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'It's Going to Be Very Slippery'

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Published in:
Material Mobilities

DOI (link to publication from Publisher):
[10.4324/9780429198496-6](https://doi.org/10.4324/9780429198496-6)

Publication date:
2019

Document Version
Accepted author manuscript, peer reviewed version

[Link to publication from Aalborg University](#)

Citation for published version (APA):
McIlvenny, P. B. (2019). 'It's Going to Be Very Slippery': Snow, Space and Mobility While Learning Cross-Country Skiing. In O. B. Jensen, C. Lassen, & I. S. G. Lange (Eds.), *Material Mobilities* (1 ed., pp. 77-100). Routledge. <https://doi.org/10.4324/9780429198496-6>

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“It's going to be very slippery”: snow, space and mobility while learning cross-country skiing

Author: Paul McIlvenny

Abstract: *This chapter examines how a child learns to sense and move through a transient environment while recreational cross-country skiing. A mobile video ethnography was undertaken of a parent instructing a novice child on how to ski. Using interactional analysis, the paper examines how snow is sensed, felt and made salient in spatio-interactional practices, and how the snowscape is (re)territorialised by the participants making temporary tracks in the snow. In this way, tracks can shape future mobile actions and immanent pedagogical activities within the practices of cross-country skiing, which inculcate the child's feeling for an ephemeral geography of snow.*

This chapter investigates the ways in which a child learns to sense and move through a transient environment while recreational cross-country skiing within the context of familial social interaction. A mobile video ethnography was undertaken of family skiing sessions while on a seasonal holiday, in which a parent instructs and guides a novice child on how to ski. Using an interactional mobility analytical approach, the chapter examines how snow – a complex, dynamic materiality that can afford spatial movement on its surface – is sensed, felt and made salient in spatio-interactional practices.

In order to analyse the skiers' feeling for snow in this case study, it is important to understand how we sense and experience space and mobility. Spinney (2006) explores the idea that our movements in and through a place define our engagement with it and help to constitute it as a place. In particular, he focuses on the embodied rhythms and kinaesthetic sensations that accompany the movement of cycling. In their study, van Duppen and Spierings (2013) ride along with urban commuter cyclists to discover their everyday, embodied experiences that constitute their diverse personal sensescapes, particularly as manifested in their passage through the city on complete journeys between home and work. Using in-depth interviews with, and photo diaries kept by, ordinary people in inner London, Middleton (2010) explores the sensory, sensual and embodied experiences manifested in urban walking. Others who have examined how we sense space socially and culturally

include Dickinson and Aiello (2016), Hockey (2006), Imai (2008), Ness (2016), Olwig (2008), Pink (2007), Saerberg (2010) and Turner and Turner (2006).

How we sense space and matter has also been studied by researchers interested in the discursive and interactional practices and ethnomethods in which they come to have meaning and salience. For example, Goodwin (1999) has analysed scientists at work to uncover how archaeologists perceive and categorise soil matter within the social, cultural and spatial practices at an archaeological dig. Büscher (2006) has followed landscape architects as they use powerful IT design tools to visualise the land. And Markus and Cameron (2002) have combined their respective research perspectives on architecture and on language/discourse to understand how architects visualise and textualise space and buildings. These studies demonstrate the insights that discursive and interactional analyses of empirical materials can bring to our understanding of the mundane practices of scientists and professionals in which space and matter become meaningful.

However, there are not many studies as yet of how H₂O in its liquid or solid state is sensed and felt in mundane everyday mobility practices. Particular types of snow and ice are the building blocks of transient natural and human-made structures, such as glaciers, igloos and ski tracks. Fallen snow affords movement along its fragile surface. Forsyth, et al. (2013) make the case that human geographers need to re-examine the notion of surface. They contend that surfaces matter, for example in their function as limits of matter and as spaces for material exchange. Drawing on Deleuze, Day (2005, p.149) argues that we need "to characterize the nature of bodies – structures and identities – in terms of powers, expressions, and the material surfaces that allow those powers to express themselves as personal and collective bodies." He uses the example of rain falling on surfaces to highlight the different dispositional and affective powers manifested by the surface of macadam or sand, for example. Surfaces have texture, durability and extension due to repetition and foldability. For Day, the term 'infrastructure' must be thought in terms of expressive events through which both bodies and notions of space are arrived at. Moreover, surfaces provide material infrastructures for mobility, but they are not static or causal (Latham and Wood, 2015). Waitt, Gill and Head (2008) have studied the experiential knowledge displayed by a heterogenous group of people who regularly walk through a maze of criss-crossing paths in a suburban Australian reserve. They argue that routine walking is best conceptualised as a territory-making process. Within the social context and bodily experiences, walking offers possibilities of making points of connection with 'nature'.

Despite a sharpened attention to phenomena such as surface, trails and the sensing of the landscape, studies of the mundane geography of snow from a social and cultural perspective are scant. Moving through snow often leaves an inference-rich visible trace. Walking and skiing in newly fallen snow means that tracks and trails emerge, though they are transient, that can shape future actions and practices. In their study of the traditional knowledge and local perceptions of the environment in Northern Finland, Ingold and Kurttilla (2000) note their informants' childhood memories of skating on the ice in winter and of being able to ride a bicycle on the hard snow-crust in spring, and yet how new technologies, such as snow scooters, require a different appreciation of the depth and consistency of snow than required for skiing. This chapter reports on a study of how is it, in the first place, that one comes to appreciate snow – its depth, consistency, surface and affordances – in order to ski recreationally.

Skiing as a sociocultural spatial practice

Nordic or cross-country skiing is a common and popular recreational and sports pursuit wherever there is adequate snow cover in the world. To become a cross country skier one needs a pair of cambered skis with bindings, a pair of ski poles, and a pair of ski boots which can attach at the toe to a binding on each ski. As a technology, skis are designed to take the weight of the skier and afford gliding over the surface of prepared snow. Some skis have a grooved pattern embossed onto the centre zone to enable the skier to press down by a transfer of weight and to grip the snow; however, most skis require a temporary wax appropriate for the snow conditions to be applied to the central 'kick zone' in order to facilitate the leg movement required to propel the ski over the surface of the snow. Ski tracks – equidistant embedded grooves in the snow – are very useful for the cross-country skier. Without them, one must exert more effort to step slowly through thick snow or hold a straight line over compressed snow and ice.

Most research on skiing focuses on the sports science perspective – for example, research on biometrics and the technical side of the sport – or sociocultural studies of the cultural capital and symbolism of skiing, as well as quantitative studies of the incidence of such leisure pursuits across a population. Studies of similar leisure and sport pursuits – for example on snow, ice or water – are common, and include snowboarding, (wind)surfing, ice climbing and ice skating (Barratt, 2012; Edensor and Richards, 2007; Karlsson, 2011; Stranger, 1999). Only a few studies, however, attend to the actual practices of practitioners as

they engage skilfully with water and interact with other practitioners or learners (Anderson, 2012; Dant and Wheaton, 2007; Geenen, 2013a; 2013b).

Interactional mobility analysis

Until recently, the automobile has been the primary mode of transport in many studies concerned with social interaction and members' methods of sense-making while mobile (Haddington, Keisanen and Nevile, 2012; Laurier, et al., 2008; Noy, 2009; Watson, 1999). Many of the methods developed to study the car as affording a social and interactional space can be used to investigate other modes of transport or leisure mobility, such as walking (Broth and Lundström, 2013), cycling (McIlvenny, 2014; 2015) or skiing. My approach in this chapter is to treat skimobility as a social and interactional, embodied practice.

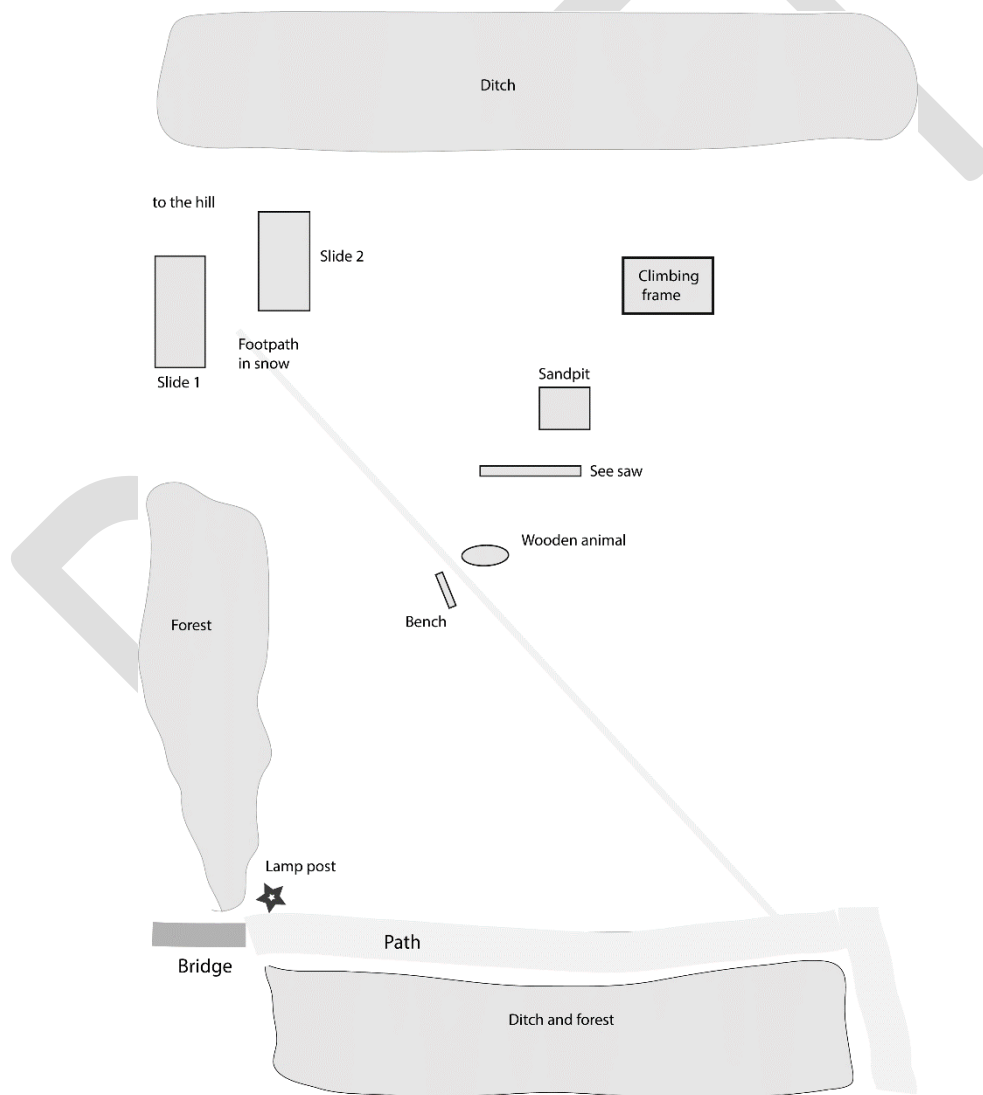
There are several key elements of a multimodal interactional approach to mobility. First, there is a focus on situated mobile practices. It can be argued that by focusing on practices, rather than categorising different types of mobilities, it becomes possible to view individuals not as mere mobile subjects, but as actors who are engaged in shaping and (re)producing mobilities and mobile formations-in-action. Second, one can study mobile ethnomethods (Allen Collinson, 2006; Hester and Francis, 2003; Ryave and Schenkein, 1974; Watson, 1999) – that is, the emic methods that people use to assemble and account for the sensefulness of their mobile formations, practices and actions. Third, there is the power of an inductive methodology to examine sequences of mobile action (for recent work see Haddington, Keisanen and Nevile, 2012; Haddington, Mondada and Nevile, 2013; McIlvenny, 2013; McIlvenny, Broth and Haddington, 2009). Such an approach is therefore an antidote to 'just so' accounts of micro-mobility practices that assume mobility is a social and cultural practice but without ever elaborating or investigating just how.

Data collection

The data collected for this study includes video recordings made during a seasonal winter holiday in the north of Finland. The author and his eight-year-old daughter (with other family members and relatives present in some recordings) are the principal participants in the mobile video 'active participant' ethnography. The spoken language used in the data is predominantly English, though on occasions Finnish is spoken.

The main site of the study is a municipal public playground near a relative's house on the outskirts of a small town in north central Finland. The child and parent practised at this site on five separate days over a period of seven days (two intermediary days were cancelled because of miserable skiing weather), which are named Days 1 to 5 in this chapter. One of the goals of practising at the playground was to enable the family at some point to go to a local recreational cross-country skiing area with groomed tracks on the outskirts of the town. When they reach the playground covered in snow (see Figure 1), some parts of the snowscape had already been adulterated. The ground is sloped gently down from the top of the map to the bottom. On Day 1 a temporary track was made in a loop.

((INSERT FIGURE 1 – “Virgin site on Day 1”))



Two body-mounted 'sports' video cameras were used to record the participants in a reasonably unobtrusive way that did not hinder their ability to ski. The use of head- and body-mounted video cameras has been tried and recommended for a variety of analytical reasons (Brown, Dilley and Marshall, 2008; Brown and Spinney, 2010; Laurier, 2013; McIlvenny, 2014; 2015; Spinney, 2011). For most of the recordings, one camera is mounted on the adult's or child's head, and the other is mounted on a chest harness that the adult is wearing. This configuration did not impede the arms nor the legs, and despite reproducing two similar scenes most of the time, the headcam indicates changes of attention on the part of the wearer (it cannot be assumed to give a subjective, point-of-view perspective), and most of the time it captured aspects of the scene that the other camera missed.

The video recordings were transcribed in order to further the investigation using ethnomethodological conversation analysis as a methodology (Haddington, Mondada and Nevile, 2013; Have, 2007; Hester and Francis, 2004; McIlvenny, Broth and Haddington, 2009). The analysis focuses on embodied interaction and the sequential organisation of the participants' actions. In the transcripts, the child is referred to as Anabel, and the parent, Peter. Transcript conventions are given in the appendix and are described more fully in Jefferson (2004). A comic transcript is also used to present the data in a novel form that is more readable for short excerpts (Laurier, 2014).

Analysis

Snow can provide a surface for embodied movement – for example, for skiing – and with it one can build a temporary spatial infrastructure for mobility in the wild, for instance by constructing tracks. Much as for Micronesian navigators in small sailing craft on the high seas (Hutchins, 1994), the playground site was *wild* in that the senseful activity of skiing had to be constructed in an unpredictable space without the benefit of abstract representations, instruments and laboratories – it was the result of an embodied cultural and spatial practice (Hutchins, 2008, p.2013). In the practice of skiing, surfaces, materialities, infrastructures, technologies and spaces are interleaved by participants to afford skimobility. The analysis will first focus on how the participants learn to sense snow as a polymorphous material surface for movement that changes moment-to-moment and day-to-day. Then it will move to explore how the material geography of snow is territorialised by the participants in the form of tracks that afford ski-ability.

Sensing snow as a polymorphous surface for movement

A landscape covered with fresh snow is not quite a *tabula rasa* – a two-dimensional blank slate – that scrubs clean the landscape to afford mobile action across its surface. The snow undulates with the geography of the natural and anthropogenic landscape it covers. Thus, particular routes and cadences of movement are possible that are to some extent visible to the trained eye, but that also need to be discovered in and through movement. In good conditions, snow is an almost frictionless surface for spatial movement. Yet, if it is too slippery or icy, then it is difficult to generate momentum or is painful if one falls. Learning to ski means learning to discriminate and feel the dynamic and every changing snow conditions and to adjust accordingly in order to generate movement, flow and rhythm to successfully traverse the surface.

There are some basic properties of snow that are important for a child to learn. In order to use the skis to grip, kick and glide (and more subtly, how to use the poles to gain purchase, pivot/push and release), it is crucial to feel the slipperiness or stickiness of the snow since this affects the ability of the skier to grip the snow (with a waxed or a waxless ski). Other qualities that are vital for ski-ability are the friction or drag of the snow that affects speed/glide, and the age and compression of the snow over time that can also affect the ice crystal structure.

When conditions are poor, the slippery condition of the snow becomes an abiding concern. On Day 1, the temporary tracks are made in relatively good conditions for skiing, and after finishing the first loop, Peter even comments that "the snow is just right". However, on Day 2 the conditions for skiing get worse, and this is noted in a number of ways by Peter as they warily approach the playground on foot carrying their skis and poles (see Excerpt 1).

((INSERT EXCERPT 1a + b: "Excerpt 1 – Day 2/arrival"))

1 P: and then we shall have to go over the bri:dge
2 (1.2)
3 P: might be a bit icy: on the bri:dge
4 ((P slips))
5 A: i think you should co:me on the sno:w
6 ((P moves off the path onto the snow))
7 (4.5)
8 ((P glances at A who looks at P))
9 (4.5)
10 P: y'see there's still sno:w the:re
11 (1.0)
12 P: it'll just be a bit more slippery: (.) toda:y.
13 (5.5)
14 ((P glances at A trailing behind))
15 (10.0)
16 ((P crosses the bridge carefully))
17 P: okay, ((P turns to A behind, yet to cross the bridge))
18 the track's still the:re.
19 A: is it slippery:?
20 P: no it's not too: slippery the:re.
21 A: pardon
22 P: it's not too slippery on the bridge
23 but there's a bit of ice:
24 ((A comes over the bridge and arrives at the site))
25 ((P turns to look up the site))
26 P: see there's=
27 A: =there there is a tra:ck
28 P: yeah (0.5) just abou:t
29 ((P puts A's skis down on the old track))
30 P: it's going to be very slippery:
31 (1.5) ((P puts his own skis down next to the track))
32 P: the ice: °on: the tra:ck°
33 (2.5) ((A steps out of ski binding))
34 P: so let me- ((P bends down next to A))
35 (25.0) ((P fits A's left boot to binding))
36 A: is it gonna be slippery:
37 P: yeah (.) it'll be so- more slippery than yesterda:y.
38 ((P fits right boot into binding on first go))
39 P: °there°
40 (6.0) ((A moves forward on the old track))
41 P: you see, (.) can you feel it being slippy=
42 =it'll be fa:st coming dow:n.
43 A: ↓huh: [↑ya:]
44 P: [it'll be]
45 (1.0)
46 P: well luckily we made a tra:ck
47 (1.5)
48 P: 'coz no:w we have a tra:ck.
49 ((P adjusts binding))
50 ((A steps forward on the old track))

After rain and near freezing temperatures, the surface has refrozen into ice. The parent and child tentatively walk from the house to the site, carrying their skis and poles. Thus, before

they even start on the track proper, Peter and Anabel are orienting in different ways to the current snow conditions in anticipation of their skiing:

- (1) As they approach the site and it comes into view, Peter first notes the slippery conditions – “y'see there's still snow there it'll just be a bit more slippery today” (lines 10-12).
- (2) As Anabel approaches the bridge that crosses a small drainage creek, she asks about the slippiness - "is it slippery" (line 19), to which Peter replies “no it's not too slippery there” (on the bridge) (line 20).
- (3) After Peter puts down Anabel’s skis on the old track, he says "it's going to be very slippery" (line 30).
- (4) While Peter helps Anabel with fixing her boots to the bindings, Anabel asks “is it going to be slippery” (line 36) again, to which Peter responds “yeah it'll be so- more slippery than yesterday” (line 37).
- (5) As they start on the track, Peter asks Anabel about the track condition in terms of a quality that one can feel, e.g. "you see can you feel it being slippy" (line 41).

First, Peter orients Anabel to the observable and inspectable features of the site as they approach it. This is done in the form of an observation and an assessment, both in relation to a gloss on what was experienced yesterday, e.g. “there’s *still* snow” (line 10) and “a bit *more* slippery” (line 12) [my emphasis]. Second, Anabel requests a confirmation from Peter of his situated assessment of the snow condition in the context of crossing a bridge (lines 19-23). Third, as they prepare for skiing by putting on their skis, Peter makes relevant again a reformulated (re)assessment of the conditions (lines 30-32), constituting this as an ongoing process of assessment and attentiveness to the conditions as they move through and over the snowscape. Fourth, as they complete the preparatory stage, with Peter fixing the last boot to the binding on Anabel’s ski, Anabel asks again about the slippery conditions (line 36). Some of the questions and statements have been about the quality of slipperiness in relation to a future action (*is going to be* or *will be*) – namely, to ski. The assessment of this quality is repeatedly bound to the activity and in anticipation of it. Fifth, as they begin to traverse the old track, Peter asks Anabel to assess the feeling of the snow as a practical, embodied, tactile experience as a skier (line 41): it can be felt as well as known in advance by visual inspection. The caregiver frames the experience as a touch/response-feel (Norris, 2012), e.g. a property (“being slippy”) of the snow that expresses itself (a response that is felt) when one

pushes against it (a touch) with the skis. Over this excerpt, we can see that Peter and Anabel are collaboratively rendering the snowscape sense-able and readable, both to gain access to the site and to anticipate the activity of skiing.

Much time is spent on Day 2 with learning about and calibrating the new snow conditions. What we can hear on many occasions is that Peter (and Anabel) repeatedly orient to both:

- (1) the conditions now, which are dynamically changing (in contrast to the steady state in the past).
- (2) the latent track (e.g. the trace of the track from previous days), which is always skied for another-first-time.

Thus, the practical issue of the quality of the snow in relation to human movement is replayed by both Peter and Anabel in their preparation for skiing on the second day. Moreover, it is returned to repeatedly over the course of the five days, as Peter and Anabel render the amorphous snowscape and the ambivalent space of the playground into a knowable environment with teachable objects in which skiing can take place. For example, the parent invokes categories and qualities that are rendered visible or can be felt in the embodied practice of moving the ski over the surface of the snow.

On Day 4, the track is again in poor condition after a stormy, wet night. Peter is adjusting Anabel's ski bindings ready for the first loop. As Anabel sets off on the icy track, Peter, who is not yet on the track, asks "is it slippery" (see the comic transcript in Figure 2).

((INSERT FIGURE 2 – “Testing the snow's slipperiness”))



Anabel reports that it is not (at least not much) slippery, and then she initiates, in an experimental mode, her own practical ‘procedure’ to ‘test’ the snow and thus determine its slipperiness. She steps forward at the loop joint and brings her skis together side-by-side on the track and moves them quickly back and forth while standing still, using her poles to support her (see Figure 3). The skis slip and slide underneath her. In surprise, she quickly acknowledges in response to Peter’s original question that the track is indeed slippery, “oh yea- ye::s”, and Peter confirms. A short while later (not in the comic transcript), as Anabel makes progress on the track, she stops and comments “it’s slippery”, which Peter acknowledges. Peter then motivates further progress to make the track more ski-able.

As the days progress, we see a shift from explicit calls to sense the snow, especially what is visible and inspectable, to feeling the snow as an embodied experience in the action

of skiing itself. Nevertheless, talk about the weather and snow surface conditions at the site is a motivated resource for instructed mobile action. We see many instances of the interdependencies of the feeling for snow with the track, technology/technique and instruction. For example, on Day 5, when Anabel is slipping on the up slope of the track, Peter initiates talk about maintaining grip in these present conditions (see Excerpt 2).

((INSERT EXCERPT 2: "Excerpt 2 – Day 5/loop 6b"))

1 ((A slips again))
2 P: op
3 y'see,
4 (you're totally ou:t)
5 P: you gotta get use:d t'it=
6 =it's different from ye:sterday.
7 (1.0)
8 P: you have to walk u:p
9 ((A continues up the slope))
10 (2.0)
11 ((A slips))
12 A: argh
13 P: (thin-) fi:nd the gri:p
14 ((A stops to watch P pass))
15 ((P demonstrates))
16 P: so when you press DO:WN with your foot,
17 ((A continues))
18 you're feeling it gri:p
19 and you're pushing forward
20 (1.5)
21 P: i don't have any grip on the:se
22 so i have to use sti:cks
23 (1.5)
24 P: if i put wa:x on i'd be able to do: it.
25 (1.0)
26 P: but you have little ma:rks
27 (2.0)
28 P: if you find the gri:pping point (.)
29 then you can run (1.5) °forward°.

Peter orients to the conditions as noticeably different from the day before (line 6). When Anabel slips while ascending the incline, he instructs her to feel the grip as an embodied experience, a touch/response-feel, and reformulates this as a 'gripping point' one has to find (line 13). He demonstrates rhythmically the definite stepping movement of the ski on the snow, with each affirmative step timed with a stress on key words (e.g. "down", "foot", "feeling", "grip", "pushing" and "forward") in the instructed action (lines 16-19). Additionally, the type of ski one uses becomes salient, in that a ski without wax or grooves

has no traction.

Making tracks: a practical infrastructure for mobility in the wild

In the setting of the snow-covered playground, the malleable snowscape is (re)territorialised by the skiers, who lay down tracks on the virgin snow, which can be reused by themselves (and other skiers), both in the same session and across sessions. As we have seen, each subsequent day is different – e.g. with new snow, rain and/or fluctuating temperatures – and the tracks have to be recolonized or started afresh. In an official ski resort or site, the tracks are made and refreshed using specially designed equipment that flattens the snow surface on a prepared path and inscribes a pair of parallel tracks for two-way traffic. One can ski on virgin snow (the skis really need to be longer and wider), but it is hard work if the snow is soft and deep since every step/stride is tentative and progress is slow.

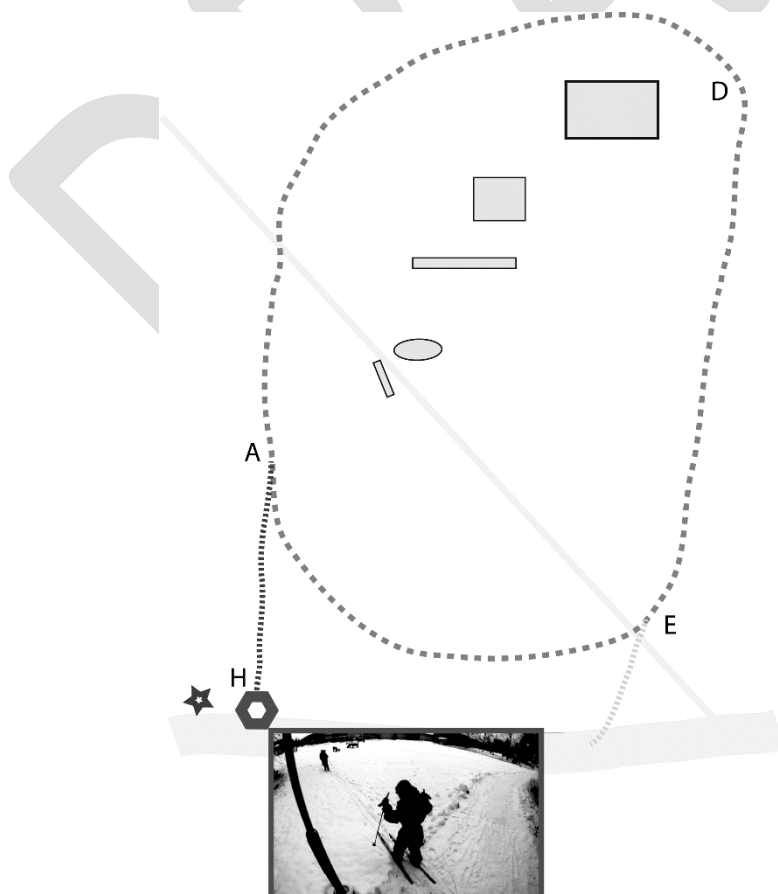
As they set off to ski to the playground on the first day, Peter orients Anabel to what they are to do when they get there: “and we go down here to the playground alright and we'll make a track there”. As they arrive at the playground, in Excerpt 3, Peter suggests they make a track immediately, but Anabel wants to play on a nearby hill with her friends. Anabel has two local girlfriends with her, Suzie and Rita, one of whom is also on skis.

((INSERT EXCERPT 3a + b: “Excerpt 3” – Day 1/arrival))

1 P: so we'll make a tra:ck no:w
2 alri:ght?
3 ((A edges onto the rough track left by S))
4 ((P follows behind A))
5 P: well you're not going to go do:wn the hill
6 in the ski:s alri:ght
7 ((A stops and looks up))
8 it's [too dang-]
9 A: [(pardon)]
10 P: you're not going to go down the hill in the ski:s
11 ((S stops and looks round to A))
12 P: it's too dangerou:s °for [you°]
13 A: [how] about su:zie
14 P: she can (0.5) but you can't
15 (0.8)
16 P: ((P points with right hand))
17 we're gonna go round here:=anabel ↑look
18 ((A twists left and looks at P))
19 ((P repoints and pans to right))
20 P: we're gonna go round, (.) and here, (.)
21 and back down, (.) and rou:nd again=
22 ((P draws a loop in the air))

23 =make a loo:p
24 ((A turns to look forward))
25 ((P and A discuss the hill that's too steep))
26 P: ((P points with right hand))
27 they'll be a hill ↑he:re
28 ((A twists to look right))
29 when you come do:wn
30 (1.0)
31 you'll find that quite fa:st
32 (0.5)
33 that's what i did when i was learni:ng
34 A: °oka:y° ((A looks back at hill))
35 P: so let me make a track fi:rst ((A twists right))
36 if you step out the wa:y
37 ((A steps to the left))
38 ((P moves forward to start a track))
39 P: it's fine to go there on a sli:de but not
40 on uh skis [yet]
41 A: [ha::]
42 P: so w'jus' going t'make a tra:ck
43 (2.0)
44 P: you follow me:

When they cross the bridge, Suzie heads straight towards the hill at the top left from position [H]. In Figure 3, the photo taken from Peter's position shows Anabel by the lamp post about to follow Suzie (and Rita) on the tracks she has just made.

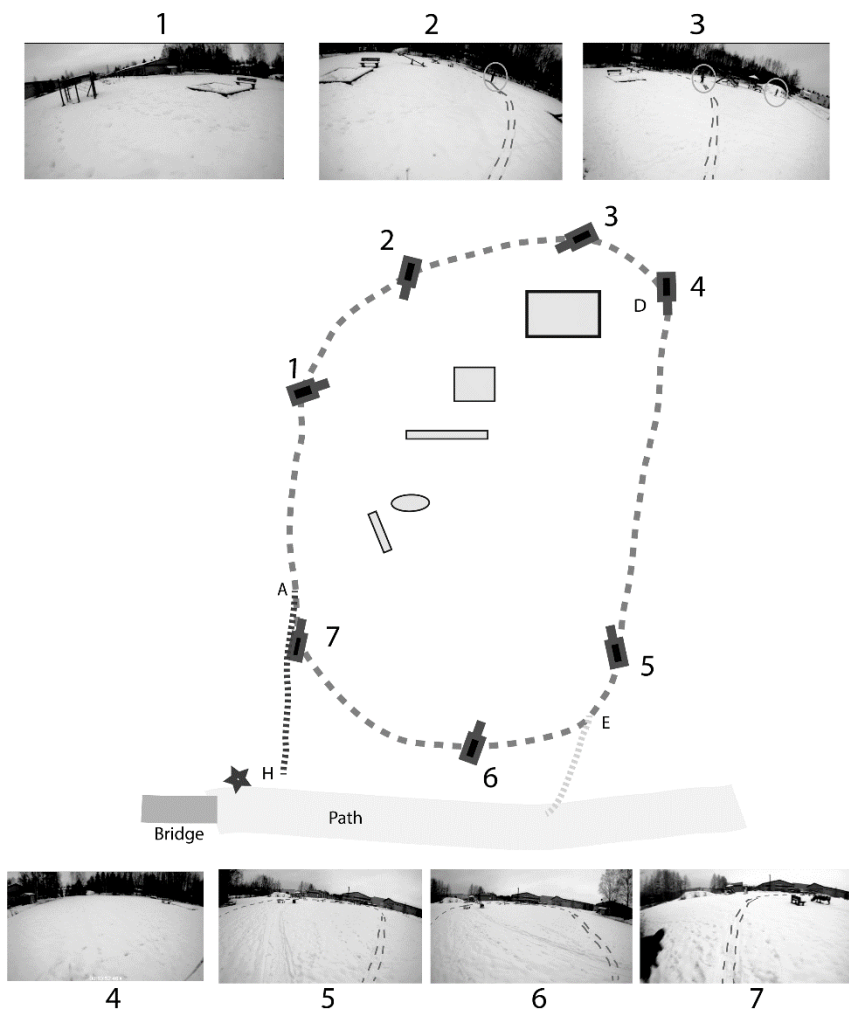


((INSERT FIGURE 3 – “Arrival at the site on Day 1”))

As they set off from point [A] into virgin snow after their arrival at the site on Day 1, Peter informs Anabel about the track (lines 1-2). There is some negotiation between Peter and Anabel concerning just what Anabel is to do at the site. In fact, Anabel is warned away from playing on the steep hill with skis. Instead, a plan is presented for making a loop track, which is sketched out with gestures punctuating features onto the snowscape of the playground (lines 16-31). In order to sketch his plan (and justify why Anabel must concentrate on practising on the track), he calls on Anabel to look (line 17) while he talks and points out the circular route of the track. He justifies that there will be a downhill stretch that will be “quite fast” (line 31). Anabel finally agrees. When Anabel agrees, Peter moves to begin the track: “so let me make a track first” (line 35) and “so w'jus' going t'make a track” (line 42). He asks Anabel to step aside while he makes a track, and then he begins to blaze an initial track into the virgin snow, with a request that Anabel follow behind.

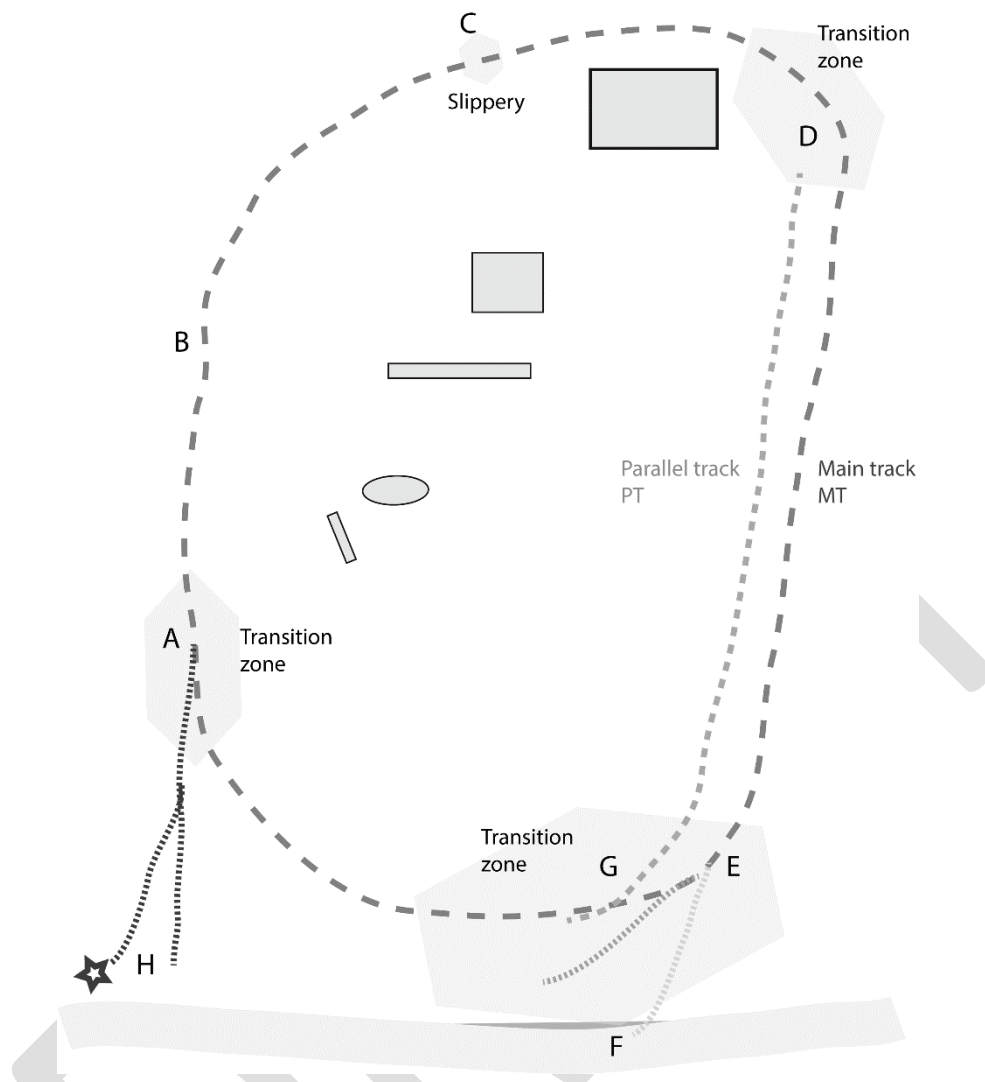
In Figure 5, photos from different points on the initial track give an indication of the geography of the snowscape. The photos are frame grabs from one of the wide-angle lens cameras that Peter is wearing. The direction of view is indicated by the camera icon, though there is some distortion of straight lines caused by the lens. In images 1 and 4 in Figure 4, there is no track for the simple reason that Peter is making the track for the first time and when looking forward there is no track yet to be seen.

((INSERT FIGURE 4 – “Building the loop track”))



As the track is being made in the snow, a loop (with stations for relevant activity) has to be established. Points [D] and [E] come to be important rest points where talk and instruction takes place before the downslope is navigated or they embark on another loop. After the first loop is complete, at point [A], Peter continues quickly around the loop for the second time to catch Anabel at [E]. During Loop 1, Peter asks Anabel to tell her friend Suzie that she is going to practice the loop track first and he makes a circular gesture. Thus, it has been established that the space will be structured as a repeatable ‘loop’ and it will therefore have a recurrent familiarity.

((INSERT FIGURE 5 – “A practical infrastructure for learning to ski”))



As they gradually inhabit the amorphous geography of the snowscape, a practical infrastructure for mobility and learning is developed and maintained in situ (see Figure 5). The core of the transient infrastructure is a loop track [MT] that circumscribes most of the playground. It is important to note that the temporary track at this site is revisited each day and it needs to be rediscovered, repaired and stabilised to constitute its apparent continuity over time and to extend its transient existence. For example, a parallel track [PT] is opened up by the parent on the downslope stretch to enable the two skiers to ski side-by-side (and therefore also to race each other), which is later appropriated by the child (see Excerpt 5). Also, the track can be traversed in both directions. In total the loop is traversed 46 times, 13 of which are anticlockwise.

Over the course of five days, as the track is reterritorialised so that it becomes a practical material infrastructure for mobility, specifically for learning to cross-country ski, the parent attends and attunes the child to a number of features of the track, including its authenticity. On Day 1, after Peter rejoins Anabel at the bottom of the slope, they head off from location [A] on what is now the second loop with Anabel in front this time (see Excerpt 4).

((INSERT EXCERPT 4: "Excerpt 4 – Day 1/loop 2"))

1 P: y'see i made a track no:w
2 ((A stops and looks to the side))
3 P: now this is like a [proper t-]
4 A: [(wait in] the track now)
5 ((A reaches down to pick up snow))
6 P: it's like a proper tra:ck.
7 (1.5)
8 P: the snow is just ri:ght.
9 (3.0)
10 ((A stands up holding a ball of snow))
11 A: yeah it is:
12 ((A twists towards P and throws a snowball))
13 A: for snowba:lls
14 P: ARGH [heheh]
15 A: [heheh] ha

Peter draws attention to the integrity and authenticity of the track that he has made as well as the quality of the snow. He observes that "it's like a proper track" (lines 3-6) and that "the snow is just right" (for skiing) (line 8). Anabel stops and responds playfully to Peter's call to attend to the qualities of the track and the snow. Instead of commenting on the snow's skiability, Anabel throws a snowball at P (requiring the snow to have sufficient moisture to retain its shape when compressed in the hand).

At a particular stage on Day 2 (see Excerpt 5), on the second loop of the day, Peter began a parallel track [PT] from [D] to [G] in order to be closer to Anabel.

((INSERT EXCERPT 5: "Excerpt 5 – Day 2/loop 2"))

1 ((A and P reach the top of the slope))
2 ((P moves off the track beside A))
3 P: come we'll go down together
4 A: NAH::
5 P: i'll go here,
6 (1.5)
7 P: and you go there
8 A: alright (.) >one two three GO:<
9 ((A starts down the track))
10 P: ready::
11 A: go:
12 ((A and P start down the slope))
13 (3.0)
14 A: can you go: without [a tra]:ck
15 P: [yeah]
16 P: we'll because it's so icy: (.) then my skis
17 ride over the top so it's okay:y.
18 (1.0)
19 P: otherwise they would fall:ll right
20 ((A loses balance))
21 P: in [the sno:w=woa:::
22 A: [(A screams)]
23 (2.5)
24 A: i won't go so fast today:y,
25 P: nah not [i-]
26 A: [be]cause there:'s i:::ce.
27 P: yeah

While at the transition zone [D], Peter steps to the right side of Anabel, who is lined up first on the downslope track. Anabel initially refuses the offer to “go down together” (lines 3-4), but when Peter elaborates that he will descend in a parallel fashion, she agrees. Immediately, she starts off in competitive mode with her fast countdown “one two three go” (line 8). Peter takes charge and redoes the start using an alternative form “ready”, which Anabel quickly completes “go”. As they descend together, Anabel asks “can you go down without a track” (line 14), revealing an assumption she now has that skiing happens in tracks, which Peter answers by accounting for the quality of the snow that makes it possible (and not possible). Anabel almost falls and then announces her she will moderate her speed today because of the presence of ice that Peter has noted (lines 24-26). Peter agrees.

On Loop 3, as they descend the slope side-by-side, Anabel slows down and asks if she can try the new parallel track. A short while later, while Peter and Anabel are at the transition zone [E], Anabel asks again if she can try the parallel track. Peter denies the request on the grounds that the fresh track is not yet deep enough. On Loop 5, while Peter and Anabel are at

the transition zone [D], Anabel asks yet again if she can try the parallel track now. This time she gets a go.

It is clear that as Peter and Anabel return to the site to practice skiing each day, there is a strong orientation to the old track, and thus to account for the site in terms of recurrent features that are revisited. The track serves as a delicate material archive – a trace of past actions, activities and events – in terms of its brief history of use. In their study, Waitt, Gill and Head (2008, p.47) note that “the regular, repetitive weaving through the familiar crisscrossing paths, and the ability to view the land from a variety of perspectives, enables the walker to move through, and to territorialise the reserve as ‘their’ place.” In this case, great effort is spent at the site in order for it to be (re)territorialised despite the vagaries of the weather. On Day 2, for example, Peter notes the significance and prescience of making the track on Day 1 in good conditions: “well luckily we made a track ‘coz now we have a track” (Excerpt 1: lines 46-48). It would not have been possible to make a new track on Day 2 in such icy conditions.

On occasions, Anabel takes part in the search for signs demonstrating the legibility of the geography of the site, and thus demonstrating her competence in reading the snowscape. In Excerpt 1 given earlier, Peter crosses the bridge, quickly surveys the site, and draws attention to the visibility of the track – it is inspectable from their current location – that they made for the first time the day before: “the track's still there” (line 18). After Anabel has crossed the bridge, Peter turns to look up the site again, and begins: “see there's...” (line 26), upon which Anabel says “there there is a track” (line 27), attempting to demonstrate a competence that Peter displayed just a minute ago. One might say that Anabel is doing ‘being’ a good apprentice. Peter acknowledges the visible trace of the track, though it is just noticeable, and in this case just about skiable, to which he adds that “it is going to be very slippery” (line 30). Therefore, Peter and Anabel mutually construct a practice of ‘reading’ the snowscape in terms of its history and its ski-ability, to which they return each day.

Although the track is accumulating a history for them, it has the potential to be ruptured at a future date when “the track” will disappear because of the vagaries of the weather. On some days, the old track was very clear to the naked eye. On other days, they struggle to make the track visible. On Day 4, in Excerpt 6, after the previous day's storm resulting in debris over the ground, Peter and Anabel walk to the playground carrying their skis and they arrive by the lamp post [H].

((INSERT EXCERPT 6: "Excerpt 6 – Day 4/arrival"))

1 P: uh: let's see:
2 ((P and A walk to the track))
3 so it's been in a sto:rm ()
4 (1.0)
5 P: there's a lot of twi:gs
6 (2.0)
7 P: but there is a bit of a tra:ck,
8 (.) still, (.) just a little bit,
9 ((A walks up to track and prods it with pole))
10 (1.5)
11 P: not mu:ch.
12 (2.0)
13 P: so: let's jus' try a bit
14 ((P sorts out the skis and poles))
15 P: it's good to practise
16 as much as we ca:n before we go to the big slo:pe
17 ((P helps A with ski bindings))
18 A: at the bi:g slo:pe
19 P: yea:h (.) °well° (the proper ski place)
20 P: °yes°
21 (2.0)
22 P: hopefully with some new sno:w
23 they make some new tra:cks

Initially, Peter orients to the necessary assessment work to be done: “uh let’s see” (line 1). They walk towards the track and Peter brings out features of the environment that are noticeable in this respect. For example, there is the visible evidence of the effects of a recent storm and the presence of twigs, showing that the snowscape is not just shaped by the landscape underneath but also the vertical dimension of natural elements, such as trees. As they reach the track, Peter determines that there is “a bit of a track” (line 7), “just a little bit” (line 8), and Anabel moves her pole to jab at the track near her: another ‘experimental technique’ she has learnt to assess the snow conditions. Thus, Anabel displays her recognition of the presence of a track, but she does not yet give her verbal assessment. Peter pursues an assessment from her by modifying his assessment “not much” (line 11). He adds that it is skiable, and anyway they need to practise (despite the poor conditions) before the big event on Day 6.

After four days of skiing on this track there is a routine, which once again is made manifest as they arrive at the lamp post on Day 5 (see Excerpt 7).

((INSERT EXCERPT 7: "Excerpt 7 – Day 5/arrival"))

1 P: oka:y (1.0) shall we find the tra:ck,
2 (2.0)
3 P: is our track here:=i can see a li:ttle bit
4 can you see it,
5 (1.5)
6 A: a tee:ny wee:ny
7 (0.5)
8 A: =[but] can you just go fi:rst this ti:me
9 P: =[so:]
10 P: yeah well i'll make the tra:ck ((P looks behind))
11 (1.5)
12 P: =[f-]
13 A: =[sha]ll i wai:t
14 P: no no you follow behi:nd me
15 (1.0)
16 P: we'll just try and ma:ke it agai:n
17 (18.0) ((P moves forward on track))
18 P: i can just about see: it ((P stops))
19 can you see it,
20 (1.5)
21 P: just abou:t

Peter suggests that they find the track, “our track” (line 2), and as they inspect the track, Peter claims he “can see a little bit”. Anabel gives her mitigated assessment that constitutes agreement (line 6). The track has to be remade given its very poor condition and Anabel requests that Peter go first (line 8). As Peter heads off, he comments repeatedly on the visibility of the track: “i can just about see it” (line 18). In places, the track is not traceable and so bridging tracks are made to repair the loop and thus rediscover “our track”, the same track since Day 1.

In fact, on each day the track is stabilised by their first traversals. Peter orients Anabel to the need to condition the track, e.g. to make it more stable and faster. For example, on Day 1 (Excerpt 8), Peter is already orienting to the need to condition the track, e.g. to make it more compressed so a skier can stay in the track and go faster.

((INSERT EXCERPT 8: "Excerpt 8 – Day 1/loop 4"))

1 P: y'see when we go round the track mo:re and mo:re (.)
2 it gets harder and harder (.) the grou:nd,
3 and it gets easier to stay in the tra:ck.
4 (0.5)
5 P: then you could focus on going fa:ster.

On Day 3 (Excerpt 9), as they finish the first loop with Anabel rejoining the track to start the next loop, she asks if they can “do a lot today” (line 3). Peter responds affirmatively.

((INSERT EXCERPT 9: “Excerpt 9 – Day 3/loop 1”))

1 P: alright. (.) on the tra:ck.
2 ((A gets on the track and stops))
3 A: can we do a lo:t today (pappa)?
4 ((A returns to moving on the track))
5 P: yeah. (.) let's get the track nice and fa:st again.
6 (1.0)
7 P: if we go over the track, (1.0) it will get
8 fa:ster and fa:ster.

Building on her request, Peter suggests that it is a priority that they “get the track nice and fast again” (line 5) by going “over the track” (line 7). He orients to the need to recondition the track for speed, which is to be valued, and this can be heard as a prerequisite to doing a lot that day.

On Day 5 (Excerpt 10), after some new snow has fallen overnight, Anabel has completed a loop on her own and returns to where Peter is standing.

((INSERT EXCERPT 10: “Excerpt 10 – Day 5/loop 2”))

1 A: but pete:r
2 P: hmm
3 A: it's just because (.) >all of a sudden
4 i go here< then i start out to sli:de
5 P: i know 'coz the track is not dee:p enough
6 ye:t
7 ((P prods the track with the ski pole))
8 P: i'm trying to make it (.) deep
9 A: can i try and go first
10 P: you go first then
11 ((A passes P and then stops and turns))
12 A: but but you have to wai:t for me
13 P: no i'm going rou:nd, (.) so we're making
14 the track better and better
15 every time [we go rou:nd]
16 A: [you have to] wait for me
17 A: when i go down that hill
18 P: aha

Anabel complains that she slipped on the turn (lines 1-4). Peter accounts for this in terms of the depth of the track that he is trying to improve, and he prods the track to demonstrate (lines

5-8). They negotiate who should go first on the next loop and whether or not Peter should wait again. Peter insists that he will follow her so that together they can make the track, thus orienting her to the combined effort of two skiers to press the snow and condition the track (lines 13-15).

From these examples, we clearly see that the track does not remain in prime condition without their labour. It is only through its use and calibration in situ that it reaches peak performance for all practical purposes. For the parent, and for the child learning, their temporary loop track is hand-made in and through their repeated attempts at sensing and feeling the snow – in the skier-binding-ski-pole-snow assemblage – as they revisit the track as it evolves over time with use.

Conclusion

This chapter has demonstrated an analytical concern with actual, mundane practices that negotiate and maintain the geography of tracks through snow as traces of past action and as conditions for future action. The calculation of the snow's affordance for low friction sliding on its material surface is a complex science, but for these skiers their feeling for the snowscape is calibrated to their concerns. Sometimes the participants focus on sensing the snow; on other occasions, it is the track that must be established and maintained; and at other times it is specific ski actions that must be practised as necessary components of skiing. We have seen how snow can be talked about, how it can be handled and how it can be felt in motion. Indeed, the participants make use of practical 'tests' for sensing the snow and the track. For example, they can stand on the track and slide the skis back and forth (Figure 2) or prod the snow in the track with a pole (Excerpt 6). These feelings for snow are action-directed, in the sense that they only make sense in their practice of cross-country skiing in this environment. The track itself is transient and ephemeral, but they work hard to re-territorialise the ever changing snowscape for their purposes and to recondition the track for speed and ski-ability.

We have seen also how the track becomes a temporary infrastructure for skiing and learning. Much as the sensing of snow conditions is crucial for rendering the site ski-able and instructable, so is the track a dynamic resource for instructing and practising skiing. It is clear that it is not possible to ski well unless one integrates an embodied awareness of the affordances of snow, the track and the skier-pole-binding-ski assemblage. For example, repeated slipping on the kick brings to the fore the conditions of the packed snow on the track

(and possibly the status of the wax on the ski) or it might expose the tiredness of the skier who is failing to transfer weight for the kick or it might point to the poor state of the track which means the skier is often sliding out of the track. In this way, the cultural practices of cross-country skiing are inculcated in situ in and through an embodied geography of snow.

Nevertheless, it may seem rather flippant to say that they constructed a spatial "infrastructure" for mobility and that it was "in the wild". Yet analysis shows that key aspects of the site were infrastructural – for example, there was repeated attention to maintaining an appropriate and robust structural surface for supporting movement. Inevitably, a few days after the site was used by the family, with some new snow, new users and changing weather patterns, the practical infrastructure they had carefully built in the wild had disappeared. All that remains are the memories, the trace of the experience and the activities in historical bodies, and the video ethnography.

This study is based on a mobile 'active participant' ethnography that enables particular insights into the cultural meanings and social interactional practices of this family at this, for them, historic site. Although it is a single case study, following a practitioner and a learner in instructional moments provided access to salient practices. The study informs our understanding of transient and ephemeral geographies in which participants generate mobility and a situated material-spatial awareness in unpredictable terrain within a nexus of social and cultural practices. It is noteworthy that the interactional mobility analysis was not undertaken simply by reference to the social and cultural background of the skiers involved.

The study contributes as well to the need to investigate children's and not just adult (or extreme) mobility practices, both in the context of learning to be mobile in an adult world and understanding what mobility means in a child's everyday life (Horton, et al., 2013) and how children are made mobile (Kullman, 2010). More research is required to determine if the findings are generalizable beyond this case study; for example, with investigations of how families and caregivers in other social situations or cultures teach their children to appreciate the materialities that afford mobility, or of how snow-covered or other 'wild' landscapes are sensed, traversed and transiently territorialised in practice, for example, by free skiers or users of snow scooters.

Appendix: Transcription conventions

<u>push</u>	stress
STOp	high volume

°glide°	low volume
> <	fast talk
< >	slow talk
:	stretching of prior syllable
par-	cut-off
.h	inbreath
h	outbreath
↑ ↓	high or low pitch at the start of the following segment
(1.5)	timed pause in seconds and tenths of seconds
[]	beginning and end of overlapping speech
=	latching (no break)
()	dubious hearing/unsure transcription
(())	transcriber's comment

Author bio

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