

# Personal Informatics and a Sense of Place

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## Abstract

This paper reports a qualitative, small-scale study into a sense of place that emerges in the use of current personal informatics sports tools. Prior research has identified how data are folded into the felt life and how this has evolved into one where some commentators have suggested that people 'dwell in data'. The research asks whether this is still the case, or whether a sense of place is beginning to emerge in a slightly altered form of the felt life. The research shows that it is appearing and is central to many data centric embodied practices. But it also shows that what place means is shaped by the purposes 'users' have, whether it is place as a visual field, an enveloping sensory environment, or a way point in a life-long voyage. The implications this has for personal informatics in the future are remarked upon.

CCS Concepts: • **Human-centered computing** → **Empirical studies in HCI**; **Empirical studies in ubiquitous and mobile computing**;

Additional Key Words and Phrases: personal informatics, place, data, felt life, ethnomethodology, ethnography, AI, abstraction

## 1 Introduction

In a world full of 'smart' things, where devices held in hands, worn on clothes, sat on desktops and embedded in sporting technologies constantly produce data, why those data are generated, collated and used by people is fundamental to HCI. While many users may think they exist in a swirl of data beyond their comprehension, many others appropriate that data to shape themselves and the world they operate within in artful and creative ways. They do so even as new forms of data production steadily emerge and unsettle the ways they have found to tame that data. The emergence of the latest large language model (LLMs) technologies, though distinct from personal informatics, shows how easily hitherto 'undatafied' practices – language use on the web – can be converted into data for new systems in ways that perturbs what people think of as their own. When this happens, they are quite right to ask what is it for and why is it being generated. While it might be *The New York Times* that asks why its text is being processed for LLMs, for users of personal informatics how their personal practices might be transformed by state of the art machine learning into new forms of 'personal data' might be equally worrying.

As it happens, nothing so radical as *foundation models* [5] have impacted personal informatics as yet. But personal informatics have been going through constant change since their emergence ten or fifteen years ago. Users have had to adapt to these, or rather fold those changes into their practices. While these technological changes might have been heterogeneous and the gentle tide of enhancement they express somewhat 'messy' from the user's point of view, these changes will have been subject to powers of appropriation that users have always retained as their own. Whatever feature released, however outlandish the claims placed upon that feature by its vendors, users will have somehow made that feature mundane. We can say this with assurance as a great deal has been written on how this happens – on how people *domesticate* personal informatics [22].

## 2 Limits of Prior Research

A key theme in this domestication literature has been how the technologies in question are appropriated to what has come to be called the *felt life* of individuals. Rooksby *et al's* work of 2014 [21] was exemplary here, showing how the relationship between

individuals and the data tools they use when understanding their bodies (and selves – not necessarily the same thing) is one that is fleshed out in the way those same individuals make those technologies fit into situated practices. As new forms of data gathering technologies appear, so, if Rooksby *et al* are right, this shaping will constantly reassert itself, ensuring that persons remain central to *their* ‘data life’ despite the claims implied in some of the latest technological enhancement. This will apply even in the most extreme scenarios of change as seems implied with some of the latest AI. In this view, the importance of the individual as a curator of their own data will come under threat by some kind of cyber alternative, an ‘AI’ of the self.

When Rooksby and his colleagues wrote, the technologies they were referring to captured such things as speed, distance and heartbeat – what one might say are the essential dimensions of physical activity. Thereafter tools began to socialise these measures, using the internet to make these shared and the basis of gamification. Internet platforms were and continue to be essential to this. More recently still, personal informatics have been supplemented by features that capture mood and its index: attentiveness. The somaesthetics of movement are now being augmented by data representations of emotion [16]. In many ways, this is opening up wholly new territories for HCI, away from the functional towards the meaningful and how meaning itself is, as it were, domesticated. AI techniques will become ever more integral to the way data is being aggregated and rendered for these concerns, though whether this will make the users task of domestication easier is an open question.

Analysing the meaning-making that users undertake, regardless of the era of technology in question, has never been straight forward and will not become easier as the technology gets more ‘intelligent’. For one thing, meaning-making by users is continuous and iterative, and combines their interpretation of data, alongside their interpretation of many other concerns outside matters expressed or captured in data. The term ‘thick description’ [11]<sup>1</sup> is often used to label what analysts need to do when understanding these interpretive practices, but if it were only thickness that was required it would be relatively easy; the trouble is getting to the right description, offering the right balance of concerns such that the thickness is appropriate rather than thick and occluding.

For example, when one looks at the early literature on felt life, one doesn’t get a sense of how that life might have been situated geographically. One doesn’t get a strong sense that place might have been a part of the context. Of course, this lack of place might have been a correct analysis: it might have been that data technologies of the time were leading people away from place and towards a situation where the felt life was abstracted from real geography to virtual circumstances. This concern might have also reflected a predilection in the years that followed for matters of identity and self-expression – these being profoundly topical at the time. But it is now nearly ten years since Rooksby *et al*. Not only has the technology evolved but so, too, may be the way that technologies are domesticated. If, once, moving into the virtual was one of the appeals of the digital, now it might be the reverse that beckons: how to ensure that the digital can lead one back to the real, to the situated, to places experienced in digitally augmented, but nevertheless corporeal ways. It is the purpose of this paper to explore this possibility (or hypothesis): that while personal informatics may have furnished the felt life, the shape of that felt life may have been altering, and today a sense of place might be expressed in the way those informatics are used.

### 3 Overview

To do this, the paper will be structured as follows. The first section will present a short literature review. Here we see that when personal informatics first appeared, certain premises at the outset of research naturally led to the emergence of the felt life as a key concept. We shall then see that more recent enquiries have begun to explore how that felt life has been shaped towards an increasing emphasis on living ‘inside data’. Terms from anthropology have been used to express this, such as Ingold’s notion of wayfaring [17]. In this conception, people *travel* through and in data; they *dwell* in it [14]. We then report enquiries of our own that address whether this form of felt life is altering once again towards practices where a sense of place comes to matter, possibly at the cost of a sense of data. For this, we report a small scale, qualitative investigation into the use of data generating technologies by three sets of physical activity seekers: open water swimmers, road cyclists and runners. We will report that the investigations do show that the felt life is suffused with a sense of place and this is deeply structured by the ways the technologies they use work and how those workings are tamed. What they afford shapes what place comes to mean for these individuals. But the evidence also shows the term place (like other terms that appear in our research) are insufficient to accurately capture the complex connection that people have with their geographical circumstances, as the term is entwined with data and what it affords,

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<sup>1</sup> For those interested, the term ‘thick description’ was originally coined by the philosopher Gilbert Ryle in his book *The Concept of Mind*. The anthropologist, Clifford Geertz, took up this interpretation as key to his mode of enquiry. The key quote from Geertz on this topic is “*Believing, with Max Weber, that man is an animal suspended in webs of significance he himself has spun, I take culture to be those webs, and the analysis of it to be therefore not an experimental science in search of law but an interpretive one in search of meaning.*” (pg 5). Interpretative enquiry requires thick description although Geertz himself never said that so simply.

as well as with the complex motivations that constitute the purposes and hopes people have. It turns out the felt life is textured, subtle and diverse; how matters of place show themselves in this felt life equally so. This has implications for the HCI of personal informatics – on how the materials gathered and offered to users are to be engineered for the rich methods of domestication we find with today’s users. We shall conclude the paper with remarks on this topic.

### 3.1 The literature

This is enormous. A Google Scholar search will point to, for example, 5,000 articles specifically mentioning “personal informatics”. Finding a way through this literature, is best done, we think, by starting at the beginning, with the *Wired Magazine* article of 2010 [24] that celebrated the use of quantification about the self as a way of living. Early academic research that followed on this journalistic introduction was device-focused, represented in, for example, the sequential order of use as described by Li *et al.* In their 5-stage model, users prepared, collected, integrated, reflected, and then acted in an endless cycle [18]. This model was modified by Epstein *et al* to include ‘lapsing’ and ‘resuming’ to cover the aspects of temporary and permanent abandonment of the technology within these stages [7]. Epstein *et al*’s paper began to address the moods that might affect data use, and opened up the door to the notion that users are not simply rational actors. Rooksby *et al*’s *Personal Tracking as Lived Informatics* took this seriously and argued that personal tracking was intertwined with the lives, experiences and social interactions of individuals [21]. Their term, ‘lived informatics’, labelled how people were “using information and finding its meaning in their day-to-day lives” (pg 1171). Doing so inevitably lead to considerations of the shaping of meaning through time, with data being used for the ‘anticipation of self’, with tracking mapping the route between a lazy and unhealthy past to a healthy and vigorous future – an imagined one, of course, fabricated with data.

More recently, Fors, Pink, Berg and O’Dell have approached Rooksby *et al*’s insights from an autoethnography perspective. *Imagining Personal Data* explores the way in which meaning is assigned to personal data, these authors’ own data, and how it is generated, through the act of living [8]. For Fors *et al*, the primary theme of their enquiry is the sensuality, or, as they put it, “[T]he embodied sensuality of self-tracking” (pg 40). “Data become meaningful in relation to the practices through which our everyday lives are played out” (pg 27), they contend; this leads them to concur with Rooksby *et al* that data is ‘felt’ and part of that experience. But Fors *et al*’s analysis suggests that data are experienced as their own ‘entity’, adding their own sensory characteristics to the individual’s experience: their notion of ‘felt’ is thus wider than Rooksby *et al*’s.

In Fors *et al*’s view, Rooksby and colleagues had moved research toward the notion of people as wayfarers in information. Fors *et al* develop this further by taking up the concept of dwelling developed by Ingold [17]. They argue that when people track their activities, they are not building a description of their lives but are wayfaring in information. However, place seems obscure in Fors *et al*’s investigations. Wayfaring here seems to entail little concern with real geography; Fors and her colleagues seem to dwell in data, to coin another word from Ingold, and hence seem to behave much like the Windows programmers encountered by Harper *et al* [14], where place hardly mattered, the offices of these programmers being so anodyne that they could be called Augé’s ‘third places’ [2]: anonymous, stripped of relevance. This is not to say that place or space is ignored in Fors *et al*; it is to say that it is not central to their enquiries. They introduce, for instance, a spatial aspect to the relationship between themselves and their data - in the consideration of contextualised ‘seeing’ and in the way data enables mapping visualisations to let experiences be remembered. They allude, as well, to the emergent way place appears in data, even if place is evanescent in their enquiries. In this, they echo Thrift [23] who suggests that place is constructed by people in the praxis of living. The concept that place and behaviour are reflexive (as discussed by Harrison and Dourish in 1996) [15] is similar to Fors *et al*’s suggestion that habits and routines are created, not through the nudging or instructing of the devices (as is expected by the technology companies), but through the anticipation of re-encountering the sensorial experience of a previous activity, as visualised by the personal data. Aside from this observation, however, how place is enacted through these practices that Fors *et al* describe is not clear. Place seems part of the phenomena seen through data but place has no centrality in this. It is as if the experiences of users separates them from the world around, only extending in their understanding through the way data renders them, the individual. The real sites in which they act, the places they construct meaning around and the geographies they traverse are merely shadows, points on a data map but not part of who (or what) they are. It turns out that *identity* is the crux of *Imagining Personal Data*.

This seemed an entirely logical focus given the method that Fors *et al* deployed, autoethnography, and reflected where these authors wanted to take design considerations: towards questions of self. But when we read this, we wondered whether there might have been some privileging of identity at the expense of other matters, like place. Besides, in the few years since Fors *et al* wrote, the experience of the digital and of place may well have altered due to covid lockdowns, with individuals being more sensitive to how place might matter given that place had been, so to say, taken away from them.

### 3.2 An enquiry

It was with this in mind that we set out to enquire into place and its role in contemporary, personal informatics and associated social practices. This research would build on ongoing (and as yet unpublished) investigations into the relationship between the concept of data and place being undertaken by the first author. Our goal was not to doubt the notion of the ‘felt life’ or ‘dwelling in software’, as to look at whether that life obscured any relation with place, or whether, perhaps, that relationship has altered over the years. Whereas once people may have sought the digital ether (its ‘placelessness’ appealing), now it might be that place is regaining some appeal. Certainly, our own research agenda was partly driven by already mentioned impact of covid. In any event, the emergence of ever more powerful AI techniques and processes might also be shaping how the technology is being experienced and used. With AI what is sensed and felt with personal informatics might be richer, perhaps able to better express the ‘real world’ in which the user exists. It could be that, with AI, domestication is becoming more refined.

We recognised that any approach we took would need to focus on meaning making, and how this is part of this domestication process. We knew as well that we would need to build on the view of Rooksby *et al* (and to a lesser extent the autoethnographic approach of Fors *et al*), as this set out how to grasp the mechanics of this meaning making in the production of the felt life. Rooksby *et al*’s approach, crudely speaking, entailed an ethnomethodological and phenomenological perspective, one that emphasised meaning as being undertaken in situ. It drew attention to the improvised ways ‘things in the world’, such as data, are made intelligible by users themselves in pragmatic, ‘reflexive’ ways. One might say, building on a phenomenology of meaning making, that users were authors of their own *contextual gestalt*. By this is meant that the general context people find themselves in (whatever it might be) is used by them to inform or understand the particularity of something or other (such as some data), and those particularities are then used, again by themselves, to re-inform the meaning of that general context. This is a continuous process of mutual meaning making. This is what Harold Garfinkel [10] came to call, in his *Studies of Ethnomethodology*, the documentary method of interpretation: the small informs the large, the large the small in turn, allowing the world in the general to fit human experience in the particular. It is this that is taken up by Rooksby *et al* even if it is not discussed.

Such an approach, an ethnomethodologically informed one, would therefore emphasise the ethnographic, when by that is meant a concern for the symbolic worlds in which users of personal informatics live and which, through their linguistic practices, they come to make and share meanings through an iterative, context-making process. But we realised too that a full ethnographic study as might be sought by anthropologists was beyond our capacity - we could not become these persons in the manner of Fors *et al*, nor spend months with them in the manner of Ingold. We would need to talk with them, listen attentively, and see how they methodically interpreted their personal informatics to construct meaning. Our topic would be language, in other words, and how through the operations of words, tellings and accounts, the current experience of personal informatics would be opened up.

Because of this, we did not obtain or seek to analyse any of the personal data that was collected by the apps. We took note only of what the participants shared with us in the course of the interview - with a view to understanding how they used the data to gain a sense of place, a sense of themselves, their lived experience.<sup>2</sup> For the purposes of the enquiry with these conceptual footings, our exploratory study had twelve subjects – four road cyclists, three runners and five outdoor swimmers. These individuals were selected as their physical hobbies – or sports if you prefer – have all become suffused with personal informatics. Using data and using it as part of a process of domestication when they rode, swam or ran, would therefore be natural in these contexts, and natural, or everyday, to these individuals.

Given what we say about our approach, no attempt was made to be representative in the selection of these twelve. The approach was not a sampling one. The demographics of each research subject (age, gender, profession and activity) can be seen in Table 1 and all of them undertook their chosen activity regularly (to their definition of ‘regularly’). One person competed as part of a sponsored team, with the rest choosing to participate in races, club activities, social groups or individually to suit their preference. Each individual was interviewed with a view to eliciting how they constructed and elaborated their felt life with regard to their particular data saturated practices. We wanted to see if there was any systematicity to this, any ethno-methods in their meaning making.

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<sup>2</sup> Research ethics approval reference: FST-2023-3885-RECR-4

Table 1. Participants with their Aliases (in Cumbrian Dialect), Age, Gender, Professions and Activity

ID	Alias	Age	Gender	Profession	Activity
1	Yan	25	Male	PhD Student	Cycling
2	Tan	26	Male	Civil Engineer	Cycling
3	Tethera	22	Male	Assistant Manager (sponsored team rider)	Cycling
4	Methera	64	Male	Retired Private Equity Fund Manager	Cycling
5	Pimpf	61	Female	Researcher - semi-retired	Swimming
6	Sethera	72	Female	Retired Nurse Midwife	Swimming
7	Lethera	61	Male	Podiatrist	Swimming
8	Hovera	60	Female	Solicitor/Freelance Law Lecturer	Swimming
9	Dovera	55	Female	Part time NHS Receptionist	Swimming
10	Dix	50	Male	Joiner	Running
11	Yan-aDix	32	Male	Flood Risk Management Manager	Running
12	Tyan-aDix	39	Male	Research Fellow	Running

All these individuals used more than one item of technology in their activities. Phones, Garmin computers, smart watches and heart rate monitors were used to log data that was then uploaded to an app (such as Strava) or recorded in notebooks. Route planning was conducted using Strava and other apps such as Google Street View, OS Maps, Komoot, Outdoor Active and All Trails. In addition, weather apps were popular with the cyclists, and social/community sites were frequently checked regarding the quality, tides and pollution conditions by the outdoor swimmers.

Nine of the interviews were conducted face-to-face in an informal setting, and three interviews took place via video chat. To put the subjects at ease, notes of the interviews were taken rather than a tape recording. Immediately after each interview, a summary vignette was written up by the fieldworker. These and the fieldwork notes made in the interviews were then examined in workshops where the research team sought to identify what appeared to be the linguistic frameworks and tools that the subjects used to convey and construct the domestication of their personal informatics. For this purpose, anonymity was preserved by giving each subject a number from one to twelve in what is called the Cumbrian dialect – a residue of ancient Norse counting still used in the area north of the university.

## 4 Results

It should hardly surprise, given what we say, that all the subjects shared with us how they used their personal informatics to constitute a life that was ‘felt’ – not simply reasoned about and measured, but experienced. It was also clear that technology was only part of how they constituted these experiences. How they did so was artful; it was not merely a matter of adding datum to experience but treating data as meaning something more than numeric. There was artfulness too in how data was linked to other concerns – to the nature of the physical activity, to the places of those activities, and to the personal motivations of the individuals in question. Data helped constitute the gestalt of experience; and gave it some of its texture. In other words, personal informatics were intrinsic to the meaningful life, a part of how it was fabricated. This emphatically confirms the salience of the felt life concept that Rooksby *et al* introduced, and confirmed Fors *et al*’s assertion that users can be said to be dwelling in data. In our subjects, data were not just contributing to a felt life but helped make that life be felt in particular ways.

For example, Strava is an app that all the cyclists and some of the runners we spoke to used. The application works with wristwatch devices that track movement, and an internet platform for visualising and sharing those movements once uploaded. The map offers what the manufacturer calls a ‘heat map’ that uses intensity of colour and type of colour to highlight routes that have been covered by users. As a case in point, Yan, one of the cyclists, visualised the cycling routes he went through with these heat maps. In interview, he showed us the coloured areas in different parts of the country that relate to his home, to his girlfriend’s home, and to his university life (in another part of the country). He used the colouring to express to us where he had been and was likely to go, as well as to share the reasons for those goings – to make his activities accountable. He used the colour maps to tell us about him and what he did. In his account, he was not just a passive cyclist, going over the same old routes at home, with

his girlfriend or at university; rather, he wanted to convey how he planned his cycling with a view to joining up these coloured zones. He talked to us about creating a 'few more coloured lines' through cycling back and forth on different routes as, for him, it *"is quite cool when you connect an area"*. Colouring was a doing, if you like, a way of directing where he and his bicycle went. He used a data tool, Strava, to show us this; he used the same tool, as he wanted to understand, in his actual doings too.

Another subject, Tethera, offered a similar account. According to him, he used the heat maps sometimes before and sometimes after his riding. He explained that the brightness of the routes on the map guided him where to cycle. Almost in the manner of a confession, said with an air of guilt, he remarked that he *"might go out the next day and make it brighter"* – referring to the strength of colour on the map. In short, and like Yan, he wanted us to know he 'did' colour. There were, of course, subtleties he wanted us to understand. At times, rather than "following a line" [preselecting a route] Tethera would identify gaps in the heat map as 'places to explore'. He would then use Strava to see where he had cycled *after* he had arrived back, so he explained. It was as if he was painting with his cycle, and then using the application to see the result.

Whether this said something about Yan or Tethera, or about how either would like to be understood by us as individuals with a particular approach or whether, by way of contrast, this was simply a factual representation of their cycling activities without any cargo of self-portrayal was hard to tell. The two were intrinsic to their accounts. What was sure is that who they wanted to be, what they did, and how it was expressed were meant to be understood (by us) as connected – their accounts to us made this clear. Their use of Strava told us about them, not about Strava.

The contrast between the practices of Tethera and Yan and how similar sports might have been experienced before the ubiquity of personal informatics might highlight the issues here. A paper in the *Journal of Ethnography* in 2015 [1], for example, reported that runners referred to a "sensory dimension" as the primary sense of what their running routes entailed. It reported that runners used the term "runners' vision" to guide what they focused on when they ran and indeed in what they recalled thereafter when reconsidering future runs. At that time, a decade or so ago, the instrument of data production was themselves, their own sensory apparatus. Today, according to the accounts we were offered, that apparatus is emphatically altered: not so much as something that is now augmented, as something that is one of the resources placed alongside others to construct meaning. The sensory experience of riding was not given precedence by Tethera, as a case in point, and seemed less consequential than the playful prospect of deepening the strength of colour on a digital map through the act of cycling with the Strava application. For Yan, the target seemed to be linking colours, like pieces in a jigsaw puzzle; likewise Tethera.

There is an important point here to do with the relationship users have with technology and the larger practices of which that technology use is a part. With personal informatics such as Strava, so the relationship between individuals, their sport and the places in which they do that sport does not become more detailed or better accounted for because of the data generating application. From how we were instructed in the accounts offered, data does not appear to add up to a better representation of the world at large. Rather, our subjects were telling us that how the world is oriented to and experienced is constituted, in part, through the use of digital means and as it does so, so the world and how it is 'felt' is altered. Giving it more colour, to play on Strava's features, does not mean more or better or with greater precision; it means, so our subjects explained, experiencing the world differently. That difference is not only through the technology, as what the technology affords is brought alongside and made intrinsic to an overall 'sense of experience' which is orchestrated in particular ways. For Tethera and Yan, it is colour that becomes part of the context. For others, different types of constituted experience.

For the swimmers we spoke to, it was the temporal and sensual that were constitutive of their experience. It was the interconnection between the temporal and the sensual as well. This is something that they were especially keen to convey. All five swimmers made it clear to us that their use of personal informatics was a *"health and safety necessity"*. *"We swim at all times of the year"* and so *"need"* watches and thermometers, they explained. Only with these technologies could they calculate how long they stay in the water. But they explained, further, that hypothermia was not so much a risk as a *threshold*.

Sethera, Hovera and Dovera, to illustrate this, explained that they would try and stay in *"skins"* [swim suits] for as long as possible before they would finally wear wetsuits, by which they did not mean that they would get out and put wetsuits on, rather there was a point in the calendar year when swimming could only be done with wetsuits. We needed to understand that their goal was always to feel a little cold. Cold was sought for, a feature desired, even if potentially hazardous. Being cold was not thwarted by wearable technology, as it was made manageable and yet still part of the purpose of the activity, so the swimmers said in their accounts.

There were various reasons offered for this. Sethera, for example, told us that that the sensation of cold helped with pain relief against her arthritis - *"the colder the better"*, she asserted. But how much cold needed watching, so to say. This was echoed by Pimpf, who explained that she used a watch to monitor her strokes per minute, her speed and such, but above all her duration.

She wanted to be in the cold, she said; it delighted her in the encounter it offered. She wanted us to understand that there is a 'physical feeling' that swimming in cold water afforded. It had to do with 'space', 'depth'; cold was an index, so we were to understand, an index of expanse, spaciousness, of something not felt anywhere else. In these respects, she knew that it was like a drug, potentially hazardous.

#### 4.1 Broadening our understanding beyond place

As we were being instructed in how the felt life was deeply connected to places but in various and in often quite different ways, we began to think our concern with place was a little fatuous, constraining what we were listening to and able to hear. Rather than focusing on what we thought was absent in the literature, we began to wonder whether we might attend more fully to what users said, even if it did make the topic of place complex and potentially unwieldy as an analytic concern.

At this point our attention was confronted by something quite unexpected, though intimately connected to what place might mean. Or rather, what it might afford. One of the swimmers, the already mentioned Sether, had explained to us that she had been a cold water swimmer for over 2 years. With this experience, she had become less reliant on technology to inform her of when hypothermia was imminent. After all this time, she could listen to her own *"body messages"*, so she explained. She then said that, in being 74, her life experiences have changed her relationship to things like swimming and the places in which it might be done. It wasn't merely exercise, she wanted us to understand; the number of strokes made, the time spent nor the sense of depth and wonder that cold water provided. It was something else, something very felt indeed. The following is an extract from our field notes: *"When I ask what Sether thinks is the best thing about outdoor swimming, she drops a bombshell: 'I've been a widow for many years and I don't know if you realise but when you're in the water it's the closest thing to you of anything and when you're not used to having any closeness with anybody anymore it can almost be an erotic experience as well.'"* The meaning of this could be literal, with it pointing towards the touch of another, or rhetorical, trying to emphasise the depth of sensual experience chilly water affords. This might be bound to the life of the speaker where delight in the sensual of any kind - human created or otherwise - is not often experienced. Either way, she was telling us that the sensual matters.

The insight we took from this was not that touch is the ultimate expression of place, as that how place gets accounted for in the experience of the felt life is enormously artful and nuanced in language. Indeed, the relationship between feelings, data, action, and place is intricately bound to how experience itself is constituted. Rather than thinking we ought to see how place mattered as if that were a question of arithmetic, we came to see that the accounts our subjects offered were better thought of as displays of narrative élan where all sorts of concerns - technical and non-technical could be deployed to deliver a point, an account, a view on what was being explained. Meaning is laminated [13]; made through juxtaposing and rendering varieties of concerns into what we might say is the gestalt of experience.

With this now understood, we started looking at our interview notes in terms of whatever theme seemed salient. To help us picture these, we began to assign a label to each topic discussed in the interview, a word or phrase that evoked what we thought the subjects were trying to convey in their sentiments at that moment in the interview. We crossreferenced these with the accounts of other participants and linked them in a matrix of relationships between technology, place and other matters. Our goal was not to see how these accounts had some hidden form that could thus be seen, so much as to let us see how rich and diverse they were. The table we came to produce was for our sluggish imagination, like Garfinkel's breeching experiments were for sociology undergraduates [9].

#### 4.2 The lexicon of the felt life

In Table 2, we display these various themes that were presented and developed in interviews with our twelve subjects. As we say, these themes represented the significant topics that the participants chose to talk about and which seemed to us resonant of other interviews and accounts we had listened to. We crafted those which seemed particularly good illustrations of what our subjects wanted us to understand – viz, the remarkable ways that the felt life is wrapped up not just in data but a whole raft of dimensions: a task of laminating together the world as understood. Our account emphasises the subject's point of view in this and how this expressed in language, trying to offer thereby sufficient richness to satisfy the methodical need for 'ethnographic thickness', as we remarked earlier. Whether we succeed in this is partly for the reader to judge and partly to be measured by our subjects, and the degree of concordance between our account, their understanding and the ways they expressed that to us - in the tools of language.



Table 2. Matrix of the main themes that the participants shared; examples that were important to them.

Theme	Yan	Tan	Tethera	Methera	Pimpf	Sethera	Lethera	Hovera	Dovera	Dix	Yan-aDix	Tyan-aDix
Make connections between places eg colouring	x		x									
Conscious of health benefits; managing safety requirements					x	x	x	x	x			
Listening to the body; sensual experiences				x	x	x		x				
To get away from; anywhere to stop thinking about work										x		
Mood as a motivator that dictates place	x	x	x	x								x
Life gets in the way; the restrictions placed on when and where											x	
A socially acceptable activity; as perceived by family and friends				x								x
'Better' places characterised by solitude			x									
Driven by solipsism; activities for the self			x		x	x				x		



Space precludes discussion of all the dimensions of this lamination, but some are especially interesting. For example, for some individuals, a sense of place had to do with the place which it wasn't. For Dix, as an example of this, his runs after work entailed going somewhere; there was a route and the route was 'datafied' in Strava. But that was not his motivation. He would run after work so as to get away from his work. It was not the physical sense of place that mattered, the placeness of place he ran through so to say, but the psychology of work that shaped his relation to that geography. His running was an attempt to flee thinking about *"what's coming up at work"*. He explained that what he wanted was to empty his mind and find himself *"just running in the now"*. He contrasted this with the experience he sought when participating in what he called 'a Park Run' at weekends. These were organised with other individuals, around predetermined routes. These would *"keep you fit"*, he explained, as if that would justify them alone; but he went on to say that they were *"also sociable, with my mates"*. Place in this sense was where people gathered, and what mattered was that the place in question was suitable for all – convenient, with good surfaces for running. Places for after-work runs were, in contrast, negative; not important because of what they afforded but because of what they were not. Where they were, in this respect, did not matter: wherever that was needed to be somewhere *other* than at work, elsewhere from the geographies that made work things come to mind.

There were nuances to this. Sometimes a concern for being elsewhere would lead Dix to select places that would demand his attention whilst running. Being *"in the now"* and not at work could be facilitated by places away from roads and where local scenery – hedgerows, hills and peaks, wild animals – could distract. Difficult surfaces could offer *"a bit of a challenge"*, too, but not so much as to mean the running experience was enhanced, as meaning the experience of running would therefore be more intense. In this way, running would more effectively resist the emergence of work in the inner landscape – in Dix's mind.

'Getting away from work' is a phrase that deploys geography to label mood, the frame of mind a person might have. What we are seeing here is that the inner landscape can govern how the external landscape is oriented to. The real world is understood in terms of the private, psychological world. There are lots of phrases and words for this inner world, of course. Mood is one such and was used by several of our subjects when they sought to explain their motivations and relation to place. One of the cyclists, the already mentioned Yan, told us that when he was feeling *"up against it"*, he would choose flat places with quieter lanes to ride. This was not because these were more anodyne than hilly routes or busy roads, as their simplicity would let his worries dissipate. In such places he could *"really go for it"*, setting up time limits on how fast and how far he could go, for example. Contrastively, if he was *"mulling things over"* (and not *"being up against it"*), he told us he would head towards the hills and green spaces. There he could go for longer rides where the mulling would be possible.

These examples of the inner life and its connection to the real world also draw attention to how the motivations of the single person could be and often were bound to the desires and needs of others. The runner, Yan-aDix for instance, was acutely aware of the compromises he had to make when juggling his running with childcare duties. Indeed, this was a major concern in his accounting to us. He explained when showing his comparative training data on Strava that *"[F]amily life makes my stats all over the place"*. Here, he was using the word 'place' metaphorically, rather than literally. The point he was making was that he had found it hard to maintain trends. Put simply, he did not run enough. Place hardly mattered, as it was time that was rare.

The way the activities were social, and questions of what was acceptable to others, had complex dimensions. For some, a sporting hobby was seen as a problem for family life, for others it was the opposite. Methera, a cyclist, and Tyan-aDix a runner, both saw their activities as a means of catching-up and being with friends in a way that would be seen by family (viz, partners and children) as more acceptable than an *"evening down the pub"*. To ride or run with friends was ok, to sit and chat with them over beer, not so much.

The moral codes that govern how practices are judged would have consequences in how places are used then, as well as how that use is evaluated. But the kinds of activities we were asking about also pointed towards solitude, even a sought for solipsism. Tethera, the cyclist, felt that *"better"* roads were those which were characterised by solitude. Through aloneness, Tethera would find some peace of mind. But that this was his goal, brings to mind the very opposite that Sethera, the swimmer, had. For her, solitude in cold water evoked the possibility of another, of the most intimate sense of presence of all.

## 5 Discussion

In sociology there has been a long-standing interest in how data mediates the social roles of individuals, rendering them in terms of social structural positionings where their acts become the stuff of platform capitalism [12]. In this view, largely derived from Foucault and his notion of the medical gaze, contemporary individuals are subject to what Beer, as a case in point, calls *The Data Gaze* [4]. People come to be seen in terms of what data says about them and not in terms of who they are, as unique agents. People are just 'data instances'. This leads Beer (and others with a similar starting point in Foucault) to critique this gaze and to

ask whether people ‘gaze back’ at the data. If they do, are they able to alter their actions so that how they are seen through data comes to better reflect who they are? Beer offers no examples of how this might be done but what our research above has begun to show is how users of personal informatics do indeed look back at data. They gaze at it and then, with a sense of what data sees now understood, they alter their behaviour so as to be seen differently in the future. Our users of Strava, as a case in point, took what Strava renders as their activities in data as a guide to what they might do next to change what future data said about them. They sought to express who they were going to be in the next cycle of data gathering and production. We use the word cycle here as a deliberate play on some instances of behaviour we have reported.

We saw, too, however, that what happens when data gazes at users and those same users gaze back in turn is difficult to compress into simple abstractions, like the idea that what is seen is a sense of place. Certainly, we found that place mattered for our small set of users, but how it mattered for them, and how that was connected to other concerns in their lives was remarkably rich. Indeed, if we learn anything from our research, it is that a sense of place is intrinsic to the felt life, but that the way that sense is shaped and constituted in reference to the emotional and social context of lives (whomsoever they might be) is more important. Users make place come to matter through the ingenious ways they fit data about their behaviours into place-relevant topics, but place itself might not be the salient worry for them. Other things may be. How these things get to be important is driven in part by the data that captures some aspects of activity but partly also by the nature of lives outside of data. If our subjects are anything to go by, these lives can be compacted with experiences and concerns. Our users laminated all sorts of meaningful concerns into the gestalt of their everyday circumstances. Our participants did so in ways that was tell-about-able to themselves and to us. They offered ‘thick description’. As we noted, there was considerable art in this. As the ethnomethodologist Charles Goodwin noted long ago [13] (also Doug Maynard [20]), the interconnectedness of the categories people use to explain and account for their actions needs to be seen for what they are: as attempts at ‘perspicuous representations’. Doing so lets these lives be seen in many ways, including in terms of abstractions that evoke many different human concerns. This is indeed what we found in our research. For some, the management of their data related practices had to do with getting away from the moral turmoil of work, for others a pretext for feeling a sense of touch, a kind of autoeroticism delivered by the chill of open water swimming. These concerns were abstracted to us as expressive summaries of personal character and its intersection with circumstance – a life where work dispirits, a life lived without the touch of another.

## 5 Conclusion

As we look at this, we ought to wonder whether a desire for abstraction in our computer systems is right for the context of personal informatics or whether what we learn from the above is that the arts of domestication need further support. To be sure, the design of personal informatics has not, as yet, been subject to the transformative effects of the latest AI tools which abstract in ways that are meant to deliver ultimate meaning (or at least synthetic meaning). This is not to deny that personal data are often aggregated against population norms through the use of various AI techniques [6] [19] [3]. But what it does draw attention to is how the meaning making that has made personal informatics widespread and commonplace is not due to the technological sophistication of the systems themselves, but in the artful ways users appropriate the outputs of these systems. Personal informatics has succeeded not because it offers a science of the body and the self, a data-driven rendering of what it means to be human but, rather, because it has come to be a resource whereby what it means to be human is expressed by those it matters to, the users themselves. This emphatically counters any claims that a better future for personal informatics will be through how they use AI. On the contrary, it will be through designing for appropriation and through the unfolding process of domestication.

## Acknowledgments

We would like to thank the participants in this study for their time and candour in describing their activities, and the reviewers of this paper for their helpful and constructive comments. This study was funded by EPSRC grant reference EP/T022574/1 and supported by the Future Places Centre at Lancaster University (<https://www.lancaster.ac.uk/future-places/>)

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