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‘Endurance Work’: Embodiment and the Mind–Body Nexus in the Physical Culture of High-Altitude Mountaineering

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Abstract

The 2015 Nepal earthquake and avalanche on Mount Everest generated one of the deadliest mountaineering disasters in modern times, bringing to media attention the physical-cultural world of high-altitude climbing. Contributing to the current sociological concern with embodiment, here we investigate the lived experience and social ‘production’ of endurance in this sociologically under-researched physical-cultural world. Via a phenomenological-sociological framework, we analyse endurance as cognitively, corporeally and interactionally lived and communicated, in the form of ‘endurance work’. Data emanate from in-depth interviews with 18 high-altitude mountaineers, 10 of whom experienced the 2015 avalanche. The article responds to Shilling’s call to address an important lacuna identified in sociological work: the need to investigate the embodied importance of cognition in the incorporation of culture. The concept of endurance work provides a powerful exemplar of this cognitive–corporeal nexus at work as a physical-culturally shaped, embodied practice and mode-of-thinking in the social world of high-altitude climbing.

Keywords

climbing, embodiment, endurance work, mountaineers, phenomenology, sociology of the body

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Introduction

In this article, we contribute fresh insights to current sociological debates surrounding the sociology of the body, social agency and embodiment (e.g. Francombe-Webb and Silk, 2016; Shilling, 2016), and the need to theorise 'from' (not just about) lived bodies (Williams and Bendelow, 1998). Debates also crystallise around the linkage between the material body, mind and world, including the 'natural' environment (Stevens, 2012) as well as the socio-cultural environment, as highlighted within carnal sociology (Crossley, 1995; Hockey and Allen-Collinson, 2007; Pitts-Taylor, 2015). Shilling (2016), in theorising the body as a socio-natural phenomenon, has called for sociologists to address as key topics the processes of embodied learning, and acquisition of culturally structured practices (both occupational and sporting), including the significance of bodywork and the senses in these processes (Allen-Collinson and Hockey, 2015; Hockey and Allen-Collinson, 2009). Importantly, Shilling (2016: 1) also identifies a relative lack of sociological recognition of the 'embodied importance of cognition to this incorporation of culture', emphasising the need for further research addressing the cognitive, corporeal and cultural nexus. As he points out (2016: 3), thought and reflexivity need to be considered in conjunction with the corporeal. We are in firm agreement with his observation that the challenges and obstacles associated with learning cognitively, sensorily and practically – and aligning these forms of knowing – are complex, as we explore below.

To address these debates and the sociological lacuna vis-a-vis the cognitive–corporeal linkage in learning and 'living' occupational and physical-cultural practices, here we explore a specific and sociologically under-researched physical culture: the highly challenging lifeworld of high-altitude mountaineering, focusing upon the lived experience of endurance, and what we term 'endurance work'. The concept of endurance work provides a powerful exemplar of the cognitive–corporeal nexus at work 'on the ground' as a physical-culturally shaped practice. It emphasises that enduring is an active, agentic, social and reflexive form of 'work', often requiring mindful sense-making. Utilising a form of phenomenologically influenced sociology (Allen-Collinson, 2009; Crossley, 1995) as theoretical and methodological framework, to date under-utilised in studies of this extreme environment, we investigate the experience of endurance as corporeally lived, recognised and 'produced' by high-altitude climbers.

With regard to the need for sociological analyses of this form of mountaineering, Lewis (2000) considers the related field of rock-climbing, arguing that, as a distinctive cultural practice, rock-climbing provides fertile ground for sociological investigations into issues such as human agency, sensory awareness and the phenomenalities of nature. We are in agreement, and here extend the analysis to the distinctive practice of high-altitude mountaineering, which similarly provides rich grounds for sociological analysis of human agency and the active learning of endurance. Findings derive from in-depth interviews with 18 high-altitude mountaineers, 10 of whom were undertaking expeditions on Mount Everest when the 2015 Nepal earthquake struck. Participants include mountain guides, expedition leaders and medical doctors. The need for endurance work in the face of considerable physical, cognitive and affective discomfort and 'dys-ease' (Leder, 1990) emerged as salient; high-altitude mountaineering brings the body forcibly and acutely to consciousness, including during periods of 'intense embodiment'

(Allen-Collinson and Owton, 2015). Furthermore, the role of intersubjectivity and social interaction also emerged from the data as key to survival in the harsh environmental conditions of high altitude. Endurance is lived not only by individual climbers, but also is co-produced between mountaineers, constituting an interactional achievement and a form of body pedagogics (Evans et al., 2008; Shilling, 2016), which we term 'endurance work'. Our analysis critically examines the meaning of endurance for mountaineers. To begin, we outline our theoretical framework of phenomenologically inspired sociology and the specific way in which we draw upon a tradition dating back to the work of Schütz (1967). Our usage reflects more recent efforts to combine the insights of both phenomenology and sociology in a powerful theoretical linkage that contributes to what Crossley (1995) evocatively terms 'carnal sociology'. We then examine the concept of endurance as employed within the lifeworld of high-altitude Himalayan mountaineering. The research project, from which our data are drawn, is described, before presenting the findings and analysis, which cohere around the lived experience and social production of endurance, as learned, recognised and produced by social actors in this particular physical-cultural domain.

Phenomenological Perspectives in Sociology: The Lived Body and Lifeworld

Evolving from the philosophical *oeuvre* of Husserl (2001 [1900/1901]), modern phenomenology spans a complex web of theoretical and methodological frameworks (Allen-Collinson, 2009), which investigate phenomena – things as they appear to the conscious mind – by examining their core structures. Husserl sought to identify and return to the 'things themselves', as far as possible devoid of the everyday presuppositions and preconceptions enveloping phenomena. His phenomenological method thus attempted to suspend the 'natural attitude' – including the taken-for-granted assumptions of everyday life – via the phenomenological *epochē* (a form of bracketing). Sociology thus shares with phenomenology a fundamental concern with challenging the taken-for-granted and uncovering tacit understandings. Sociologists employing phenomenology acknowledge the impossibility of full *epochē*, not least because we are never able to stand completely outside of socio-cultural structures, including language (Allen-Collinson, 2009). Phenomenologists also share with various sociological traditions an interest in lived experience, and the 'lived body' (*Leib*): the experiential ground of the body as subjectively lived in everyday life. Within phenomenological thinking, mind, body and world are fundamentally intertwined; a relationship exemplified post-Husserl in the existentialist phenomenological work of De Beauvoir, and Merleau-Ponty. In later work, Merleau-Ponty (1969) posited his notion of *chair*, the 'flesh' or fabric of the world that unites mind–body–world. His focus upon the body and embodied habitual action has proved of interest to many working within the sociology of the body (e.g. Crossley, 1995; Shilling, 2016).

Elements of Husserlian phenomenology were originally taken up and developed within sociology by Schütz (1967) whose sociological imagination was sparked by the concept of the *Lebenswelt* or lifeworld (Schütz and Luckmann, 1973): the familiar world of immediate, everyday life, shared with others as 'co-lived'. Combining phenomenological ideas

with a Weberian focus upon *Verstehen* and social action, Schütz (1967) highlighted the need to explore people's meanings and lifeworlds as embedded within social structure. Employing a sociologised form of phenomenology thus highlights and subjects to analytic attention the social-structurally, ideologically influenced, historically specific and socially situated nature of human embodiment and experience. Here, classic sociological variables such as gender and age, for example, are acknowledged as highly salient. Looking (and other forms of sensing) via a phenomenologically sensitive sociological perspective thus allows us to identify and analyse the considerable impact of social-structural forces upon embodied experience. This addresses the concerns of many sociologists, including those working within the 'new materialism' (Fullagar, 2017), regarding the lack of analytic attention accorded to social structure in more traditional forms of phenomenology. As Shilling (2016) notes, growing numbers of sociological authors have utilised Merleau-Ponty's existential form of phenomenology to explore how embodied consciousness is demonstrated, learnt and re-learnt within occupational, sporting and other settings (see also Allen-Collinson and Hockey, 2011; Hockey and Allen-Collinson, 2009; Kupers, 2005). Also drawing on phenomenologically inspired insights, Leder (1990) portrays how our intentionality shifts – sometimes acutely – to our body, which 'dys-appears' to conscious mind when pain or other intense sensations disrupt the everyday state of corporeal 'disappearance' from the forefront of consciousness. For high-altitude mountaineers, when the body 'dys-appears', as a result of fatigue, exhaustion, breathing difficulties, pain, discomfort and so on, it can be encountered as 'that which stands in the way, an obstinate force interfering with our projects' (Leder, 1990: 84). To give a feel for this form of mountaineering, we now consider its particular physical-cultural domain, and the concept of endurance as lived and co-produced by its lifeworld inhabitants in the form of endurance work.

High-Altitude Mountaineering and Endurance

A small but developing sociological literature exists on endurance – defined as the ability to keep going (physically and mentally) in the face of pain, discomfort and suffering, including as a celebrated cultural practice in endurance sports such as triathlon and distance running (e.g. Allen-Collinson, 2017; Atkinson, 2008; Bridel et al., 2016; Hockey and Allen-Collinson, 2016; Reischer, 2001). There is also a sport-psychological literature on the related psychological concept of 'mental toughness' in endurance sports and physical activities, such as long-distance walking (Crust et al., 2011). Within the normative framework of these physical cultures, the desire and ability to endure and keep going in the face of intense fatigue and pain, are highly valorised (Hockey and Allen-Collinson, 2016; Reischer, 2001), requiring socialisation into endurance of mind as well as body. High-altitude mountaineering (on mountains above 8000 m) also demands a combination of cognitive and corporeal endurance, and takes place in extreme environments, including some of the most hostile and dangerous terrain on earth. In these places of rarefied air, oxygen is sparse and survival tenuous (Burke et al., 2008, 2010); for example, in the high mountains of the Himalaya. Here, environmental conditions such as the steepness of terrain, the dangers of crevasses and rock or icefalls, and risk of avalanche, all render such mountaineering extremely hazardous. Statistical evidence (e.g. Wickens

et al., 2015) indicates that this form of mountaineering is most dangerous where risk of death increases significantly, whether directly – due to high-level falls, for example – or indirectly – such as having to camp out in a bivouac above 8000 m. The corporeal dangers emanating from extremely low temperatures and lack of oxygen are severe, and include hypothermia, frostbite, acute mountain sickness and cerebral and pulmonary oedema. Given that humans can survive only temporarily above 8000 m (commonly termed the 'death zone'), physiological adaptation is crucial. The body–mind linkage is also vital to success and survival as climbers have to *learn* how to endure physiologically, psychologically and also interactionally; that is, to undertake endurance work.

Currently, there is somewhat of a sociological research lacuna in relation not only to researching the cognitive–corporeal relationship identified by Shilling (2016), but also vis-a-vis sociological studies of high-altitude mountaineering and the values and norms of mountaineering endurance specifically. Ethnographic studies of mountaineers exist; for example, there has been research undertaken while on Mount Everest (Burke et al., 2008) that employs ethnomethodology, and also on the related domain of Alpine-style climbing in North America, which Bunn (2016) analyses via a modified Bourdieusian approach. Perhaps not surprisingly, portrayals of risk-taking have featured, including a Foucauldian-inspired analysis of the 1996 Mount Everest 'disaster' by Elmes and Frame (2008), and Pereira's (2009) study of meaning-making among high-altitude climbers, including mountaineering risk-taking as constituting transgressive action.

The gendered dimension of high-altitude mountaineering has also attracted scholarly attention; for example, in Frohlick's (1999–2000) and Ortner's (1999) incisive analyses of the gender politics of the 'hypermasculine' landscape of this form of mountaineering. Adopting a historical perspective, Gugglberger (2015) charts the emergence of Nepalese women's mountaineering, drawing parallels with the development of 'western' women's expeditions to the Himalayan peaks. She highlights the gender arrangements in this form of high-altitude mountaineering, noting that in the early years of modern mountaineering during the 18th and 19th centuries, the idealised image of a climber was constructed along stereotypically masculine lines, and strongly linked to heroic and nationalised discourses (2015: 598). Indeed, as she points out, very few women were included in Himalayan expeditions even at the turn of the 20th century, other than as married women 'accompanying their husbands'. In general, women mountaineers have had to act within the rigid framework of traditional gender roles while pursuing their ambitions for mountain-climbing. The active exclusion of women from British climbing clubs led women to establish their own, such as the Ladies Alpine club in 1907, and the Scottish Ladies Climbing Club in 1908 (Gugglberger, 2015: 598).

In contrast to high-altitude mountaineering, rock-climbing has attracted considerable academic attention; for example, with Donnelly and Young's (1999) classic interactionist account of identity construction processes in rock-climbing and rugby, and Lewis' (2000) examination of adventure rock-climbing as an embodied ritual of resistance against modernity. Hardie-Bick and Bonner (2016) examine 'flow', risk-taking and enjoyment in the edgework activities of climbing and sky-diving, drawing on Thompson's (1980; see also Lyng, 2005) original conceptualisation of edgework as a range of 'transgressive' and challenging experiences that involve risking death, or at least incurring serious injury. Adopting a cultural-geographical perspective, Rickly's (2016) study of sport

rock-climbing explores the social production of climbing space, drawing on Lefebvre's theoretical perspectives. Returning to mountaineering specifically, research has found some mountaineers to be sensation seekers, holding normative constructions of danger divergent from those held by members of the non-climbing public (Ewart, 1994). From a psychological perspective, research by Burke and colleagues (2010) found that some elite climbers became obsessed with goals, such as summiting, with potentially grave consequences. Analogously, a rigid goal-orientation perspective was also identified in a study by Wickens and colleagues (2015), which found that some within the high-altitude climbing community pursued a 'summit or die' approach; a finding that resonates with our research. Of direct relevance to the current article, a phenomenologically based study by Fawcett (2011) examined the psychology of 'mental toughness' (a multi-faceted concept germane to sociological considerations of endurance) in mountaineering. To date, however, there has been scant sociological consideration of the complexities involved in the social production of endurance in the world of altitude mountaineering.

While physiological endurance is developed by mountaineers through demanding physical training regimes, concomitant forms of cognitive endurance and somatic knowledge are also required, which have to be learnt, developed and refined – and sometimes re-learnt, for example, when climbers are 'out of climbing' or other endurance training for extended periods of time. Relatedly, Bunn (2016: 106) argues that dispositions, as body schemata, begin a process of decay at the moment they fall out of use, and those dispositions the most carefully honed and refined are the most subject to deterioration. Endurance has to be learnt and developed over time, cognitively and corporeally, and requires substantial effort and training (Hockey and Allen-Collinson, 2016). The limits of endurance, and the need to recognise when *not* to endure any further (see Swann et al., 2016), similarly have to be learnt, and constitute an important part of endurance work. The challenges involved in learning cognitively, sensorily and practically, are complex indeed (Shilling, 2016). Furthermore, even experienced practitioners cannot guarantee that, once developed, embodied learning remains sedimented once and for all in the body–mind.

Researching High-Altitude Mountaineers and Their Lifeworld

Purposive sampling was utilised to assemble an initial group of mountaineers, primarily via the personal networks of the second and third authors. Selection criteria were: participants' direct lived experience of the phenomenon under study (high-altitude mountaineering); fluency in the English language; and an ability to describe in-depth lived experience. Snowball sampling was then utilised to recruit additional mountaineers via the social networks of the initial group. As Markula and Silk (2011) describe, snowball or chain sampling commences with a person or persons well situated to discussing a specific topic, and then asking this person to suggest further participants who meet the inclusion criteria. Eighteen high-altitude mountaineers were eventually selected for participation, with a gender ratio of 14 men to four women, which is generally consistent with participation rates identified in extreme endurance sports more widely (Schüler et al., 2014). Of this sample of mountaineers, two participants were also experienced

expedition leaders, five acted as guides for less experienced climbers and two were high-altitude medical doctors. Three participants had established high-altitude climbing records during their climbing careers. The mean age of the sample was 42.2 years (SD =13 years) with participants having on average 19.4 years of mountaineering experience. Our interviewees had climbed in the Himalaya for a minimum of six years, with some reporting having over 30 years' experience of climbing high-altitude mountains (8000 m and above). On average, participants had undertaken 7.9 high-altitude expeditions and summited 3.6 peaks over 8000 m (there exist only 14 such peaks in the world).

Given the potential identifiability of our participants in such a restricted population, it was decided not to include a detailed table giving their demographic information, but we can disclose that with regard to geographical spread, the sample incorporated mountaineers from the United States ($n = 7$), Great Britain ($n = 6$), Iran ($n = 1$), Germany ($n = 1$), New Zealand ($n = 1$), Mexico ($n = 1$) and Republic of Ireland ($n = 1$). The majority reported climbing as part of an expedition-style 'siege' approach. This requires establishing lines of fixed ropes, setting up and stocking camps at various points along the route, with the aid of specialist high-altitude guides/porters such as Himalayan Sherpa, and the use of supplemental oxygen during summit attempts. In contrast, some participants reported climbing in Alpine style, carrying their own equipment and supplies, without the use of fixed-ropes or supplemental oxygen (see Bunn, 2016 for further detail). While the key benefit of Alpine-style climbing is less time spent on the mountain, and thus less time exposed to dangers such as rock- or ice-fall, avalanche or extreme weather conditions, there is correspondingly reduced time for acclimatisation, and more limited support and protection in the form of, for example, food supplies, and protective gear.

Drawing on a form of sociological phenomenology (Allen-Collinson, 2009; Katz and Csordas, 2003), interviews were designed to elicit rich, in-depth accounts of participants' lived experiences. This form of phenomenology departs from 'traditional' philosophical phenomenology, in that it engages in sociological conceptualisation and theorisation as well as applying phenomenological principles to the collection and analysis of empirical data. Sociological phenomenological interviews are characteristically open and relatively unstructured, with participants viewed as co-producers of the research (Allen-Collinson, 2009). Untrammelled by a fixed interview schedule, there is freedom to explore emerging concepts, and for interviewees to take the lead, as appropriate. The interviews are not designed to test or confirm theories or conceptualisations (Bevan, 2014), but rather the interviewer attempts to suspend her/his prior assumptions and presuppositions about the phenomenon under study, to bracket as much as possible 'the natural attitude', and to allow the interviewee to describe her or his experiences in some depth. As Gallagher and Zahavi (2008) note, phenomenology aims to disclose structures of consciousness that are *intersubjectively* accessible. Phenomenological interviews, we thus emphasise, generate 'data' that are co-produced by interviewee/interviewer in the interactional encounter. These data are then subjected to phenomenologically sensitive analysis, as we describe below. Interviews lasted between 49 and 118 minutes, and SKYPE™ and telephone interviews had to be used in many cases, given that participants spanned a wide range of geographic locations. Due to the potentially sensitive nature of the topic (particularly for those recalling the earthquake and avalanche), participants were reminded that they were under no obligation to answer any of the questions, could

take a break at any point in the interview or withdraw from the research at any time; none chose to do so, and indeed many expressed the benefits of their involvement, including having the opportunity to talk in detail about their experiences.

As part of the data analysis process, we employed elements of Giorgi and Giorgi's (2003) approach to empirical phenomenological research: (1) engagement with the phenomenological *epochē* – making best efforts to bracket our preconceptions regarding the phenomenon, which was assisted by the lack of familiarity of one team member with high-altitude mountaineering culture; (2) initial impressionistic readings of transcripts; (3) in-depth re-reading and data-immersion, to identify themes and sub-themes. Separate initial 'discovery sheets' of key words, concepts and themes were generated by each researcher, to aid preliminary classification. Subsequently, comparisons were made between our independent analyses to identify key themes and sub-themes.

To ensure the results of our interpretive and analytic endeavours were well grounded in participants' experiences, initial interpretations were discussed with them in an effort to ensure congruence and resonance with their lived experiences. All participants were provided with a transcript of their own interview, and were encouraged to question the team's interpretations and offer alternative accounts if they wished, although none actually subsequently did. Indeed, participants provided very positive feedback about the extent to which the analysis captured and reverberated with their experiences. As a further element of the analytic and interpretative process, follow-up interviews were conducted with two participants, to develop a critical dialogue about results. These interviewees were selected as both had expressed great interest in the topic and openness to further discussion. Commensurate with a phenomenologically sensitive approach, the purpose of these follow-up interviews was to encourage reflection upon, and exploration of, alternative explanations and interpretations as they emerged in relation to the data (see also Crust et al., 2016; Sparkes and Smith, 2014).

Endurance Work

The findings that follow have been structured into key themes relating to the lived experience of endurance and engagement in endurance work (other key themes have been discussed in our previous work; for example, Crust et al. (2016); Swann et al. (2016)). These themes illustrate vividly the inter-relatedness of the cognitive and the corporeal, and thus respond directly to Shilling's (2016) call to address sociologically the analysis of physical experiences in conjunction with the role of cognition in embodied processes. We begin with the analysis of exhaustion and the need to *learn* endurance as part of endurance work.

Exhaustion and Learning Endurance

Existential phenomenology emphasises the mind–body nexus, and the development of embodied remembering. Merleau-Ponty (2001), for example, portrays the body-memory and habit-body of a typist, who, initially when learning how to type, has to think consciously about the action of typing, where to find the keys on the keyboard and so on. As the action of typing gradually becomes habituated, the typist can type spontaneously,

pre-reflectively – almost automatically – without conscious reflection of where s/he should place fingers. Research on various physical cultures also charts the experience of this corporeal memory (see, for example, Brown and Jennings, 2013; Fuchs, 2012). For mountaineers, as for many endurance athletes, it can feel as if the very muscles themselves retain a memory of a highly fatigued mode of being-in-the-world. Whatever the physiological 'facts' of such muscle memories, the lived experience is that of memory deeply engrained in the body.

A key element emergent across all interviewees' accounts was the importance of endurance work, and the need to learn *how to* endure, including via interpretation of sensations and the development of the experiential knowledge that one *could* survive extreme exhaustion. The importance of sensation has been highlighted in much phenomenologically inspired sociological work, including research into physical cultures (e.g. Allen-Collinson and Hockey, 2011; Allen-Collinson and Owton, 2015; Hockey, 2013; Throsby, 2013). More generally, Leder (1990: 23) has noted how: 'the body is always a field of immediately lived sensations […] (its) presence fleshed out by a ceaseless stream of kinaesthesias, cutaneous and visceral sensations'. For the high-altitude mountaineer, endurance work and *learning* endurance involve experiencing this ceaseless stream of sensations, bringing sensations to conscious mind, and in cases of 'dys-appearance' (Leder, 1990) having these brought, sometimes acutely, to mind. Mountaineers must learn how to interpret sensations in order to render them meaningful, before responding to them.

Not surprisingly, one of the most prominent sensations recounted by participants was fatigue developing into exhaustion. This level of extreme tiredness and exhaustion was something for which the mountaineers routinely trained and prepared, via a range of different training regimes, such as distance running. The need to prepare mentally as well as physiologically was reported by many experienced mountaineers:

> [as] part of my training I try to go out for a long run the day before and I mean *run* and then when I get to the mountain to start climbing I'm already tired and it's a big, big effort so I think preparing myself for it makes it easier while I'm climbing.

Encountering fatigue is then rendered 'routine'; sensations of tiredness and exhaustion become familiar, accepted and normalised within the culture. While the perception of novice mountaineers may well be that it is simply not possible to continue with such levels of fatigue, experienced climbers have learnt over time and with embodied experience that they can continue, they can endure even when *in extremis*, for example when suffering from altitude sickness, a highly debilitating condition:

> I suffered with the altitude for no good reason – it just comes, it gets you, and it's really debilitating, like man 'flu only 10 times worse and you can't really do much about it. Every single step was just agony you know, feeling such pain and exhaustion but I tend to say to myself I haven't got much choice, I can't stop. I've got to carry on.

For climbers, when exhaustion sets in, the physical demands of putting one foot in front of another can become overwhelming, even when the goal of the expedition is within reach. At such times of extreme exhaustion, the mind–body nexus was salient, alongside

the importance of experiential learning. If ignored, altitude-related problems such as cerebral and pulmonary oedema can become life-threatening. Mountaineers have therefore to learn to distinguish between the 'normal' effects of acclimatisation and more serious conditions, and to make decisions based on cognitive and somatic knowledge.

Interviewees also recounted how climbers learn how to transcend bodily 'dys-ease' (Leder, 1990) and extreme exhaustion, drawing on extra reserves of energy by rendering highly meaningful the pursuit of the summit (or other goal). Recalling the investment of time and energy required for training for the expedition could be used as a technique for spurring oneself onwards; not so much 'mind over matter', but rather mind and (body) matter as fundamentally interlinked in the task at hand. Here, this mountaineer evocatively portrays the mind–body linkage in making himself push onwards in the face of intense exhaustion:

> And then you think, 'Fuck this; I didn't actually spend the best part of eight months slogging in the rain in England and Ireland to just sit here', and you get up. So, everyone has to have the reason to get up, I guess, but half the team turned around with an hour to go, and I know why. They couldn't physically put one foot in front of the other. Whatever mental capacity was required to convince them to go even further beyond what they're used to, they weren't able to do it. Some people are able to call on that extra reserve, and I've realised you have lots of reserves when I started doing this, because you end up pushing yourself to a point where you then have to come the whole way back. And then you find out what it's like to have to go seven hours back with nothing in the tank, or come down Elbrus with no food and your water all frozen because you were stupid with your gear management. So, you figure out where your extra bit is, and some, I guess, just aren't able to call on it. If you brought them back the next year, maybe they might be.

This suggests that climbers can learn via experience where to find the 'extra bit' of energy, so that if a similar situation of extreme fatigue were to arise in the future ('if you brought them back the next year'), then they might be in a position to draw on body-memories, and the hard-won somatic knowledge of how to endure. The above quote, together with many others, also exemplifies the role of meaning and meaning-making in endurance work, and the accounting practices of mountaineers both to others and to self, as this interviewee evocatively identified:

> It's cold, uncomfortable, you're smelly, your head hurts because [of] the altitude, the food stinks, the wind's about to blow your tent away, you could slip and fall, you can't feel your fingers, it's uncomfortable, there's a million reasons not to be there and in my mind really only one reason to be there, and that's because you want to do it.

Endurance and Meaning-Making

Shilling (2016) identifies the need for sociology to analyse physical experiences, while also recognising the role of cognition in embodied processes. This, and the role of meaning-making in interpreting bodily sensations of exhaustion, were notable in the research findings. For many interviewees, encounters with extreme fatigue developed into experiential and bodily ways of knowing. Such knowing involved acknowledging that while

one would inevitably encounter utter exhaustion, this *could* be endured, and might even lead to an embracing of exhaustion, a 'love' of it, as described by some:

> That feeling of utter exhaustion, and you just fall into your sleeping bag. You're still wearing your harness and your boots and you're just… woooof. I love it. I don't love it at the time because I always say, 'God, I'll never do it again.' But then two days later I think… yeah.

Similarly, interviewees recounted how learning endurance in the face of fatigue required routinely embracing, and even enjoying 'suffering'. For many, suffering emerged as a shared, core characteristic of climbing and of mountaineering generally:

> Climbing is all about suffering in my opinion, y'know, you carry a heavy load and you battle the cold plus the high wind, altitude, fatigue, a lot, you're not sitting on the beach (laughs), but some people enjoy that, I enjoy that.

> I definitely experience the same challenges that anyone else would experience: mental fatigue, physical fatigue, but in mountaineering it's easier for me to power through that to be tough, to accomplish the task at hand, I think that's why I've excelled, that's why I've thrived in that arena.

The cognitive–corporeal dimension was also evident when mountaineers described how bodily feelings of utter fatigue and exhaustion could seem to 'vanish' when intentionality was directed away from the material body and towards a mental representation, such as the goal summiting:

> I remember Manaslu, the first time when I was using oxygen, I was having problems with my mask and everybody was gone and I was on my own with a Sherpa. I saw them all high up and just thought, 'Bloody hell, I'm just gonna turn around.' Then I radioed our expedition leader, and he said to me, 'you're not that far away'. And with just that one sentence – it gave me – all of a sudden, my exhaustion was gone and I carried on.

Here, Leder's (1990) phenomenogically inspired concept of the 'dys-appearing body' is apposite. Leder portrays how the body in pain or discomfort can erupt into the conscious mind, disturbing the routine everyday flow of consciousness, demanding a person's attention. The above example illustrates how the reverse also occurs: the pained and discomforted body can 'disappear' from the forefront of the mind, when a person's intentionality shifts away from bodily sensations to an object of cognition; in this case, the tantalising idea of the summit goal being within reach. In stark contrast, when the mental representation of achievement vanishes from the forefront of the mind and the mountaineer can no longer hold on to the motivating hope of summiting, the exhaustion of the material body erupts into consciousness again, demonstrating acutely the body–mind intertwining analysed by phenomenological sociologists:

> I mean it was so interesting because I was so strong on the mountain, and then we walked out and on the walk out I could just feel that my whole strength – I mean I could hardly walk. I had no strength left in my legs, nothing. I mean I could get around my thighs with my hands. It

> occurred to me that as long as we were on the mountain and there was the chance that we could summit, I was strong, I felt strong, and then all of a sudden it went when we went home.

Should the prospect of summiting become too tantalising, however, and the determination to endure anything and everything become so intense that the mountaineer is in danger of exceeding her/his endurance capacities, this disrupts or breaches the normative code of the experienced, 'serious' high-altitude mountaineering community, as we discuss in the final section of the findings.

Learning When Not to Endure

As Bunn (2016) notes, experienced climbers continually assess and reassess not only what they expect during or prior to a climb, but also reflect on decisions made on previous climbs, in an effort to enhance their capacities in future climbs. As part of this assessment and their endurance work, mountaineers, like the distance runners portrayed by Hockey and Allen-Collinson (2013), must learn to listen to their bodies in order to monitor their corporeal state of being-in-the-world and assess what is possible in terms of their current state in the specific context. Discomfort, pain and intense fatigue are routine and normalised within the physical culture of high altitude mountaineering. Our participants reported, however, that within the community of experienced mountaineers, knowing one's limits and having the ability to make informed, rational decisions as to whether to continue or to abandon an expedition or a specific route were respected and valorised. The cognitive–corporeal aspect was highlighted here, as interviewees explained that corporeal toughness had to be allied to psychological toughness. Experienced mountaineers learnt that making difficult decisions regarding when not to go on, to say 'no', was challenging and required disciplined thinking, recognising and appreciating the level of risk involved:

> I think a lot of that is about appreciation of risk rather than trying to ignore risk. Ignoring risk is dangerous. Appreciating it, working round it, seeing it as a challenge to be overcome, not as something that must be ignored, I think is key to being mentally tough. But also about that deciding what's worth it, I turned around on K2 because the snow conditions were poor, I could have kept on going a little bit further but I got to the point where I thought y'know my mental toughness in theory can say one more step, one more step, one more step but my recognition risk versus reward is that it's now better, now it's time to turn around.

A lack of learned experience could have highly deleterious corporeal consequences when allied to dogged determination to endure:

> Three of them had really severe frostbite, I'm sure one of them lost all their fingers if not part of the hand so yeah if they had that experience they would have known that they needed to turn around and yeah like I said, inexperience is really dangerous up there.

Another mountaineer similarly noted how the need to make balanced judgements involved experiential, somatic learning *and* psychological 'toughness':

> It is knowing how deep you're in the situation, you don't want to get yourself too far into a predicament knowing that you can't get out of it. So, it's knowing that fine balance really, and that's part of the toughness really that comes in. It's knowing when to say no, when to carry on, which way to go, which way not to go.

A 'summit or die' approach was construed variously by interviewees as sheer folly, a sign of immaturity or inexperience, and, importantly in relation to the wider mountaineering culture, a danger to others. Such risk-tasking was considered a violation of the normative structure of the high-altitude mountaineering community when it endangered the lives of others:

> I have got a friend who is quite a high achiever and before he said I would be willing to lose a toe to go to the summit and that makes you kind of cringe and makes you feel really unwell the fact that people want it so much. They want it so much that they risk so much that it's going to put you in danger or the guide or your Sherpas in danger.

While the ability to endure fatigue and exhaustion were highly valorised by the mountaineers, so was the self-knowledge required to assess accurately one's state of being and to know the limits of endurance, so as not to risk the lives of others:

> And a lot of the deaths in the high mountains occur when people just push themselves too hard and they get themselves into a position where they are so physically exhausted they don't have the energy to get safely back off the mountain, which not only puts your own life at risk but potentially puts other people's lives at risk, who are trying to help you down.

Conclusion

The research portrayed here contributes to current sociological debates, within and beyond the sociology of the body, in addressing directly the need to theorise the interrelatedness of the material body, mind and environment, and to theorise 'from' (as well as about) lived bodies. As Williams and Bendelow (1998: 3) argue, only on the basis of this form of theorising can a 'truly embodied sociology have any real hope of putting minds back into bodies, bodies back into society and society back into the body'. Our work seeks to respond to that challenge, and also relatedly to Shilling's (2016) call for sociology to address the 'embodied importance of cognition to the incorporation of culture'. In the current article, this relates to the incorporation of the practices and modes of being we have termed 'endurance work', highly valued within the community of high-altitude mountaineering. Sociologically speaking, endurance constitutes not some innate, biologically essentialist or inherent characteristic, but has to be learnt (and relearnt) over time, and socially produced in the form of endurance work, the practices of which are learnt, often tacitly, within the culture of high-altitude climbing. Thus, endurance is actively constructed by mountaineers, interpreted, made sense of, produced/reproduced and communicated via social interaction, and contoured by the specific physical-cultural world. This theoretical conceptualisation coheres with sociological notions of the active 'social production' of the senses and the sensory (see, for example, Allen-Collinson, 2018; Allen-Collinson et al., 2016; Chau, 2008), in that social actors must undertake work in sensory *production* as well as in sensory *interpretation*.

Findings revealed our participants having to engage purposively in endurance work, and in the active, somatic learning of endurance within the lifeworld of high-altitude mountaineering. Furthermore, the somatic learning of endurance is never total or complete, in the sense that corporeal challenges and body–mind vulnerabilities can emerge, even in the most experienced mountaineering-world inhabitant. Mental and physical capacities can develop, but also decline, for example due to injury and the ageing process, and experiences of accidents and near death. Confidence in one's own – and in other fellow climbers' – ability to endure is thus provisional and contingent, requiring ongoing assessment of fitness levels and experiential knowledge of what has previously been endured on similar occasions. The enduring mountaineering body is, then, a project to be 'worked at and accomplished' (Shilling, 2003: 4–5), but never achieved once and for all.

Our research investigated how high-altitude mountaineers experienced, described and produced endurance, both to themselves as individual social actors, and between themselves as intersubjectively and intercorporeally co-present beings in the lifeworld of high-altitude mountaineering. The inter-relatedness of the cognitive and corporeal emerged as highly salient as it became evident that the mountaineering-mind and mountaineering-body had to work synergistically in order to undertake endurance work. For these high-altitude mountaineers, 'doing endurance' is a key structure of the mountaineering *Lebenswelt*, and undertaking 'endurance work' is required to substantiate their inhabitance of this particular world. The nature of endurance work in this physical-cultural domain could in future research be compared and contrasted with analogous forms in other endurance cultures, such as marathon swimming (Throsby, 2013), endurance running (Bridel et al., 2016) and long-distance walking (Crust et al., 2011), and in wider socio-cultural contexts, in order to advance and refine knowledge about the cultural specificities and normative order of endurance.

Endurance work constitutes not just part and parcel of the practices of high-altitude mountaineering, but endurance also becomes a central component of mountaineers' consciousness and general being-in-the-world, extending into other parts of their lives. As Shilling (2016) notes in his discussion of body pedagogics, those who internalise techniques (or modes of 'work' in this case) associated with occupational pedagogics find their deliberative patterns and sensory reactions changed in fundamental ways that can cross over into other aspects of their lives. So it was with the mountaineers, who described how the ability to endure transcended the mountaineering context into other areas of their lives, where enduring pain, discomfort and suffering might be involved. Even when not in the thin air of high altitude, the embodied endurance mind was geared to enduring other vicissitudes of life, such as illness, pain, injury and the death of friends and family members.

In Schützian terms, drawing upon a shared stock of knowledge, high-altitude mountaineers evaluate not only their own endurance work, but that of their team-leaders, guides and co-climbers, undertaking the ongoing assessment of these lifeworld sharers as able (or not) to engage successfully in endurance work. Enduring thus constitutes a *shared* cultural practice of mind and body; one that is learnt, undertaken, developed, refined, identified in self and others, comes to be known and culturally transmitted – sometimes tacitly, sometimes articulated – among a community of high-altitude mountaineering practitioners. Via the

research findings, we respond directly to Shilling's (2016) call for sociology to address an important lacuna: the need to investigate the embodied importance of cognition in the incorporation of culture. For us, endurance work provides a powerful exemplar of this cognitive–corporeal nexus at work as a socially shaped and highly embodied practice and mode of thinking, which is incorporated by, and communicated between mountaineers within their shared physical culture.

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