply embedded in training and operational procedures as these quotes suggest:

> Training is more important than even now as we/each team member needs to know exactly what the other team members are capable of - especially in view of the present litigation trend. We are more thorough to ensure that all probationers have our skills before securing full team members (Team 22)

> 'Health and safety' and 'fit for purpose' legislation has impacted on training requirements as has 'duty of care' requirements. Additionally as deployment by police has changed and our training has reflected this (Team 20)

This professionalization has meant that the police have recognised not only the skills of MRTs, but also that they can be deployed in different circumstances:

> They are as good as gold they will go anywhere. They are transferring their skills and working on [the moor] and searching [the moor] into an urban environment .. they will always come to any job we call them to, they will never question it. (Interview with Police Officer)

Despite changes in leisure practices and legislation, MRT continue to play important, if changing, roles in the networks of emergency service provision.

8. Conclusions

This paper has begun to chart some of the spatialities of the emergency services using the example of MRTs in England and Wales. First, it has noted how teams were established and developed in response to risks associated with outdoor leisure. These risks continue to drive the training and technologies of MRTs although risks associated with outdoor leisure appear to be declining in some areas. The advent of GPS, mobile phones and effective waterproofs has meant that personal technology and equipment is playing a stronger role in the practices of outdoor leisure supplementing, to a degree, the safety-net supplied by MRTs. Although MRTs continue to provide support when these technologies fail, some, but not all, are being re-deployed in response to risks associated with an ageing society and mental health. These changes emphasise that emergency services are fluidly positioned in emergency networks relative to risk or perceived risks.

The paper has shed some light onto the workings of the emergency services. It has emphasised the heterogeneity of emergencies, itself a reflection of the complexity of the risk society. Using relational networks, it is possible to start unpacking some of this diversity and to appreciate how hybrid networks of people, animals, skill and technology resolve emergencies that occur when risks are realised. Although particular emergencies services combine these elements in particular ways to resolve particular emergencies, it is important to appreciate that these roles are not fixed and that agencies must frequently combine skills, kit and personnel in emergency situations. The respective and relative role of agencies is determined strategically, rather than at the site of

an emergency, reflecting state regulation, negotiation by agencies and the changing perception of risk.

Relational geography provides a suitable tool to begin analysing and unpacking these geographies. It provides a theoretical middle ground (Herbert 1997) that takes account of political negotiation at national scales; how these are played out in local levels and, significantly, how a range of different actors, agencies, knowledges and technologies are fluidly combined in the resolution of specific emergencies. Commentators have rightly stressed the importance of (local) political negotiation in these networks (Woods and Goodwin, 2003). What also emerges from this paper is that emotions are important glues in these networks. At an operational level, emotions such as humour, banter, stoicism and optimism are intrinsic to the workings of a team and provide important ways of coping for edge-workers (Table 4, Box 1, Lois 2003). More broadly friendship, team-working and commitment can help to ensure its continuation in networks of emergency provision. Although mountain operations are becoming the exception rather than the rule for some MRTs, loyalty to a unit means that its members will want it to continue, even if its original raison d'être has been superseded. Teams are therefore willing to re-negotiate their places in networks of emergency provision to ensure that their units still have purpose and, consequently, continued to operate. While much is known about the personal or individual ethics of voluntary work (Cloke *et al* 2005), more attention needs to be given to team identity and its importance operational and strategic emergency networks. While geographers may perceive agencies and emergencies as part of a fluid network, teams and

their practices are more fixed in the eyes of their members, providing a sense of identity and purpose.

Although this work focused on MRTs in England and Wales, voluntary MRTs in other western countries are experiencing similar issues, namely non-mountain incidents are increasing (Coyne and Corbett 2008) and there is increased regulation from the state (Landsar 2008).

Just has Woodward (2005) has highlighted that the military have a significant but frequently unnoticed presence in many places; the emergency services are also influential on the daily organisation of society and space. With the notable exception of policing (Fyfe, 2000), these agencies have been given scant attention by geographers. However, their operation impacts on the daily lives of many people both directly, in responding to emergencies, and indirectly, in preventing them. The study of the emergency services has the potential to contribute much to thinking on nature, society and the state. Geographers should take prompt, even emergency, action to address this research gap.

Box 1: The Shout

The following is an account of a weekly training exercise of the Plymouth Section of the Dartmoor Rescue Group. It gives some indication of the skills, technologies and knowledge that can be deployed on a search and rescue.

It is a few minutes before seven on a spring evening in Dartmoor, Devon. The weather is clear but cold with a westerly wind blowing across the open moor. To the west, grey clouds signal the ominous presence of an approaching front and, with it, the threat of the heavy rain showers predicted on the local weather forecast.

The rescue group have rendezvoused at an unmetalled parking area at the end of a narrow country lane some five miles from the nearest town. The team's control vehicle (Figure 2), an elderly but reliable transit van, has been set up: a radio mast protrudes from the roof and small generator chugs away rhythmically in the background. The van provides a focal point for the team as they arrive in their own vehicles. The atmosphere is relaxed with friendly banter exchanged between members.

Figure 2 here

There have been reports of a young female walker who is lost with a leg

injury. Inside the control vehicle (Figure 3) the team controllers use maps, whiteboards and notebooks to plan her rescue. Her location has been narrowed down to a 4km^2 area of moor some 2km to the west of their location. Using their training and experience they divide this location into specific search areas that take account of visibility, terrain and her last known position.

Figures 3 and 4 here

At 1900 the whole section is briefed by the controllers and divided into three search teams of five or six people. Each team is tasked with an area of moor to search and allocated equipment needed to treat and evacuate the casualty (Figure 4). The leader of each search team allocates roles to each member: radio operator, first-aider and navigator; although all are required to be the 'eyes and ears' of the search. A search dog, his handler and a navigator are tasked to large section of the moor. The dog uses air-scent to find casualties and can search faster, and with a higher Probability of Detection (PoD), than all-human teams.

Dartmoor is a moorland plateau with few obvious landmarks to aid navigation in many places (Figure 5). The team therefore places great emphasis on navigation, training to a high standard with map and compass (Figure 4) to allow their location to be pinpointed at night and in poor weather conditions. Continual training on the moor develops knowledge of its micro-geography: tors, distinctive rocks, pools, tracks and archaeological sites can all be used as navigational aids.

After a half-an-hour walk the teams arrive in the search area. Although the rain is holding off, there is a cold wind, kept out by the team's jackets made from 'breathable fibres' that wick away the inevitable sweat brought about by walking across the moor. The stretcher is left on the moor: carrying it would take at least four members out of the search. The plan is to return to the stretcher when it is needed.

Figure 5 here

The teams deploy into a 'line search' formation in their search areas (Figure 6). Each line has five or six members spread out across the moor at a distance that will ensure that nothing is missed. With a command from the team leader, the line moves forward following a compass bearing and sweeping the ground in front of them using 'purposeful wandering' (walking between likely sites where casualties may be sheltering). As the team moves members call out and blow horns to attract attention; periodically they look behind them in case anything has been missed in the uneven, tussock strewn ground of Dartmoor. Across the moor, other teams can be seen searching in a similar way; sweeping the moor in a regular, systematic way. The radio network links teams to each other and the control vehicle that is out of sight now in the valley. In contrast to the steady tramp of the human teams, the search dog can be seen bounding across the moor, his actions highlighted by a flashing strobe fixed to a luminous bib.

Figure 6 here

After ten minutes of searching, a message from control comes through. Another group of teenagers on the same organised walk has got lost somewhere on a track in the search area: there are now two sets of casualties.

Soon afterwards, one team reports a find: a female teenager with an injury to her leg. The team that found her stop and start to administer first aid. Her leg is immobilised with a vacuum splint and bandages and her condition recorded and reported to control with a casualty card. She is kept warm with a casualty bag and given oxygen to relieve pain. Two members are sent back to fetch the stretcher from its drop off point; the remainder of the team insulate the casualty from the ground with a foam mat and erect a KISU[10] to shelter her.

Meanwhile the other teams continue their search for the other missing group. A few minutes later two teenage males are sighted on a track. One team reaches them and at the same time the search dog bounds towards them. He turns; heads back to his handler some distance way, barks and then returns to the casualty site. He repeats this process, guiding the handler towards the youths. Human team members evaluate their condition of the young men: they appear well but lost and a little confused at the attention being warranted to them. The team is tasked to walk them off the moor and to join the other teams at the site of the girl with the injured leg. By now it is starting to get

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[10] Karrimor Instructor Survival Unit (or bothy bag). A quickly erected fabric shelter that provides protection from wind and rain.

dark. Members don head torches and are illuminated by fluorescing trips fixed to their jackets: simple but remarkable effective piece of kit.

As the operation switches from search to rescue, the teams' geography changes from one of regular dispersal across the moor to concentration at the casualty site. It has been established that she is unable to walk and all hands are required for the carry-off. Six team members gather around her. On command, she is lifted a few inches from the ground. Quickly another member slides the stretcher underneath her and she is lowered onto it and secured with straps.

Figure 8 here

When she ready, eight team members kneel around the stretcher, holding it with one hand and placing carrying straps over their shoulders to spread the weight of the stretcher. The stretcher is lifted and the 2km walk-off begins. Ahead of the stretcher one member navigates, following a compass bearing towards the van (Figure 8). Two others reconnoitre the route calling out warnings and instructions. Although the teenage casualty is relatively light, a stretcher loaded with a casualty is heavy and the bearers are changed every ten minutes. Night has fallen and the party forms a cluster of lights on an otherwise dark, indistinguishable moor. The compass, that simple piece of Perspex with a magnetised needle, guides the team slowly to the control vehicle and the safety of a waiting ambulance.

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