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# The craft of rock climbing: exploring the implications of relational ontologies for learning to rock climb

Peter Hubbard<sup>1</sup> · Colin Wood<sup>1</sup>

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## Abstract

This paper explores how relational ontologies challenge the conception of skill development in rock climbing. Using especially the concepts of Tim Ingold and Phil Mullins, the paper suggests that pro-environmental behaviours, and relationships to place, can be fostered by direct involvement in skills development. This ontology is at odds with dualistic approaches that see climbing and pro-environmental behaviours as tensioned concepts. It is also contrary to historic practice theories that see climbing development as deriving from mastering oneself and conquering the climb. The paper proposes that climbing can be better understood as a craft and that each climb can be seen as co-created by the correspondence between the climber and the rock. This approach challenges the anthropocentric concept of the climb as a challenge to be overcome by skill and human endeavour, and instead suggests that a perspective of climbing as a craft better recognises the shared agency of the assemblage of rock and climber. Consequently, the paper suggests that completed rock climbs can be seen as co-evolved expressions of knowledge and action, and thus that climbing skills and pro-environmental behaviours derive from a creative process of engagement with the solid reality of the rock.

**Keywords** Enskilment · Rock-climbing · Environment · Place · Relational ontology

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✉ Peter Hubbard  
hubp1\_20@uni.worc.ac.uk  
Colin Wood  
c.wood@worc.ac.uk

<sup>1</sup> School of Sport and Exercise Science, University of Worcester, Worcester, UK

## Introduction

The origins of modern rock-climbing are somewhat disputed, but probably lie in Europe in the late 19th century, emerging from the pastime of mountaineering (Hoibian, 2017). However, evidence of human habitation in hard to access rocky areas suggests that people have climbed rockfaces in search of food and shelter for millennia. Indeed, examples of rock-climbing traditions can be found around the world from the Miao peoples of China to the Igotol burials in the Philippines and the Puebloan rock dwellings in the United States. Similarly, there are an abundance of mythical and historic accounts of heroes scaling cliffs in search of love, glory or other rewards. By contrast, modern rock-climbers mostly climb for recreation or as a leisure sport (Hoibian, 2017). As such, modern rock-climbing can be critiqued as an artifact of leisured lifestyles and Western aesthetic and cultural values (Thompson, 2012). Hoibian (2017) recognises this, but suggests that,

Mountaineering and rock climbing have a unique position in the world of leisure sport. These activities arouse scientific curiosity; attract those with aesthetic and contemplative sensibilities, a spirit of adventure, or a desire to attain high levels of performance. (p. 3)

However, this representation of rock-climbing as a human cultural activity has a significant and frustrating omission: it suggests that climbing has little to do with the environment. Consequently, it seems to over-represent the culture and personal motivation of the climber whilst ignoring the importance of their physical and sensory engagement with their surroundings. In response, this article argues that rock-climbing can be otherwise understood as a relationship that is co-created by the climber, the rock, and the wider ecology. In this conception, a relationship to the environment is embodied in the skills of the climber.

In a review of North American climbing narratives, McCarthy (2002) identifies three primary modes of imagining nature: as an object to conquer, as a picturesque setting to admire; and as the ‘extension of a self whose identity is shaped by the interpenetration of the human and the natural’ (p. 179). The first two modes see nature as an object and suggest a Cartesian divide between subject and object. However, he recognises a third mode of literature that became apparent in late twentieth-century climbing stories that ‘points to connection with the medium—snow, ice, stone—as an effect and a reward of extended effort and commitment’ (p. 188). McCarthy suggests that these texts reject the Cartesian divide and acknowledge the intermingling of subject and object through kinaesthetic engagement. He concludes that,

Mountaineering narratives climb toward the recognition that people are not discrete and separate from the environment, but are intermingled units of a natural environment that includes storms and plants and glaciers. (p. 190)

McCarthy’s (2002) review reflects our own concerns about the historic representation of rock-climbing as a human cultural activity, and the underlying assumption that the rock is merely a context for conquest or caretaking. As a response to these concerns,

our work extends McCarthy's comments about the climbing literature into the practices of rock-climbing and the teaching of rock-climbing. As such it considers climbing through the lens of relational ontologies, drawing on the ideas of Tim Ingold and Phil Mullins. The work then draws on these relational ontologies to develop the idea of climbing as a craft and uses this conception to rethink the value of skill acquisition in climbing. Finally, the work addresses ethical and political implications of the ideas and proposes how climbers, and those teaching climbing, might make practical use of the ideas.

Before addressing the theoretical issues, it is worthwhile defining the parameters of the physical context and acknowledging the limitations of the terminology used. Rock climbing has multiple variants and complicated relationships with related activities such as mountaineering and fitness training. Modern rock-climbing spans from Olympic sport to meditative solo climbing; from multi-pitch routes in remote areas to artificial boulder problems in indoor gyms. However, the core forms of rock-climbing are commonly categorised as Bouldering, Trad climbing, Sport climbing, Top roping, Aid climbing and Free Solo climbing. All of these entail an attempt to complete a set of movements in the vertical plane that lead from one point to another. Whilst these forms are generally accepted as within the canon of rock-climbing there are ongoing discussions about the legitimacy of indoor climbing, it must be noted that rock-climbing includes diverse climbing cultures that are often loose and poorly defined (Batuev & Robinson, 2022), with different traditions, values and norms, and that there are significant tensions within and between climbing cultures (Kiewa, 2002; Bogardus, 2012; Renfree et al., 2021). In this article we use the term 'rock climbing' to include all these forms, and whilst acknowledging the diversity of climbing cultures, we seek to locate our discussion of rock climbing within the relationship between climber(s) and the rock, rather than within historical, sociological or political contexts.

The authors recognise the popularity and importance of artificial climbing venues and acknowledge that it is possible to develop a relationship to place with a built environment. We intend our arguments to hold for all environments where rock climbing takes place. Indeed, all climbing locations have been somewhat adapted by climbers. On crags and boulders, such adaptation may arise from intentional removal of loose rock and bolting fixed protection, or from unintentional disturbance to wild-life. Climbing locations have also been transformed into techno-cultural spaces – climbs are claimed by their first ascensionist, given names, graded and listed within climbing guides. As such, the difference between artificial venues and natural venues is somewhat arbitrary. Nevertheless, in this article we predominantly conceptualise climbing as taking place on outdoor rock formations.

Finally, *climbing skills* needs clarification. Williams (2022) suggests that climbing incorporates a range of psychomotor skills, ropework and safety skills, cognitive skills and those related to emotional control. Moberåten and Christophersen (2020) classify these into three classic performance factors: technical, physical and mental. Thus, both approaches consider the skills to be related to the individual. This article challenges this perspective as anthropocentric and sees it as decontextualising climbing skills. Instead, the article suggests that climbing skills are co-created by the correspondence between the climber(s), rock and an ecology of climbing.

Thus, this paper seeks to challenge the concept of climbing as a human cultural activity and to recognise the inter-relationship between the climber(s) and the environment in which they climb.

## Rock climbing, enskilment and pro-environmental behaviour

Within outdoor education, there have been repeated calls for a greater focus on place and environmental learning (Nicol, 2003; Higgins, 2009; Mullins, 2014a; Quay et al., 2020; Lynch & Mannion, 2021). This move towards environmental learning has led to debate about the role and function of adventurous activities, such as rock-climbing, for learning in the outdoors. Indeed, Lugg (2004, p. 9) criticises rock-climbing for treating nature as a “gymnasium” and having an “anthropocentric mindset.” She sees this as a missed opportunity for environmental education. Similarly, Nicol (2002, p. 221) is frustrated that, when teaching climbing, educators “expect understanding of nature to happen incidentally.” Such concerns also inform Wattchow and Brown (2011, p. 24) who are concerned that, “a focus on activities risks consuming and commodifying places as spaces that are irrelevant except for the resources that they offer (e.g., rapid, climbing crag, peak to bag)” (p. 24). These authors express concerns that the gymnastic and activity focus of adventurous activities might displace learning about sustainability or the development of a relationship to place, or perhaps even separate participants from the natural context by emphasising its utility as a resource for climbing.

By contrast, Mullins (2014b) finds that increased specialisation in an outdoor activity is a strong predictor of pro-environmental behaviour. Similarly, Thomas (2005) suggests that enjoyment and adventure help develop positive relationships with nature. These findings are also arrived at by Sharma-Brymer et al. (2017) and MacIntyre et al. (2019) when looking at more extreme sports. These authors suggest that more experienced outdoor performers are more likely to care about the environment where the activities take place, than those with less experience. However, Mullins (2014b) goes further, suggesting that the development of skills can also be a means towards gaining embodied learning about the environment. From this, he suggests that outdoor theorists must “position humanity as belonging within environments, and that skill provides an important avenue” (p. 129). Thus, honing climbing skills at a cliff can be seen as a route for climbers to belong in their environment, and a sense of belonging is seen as a way of developing an ethic of care and wider pro-environmental behaviours.

### Relationships with the rock

This section looks at the relationship between climbers and their environment. As such it expands on McCarthy’s (2002) third mode of imagining nature as the “extension of a self whose identity is shaped by the interpenetration of the human and the natural” (p. 179). Thus, it explores a conceptualisation of rock-climbing where the relationships are multi-faceted and, at least partly, reciprocal.

In starting to explore the relationship between the climber(s) and the climbed it is perhaps useful to argue against the Cartesian divide between humans and nature that underpins McCarthy's first two modes of imagining nature which are characterised by the presentation of rock-climbing as 'conquest' over nature or as the 'caretaking of nature.' In these modes the relationships are straightforward. The subject (the human) operates on the object (nature). The relationship is unilinear and directional and reflects the culture and values of the subject. However, this is overly simplistic as it overlooks the complexity of the relationship and the way that the relationship is enmeshed with other constructs. As an example, the way a climber interacts with the rock is likely to reflect the characteristics of their climbing, and these are entangled with their experience, values and cultural expectations and the nature of their sensory interface with the physical environment. Thus, climbers who are predominantly experienced at gritstone climbing will interact with rock differently than those who are predominantly experienced at limestone climbing. Their bodies will seek familiar forms, their contact through their feet and hands will differ. Similarly, climbers who are climbing with strangers are likely to climb differently to when they are climbing with friends. In both instances the way that the climber interacts with the rock is modified by factors that lie outside of the direct relationship between the climber and the rock.

Similarly, the way that the rock interacts with the climber reflects its characteristics for climbing. The rock may have features that fit or do not fit the climbers' style or dimensions. If they fit, then they become potential handholds and footholds. If they do not, then they remain simply as rock. In some cases, the rock helps the climbers, and at other times it hinders or challenges them. This is not to anthropomorphise the relationship. The rock is not sentient. Instead, the relationship between the climber(s) and rock depends on convergence between both parties. Thus, the crag is not simply a backdrop to the activity, and the rock is not simply an object on which to practice. Instead, climber(s) and rock come together to create the activity of climbing. This suggests that in climbing the boundaries between human and non-human (i.e. climbers and crag) do not exist or, at best, are permeable. As an example of this permeability, when interviewing secondary school students on climbing sessions, Jane et al. (2022) identified interpersonal themes (such as trust, motivation and achievement) and saw the venue as a place that could provide these social and cultural experiences. Their findings indicated that the different contexts of 'rock climbing' could produce different types of experiences for students. Clearly, the act of climbing in this research goes beyond a human cultural activity with nature as a backdrop and becomes an activity where the type of rock climbing (as a shared activity between climber and climbed) has impact on the types of outcomes.

Thus, there are aspects of reciprocity within the relationship between the climbing environment and the climber(s). This is evident in Rossiter's (2007, p. 295) discussion of the funniness of climbers' movements on rock. She states that, in the "strange positions that the rock insists the climber adopt, even the most boring climber may experience the pleasures of becoming funny." Here, she is not suggesting that the rock had a sense of humour, but that the "boring climber" was funny because of their interaction with the rock. The climber's contortions were not entirely of their own volition, but rather a response to the needs of the route. Likewise, she notes that rock

scares climbers. Rossiter (2007, p. 299) sees that, “in frightened climbing bodies, volitional capacities and their imagined fixed boundaries are thrown into the sharpest relief.” Here, Rossiter is positioning fear as part of the interaction between rock and climber. The climbers are not scared by their own volition - they do not *intend* to panic or to over-grip. Equally, it seems evident that the rock does not intend to scare the climber. Thus, if the climber’s fear does not emerge from the intentionality of either the rock or the climber, then it seems likely that the fear must arise from within the relationship between them.

The lack of clear boundaries between the non-human and human is also considered by Lewis (2000). He suggests that this is because modern life desensitises us with consumption and a continual bombardment of things, and we retreat into a mental world. In consequence, he argues that most of modern life is ocular rather than sensate, and thus it is easy, passive and voyeuristic. So, for Lewis (2000) “estrangement from the world is to be expected when one is already estranged from one’s body” (p. 68). However, he suggests that climbing “serves to unite body and world” (p. 68). Lewis stresses how climbing involves mind, body and world, and indeed he sees this as the reason that rock-climbing exists. He concludes that, as modern life has left people feeling unsatisfied, climbing has increasingly offered “a validation of the body at a time when the first serious incursions of modern technology were being felt” (p. 68).

Lewis’s ideas suggest that climbers are not detached from the world, as people are in houses, cars or virtual spaces. Rather, they are immersed in their environment and their environment effects them physiologically and mentally, but these responses (fear, anxiety, happiness, etc.) are also interconnected with the climber’s experience, approaches and bodily capability within a specific environmental situation. As an example, all climbers will experience fear differently, but more experienced climbers may exhibit their fear differently to beginners. The differences may be a result of conditioned responses, better strategies for coping, or they may reflect a positive enjoyment of fear through the heightened senses associated with endorphin release. Regardless, the exhibition of even the most physiological responses seems to be related to prior experience and interwoven with the cultural and environmental context.

The consequence of Rossiter’s (2007) exploration of the way that rock contorts the bodies and minds of climbers, and Lewis’s ideas (2000) that the immersion within nature unites the climbers’ body and world, presents evidence that climbers’ relationship with rock is intertwined with the internal world of the climber and the external reality of the environment.

### **Damage, mutual defacing and correspondence**

Within a relational ontology the relationship between rock and the climber is, at least partly, reciprocal. This is graphically described by Lewis (2000), who states that the “climber and environment inscribe each other” (p. 74). The rock leaves the climbers with “worn fingernails, bruised knees”, but also that the rock,

... cultivates the body towards a better configuration for climbing. And this body is, in substance, created by nature. Through its very engagement with nature the body becomes natural. (p. 74)

Mullins (2014a) interprets Lewis to suggest that through the cultivation of muscles, callused fingers, etc. “climbers come to share an embodied knowledge, ability, and experience of their world” (p. 323). Thus, through repeated climbing experiences, the climber becomes an artifact of the rock climbs but is also absorbed into the nature of vertical places. Rossiter (2007, p. 298) describes these reciprocal changes as “mutual defacings,” where climbers leave chalk-marks, holds get polished, and routes are “cleaned” of plants, lichen, moss. In return, the climbers are defaced through the “growth of muscles” and the “sanding back of skin from the fingertips” (Rossiter, 2007, p. 299). For Mullins (2014a) such mutual defacing is part of “skilled embodied performance” of activities such as rock climbing, and “enable selves and landscapes to commingle” (p. 323). Thus, the rock adapts a human into a climber just as the climber makes the rock into a climb. Consequently, the phenomenon of climbing is created between them.

However, a human becoming a climber and a rock becoming a climb is overly simplistic and does not recognise that they both dwell within a meshwork of moving parts. Ingold (2008) suggests that the flow of dynamic ecological systems is their fundamental quality. That is, rather than people or rocks being fixed entities, there are only cycles and flows of energy and matter. Thus, for Ingold (2021, p. 212), “the path, and not the place, is the primary condition of being,” and the paths are themselves a part of a meshwork of entangled lines of life, growth and movement. As such, Ingold (2008, p. 13) envisages places as “formed through movement”. Thus, if the rock climb is a sort of vertical path, then it might be seen, following Mullins (2014a, p. 323) as a “shifting form” that climbers perceive and negotiate with as they move. At the same time the climber can be seen as an everchanging entity that is part of the flow of energy and matter within an ecosystem.

Stinson and Grimwood (2020) suggest that embracing these negotiations, or mutual defacings, have several environmental implications. Firstly, by attending to how a climb feels, and recognising what Rossiter (2007, p. 298) calls the “intercorporeality” between climber(s) and environment, climbers might resist ideas of “ownership, domination, and resource-extraction.” Secondly, the concept of negotiations is not coherent with ideas of human exceptionalism, or anthropocentrism. Thus, the insight that climbers are participants within nature might lead to feelings of shared consequences of the degradation or damage to the environment. This point is made by Mullins (2014a) in which he finishes his paper,

So, rather than asking ‘Does outdoor adventure produce relationships with nature?’, a participatory ecological approach asks ‘How do participants in outdoor adventure enact relationships with their environment and its inhabitants, and with what results?’ (p. 330)



## Actor network theory and the diminished role of humans

Both Rossiter (2007), and Stinson and Grimwood (2020), look to Actor Network Theory (ANT), to improve upon the human-nonhuman dualism. Von Bruno Latour (in Harrison et al., 2004), a key theorist for ANT, explains that “anything that modifies a state of affairs by making a difference is an actor” (p. 226). From this perspective, the cliff, climbers, equipment, and the culture of climbing are actors in a network that allows the social phenomenon of climbing. The rock makes climbing possible in the way that the kettle makes tea possible. Or, in the language of Gibson (1979), rock offers *affordances* for climbing. Michael (2000, p. 61) explains the “surfaces and structures” of an environment “specify a range of possible actions.” Thus, rock doesn’t determine a climb, but it is an agent that *affords* possible movements, actions, and emotions.

For new materialists, including Barad (2007), humans cannot be exceptional as they are inseparable from nonhumans. In this perspective, agency is extended to everything that influences and interacts and so there are no individuals per se. Barad (2007) calls this “agential realism” (p. 34). If applied to climbing, new materialism would not talk of a climber, but of a *human-crag-equipment* assemblage. Indeed, in a sea kayaking context, Kennedy et al. (2020, p. 8) describe such a sea-kayak-human assemblage. In both situations, humans are not distinguished as distinct agents, but as Morgan (2019) puts it they are “temporal expressions of ongoing entanglements” (p. 260). This ontology challenges the presumption that agency belongs only to humans. By contrast, new materialism looks beyond human exceptionalism to see humans as part of entangled networks and acting at any time within assemblages of human and nonhuman entities.

The consideration of assemblages raises some ethical problems as deprioritising the agency of humans, may undermine arguments about the human responsibility for environmental degradation. Thus, if a climber disturbs a nesting bird, then it seems improper to blame the human-crag-equipment assemblage when the climber retains responsibility for their environmental impact. Despite such ethical difficulties, the concept of assemblage provides a useful construct for exploring how climbers’ possible actions are limited by the affordances of the rock and are only possible through the interaction of humans and nonhuman entities in an entangled network of relationships that surrounds that activity, time and place.

For Ingold (2020), the ANT’s network metaphor does not go far enough as ultimately it sees relationships as connecting discrete points. Life, for Ingold (2020) is a “tangled mesh of correspondences” (p. 11) where “nothing is locked in” (p. 7) and, thus, “where an entity ends and its contrary begins cannot be ascertained with any finality” (p. 7). He explains that an entity is not self-contained but rather is a “going-on that spills out into its surroundings” (p. 7). Therefore, rather than entities sharing agency within an assemblage, Ingold’s position is that entities ‘correspond,’ in what he describes as an open-ended, dialogical process between entities.

Indeed, Ingold (2021) extends this argument where he envisages the environment as a domain of entanglements, or a *meshwork*. Rather than agency, he prefers ‘animacy’ which he describes as “the dynamic, transformative potential of the entire field of relations within which beings of all kinds... continually and reciprocally bring

one another into existence” (p. 68). The consequence of this later revision is that no entity can be conceived as existing in isolation. All things are in a process of change in and out of entanglement with other things. Thus, both the rock and the climber(s) are essential for climbing to exist, but so are other parts of the meshwork such as the weather, the ownership, or the presence of other entities such as vegetation, birds or insects. Indeed, the meshwork might extend to intangible entities such as the imagination of the climber(s), or their environmental beliefs. In this view, nothing is fixed or isolate, and consequently all agency, or animacy, is shared within the meshwork of the domain.

Like new-materialism and ANT, Ingold (1993, 2000, 2010, 2021) seeks to collapse the dominant Western concept of a nature-culture dualism with a relational ontology, but he sees the word ‘nature’ itself as symptomatic of our disengagement from it. Ingold (2000) states, “The world can only be ‘nature’ for a being that does not inhabit it, yet only through inhabiting can the world be constituted, in *relation* to a being, as its environment” (p. 40). From this, Ingold (2000) argues against what he describes as a “Western ontology whose point of departure is that of a mind detached from the world, and that has literally to formulate it - to build an intentional world in consciousness – prior to any attempt at engagement” (p. 40). Thus, in contrast to attempting to move beyond anthropocentrism, the implication of Ingold’s ontology is that humans need to be put back into the centre of our world. He suggests that it is only by *inhabiting* the world that humans can take responsibility for it.

In conclusion, relational ontologies (and specifically the ontology developed in Ingold, 2021) allow conceptual space for a middle ground where rock-climbing environments are neither cultural nor natural. Rather, rock affords movements, and even emotions. Furthermore, it allows consideration of how rock and climbers correspond with one another to bring about the phenomenon of a climb. Using a relational and ecological ontology to understand rock-climbing, therefore, locates the experience of climbing within an embodied, situated and ecological approach.

## **An ecological conception of skill**

This section moves the discussion on to consider skill acquisition in climbing. It explores the physical and mental dimensions of climbing and the way that this division leaves out skills that reside in the more-than-human world. Later, this section explores Ingold’s notions of craft (Ingold, 2000), as a way of conceptualising the ways that climbers acquire skill.

### **Climbing as more than a ‘mind sport’**

Climbing has a significant mental aspect. In their study, Whitaker et al. (2020) found evidence that experienced indoor rock climbers “perceive what their body is capable of in a climbing environment, remember visual aspects (holds), and both plan and remember motor sequences for routes” (p. 508). These mental tasks are founded in bodily perception and action within a climbing environment. Climbers call the information about how to perform a series of moves, *beta*. This way of thinking about

climbing implies that there is an abstract solution to a climb, and that this can be conceived of as a mental representation of the climb. Whitaker et al. (2020) reject this, seeing climbing as unique because, unlike other “mind sports” such as chess, the environment is stable (the holds do not move). However, the climbers, must perform “cognitive tasks while engaging in an athletic activity where they must account for their body and physical capabilities in relation to environmental aspects” (p. 494).

Despite recognising that climbing requires engagement between mind, body and the environment, the approach of Whitaker et al. (2020) sees the cognitive task as inherently separate to the athletic activity. Here the mind of a skilled climber is busily engaged with reading the route, planning actions, evaluating athletic performance and reviewing success and failure to develop a abstract conceptualisation of the solution to the problem. Meanwhile the body of the same skilled climber is engaged with two tasks: applying that solution into its physical interaction with the rock, and feeding sensory information to the mind. Thus, the ‘mind sports’ approach treats perception, cognition and action as separate areas of skilfulness. However, as discussed earlier, the belief in rigid boundaries between mind-body and climber-crag are symptomatic of an ontology that sees humans as actors and consciousness as driving actions. A relational approach would suggest that the mind skills of climbing are not discrete things that can be applied to solve problems. Such skills are part of the relationship between the climber and the climbs where they were developed. As such, they are embedded in current and past experiences. Such a relational approach would suggest that the skilled climber is not just skilled because they have ‘better’ skills than others, but because their skills (including their mind skills) are more closely attuned to themselves and the rock. Thus, the separation of climbing skills into different areas overlooks the interrelationships between mind and body, but more seriously objectifies the rock and would seem to characterize it as something to be solved rather something that can be understood, interacted with, and learned from.

### Challenging the cartesian divide

In a series of articles, Phil Mullins has explored the complexity of outdoor experiences and developed a model that applies Ingold’s ideas of dwelling to draw connections between a sense of place and the development of skills (Mullins, 2009, 2014a, b, 2021). A key part of this is that skill is not individual or fixed, but embedded in social and environmental relationships, and embodied in the actions of the skilled outdoor participant. Mullins ideas provide a direct challenge to the Cartesian dualism that sees the mind and body as separate, with the mind acting as the controller of the body.

Cartesian dualism can be seen in many aspects of climbing discourse. It is evident when a climb is seen as a cerebral puzzle. As an example, John Gill, a populariser of bouldering, profiled by Krakauer (1997) says, “I enjoy finding a piece of rock that has never been climbed, visualizing some pattern of holds on the surface of that rock, and then climbing it” (p. 18).

Gill’s description of climbing seems based on the Cartesian dualism – the mind and body are divided. Gill’s mental representation of the climb is then executed by his body. With Gill’s boulder problem, he has the end form in mind (“some pattern

of holds”) before he climbs it. The inert matter (“a piece of rock”) must submit to his will. His body mechanically, carries out the will of his mind. Ingold (2010) rejects the idea that the body is just carrying out a mental plan. Instead, within a relational ontology, the climber’s body and mind are in *correspondence* with the rock through an interplay of perception and action.

In this sense, skill is embodied. Recent sport science studies (Davids et al., 2013; Seifert et al., 2017) attest that some cognitive tasks are embodied in climbing. A study by van Knobelsdorff et al. (2020) used eye tracking glasses to investigate a link between how climbers visually assess a route (both in planning and performance), and their finger strength. They found that stronger climbers have more complex visual behaviour allowing them to use more holds. In another study Bekkering and Neggers (2002), found that the perception of distance was influenced by whether participants pointed to or grasped an object. They found that bodily interaction with the environment contributed to visual processing. These studies imply that climbers perceive the rock differently when they hold it, and that how they think depends on their body’s actions. Therefore, cognition is not constrained to the brain but exists in a coupling of perception and action, and as such it is embodied.

Mullin’s ideas (2009, 2014a, 2014b, 2021) and the research evidence seems to suggest that the concept that mind and body are divided is flawed. In the world of the climber, the puzzles of climbing are not solved by mental plan or by physical dexterity alone. They are not even solved by the combination of them both. Instead, they appear to be solved by the application of embodied skills that are attuned to the rock through the interplay of perception and action, and through repeated attempts. Hence, climbing skills must perhaps be seen as an individualised (and often iterative) interaction with the environment rather than a decoding of an existing solution to the puzzle of the climb.

### **The entangled lines of climbing**

Having drawn a tentative conclusion that climbing skills are an individualised interaction with the environment, this section extends the analysis to include the ways that skill can be envisaged as lines within an entangled web that links the climber(s), their community, non-human ecology and the environment.

Ingold (2000, 2017, 2021) describes the world we inhabit as temporal and constantly in flux, changing by the influence of a myriad of forces. Within this, he sees humans as organisms inhabiting social communities interdependent on ecosystems and environments. Therefore, activities like climbing, exist not just at the rockface, but in a multiplicity of environments as climbers go about their wider lives. The paths of climbers’ lives come in and out of connection with the ecological relations (crags), social relations (other climbers) and relations to artefacts (photos, equipment, etc.). The lines of each climber’s path, and all other entities, are constantly moving in and out of relationships to make up a meshwork of entangled lines of life, growth and movement. As Ingold (2021) puts it, “This is the world we inhabit. My contention... is that what is commonly known as the ‘web of life’ is precisely that: not a network of connected points, but a meshwork of interwoven lines” (p. 63).

We can identify some of these interwoven lines of life, growth and movement that surround the climber. Within these we can locate the skills that allow a climber to pursue their chosen route. These skills might be cerebral, emotional and physical. They may be embedded in the body, mind or memory. Thus, the climber's skill might exhibit itself in their ability to sense and interact with the *affordances* of each rock type. This might be trusting the friction of rounded gritstone slopers or being cautious of the polished edges of a limestone classic. Their skill might also be exhibited in the decisions they make to select routes that provides the right level of difficulty, danger, compelling movements, adventure or beauty. Thus, their choice of a long, multi-pitch mountain route, or a head-height boulder problem, indicates the balance of their skills, which reflect in turn their past and present interactions with their community, non-human ecology and the environment. Similarly, the strategies that a climber uses to stay safe again show skills developed through these past and present interactions. The climber's actions for keeping safe might reflect training or absorption of good practice from a climbing community including choosing equipment options from gri-gris, spring-loaded-cams, or boulder pads; or choosing venues by judging tides at sea cliffs; or weather in the mountains. Again, these skills are developed through relationships and sit within a meshwork of interwoven lines that is individual to the climber in that time and place.

Lines are important to Ingold, indeed his book *The Life of Lines* (2015) is dedicated to them. Lines are important to climbers too. They talk of an 'elegant line' for a route with satisfying movements. A roped climb can be seen from afar as a line of movement. The line of a rope, and its knots, connecting the climbers holds metaphorical importance as a symbol of their social bonds: trust, sharing of experience, etc. The line of a climber, however, does not end at the crag. The whole relational ecology of climbing includes the perception climbers have of climbing from wider culture, climbing history, climbing books, magazines, videos and completely unfeasible stories of epic scrapes. A skilled climber inhabits this rich world of climbing activities. They do not necessarily carry out every activity, but they are able to climb because of their interconnections with them. Mullins (2014a) concludes:

A skill, then, is an embodied knowledge of specific environments and landscapes, an attunement to particular elements or phenomena in the surroundings. Thus, skilled learning and practice are processes through which people shape and are shaped by their environment while coming to know the aspects of it intimately. From this perspective, the enskilment of participants in outdoor activities is crucial to the people, landscapes, knowledge, and meanings cultivated through recreation, education, and tourism. (p. 327)

Thus, from this perspective, we can say that climbers acquire skills through their past and present engagement with a meshwork of relationships within the assemblage of climbing.

## Climbing as craft: corresponding with rock

Ingold's (2000) discussion of skill as it relates to making crafts neatly encapsulates the experience of skilfulness in climbing. He proposes that the intention to make something is not a pre-existing property of the user and materials, but that intentionality is immanent in the activity. A carver does not just chip away at a block of wood until it resembles a pre-determined form. Rather things are made by the correspondence of the craftsperson with the materials, and thus the intention emerges from the activity.

Mullins (2014a) draws on Ingold, in much the same way, to understand skill as:

... an intentional ability of an individual or group to create and/or maintain an outcome, product, experience, or relationship that is imagined in advance but can only be realized through performance of embodied capabilities of perception and action that involve the whole organic being(s) (indissolubly body, mind, and spirit) within a web of particular relations extending through-out and shaping an active environment and dynamic landscape that include other beings. (p. 328)

So, the dynamic, improvisatory experience climbing might be thought of as the outcome of the craft – or what is crafted. For Mullins (2014a) “skill is always uncertain” and this uncertainty is “in relation to an ever-changing environment” (p. 328).

As an example, in climbing we might consider the activity of *route reading*. This is where a climber looks up at the route and plans how to climb it. The climber might feel like they have a pre-determined plan, or form, for the climb. However, seen through the lens of a relational ontology, the route reading is where the climber begins to correspond with the rock. This is at first by sight and then perhaps by rehearsing their hand positions from the ground. The correspondence intensifies as the climber leaves the ground. At this point the climber's other senses join in. The hands feel for the best grip on a handhold, the feet judge the point of balance on a foothold, the speed of a movement can be felt through changes in balance and weight, and so on. Here, skill relates to, “the total field of relations constituted by the presence of the organism-person, indissolubly body and mind, in a richly structured environment” (Ingold, 2000, p. 352).

So, the climber is absorbed in the environment, and it is impossible to separate the awareness of gravity and movement, the tactile appreciation of handhold, or feel of the weather. When discussing the experience, climbers seek to express this sensory absorption with terms such as “exposure” or “airiness.” However, whilst in the act of climbing, the climber's response to the environment is expressed in their moment-to-moment application and adaptation of the skills of climbing. As such the skills are embedded in the environment.

The idea that skills are embedded in the environment resonates with ideas of ecological dynamics. Araújo et al., (2006) draw on Gibson's idea of affordances to show that sporting decisions are made within the relationship of organism and environment. Similarly, Davids et al. (2013) studied affordances in rock climbing and concluded that, “affordances imply that the coordination dynamics of action emerge

from a mutual coupling of a climber's perceptions and intentions with the specific properties of a climbing surface" (p. 307).

The idea of affordances again suggests that the rock climb is not simply a route. Rather, it provides opportunities for the climber(s), but only when those opportunities are combined with the skill and intentionality of the climber(s). This supports Ingold's point that skill isn't a mechanical process but requires (Ingold, 2000, p. 352) "care, judgment and dexterity." Similarly, it also implies that a skilled climber has an attentive, perceptual involvement with the material – or correspondence. Combinedly, this suggests that the act of climbing becomes the interplay between body, mind, and environment, and that this correspondence lies at the centre of the skill of climbing.

If this insight is accepted, it has implications for how we teach the skills of climbing to others. Because of the interplay of perception and action, it suggests that we cannot *transmit* a neat formula, or a set of instructions for climbing. Instead, climbing skills must be learned by repeated practice and sensory engagement with place. Thus, the skilled practitioner guides the attention of the novice, until they get a feel for the rock themselves.

In conclusion, skill acquisition, if confined to the mind, distances us from both our own bodies and the world. Using a relational ontology to understand skill development, suggests that we see the development of climbing skills as a part of an embodied correspondence with the rockface, such that it leads experienced climbers to become attuned to their environment. An ecological approach to skill would thus remind us of our interdependence with the non-human world and the need to live sustainably within it, whilst providing a rationale for developing skills through engagement with the senses during climbing.

## Implications of relational ontologies for learning / teaching climbing

Repositioning climbers as inhabitants of a climbing ecology, and rock climbing as a craft, might have some important ethical implications. In this section we try to apply the ontological implications of inhabitation and meshwork to address four specific issues in climbing: (1) might climbers better explore the depth of experience in a familiar area rather than forever seek new climbs; (2) might climbers decolonise route naming conventions; (3) might an emphasis on quality grading rather than grading difficulty and danger, help climbers develop their craft; and (4) how might climbers engage with sustainability.

### Avoiding describing climbing as 'conquest'

At the beginning we noted the three primary modes of imagining nature within North American climbing texts (McCarthy, 2002). In arguing for a relational ontology, we have focused upon the third mode and given little attention to the implications of seeing nature as an object to conquer.

In his essay *The Mountaineer's Lament*, Ingold (2020) reflects on a mountaineering lecture, where the mountaineer was despondent that all the great peaks have been

conquered, many by him, and apologised that none are left for future generations. Ingold questions why it was important that the rock had “never been climbed.” He compares childlike discovery, where the familiar world “is an inexhaustible source of revelation” (p. 62) with an adult view of the world as fully formed. From this adultocentric conception, he argues that the would-be explorer must go beyond the limits of the already known to discover something new. However, books about childhood connection to nature (Such as Barkham, 2020, Griffiths, 2013; Louv, 2008) describe the depth of connection children have to local places. These writers all point out how children relish returning to a familiar places and repeating activities. Indeed, in the authors’ own observations of early rock-climbing experiences, children are often keen to repeat the same route, perhaps as a self-check on how their confidence and skill are progressing. By contrast, many adult climbers will tick off a route, after scrappily reaching the top, and never return. Their aims would appear to be conquest and progression.

This adult focus on conquest and progression, is also evident in British climbing memoirs (Bonington, 2013; Boysen, 2014; Cave, 2005) where the progression is often from local crags to mountain routes in North Wales or the Lake District, then to Scottish winter climbing, then to the Alps, then to the Himalayan giants. This restless ambition shifts climbers from inhabitants of a place to occupants of a space. As inhabitants, Ingold (2020, p. 64) says, “mountains are part of a familiar but ever-evolving world.” Thus, an inhabitant’s lines of travel are traced by where they walk, what they climb and how they engage with the place that they are in. However, for the occupant mountaineer, (Ingold, 2020, p. 45) the lines of travel “are first projected, as the solution to the puzzle of how to get from base to summit.” The occupant’s line of travel is thus about expectation, intention and progression, and their learning is defined as things that can be transmitted to the next challenge. Thus, climbing as conquering and exploration is hylomorphic, and learning is ‘transmission.’

We have argued that climbers acquire skills through their past and present engagement with a meshwork of relationships within the assemblage of climbing. However, it seems likely that those who seek to conquer nature (and who only occupy the climb as a way of progressing to harder arenas) are more focused on their future engagements than in the past or present. Thus, their skills are developed within a meshwork that is dominated by their relationship with their own ambitions. Whilst the centrality of one relationship may allow rapid progression, it seems likely that it distances the climber from more complex and embodied experiences that lead to mutual defacing of both climber and climb. In simple terms, it seems likely to develop single minded climbers with little respect for their environment. Thus, we would suggest that climbing culture might be encouraged to attune learners to the complexities of the local rather than forever seek virgin terrain.

### **Decolonising route naming conventions**

There is a tradition in rock climbing that the name of a route is given by the first ascensionist. This practise is seen as problematic (Wigglesworth, 2022, p. 597) on the grounds that it “cannot be divorced from a settler colonial logic” and entrenches the structures of “white supremacy and heteropatriarchy that shape outdoor recre-



ation.” Dobner (2021, p. 88), likewise, sees the practice as “homogenising the climbing environment” and suggests that it “inevitably excludes others, who are not white men.” Wigglesworth’s intersectional feminist analysis (2022) considered how female recreational climbers responded to misogynistic route names in her local climbing area. A prominent theme was the intersection between sexism, racism and settler colonialism. She suggests that giving a route a sexualised name equated conquering a climbing route with conquering a woman.

Naming a climbing route in this way also follows an imperial history of conquest. Dobner (2021) gives the example of Mount Everest being named after the British surveyor George Everest. It had several pre-existing names in Tibetan, Nepali, Chinese and Indian. Some of these meant ‘Holy Mother’ and ‘Goddess of the Sky.’ Thus, the act of naming replaces omnipotent feminine divinities with the name of the previous Surveyor General of India.

Dobner (2021) extends this critique to question British climbers setting up new routes in areas before a nascent climbing community has time to develop. She offers a possibility for the decolonisation of climbing: “Perhaps it could become common practice to open in-depth communications with indigenous peoples before putting up new routes. What relationships currently exist with the rocks? What issues matter to various local inhabitants?” (p. 98).

In short, decolonising climbing and mountaineering requires correspondence with those that share the landscape. It requires sensitivity and a relational appreciation. If ethical climbing should be about caring for “the world we live in, and for its multiple human and non-human inhabitants” then perhaps “it is about restoring them to presence, so that we can attend and respond to what they have to say” (Ingold, 2017, p. 28).

### **Selecting routes for quality of experience rather than grade**

The conventions of grading routes are another area that may be at odds with a relational perspective. Typically, climbing grades aim to give an objective scale that rates how difficult and dangerous a route is. Challenge and risk are important considerations for climbers. Nevertheless, overemphasising them leads climbers to see completing a more difficult or dangerous route as synonymous with becoming better climbers. Moreover, it underemphasises the relational co-creation of experience, seeing a climb instead as an achievement, or something to be conquered.

As a counter to the grading convention, many guidebooks use star grades and personalised descriptions to recommend particular climbs. These celebrate more nebulous qualities of a climb. They may indicate tactile rock, the history of the climb, a beautiful line, an elegant sequence, enjoyably devious moves, or even a route with a stunning view. As such they are specific to that climb and the climber is encouraged to engage with aspects (and relationships) beyond the technicality and danger of the route.

We would argue that, if climbing is a craft, then the quality of what we climb, and our skilled performance, is what should matter to us. Thus, we should be interested in what makes a climb compelling and what will develop our relationships to community, non-human ecology and the environment.

For Ingold (2000), there is creativity and expression in the act of crafting something. The craftsperson responds to the form of the material and improvises a response. This is similar to climbing. A climb must be practically experienced, and the climber improvise with each movement. A subtle movement of a hand may make an edge feel better or, by adjusting a foot, the friction between boot and sloping rock may be increased. All the time the climber feels gravity act on their body position as they are exposed to a range of other senses. However, the climber cannot climb at the speed of their imaginations; the material of the rock slows them down. They must climb by corresponding with the route. Climbing then is a creative act and, in Ingold's terms, can be thought of as a craft exercised in the moment through engagement in a meshwork of interwoven lines that is individual to the climber in that time and place.

So, from a relational approach, climbs transcend their technical grade and danger. They can be seen as an opportunity to engage in a creative, improvisatory craft that emphasises technique, good form, the wider experience, the history, and the non-climbing importance of the vertical landscape. We would encourage climbers to choose routes that provide opportunities to inhabit a place and craft their own climbing experience rather than simply choosing climbs by their grade.

### **Defining climbing as ecological participation – rather than sport**

Our discussion so far has sought to avoid normative statements about sustainability and pro-environmental behaviours, in order to maintain a focus on the complicated relationships that surround climbing. However, a core feature of Ingold's ontology is how we, as humans, inhabit our world. In this conception, we cannot think of nature as somewhere we go, separate from our everyday lives. Similarly, we cannot protect nature by 'fortress conservation' (Coscieme et al., 2020) that keeps humans out. Indeed, Loynes (2018) argues that such approaches potentially reInforce the separation from nature. As an example of this, Loynes' (2018) analysis of 'Leave No Trace' practices, suggests that it over-prioritises reducing environmental impact and ignores "the more significant impacts of equipment purchase, travel, and modern lifestyles" (p. 179). As such, Leave No Trace is a practise for visitors to natural areas that need protecting and not for an appropriate rule for life, as we cannot help but leave a trace somewhere. Ingold (2005) differentiates between the protection of nature and protection of place: "Protection of nature is somewhat analogous to the company's protection of profits: it's a question of bookkeeping and rational management, of balancing recruitment and loss in wildlife populations" (p. 507).

Protecting places, on the other hand, is about personal relationship with the elements of the environment a climber understands, the shared history a climber has with the places they climb. In his work, Mullins (2012) shows visually this distinction, and we can apply his points to climbing. To inhabit the places we climb, means to engage with the history, wildlife, local people, and to see our climbing as a way to maintain socio-ecological relations. An inhabitant climber is not somehow separated from modernity, they understand that climbing landscapes are interrelated with the landscapes of their daily lives, and that the impacts flow across boundaries.

Thus, the inhabitant climber might cultivate familiarity of the places they climb for greater depth of experience. They might seek to correspond with local people and wildlife, in order to decolonise climbing and seek greater environmental sensitivity. They might emphasise the craft of climbing so that what compels them to climb is the quality of their relationship with the vertical landscape, rather than a selfish desire to conquer. This is also the conclusion of Mullins (2018) who recommends a participatory ecological approach through the teaching of skills in ways that emphasise the engagement with nature, rather than abstract theoretical knowledge. Indeed Mullins (2021) suggests that this approach should be integrated into outdoor leadership and outdoor programmes.

## Conclusion

This paper has been exploratory and has sought to illustrate a different perspective on the context of climbing. It is hoped that climbers, climbing instructors and outdoor educators might rethink their approach, and emphasise the relationship between the climber(s) and the rock. We have suggested that this can be achieved through the adoption of a relational ecological ontology. If a climb is not a battle between climber and rock, but rather a co-production, then the emphasis must be on the experience, rather than on the conquest. It follows that if climbers considered climbing as a craft (in the manner that Ingold describes), then climbing could focus on seeking mastery of this craft through engagement with familiar crags, rather than as a series of skills and conquests through the pursuit of ever more difficult, dangerous, or unclimbed routes. Engagement with such a relational approach might then help climbers to appreciate that climbing takes them to beautiful places with fascinating ecosystems, and that being better attuned to the rock, other land users, the wildlife and the landscapes might lead them to climb more sympathetically. Indeed, such climbing may leave its mark on both climber and rock, as inhabiting involves mutual defacing, but climbers must be wary of allowing the relationship to become exploitative.

In addition, we have suggested that climbing is improvisatory, complex and involves adapting to the needs of the rock. Thus, learning to climb requires time spent attuning to the needs of the rock and embodying the physical, social and cultural aspects of climbing environment through an engagement of the senses and through guided attention. Therefore, those of us who teach climbing could perhaps encourage good form, community, and quality of experience rather than emphasise achievement and progression to higher grades and more remote venues. In other words, we suggest that we should seek to welcome new climbers into inhabiting the world of climbing, rather than briefly occupying it.

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**Peter Hubbard** is a student on the MA in Outdoor Education at the University of Worcester. He runs a small outdoor education business, in the North East of England, that uses adventurous activities to teach elements of the primary school curriculum.

**Colin Wood** teaches Outdoor Education and Work-Based Learning at undergraduate and postgraduate levels. He is involved in research in both areas and leads the innovative MA in Outdoor Education, which supports outdoor professionals wishing to study in their workplace. Previously, Colin had a long career in Outdoor Education that spanned corporate development, outdoor recreation, sail training and expeditionary learning including leading numerous jungle expeditions.