**Researching the outdoors: exploring the unsettled frontier between science and adventure**

# Abstract

Outdoor practitioners and academic geographers arguably share a common origin in the explorers of the 17th to 19th centuries. The two interests diverged during the twentieth century, as academic geography became less dependent on travel and the pursuit of knowledge no longer provided the sole justification for exploration and adventure, but some synergies remain, at least in experiencing and making sense of the natural environment. This paper reflects on some pilot fieldwork for an on-going research project that combines fluvial geomorphology and outdoor education practice, in order to explore the parallels and differences between physical geography and outdoor education. A key area of divergence is identified in the degree of attention paid to the ‘self’, and particularly the body, in our interactions with the environment. We highlight the role of embodied experience both in our approach to the field site, and in the subsequent framing and re-framing of the research project, joining calls for greater attention to be paid to the corporeal practice of fieldwork. We conclude by arguing that Driver’s (2001) notion of an ‘unsettled frontier’ between science and adventure is as relevant for contemporary discourse as he suggests it is for historical geography.

**Key words:** outdoor education, physical geography, fieldwork, embodiment, interdisciplinary, transdisciplinary

**Introduction**

This paper provides a reflective account of pilot fieldwork for a project that spans fluvial geomorphology and outdoor practice. It joins calls for more attention to be paid to the practices, and particularly to the embodied experiences, of fieldwork, (Driver 2001, Dewsbury and Naylor 2002 and Trudgill 2003). It also contributes to the developing literature on the practices of inter-, multi- and trans-disciplinary research (in the vein of Bracken and Oughton 2006, and Jones and Macdonald 2007), specifically focusing on geography and outdoor education.

For the sake of context, we firstly introduce ourselves, explaining our backgrounds and the nature of our research. We then consider the historical connections and tensions between science/academic geography and exploration/outdoor education, and the differing attention paid to the self, and particularly to the body, in contemporary physical geography fieldwork and outdoor education practice. Next we present a reflective account of our collaborative research in action, foregrounding the different perspectives and approaches we each bring to research in the field, and considering the role of embodied field experience in the framing and re-framing (Oughton and Bracken 2009) of the project. Ultimately, we highlight that Driver’s (2001) ‘unsettled frontier’ between science and adventure still remains, providing terrain over which academic geographers and outdoor practitioners should strive to negotiate.

**Our positions as researchers**

We have been teaching together for some years on an Outdoor Adventure degree programme, but have very different backgrounds. Pauline is a geographer, primarily a fluvial geomorphologist, arriving in an academic position via the ‘traditional’ route of degree and PhD. Louise’s academic background is in psychology and, more recently, outdoor learning, following many years of experience as a professional outdoor education practitioner. The project on which this paper is based is our first research collaboration. It focuses on the hazard associated with hillwalkers crossing rivers, and was initially formulated with two stages: first, using fluid dynamics and geomorphology to develop understanding of the physical hazard presented by flowing water; second, examining outdoor leaders’ perceptions of river flow and decision-making in identifying suitable crossing points. The ultimate aim is to bring the two together, developing improved guidance on river crossings to outdoor practitioners. In the language of Harris *et al* (2009), this research could be considered multidisciplinary in the early stages with potential for interdisciplinary working as the project progresses, but with Louise’s status as an outdoor practitioner and our very practical overall aim, it is arguably transdisciplinary, crossing the boundaries between scientific knowledge and tacit knowledge, between academic discipline(s) and professional practice.

Recognising that academic geography and outdoor education have some common origin in colonial exploration, in the next section we attempt to draw out some of the historical connections and divergences between the two.

**Exploration and science: connections and tensions**

There is no simple, single history of any discipline, but from the 15th century at least, the development of geographical knowledge was undoubtedly intertwined with both exploration and imperial expansion (e.g. Livingstone 1992, Driver 2001). Throughout the intervening six hundred years there will have been a whole variety of motivations for adventurous journeys, driving different individuals, teams and expedition funders in different ways contemporaneously. Arguably, though, ‘science’ was at its most prominent in this mix from the late seventeenth century to the middle of the nineteenth (Fernández-Armesto 2006). Livingstone (1992) identifies a changing self-image of explorers around the turn of the nineteenth century, the ‘scientific travellers’ distinguishing themselves from the earlier explorers, who “*were more like pirates or buccaneers”* (166). The pursuit of knowledge, then, was increasingly providing the justification for expeditions – albeit often still underpinned by imperial ambition: geographical knowledge was of utilitarian value (Freeman 1961, Withers 2006). But exploration during the Enlightenment “*sought to bring the globe under the sovereignty of science”* (Withers 2007, 88). The establishment of the early Geographical Societies in the first half of the nineteenth century (Bassin, 1983, Unwin 1992) thus came at a time when exploration, science and colonial expansion were closely intertwined. They were hubs for exploration, and particularly exploration driven by the national interests of political ambition. Hence the social formalisation of the discipline tied it closely to exploration (Unwin 1992).

By all accounts, friction between ‘academic’ geography and exploration surfaced rapidly. Livingstone (1992) and Fernández-Armesto (2006) identify a tension between geography’s ‘out-of-doors practitioners’ and ‘armchair philosophers’ of the mid-1800s. Collier and Inkpen (2002) identify this as a period of significant change in the Royal Geographical Society (RGS), from a focus on exploration to one of systematic acquisition of knowledge, mirroring developments elsewhere (e.g. France, see Freeman, 1961). Fernández-Armesto (2006) identifies the second half of the nineteenth century as the period when global ‘pathfinding and mapping’ were drawing to a close; less of the world was unknown. At the same time, chairs of geography were being introduced in multiple universities in Britain, France, Germany and the US1 (Unwin 1992, Withers 2006), and geography’s credentials as a systematic science were seen as key to establishing it as a university discipline (Livingstone 1992). Towards the end of the nineteenth century, then, academic geography was beginning to dissociate itself from exploration. That said, the journals of the early twentieth century reveal that geography in the UK often still had travel at its core. Examining just one volume of the RGS’s *Geographical Journal* reveals accounts of expeditions (Nielsen 1937, Shipton 1937) and their physiological impacts (Warren 1937) alongside systematic geographies of industry (Beckinsale 1937) and soil erosion (Morris 1937). Indeed, the two were sometimes combined (Wage 1937). So perhaps it was not until the Quantitative Revolution of the mid-twentieth century that the separation of exploratory travel and academic geography characteristic of today really emerged. While many geographers still travel *to* field sites, journeying and the physical experience of fieldwork are rarely, if ever, an explicit part of the knowledge-making itself.

The emergence and recognition of outdoor education2 in the UK is generally attributed to the work of individuals such as Hahn and Baden-Powell in the mid twentieth century (Barnes 2000) and is approximately contemporaneous with the separation of exploration and science in geography. Here, we consider the place of ‘environmental knowledge’ (corresponding with the science of geography) in this field.

Reviews of historical developments in outdoor education reveal that ‘character building’ and the development of ‘community spirit and respect’ provided the initial rationale for outdoor education (Cooke 1999, Leather 2010). The environment served as the stage on which adventures unfolded, rather than providing a core focus in itself. By the 1970s, outdoor education was clearly seen as a medium *for* learning rather than constituting a specified set of activities (Joint Conference Report, 1996); the National Association for Outdoor Education defined it as *“a means of approaching educational objectives through guided direct experience in the environment, using its resources as learning materials”* (Parker and Meldrum 1973, 10). The aims of this learning were articulated at the 1975 Dartington Conference as focusing on awareness of, and respect for, the *self, others* and the *environment* (Barnes and Sharp 2004). More recently, Higgins *et al* (1997) have developed this to suggest that outdoor education consists of three equal components: outdoor activities; personal and social development; and environmental education, outdoor education taking place at the conjunction of the three. This tripartite model was initially proposed for outdoor educators in Scotland. It has subsequently provided a conceptual basis for a number of publications (e.g. Barnes 2005) and been endorsed by the European Institute of Outdoor Adventure, and thus has some institutional legitimacy within formalised outdoor education practice.3

However, many would argue that outdoor education has been dominated by adventurous activities and/or personal and social development, to the neglect of learning about the environment (e.g. Deeming 2000, Higgins 2003, Stott 2010). Nicol (2002) identifies that, despite the tripartite model, outdoor education is often described in terms of constitutive activities such as canoeing, hillwalking, rock climbing and skiing: practice has always preceded philosophical debate and theoretical development, perhaps lending emphasis to the activities. Rickinson *et al* (2004), in a review of research on outdoor learning, reveal an overall decline in fieldwork through the late twentieth century. Outdoor education now has an increasing university profile in the presence of departments and course provision, and an increasing body of academic literature. Principally dominated by psychology and educational theory, this literature has focused predominantly on personal and social development (Nicol 2002; Beringer and Martin 2003) and has often been associated with attempts to justify or explain the role of adventure and challenge within education (e.g. Putnam and Hopkins 1998). An increasing body of research indicates that experiences within the natural environment have a positive impact on physical and emotional wellbeing (Barratt Hacking *et al* 2007) and on the development of creativity (Louv 2005), and the therapeutic potential of the natural environment has been recognised across a range of disciplines, including medicine and ecopsychology (Beringer and Martin 2003). This literature, focusing as it does on the ‘human’, arguably serves to reinforce the notion that outdoor education is principally about adventurous activities for personal and social development, rather than understanding the environment.

Compounding this further, recent decades have seen a shift towards increasing consumerism in outdoor activities(Foley *et al* 2003, 150). This is manifest in the development of packaged, accessible adventure in which the *journey* of exploration and endeavour has been, at least in part, replaced by short, sharp bursts of adventurous experience. In essence, thrill and challenge are high on the agenda, the focus being *“getting what you want in the minimum time available”* (Higgins 2003, 131). Such a consumerist approach inadvertently pushes towards the use of nature as a commodity, merely the location for adventure to take place (Allison 2000). It would seem, then, that despite attempts to develop a more balanced theoretical basis, outdoor education in practice is as dominated by concerns for the personal and social dimensions as it was in the mid twentieth century.

**Fieldwork and outdoor practice**

This leaves the key connection between geography and outdoor education being embodied ‘outdoor experience’. Fieldwork remains central to geography (perhaps especially physical geography) both in terms of its ‘privileged epistemological status’ (Rhoads and Thorn 1996, but see also Matthewson 2001 and Burt 2003) and as a motivating factor for being or becoming a geographer (Stevens 2001, Parker 2001, Trudgill 2003a and b, Zelisnky 2001, Entrikin 2009). Thus Trudgill (2003a) captures common ground between geographers and outdoor education practitioners;

*“...the feeling of being there, of experience. Ask physical geographers why they enjoy their work and many will give you the same kind of answer – a love of wild places, mountains, glaciers, coasts and so on, as a prime motivation.”*  (26)

The legacy of geography’s history of exploration is highlighted in recent critiques of the dominant discourse(s) of fieldwork (e.g. Hall *et* al 2002, Powell 2002, Simandan 2002, Lorimer 2003, Bracken and Bull 2004), wherein fieldwork is portrayed as a masculine conquering of landscapes, the *“heroic quest of the naturalist explorer”* (Lane 2009, 129).

But whereas outdoor education prioritises the personal and social experience of being outdoors, this is lost in the scientific reporting of physical geography research, its influence on the research hidden4 (Trudgill 2003a, 2003b, Dewsbury and Naylor 2003). Raab and Frodeman’s (2002) phenomenological account of geology fieldwork highlights the role of a researcher’s movement across a field site in determining what s/he sees, and hence subsequent interpretation of that site. Thrift’s (1996) non-representational (or more-than-representational) theory could be useful in taking this further, emphasising as it does embodied experience, materiality, and place as a relational assemblage or even convergence (Anderson 2010) of self and environment (Entrikin 2009). Hitchings (2007) notes that much of this work has been focused on outdoor spaces such as mountains, forests, caves and coastal cliffs, such that our non-representational understanding of outdoor recreation/education is arguably more advanced than our understanding of embodied physical geography fieldwork. Both Dewsbury and Naylor (2002) and Powell (2002) call for greater attention to be paid to the corporeal practice of fieldwork. This provides a useful entry point for our research: given that the research was designed to use empirical field science to further our understanding of embodied outdoor experience, the fieldwork in practice has drawn us unavoidably to consideration of the mutual relation between the two. We pursue this further in the next section, but begin with an explicit process of representation in order to access our, first different, and then shared, embodied fieldwork performance.

**A day in the field**

Our setting for a day of pilot field research was an upland river reach, our purpose being to survey river cross-sections and collect flow depth and velocity data. Inspired by discussion of this *Area* special section, we agreed that our first task should be to each ‘draw’ the field site, out of curiosity to see whether or not the exercise would reveal anything about the perspectives we bring to the research. This necessitated prior delimitation of a field ‘site’, which involved walking the river bank, discussing our requirements in terms of the data we were there to collect (specifically, the desire for variation in depth and velocity) and the degree to which the reach was characteristic of one that a hillwalker might attempt to cross. Once an area was agreed, we drew in silence. Despite the attendant problems of knowing in advance the purpose of the exercise, we could only draw what we each saw, and were both surprised by the result. We now realise that (secretly) neither of us expected much to come of the exercise and that, at the moment of putting pencil to paper, we both experienced some uncertainty: Pauline’s description was of feeling “like a school-kid faced with a blank sheet of paper, uncertain of the instructions”. Perhaps (in retrospect) it should not have been so surprising that the resulting representations (Figure 1) are so different, but this prompted discussion of how we each went about the task, both physically and in terms of our thought processes at the time. Table 1 lists the order in which each of our drawings developed.

*[INSERT FIGURE 1]*

*[INSERT TABLE 1]*

The most obvious difference between the resulting images is one of style: Louise drew an oblique sketch (Figure 1a), representing the river from the position in which she stood, while Pauline drew a map (Figure 1b). This difference was underpinned by a difference in corporeal practice: Louise chose a specific vantage point (close to the confluence of the river and its tributary stream) and stayed there throughout, whereas Pauline roamed the field site to change vantage. It is tempting to theorise this movement as a performance of the scientist’s ‘view from nowhere’ (Nagel 1986), or the geographer’s ‘conquering the landscape’, although such theorisation is only after-the-fact speculation. But Pauline’s map, with its emphasis on river-bed and bank features (the gorse bushes being an afterthought, as signalled in Table 1) clearly reflects her disciplinary training as a geographer and geomorphologist. Louise’s key focus was on the bank opposite her, rather than the specific details of water flow. The way she viewed the bank was similar to how she would assess a river for a crossing, identifying the key features that could impact on a safe passage. Thus the section of steep bank on the north side of the river was one of the first features she drew (see Table 1), the morphology of the far river bank being a crucial element of the decision-making in assessing where to cross a river.

This exercise, then, has begun to shed light on the deeply embedded *approaches* (as opposed to simply *perspectives*, which risks prioritising the visual and cognitive) that we each bring to the research. The classically ‘geographical’ act of constructing a visual representation of the field site helped us to appreciate the (degree of) differences in our understanding of the river that language had not so clearly revealed. The drawings could be said to exemplify Trudgill’s (2003a, 31) suggestion that ‘given’ (or taught) meanings can replace personal meanings, “forever constrain[ing] the ways of looking at a scene.” But in our case these meanings have not *recently* been taught and are deeply embedded: the representations presented in Figure 1 and the physical and cognitive processes involved in the acts of producing them connect to our identities, experiences and expectations of rivers performed at that location, on that day. Drawing a map relieved Pauline’s uncertainties from the beginning of the morning: the field ‘site’ had been created. This was through putting pencil to paper, but precisely because it involved focusing attention on the fluvial features present and asking questions of them beyond anything in the map representation. How far does the bar extend upstream? How often is it submerged? What was the sequence of development of in-channel features? The production of a (pseudo-objective) account of the geomorphology, an account from which the self is explicitly excluded, positioned Pauline as a geomorphologist at the riverside, offering the comfort of familiar territory even if the terrain was relatively unfamiliar. This process was cognitive, but the geomorphological questions stemmed from, and were considered through, corporeal interaction with the location (as Raab and Frodeman, 2002, suggest occurs in geological fieldwork). Louise’s focus was on the aspects of the river likely to impact on a crossing, seeing the river as a feature in the landscape that may form part of a journey. Although she was stationary, embodied interaction with the environment, the placing of the ‘self’ in the environment, was fundamental to her interpretation of her surroundings, which she depicted explicitly as her ‘view from *here*’. ‘Self’ and ‘challenge’ were central to her interpretation. On that morning, then, two field sites were co-existing; two ‘taskscape[s] of doing research’ (Dewsbury and Naylor 2002) brought into being through the enactment (after Powell 2002) of two disciplinary identities.

The rest of the day was spent surveying river cross-sections and measuring flow depth and velocity, using standard geomorphological techniques, generating quantitative data representing the river to model the fluid drag that a person crossing it would be subjected to. However, our interest for this paper is not the data generated, but the embodied experience of data collection. The purpose of the research is to better understand interactions between river flow and the body, and while taking a ‘scientific’ approach to this, when measuring flow velocity we are ourselves standing in the river and subject to the forces we are modelling. The embodied experience of data collection is thus relevant to the research itself, and so dominated our conversations at the time. With one of us in the river measuring flow and the other on the bank recording the data, exchanges were focused on how strong the water *looks* from the bank and how it *feels* here in the river, how stable or unstable, safe or unsafe, does it feel to be standing here, and *why*. Although we were not directly calculating fluid drag in the field, we found ourselves trying to guess, from the feel of the water when standing in it and the look of the water from the bank, whether the velocity measurement would give us a higher value here, lower there; data collection became a game of comparison of perception with numbers. At the end, before packing up the field kit, we took an additional velocity and depth measurement slightly further upstream, where the force of water against our legs *felt* greater. Curiosity was triggered by our embodied experience of the field site.

We became (more) conscious of the other factors that may influence our perception of relative safety. Apart from the physical force of the water, the bed material is clearly important, offering different degrees of ‘slipperiness’ to impede our ability to withstand the water’s force, and occasional obstacles on which to trip or lose our footing. But then we wondered how water depth, relative to our bodies, may influence our *perception* of stability or instability; do we feel less stable simply because the water is above our knees here? In the potentially risky situation of hillwalkers crossing a river, perception can influence confidence, and confidence will influence actions. So our thinking about the research project, in terms of both the kinds of conditions in which we wish to collect data and the future directions the project could take – the framing and re-framing of the project (Oughton and Bracken 2009), was affected by the materiality of the field site (Dewbsury and Naylor 2002) and our embodied interactions with it.

At the same time, we were conscious that standing in a river, buffeted by flow, can render it difficult to accurately place or hold steady a survey staff or flowmeter. Wind catching the survey staff requires rapid judgment at the brief instant that the staff is vertical to obtain a measurement. A flowmeter may slip and move half way through a 50 second measurement period. In a multitude of such tiny interactions, a constant interplay between field, researcher and equipment, the field site itself shapes the data collected.

**Concluding thoughts**

All of this raises questions about how the embodied experience of the field influences other ‘science’ field research, where this experience is not explicitly part of the research and is never discussed. Anyone who has undertaken such research will know that it is not always comfortable, for example, measuring river flow in sub-zero temperatures. But (how) do comfort and potential danger impact on decisions and behaviour in the field, affect the data collected and hence shape the science itself? Here we add to Dewsbury and Naylor’s (2002) call for greater attention to be paid to the ‘space between the body and the field’ (257), and Raab and Frodeman’s (2002) phenomenology of geology, by suggesting that the researcher-equipment-field hybrid requires attention in order to better understand field science and the knowledge it produces.

Our experience also illustrates Jones and Macdonald’s (2007) claim that interdisciplinary research requires trust, understanding and *practice.* They cite Massey *et al*’s (2006) recommendation that interdisciplinary research should begin with an explicit discussion of the different epistemological positions of the researchers. However, such differences may be difficult to articulate: we were not aware of them specifically because we each did not appreciate that our co-researcher was seeing things so differently. Rather than discussion, we found an alternative means of revealing such differences. By recounting our pilot data collection exercise, we hope we have demonstrated the central role that *practicing* the research can play in the iterative framing (Oughton and Bracken 2009) of an interdisciplinary project.

Finally, we return to the historical connections and tensions of our disciplinary and professional backgrounds, and the different emphases of physical geography and outdoor education practice. Our research is bringing together the outdoor practitioner’s awareness of *being* in the environment with the scientist’s focus on understanding that environment: two aspects that once were part of the same endeavour, perhaps best exemplified by Alexander von Humboldt. Driver (2001) describes the rift between adventurous travel and scientific exploration as an ‘unsettled frontier’, warning historians of geography not to ‘assume a neat distinction’ (2) between academic geography and other geographical discourses of the past. We would argue that the frontier should still be considered unsettled: there is potential for academic geography and other, more practical or pragmatic, discourses of the outdoors to come together to mutual benefit – in effect, to undertake what Harris *et al* (2009) describe as *transdisciplinary* research, but spanning *geographical* knowledges.

**Notes**

1. Recognising that geography existed within university curricula long before this (e.g. Withers, 2006), although not as a discrete subject, and that the first chair in a French university was established in 1809 (Unwin, 1992). The late 1800s appears to have brought a significant consolidation of geography’s presence in Universities.

2. It should be noted here that there is both overlap and distinction between Outdoor Education/Learning and Outdoor Recreation (see Martin 2001 for a further discussion of this). This article, and indeed our research, focuses principally on the former, but also has relevance to the latter.

3. BSES Expeditions provides one example of formalised outdoor learning adhering to the tripartite model, with aims which encompass character development, the pursuit of scientific knowledge, and individual (outdoor) challenge (Stott and Hall 2003).

4. Noting, though, that this has not always been the case: Alexander von Humboldt used his body as a ‘scientific instrument’ in his exploration of South America, particularly noting the effects of altitude (Kohlhepp 2005, Debarbieux 2009).

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Figure 1. Field sketches of the pilot research site: a) by Louise, and b) by Pauline. The numbers identify common elements: 1 is the tributary inlet; 2 and 3 are sections of vertical bank face, bare of vegetation; 4 is a boulder weir.

Table 1: Chronological accounts of drawing field sketches/maps

|  |  |
| --- | --- |
| Louise | Pauline |
| * Tributary stream entering from the south * Lines indicating the overall shape of the river * Bank on the north side – in particular, the steep/high sections, grass tufts and trees * Tufts in the subsidiary stream * Tufts in the main river flow * Weir * Boulders on the banks * Flow lines * A more distinctive line showing the water’s edge on the north side * Added more definition/detail to all features to attempt to make it more recognizable | * North bank (as a reference line from which to map other features), including eroded areas * Upstream weir, then the lateral bar and the south bank line as far downstream as the tributary * Filled in the in-stream features and some vegetation (primarily the longer vegetation that was impeding flow) * Started the key * Added the tributary and the south bank downstream of this * Filled in the in-stream features of the down-stream end and some vegetation. * Added some of the riparian gorse bushes. * Completed the key. |