

The Information Practices of Enthusiast Car Restorers

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Abstract

A study of enthusiast car restorers is used to illustrate how an information practice approach can provide information science researchers with a richer, more nuanced understanding of the complex inter-relationship between people, technology and information. The study's fieldwork adopted an ethnographic approach incorporating both semi-structured interviews and *in the garage* ethnographic observation. Analysis was undertaken using an inductive, thematic approach. The findings demonstrate that participants' information environments are rich and complex. Participants' accounts emphasised the corporeal and embodied nature of the restoration process, and this may account for why they privileged the social networks they had developed, often over many decades, over online resources and communities. The findings indicate that participants are engaged in much more than applied problem solving. What is also evident is that engagement in the social world of car restoration, and the networks of social knowledge sharing it affords, is significant for the emotional support it provides for older men who often lose these networks later in life. In a sense, the participants are not only rebuilding their cars but also their own sense of self

Introduction

This article will use the study of the information practices of enthusiast car restorers to illustrate how a range of theoretical and methodological approaches drawn from practice theory, actor network theory and sense-making can afford information researchers a richer, more nuanced understanding of the complex inter-relationship between people, technology and information. A significant theme of this research is the role of the body in shaping people's information practices and their relationship with technologies, both old and new

When information researchers describe 'information technology', their discussion has for many decades overwhelmingly focussed on electronic, online information/communication technologies (ICTs) with a strong focus on the most recent developments of the time. This discursive focus on the new, valorising innovation is certainly not unique to the information science realm; rather it is epistemic in mainstream 21st century western culture. Whilst we are certainly not arguing that information scientists should not study social media or cloud computing, we raise the question of whether focussing on recent developments in isolation may lead to an incomplete picture. We would argue that a discursive environment focussing on novelty and innovation — i.e. on what makes the latest technologies/systems 'revolutionary' — is likely to neglect exploring questions of how the development and adoption of new technologies must inevitably be based on people's existing information practices, including their experience of existing technologies.

Drawing on notions from critical discourse analysis (Fairclough, 2003) about the power of language to structure our understanding of a topic, we would ask whether our propensity to refer to social media users or MOOC participants as members of ‘virtual communities’ does not, at least implicitly imply they are made up of virtual people? Such a construction is in our view highly problematic, in that it diminishes the physicality of all human interactions with technology. The prevalence of this discourse has no doubt been assisted by the prevalence of cognitivist approaches to theorising information behaviour, in which information is seen as an essentially mental process (Talja et. al, 2005; Savolainen, 2007; Olsson, 2009). In this article we argue that these discourses have led to a very narrow construction of the complex relationship between people, information and technology.

At the same time, the study’s findings will also demonstrate that there are contexts and communities, where the importance of hands-on knowledge renders even multi-media information resources lacking as information sources for community members. In addition, the study demonstrates that in the right, skilled hands, objects not generally thought of as ‘informative’ (hand tools, car parts) can become information sources in their own right.

The practice of restoration

The restoration stories of car enthusiasts were analysed in an ongoing project on embodied knowledge and ways of knowing (Lloyd, and Olsson, 2016; Olsson and Lloyd, 2017). From these stories we identify, analyse and discuss how technology is implicated in restoration practice, and the affordances it offers to the predominately male participants of this study. Two areas are highlighted from the larger study for discussion: firstly the functional role of technology in terms of the restoration; and secondly the affordance opportunities for men (often retired) to develop ambient relationships and co-presence, and a sense of solidarity with other men who share the same love, passion and commitment for their restoration projects. We link the project of restoration to literature on practice, information practice, affordance and embodiment theory, and situate this lens through the practice of restoration and geographies of enthusiasm.

In considering how technology is implicated we consider questions about the capture of embodied and social knowledges and ways of knowing — questions that are increasingly becoming silenced, relegated and lost in the technologically driven discursive practice of the accelerated age.

Geographies and landscapes of enthusiasm: A short history of restoration

Restoration “is a debt paid forward to the future by accurately interpreting its past” (DeLyser & Greenstein, 2017, p. 1466) and while there is an abundance of literature devoted to the applied elements of restoration projects, little has been written about restoration as a specific form of practice, or the object of restoration as a specific type of project. As DeLyser & Greenstein observe, to engage with the practice of a restoration project, enthusiasts must link and map historical knowledge, and an understanding of aesthetics with technical, mechanical knowledge and skills (p. 1464). To this list we would also add embodied knowledges.

Whilst studying restoration on one level has much in common with studies of repair (Jackson, 2014, Houston, 2017), differences exist which shape the analytical contours of the study.

Repair refers to the act of making something functional again (i.e. fixing a problem), whereas restoration (the focus of the present study) references a more complex act of reconstructing an object.

In the present study it is clear that car restoration occurs in the context of a much more varied and nuanced discursive landscape. There are clear parallels with Olsson's study of theatre professionals (2010) where participants' sense-making of Shakespeare drew simultaneously on both originality and creativity discourses. Similarly, the stories of participants in the present study make it clear that in the context of classic car restoration there are multiple ways to engage with the concept of originality, with participants drawing on a range of different originality discourses to describe and justify their practices. For example, the 'factory original' approach sees a person seeking to restore their car to be as close as possible to the way it was when it first left the factory: a variant on this is to restore a car to the way it was at a particular point in its life e.g. when it competed at a famous race. However, participants' accounts also drew on a range of other discourses that justify a range of more creative approaches. One of these is a 'perfection' discourse, where the restorer aims for a standard of craftsmanship far higher than was possible/feasible when the car was new, making the finished restoration a kind of Platonic ideal. Sometimes this is externally motivated, where the aim of the restoration is to produce a concours/show standard car, but equally it can be more personal, with the restorer using the car to represent the embodiment of their own skills. Other participants, some of them openly contemptuous of the 'concours queen' (i.e. aimed at winning prizes at car shows) school of restoration, adopt a 'fit for purpose' approach, arguing that the selective application of more modern technology, such as brake upgrades or electronic ignition, which make the car safer, more reliable or enhance the driving experience, are entirely appropriate. Three participants drew on the long history of building 'specials' in motorsport and hot-rodding to create one-off vehicles, using period components, inspired by cars from the 1930s-50s but ultimately their own creations.

In contrast to the idea of repair, the variations in the restoration discourse represent a social geography, linking enthusiasts to the restoration environment and the multitude of information landscapes that reference it (Lloyd, 2017). Like other practices of making and remaking, restoration requires enthusiasts to engage haptically and iteratively and to develop information practices that reference the site and link them to forms of embodied knowledge and expertise that may only be available at the moment of practice (Bonner and Lloyd 2011). Successful restoration practice is predicated on wide and often deep social networks that are built up over time or inherited. In this respect, '*knowing a bloke who knows a bloke*' may accurately sum up a central theme in the car enthusiast's *modus operandi*, but at a deeper level it can reveal that knowledge ties amongst this particular group of enthusiasts are knotted in a rich and complex structure, often spanning generations. This suggests spatial and temporal elements that may be explored at a later date.

In recent times, access to materials, resources and expertise has been made easier by technology, and the digital landscapes created by social media, email and applications such as Google Translate and YouTube. In this study, we see technology and the digital landscape as being implicated in the role of restoration in two ways. It is an instrumental resource that enables access to diverse expert knowledges about materials and practical/operational issues related to the practice, and it also creates the opportunity for diverse social interactions, in which participants can collaborate, nurture skills and engage in emotional sharing. The practice of restoration can therefore be seen as being set within the context of the project (the car) and developed through a number of arrangements, material practices and teleoaffective

features. Over time, restoration becomes an embodied practice that has practical and emotional resonance.

Theory and Method

Practice Theory

In this study, we understand practices to be socially established cooperative human activity involving utterances and forms of understandings (*sayings*), mode of action (*doing*) and ways in which people connect to one another and the world (*relating*), all of which happen and hang together within a project (Mahon, Kemmis, Francisco, Lloyd, 2017). We do not find it necessary to distinguish between practice and social practice (as does Cox 2017), as all practices are inherently shaped by the “site of the social” (Schatzki, 2002) and consequently reference it. Similarly, when we reference embodiment and materiality we follow Orlikowski and Scott (2015, p.698) who say “bodies, spaces and objects are, at any given time, what practices have made them”, meaning that practices are immanent and grounded in materiality.

Practice theory has been cited and employed as a theoretical frame by a number of authors as part of the ‘practice turn’ in the Library and Information Science field (e.g. Savolainen, 2008, Lloyd, 2010, Olsson, 2016, Pilerot, Cox 2017). These works draw from first-wave interests (Bourdieu, 1977, Giddens, 1984) and second-wave, which feature both ontological approaches (Schatzki, 2002; Kemmis and Grootenboer 2008; Reckwitz 2000) and epistemological approaches (Feldman and Orlikowski, 2008, Gherardi, Lave and Wenger 1991, Nicolini, 2016). While each theory of practice emphasizes different elements, features common among all of them allow us to describe practices a composed of social and corporeal elements. From this perspective Nicolini argues that:

The social world appears as vast array or assemblage of performances made durable by being inscribed in skills human bodies and minds, objects and texts and knotted together in such a way that the results of one performance become the resource of another. (2012, p.2)

An overview of practice theory espouses that practices:

- Are constituted temporally, spatially, and materially and reference the textures of everyday life (Reckwitz, 2002)
- Are situated, social and relational (Schatzki, 2002)
- Are composed by bodies which inscribe the discursiveness and routine of social order and material things across all social affairs (Nicolini 2011; Reckwitz 2002; Orlikowski and Scott, 2015)
- Consist of organised constellations or patterns of activity and understandings that are critical to the shaping and process of human life (Schatzki 2012, p.14)
- Contain propositional and non-propositional elements - e.g. articulated through intelligibly via text but also articulated and expressed in non-textual forms of practical knowledge through the body and artefacts which are named via the practice. (Mahon, Kemmis, Francesco, Lloyd, 2017)
- Reject dualisms e.g. mind/body, agency/structure (Bourdieu and Wacquant, 1992; Feldman & Orlikowski, 2011); and,
- Acknowledge the importance of materiality and materials, communications, text/symbols in the constitution of practice (Orlikowski & Scott, 2015; Mahon, Kemmis, Francesco, Lloyd, 2017)

Common among the general understanding of practice theory is also the view that knowledge represents mastery which is articulated and expressed in the ability to carry out a performance and share the accumulated benefits of experience with others.

“Becoming part of an existing practice ... involves learning how to act, how to speak (and what to say), but also how to feel, what to expect and what things mean” (Nicolini, 2011. P.5)

When practices are approached ontologically (e.g. Schatzki, 2001; Mahon et al, 2017) the focus of research is on the conduct of practice; organisation in space/time; arrangements that make it possible and that hold it in place; transformations and sites in which it happens (Mahon, Kemmis, Francisco, Lloyd 2017) and the entanglement of discourse and materiality (Barad, 2007; Orlikowski & Scott, 2015). Epistemological approaches to the study of practices may focus on practice knowledges and know-how in the learning and knowing process, i.e. what and how people come to know a practice; how knowledge emerges, and is enabled or constrained (Lave and Wenger 1991, Gherardi and Nicolini, 2000).

Information environments, and information landscapes: An information perspective

This study employs an information perspective that is influenced by practice theory. This perspective focuses how information practices are shaped and maintained, in the context of people’s actions and interactions with other people, materials, signs, symbols and tools which are all constituent elements responsible for the formation of information environments and information landscapes.

Information Environments

Over time, the car restoration hobby has created an established and stable body of knowledge (information environment). This environment is represented through discourses which reference the modalities of information used by people. These have been described by Lloyd (2006, 2011) as the epistemic/instrumental space where people engage with information sources that define the rules and structures of practice; the abstract elements and expressions of social interactions and relations (histories); and the embodied or contingent information drawn from and learnt through the body as it practiced or engaged with ‘doing’. The corporeal modality represents the intersection between social and epistemic spaces (Lloyd, 2011). From an ontological perspective, information environments reference what happens in practice.

Information environments are consequently treated as larger sites of stable knowledge (e.g. about technical/material practices and ways of knowing related to restoration, rules and regulations of car clubs, traditions, and histories etc.), through which the project of restoration (the specific make/vintage of car) is situated. To construct a way of being in the restoration world, people draw from the information environment and in that process become intersubjectively positioned in relation to the common reference points and knowledges shared by people who are engaged in the same social endeavour. To use a different example, the larger project of being a librarian draws from previous experiences, histories, social and material practices of librarianship and ways of working as a librarian that are shared amongst those who engage with this endeavour.

Information Landscapes

Information landscapes (Lloyd 2010) differ from information environments, because they reference *how* a practice happens. In this respect they are oriented epistemologically. People

construct their information landscapes through the lens of an information environment, and through interaction with their actual enterprises and performances as they connect with people, material objects and embodied performances of a specific setting (Lloyd, 2005) — i.e. as practice happens. Information landscapes are therefore in the first instance intersubjective constructions. However, they also reflect an individual’s subjectivity and agency as it is discursively materialized and understood (Barad, 2007) i.e. as the individual engages with the performances of a practice or when a practice is contested. When entering and engaging with a community such as a restoration community, new members learn to map the information sources that are necessary to their practice. They learn about the material, economic, political and historical resources that shape the site of the social (Schatzki, 2002, Lloyd, 2006, 2013, 2014, 2015) and the range of information practices that will facilitate access to social and embodied knowledges of the practice. As they learn about these social, embodied and epistemic sources, they construct their information landscapes and define paths, nodes and edges with reference to the larger information environment. Learning about which information practices enable access to knowledge is integral to the formation of information landscapes e.g. information sharing, observing others and their environments, being reflexive.

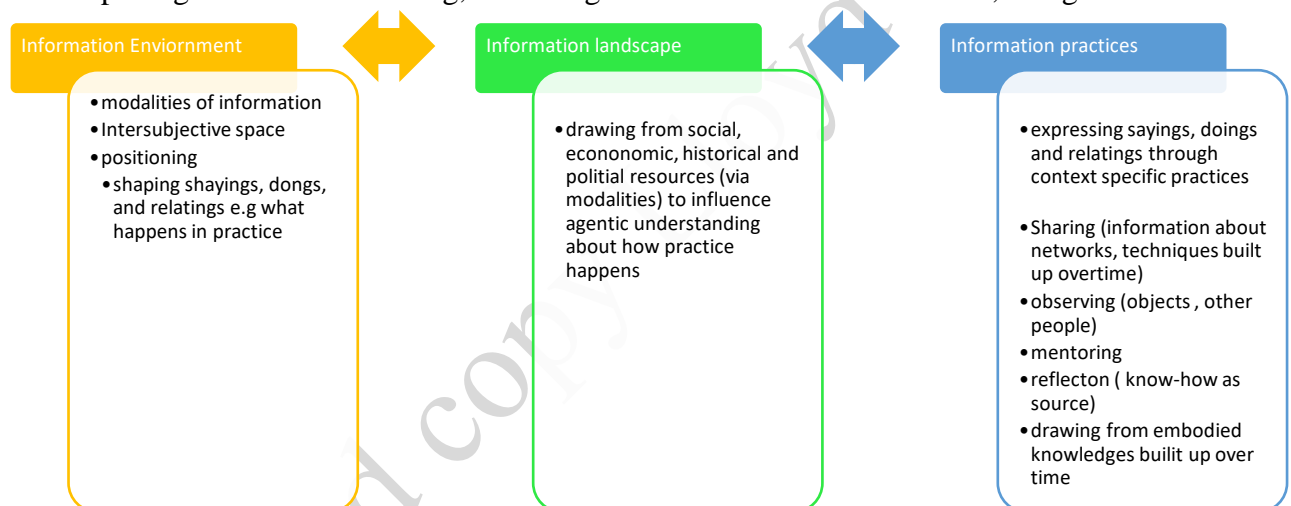


Figure 1 Information Environment and Landscape

Information practices

Information practices have been explored and defined by several scholars in the information studies field. Savolainen (2008) views information practices as habitual and identifiable in everyday settings. According to this view information practices are defined “set of socially and culturally established ways to identify, seek use and share the information available in various sources such as televisions, newspapers, and the Internet” (2008, p2). The concept has also been notably explored by McKenzie (2003) focusing on how cognitive authority is constructed in discourse. Talja and Hansen’s (2005) exploration of information sharing indicated that information practices are inherent within all social practices referencing community, sociotechnical infrastructures and language.

In the current study, information practices are treated by Lloyd (2011) as referencing the 'social' and therefore emerging socially and corporeally as in-situ ways of knowing. Lloyd defines information practices as:

An array of information-related activities and skills, constituted, justified and organized through the arrangements of a social site, and mediated socially and materially with the aim of producing shared understanding and mutual agreement about ways of knowing and recognizing how performance is enacted, enabled and constrained in collective situated action. (Lloyd, 2011, p. 285)

Information practices are therefore treated as social and dialogical articulations that are expressed through the sayings, doings and relatings of context. According to Schatzki (2002), practices are prefigured over time, being formed and reformed in relation to embodied knowledges. Information practices reflect this formation and reformation process, and consequently represent a dispersed practice which accommodates and reacts to the changing dynamics of a social site.

Lloyd has developed her understanding of information practices from studies of nurses, ambulance officers, firefighters and refugees and from other studies (Prigoda & McKenzie 2007; Olsson, 2016) and argues that "information practices are context specific, and entwined with a range of modalities (social, corporeal and epistemic/instrumental) through which information work and performances of a specific setting are references" (Lloyd and Olsson, 2017). This leads to the conclusion that embodied information practices

- are always situated (in situ);
- are expressed corporeally, and are central to actors understanding the social and epistemic modalities of the landscape;
- act as a site for know-how knowledge, which cannot be effectively expressed in written form (e.g. learning how to recognise an artefact; learning how to write; learning how read a fire);
- are local/nuanced, drawing from expertise in situ, and may be contingent and only available at the 'moment of practice'. (Lloyd & Olsson, 2017)

In the study reported here, the project (car restoration) provides the central situational context and shapes the information practices of participants as they connect to the knowledges, practices and discourses which guide remaking. As Gherardi suggests;

Knowledge is not what resides in a person's head or in books or in data banks. To know is to be capable of participating with the requisite knowledge competence in the complex web of relationship among people material artefacts and activities...On this definition, it follows that knowing in practice is always a practical accomplishment (Gherardi, 2008, p. 517).

Affordances and the project of remaking

Central to the study's approach is the recognition that it is not only 'information technology', as it is generally conceived of, which can be informative. The study's approach can in one sense be seen as returning to information science's documentalist roots (Briet, 2006) in

arguing that all material objects have the potential to be informative actors in networks of practice. Drawing on Latour (2005), we go further in arguing that objects need to be seen as actors in these networks. This manifests in particular ways when considering people's relationship with technology. As Latour points out, technology affords its user enhanced capabilities, and at the same time shapes and may even proscribe its users' practices. Innate to the design of any technology or tool, are notions of 'correct' ways to use it. Even where explicit instructions are absent or — as in the case of the older technologies restorers engage with — long missing, the physical size, shape, weight etc. of the object will afford certain kinds of usage and preclude others.

The affordances of the environment are “what it offers the animal, what it provides for ill or good” (Gibson, 1979, p.68). We have interpreted this as the opportunities offered to *people* by the environment or setting. These invitational qualities, are predicated on the individual's ability to recognize and mediate the information environment and construct information landscapes (Lloyd 2006) by identifying the kinds of knowledges that are valued by members who are engaged or connected to the practice of remaking.

In the present study the object of restoration project is the car which creates an *information environment* through which the restorers' *information landscapes* are formed. While there may be common affordances recognizable to all cars as objects, the project of remaking creates specific conditions that furnish affordances which are not only technical but represent social and emotion elements of remaking.

By our account, these opportunities for interaction occur because, in the first instance, the car creates technical and social information needs: i.e. How do I remake, how do I find this part, how do I make this part, what does this part consist of, who do I know that can provide me with information, what social and expertise networks are available to me to help me operationalize the process of remaking? In the second instance, the car furnishes opportunities that meet complex social needs (how do I meet people with expertise, where is my community?) and physical affordances to access information (why does this not work, how do I make this, is there a trick to getting this to fit) that is only available at the moment of practice and draws from expertise that resides in the body.

Therefore, the car becomes the focus of participants' need to access information on technical, social and emotional levels and this information is only picked up because the participants are involved in the process of restoration.

Embodiment, and embodied knowing

The concept of embodiment is explored in many disciplines and fields. In Library and Information Science, it has relevance to research related to information literacy and ways of knowing (Lloyd 2017), information practices (Gorichanaz, 2015; Lloyd, 2007; Olsson 2016, Veinot, 2007), and human computer interaction (Dourish, 2004). Philosophically, embodiment emerges in opposition to scientific reductionism which argues for the mind and body as separate. Heidegger (1927) in *Time and Being*, argues that our mental and physical experiences are bounded in our (inter) actions with and in the physical world that we encounter: in other words, we must *be in the world in order to think about it* and understand it. In this respect thinking and being are intertwined and we encounter the world practically in ways that make the world meaningful. In rejecting dualist thinking, social theorist Merleau-Ponty (1945/2002) argued that human consciousness could not be abstracted from the human body, insisting that the body is central to thinking. Merleau-Ponty argued that consciousness

is the “lived experience”: “To be a body, is to be tied to a certain world...our body is not primarily in space: it is of it” (Merleau-Ponty, 1945/2002 p.148).

Within the social sciences, the bodily turn (Shilling, 2012) espouses that knowledge is rooted and acquired through our sensory and sentient experiences - we see, smell, hear and touch, and we understand these corporeal experiences through the narratives enacted in our social settings. The corporeal experience provides our symbolic capacities “because these features of human embodiment dictate that there are certain ways we (can) or must experience the world, and other ways in which we cannot (O’Connor, 2017, p. 4). Knowledge is subsequently viewed as embedded within context, emerging through affordances (Gibson, 1979) between the symbolic and physical opportunities and the individual.

In social relations theory and in areas of vocational training, the social dimensions of class, gender, and aging are viewed by Jodelets (1984, 1993) as stamped onto the body, establishing it as a social source of information (Lloyd & Olsson, 2018). In the vocational setting, the status of embodied information and corporeal knowledge has been explored in the context of learning in the workplace. In this practical and applied context, Beckett and Morris (2001, p.36) writing from a vocational education perspective, noted that “the highest status is reserved for the most abstract and immaterial learning... and the lowest status is accorded to concrete, material learning, much of which we learn in daily embodied actions. Lloyd (2004; 2009; Bonner and Lloyd, 2011) in her work with professional firefighters, ambulance officers and nurses, has identified the body as a central source of information which is inscribed as vocabulary on the body, and made available to others who recognize its authority. Schatzki locates the body within practice theory by noting that many practice theorists consider practice as an “embodied materially mediated arrays of human activity centrally organized around shared practical understandings” (Schatzki, 2001, p.11). Practices provide the context for the composition of the body, for example the fashioning of identity and the development of information practices and information skills (Lloyd, 2010; Lloyd & Olsson 2018).

Embodiment and technology

The concept of embodiment has been taken up within the area of Human Computer Interaction (HCI) and has implications for understanding human interaction in the context of AI and ubiquitous computing. In connecting technology and the body, Dourish (2004) has argued that traditional computing has become divorced from real interaction in the environment. Dourish proposes that computer technology should be inhabiting the lived experience of the social world, primarily because in day to day use, the object becomes part of the body through action: for example, we use computers without consciously acknowledging our body’s role in the practice of computer use. This idea represents the concept of mastery and practical wisdom espoused by Heidegger (1927) where tools become part of the lived experience. According to Dourish (2004) it is necessary for researchers to understand the relationship between physical and symbolic representations in relation to the tools people use in the context of the everyday lived experiences.

What does embodied experience and knowledge look like in the practice of remaking?

The practice of restoration references the rebuilding, remaking, and rescuing of vintage or classic cars. The practice is primarily entered into by men, with support from their wives. Our analysis foregrounds men as the narrators of the project, and this narration is tied to identity, expertise, know-how and community. In interviews where wives were present, they are backgrounded and relegated by male participants to roles best described by us as documenters

and archivists of restoration projects. This is not say they are not 'present' within the project, merely that they are not central to its execution (in further studies we will explore this aspect).

The analysis that ensues therefore conceptualises information practices as narrated by men, is considering how technology is implicated in both social and material practices associated with the car restoration.

Method

Both conceptually and methodologically, the study builds on both researchers' previous research, which examined embodied information practices in a variety of academic, artistic, professional, and everyday life contexts. An important feature of the present study is that through their collaboration the researchers were able to bring both an insider and an outsider perspective to bear on the community and its context. One researcher (Olsson) is a classic car owner and a second-generation car enthusiast, having grown up in the classic car scene. This insider status brought multiple advantages including facilitating recruitment, building rapport and establishing cognitive authority with participants, as well as the ability to understand the language, history and assumed knowledge inherent in participants' accounts of their practices. However, whilst insider status can bring many advantages, it also has its perils, in terms of a potential lack of critical distance. The other researcher (Lloyd) was unfamiliar with the community at the beginning of the project and therefore in a unique position to provide critical insight into the often taken for granted elements of the remaking practice and community.

At the time of writing, the study includes 15 participants, 13 from Australasia and two from the UK. Participant recruitment methods included the researcher's personal network (3 participants), car club meetings and newsletters (7 participants), volunteers at a motoring museum (2 participants), as well as snowball sampling (3 participants). Demographically, 14 of the participants were aged 55 or older, and there were 13 male and two female participants. The age and gender imbalance appear to fairly reflect participation in the hobby, although future fieldwork will endeavour to purposely sample participants outside this core demographic. Participants chose their own pseudonym using a list of names of famous former racing car drivers provided by the researcher, although some negotiated similar names, not appearing on the list, as an ice-breaking exercise.

The study's fieldwork adopted an ethnographic approach (Bryman, 2008) incorporating both semi-structured interviews and *in the garage* ethnographic observation of participants working on their current restoration projects. All fieldwork was carried out by Olsson using an interview guide and related materials designed by both researchers. The interview guide included some elements inspired by Dervin's Sense-Making methodology (Dervin et al., 2003), although the overall approach was also heavily influenced by Seidman's (1991) less structured, more conversational approach to research interviewing. Interviews lasted from 45 to 240 minutes and were digitally recorded. The researcher also observed eight of the participants during several hours working on their cars. Prior to each interview taking place, Lloyd reviewed transcripts to ensure research questions and topics were addressed.

As was perhaps inevitable given the nature and context of the fieldwork and the researchers' interest in hands-on practices, the division between interviewing and observation was not clear cut. Since ten interviews took place in the participants' garages/workshops, it was quite natural for them to stop in the midst of the interview and show the researcher the relevant part of the car or demonstrate the technique they were describing. Similarly, there were occasions

during the observation when participants would spontaneously break off from a task in order to either provide the researcher with a longer explanation of the task they were undertaking or to share a thought which had occurred to them. Far from being a limitation, the authors feel that this blended approach greatly enhanced the research experience for both participants and researchers, providing many insights that a more orthodox approach would have missed.

Analysis was undertaken using an inductive, thematic approach. Although the analysis was consciously informed by the range of theoretical perspectives described above, the study's aim was not to test a pre-defined theory or hypothesis, but rather to develop a contextual, situated understanding of the relationship between participants' context, their physical environment, their role/s as members of the classic car community, the discourses they engaged with and their information practices. In order to maximise the benefits of the *insider-outsider* approach, each researcher undertook their own initial thematic analysis before coming together to develop findings drawing on both researchers' insights and expertise.

Analysis

Our analysis of participants' accounts and observation of them working on their restoration projects has shown that their information environments and the landscapes which emerge are rich and complex. Whilst participants were certainly not ignorant of the opportunities that online resources and communities could afford them, these were largely seen as secondary, supplementing the more traditional resources and social networks that participants had developed, often over many decades, highlighting the importance of the lived experience to narratives of remaking.

Learning by doing

One of the first things to strike an outside observer of car restoration is the complexity of the challenges involved, the breadth of skills and knowledge it requires, and the time commitment, which often runs into thousands of hours over a period of years.

This car is one of three and the only one in the country. It took me about four years to restore. I got the chassis at an estate auction in rural Victoria... I chased up the nephew of the guy and got onto a shed on another family property where I dug up an engine and a few other bits and pieces from under about 50 years of old junk! The rest is about finding what you can and then making what you can't. (Straight)

A striking feature of participants' accounts of their restoration practices was the relish with which they described the seemingly insurmountable problems and challenges their projects had thrown up and the various strategies and skills they applied to overcoming them. Many participants described the difficulty of restoration not as a barrier but one of its principal attractions for them:

I know lots of people think I'm mad – including my wife! – but I love taking on these basket cases. I love the challenge. (Davison)

I always have to have a [restoration] project going, without one I get bored! (Surtees)

One participant even advertised in his car club newsletter for difficult restorations, including 'before' and 'after' photos of his two most recent restoration projects showing how he had transformed them from piles of rusting scrap metal to shining perfection. Participants'

accounts manifest their strong feelings of pride and accomplishment in being able to bring their project cars back from the dead. In a sense, their cars can be seen as the embodiment of their skills, as well as tangible evidence of a concrete achievement. For participants, the restoration process therefore had a clear affective element, with their cars becoming an embodiment of a positive construction of the self. It may well be that this is particularly important for older, retired men who no longer have a work role around which to construct their sense of identity.

I've really got into taking on restoration projects a lot more since I retired.... It gives me a reason to get up in the morning. (Aston)

I love coming up here and working on the cars every Friday – it's the best part of my week! (Watson)

Twelve participants described a love of practical challenges and working with their hands as having been part of their lives from childhood:

I was always a hands-on kind of bloke, even as a kid I'd be building things or fixing things (Moss)

My first love! Even before [my apprenticeship], I was always out in the shed, tinkering and making stuff. (Chiron)

I like the challenge of working out how to do something not just as cars but clocks, lawnmowers, anything really. (Surtees)

Whilst many acknowledged that the need to repair things, including cars, was a much stronger feature of the post-war period than today, participants tended to describe this as being a stronger interest for them than for most of their contemporaries.

This theme of independence, an ability to solve complex practical problems and learning by doing, was a powerful discourse throughout the research, with all participants emphasising that most of their skills and knowledge around car restoration had been acquired experientially:

I just picked it up over the years: engines, gearboxes. ... a fair bit of trial and error. I now feel that if I don't know how to do it, I've got enough experience I can probably work it out. (Moss)

For the majority of participants, this idea of being a fixer and maker seemed to play a central role in their construction of their own identity. Underlying their accounts was a discourse of masculinity in which male identity is defined by an ability to solve practical problems in a hands-on way.

The Anglo-Australian background of 11 of the participants is also significant here. In a cultural context where not being “big-headed” (knowing it all) or “up yourself” (thinking you are better than others) is an unspoken convention (unwritten epistemic rule), it was perhaps unsurprising that participants when interviewed were extremely reluctant to overtly acknowledge their own expertise. Deflective statements like “*It's not that hard*” or “*anyone*

could do it really” were commonplace. When asked instead about their cars, or particular aspects or challenges of the restoration process, participants were able to move into a discursive space where their knowledge and skills became depersonalised, embodied in the car and its components, and where they could talk comfortably and in detail about how they achieved their desired outcomes.

Haptic learning in embodied information practices

Participants’ descriptions of the challenges of car restorations naturally included discussion of the dearth of documentation, particularly in relation to vintage cars:

Restoring a vintage Delage isn’t like working on a modern car or even restoring something like a Mini or an MGB [mass-production models from the 1960s]. They’re hand-made and everyone is different. There’s no owner’s manual and if there ever were factory build sheets, they’re long gone. (Davison)

However, even where owners and workshop manuals existed, and where they were acknowledged as an invaluable resource, participants recognised that there were limits to what one could learn from a printed resource:

Even if you’ve got a manual, it can only take you so far. When you start doing it, there’s lots of things a book can’t tell you. (Hulme)

Both interviews and observation indicated that the acquisition and use of information was inextricably linked to embodied practices. As in Olsson’s (2016) study of archaeologists in the field, when participants described working on their cars, they frequently used tactile language to describe what they were doing:

I’m feeling along here as I check for cracks. (Hulme)

You’ve really got to develop a feel for the metal as you’re shaping it ... Aluminium reacts very different to steel. (Clark)

Significantly, both throughout the interviews and whilst they were being observed working on their cars, participants used dialogic language to describe their relationship with the car/part they were working on:

She doesn’t like that. I’ll have to try something else. (Aston)

It’s not moving. If I push too hard, it’ll just break. (Watson)

When I’m making a panel, the feel I get from the metal tells me how much pressure to apply. (Clark)

Both their descriptions and the researcher’s observations support a Latourian interpretation of the relationship between the participants, the tools they use and the cars they are working on i.e. that both people and objects are actors in the practice of car restoration. The physical properties of the objects afford certain ‘correct’ ways of use, and in doing so shape the participants’ sense-making, and the decisions they make in solving the problems their

restoration projects throw up. The restored car ultimately embodies the correctness of their solution.

Use of online resources and communities

All participants described the internet as an important resource for them in their restoration projects:

It's all internet: queries here, queries there, queries somewhere else. (Webber)

However, although many participants were enthusiastic about how the web had made restoration easier, for the majority the only online practices they described were using search engines and sales sites like eBay as a means to find and purchase car parts:

The great thing is that you can jump online and find what you're looking for. You can get parts in from the US or England. (Hulme)

Whilst the majority used relatively simple search strategies, three participants had set up automated notification algorithms, so they would be alerted to potential items relating to their restoration interests:

I'm an eBay addict ... I've got a couple of triggers set on UK eBay: Bristol MINUS football MINUS bus! (Webber)

Multimedia resources were little used by the study's participants, although one of the younger participants, albeit in his mid-fifties, did describe making significant use of online video in the context of one part of his restoration practice:

For the English wheel, there's a lot of really good stuff on YouTube ... You can watch some of the top guys in the UK or wherever (Clark)

This participant, who was highly skilled at fabricating body panels from scratch, used YouTube as a learning tool to improve his practice using the English wheel, a metalworking tool that enables a craftsman to form compound (double curvature) curves from flat sheets of metal such as aluminium or steel (Smith, 2015). He was very purposeful in his use of YouTube, undertaking detailed searches to the specific technique or task he was undertaking at the time rather than subscribing to any channels. Whether YouTube and similar sites as multi-modal resources (Kress and van Leeuwen, 2001) offer benefits in learning embodied skills is another question that the next phase of the research will hope to address.

Although there are numerous online forums, Facebook pages etc. devoted to car restoration, only three of the study's participants described regularly engaging with these online communities. All participants were aware of them and most had some experience of using them, but even those who were active users talked about them as problematic sources of information:

There are a lot of so-called experts [online] and a lot of them don't know what they're talking about! (Straight)

Many talked about the problem of assessing the authority and expertise of online advice:

Someone can tell you to do it one way but you have to ask yourself "Have they actually done it themselves? Or is it just something they've heard or read about?" (Clark)

It takes a long time in these groups to work out who knows what they're talking about and who's just full of hot air! ...I find it most useful when they show you photos of what they're doing, so that's what I try to do myself. (Birkin)

Participants' accounts thus make it clear that one of the principal reasons they find judging the authority of online advice is not just not knowing the person giving the advice but, more importantly, not being able to see their restoration work and therefore not being able to assess their levels of embodied expertise.

Non-use of online resources and communities

It would be tempting to ascribe the relative lack of use of online information resources and communities to a lack of experience or skill, or even to technophobia – all tropes that appear frequently in discussions of the information behaviour of older people. To do so in the context of the present study, however, would be to greatly underestimate the participants' abilities and judgement. Half the participants were university educated, many held senior positions in the working lives and all did make some use of online resources to support their project, but more so in their everyday lives. Furthermore, their success in carrying out their restoration projects, and the respect their peers had for them, requires us to take seriously the participants' own explanations for their non-use: that online resources were less effective than the practices they did employ:

I've had a look at them [online forums] now and then but really you can end up wasting a lot of time with idiots! (Straight)

We would argue that participants' critical stance in relation to online resources needs to be understood in the context of the study's finding that car restoration is a multi-sensory embodied practice.

Look, working on these cars is very hands on. Drawings, even a video only get you so far. That's why the best way to learn – really the only way – is hands-on. (Aston)

One particularly striking example of non-use was a participant who in his working life had been an internationally recognised pioneer in the design and development of electronic project management and planning tools. Yet when asked if he ever used such tools to manage his restoration projects his response was:

No. I use a spreadsheet to keep track of what I'm spending. Restoring these cars is different, you can't really plan in out at the beginning in the same way. A lot of it you don't really know until you start working. You find the problems as you go along and then you have to stop and think about what you're going to do and how you're going to fix the problem or find the right person who knows what you need to know. (Chiron)

It is possible that the lack of use of online resources may be attributable to other characteristics of the study's participants, which might make their practices not representative of the broader car restoration community. All but one of the participants were highly experienced car restorers, and were regarded by other members of the community as being

particularly skilled. This may be an unintended consequence of the study's recruitment methods in that both the researcher's personal connections in the community, and car club committee members when asked for recommendations, were likely to nominate the most expert restorers they knew. Equally, it is possible that more skilled restorers were more likely to respond to the researchers' call for volunteers made at car club meetings and through club newsletters.

Without doubt, the main reason for non-use was their extensive personal network of expert fellow restorers (described in the next section):

I don't need to ask someone I don't know on the internet... What I really like about the club is that there are people there, like Moss, who've been restoring these cars for years. Between them, they know everything there is to know about Bristols. (Webber)

Another factor may be that 12 of the 15 participants lived in their state's capital city:

That's one of the advantages of living in Melbourne. The car companies were all based here and so are the people with the expertise. (Edsel)

It may therefore be the case that those with lower levels of expertise, and/or less access to an expert community of peers where they live, may make greater use of online resources to support their restoration practices. This is something that the next stage of the study will seek to address.

Focus on men talking about solidarity- technology - emotional affordances

Common to all participants' accounts was the central importance of their relationships with their fellow car enthusiasts. As described by both male and female participants, car restoration is a social world largely made up of (mostly older) men. For all participants, the social relationships developed with other enthusiast restorers provided active mentoring at the beginning of their involvement in the hobby, and continued to support their restoration projects today. Significantly, the support that participants described was not only technical or material but also emotional. Perhaps the most striking feature of participants' accounts was how feelingly they discussed the importance of working on their cars as a source of satisfaction and a source of emotional support during difficult times in their lives.

For 11 participants, their involvement with classic cars began in childhood or their early teens and involved mentoring by an older man. For some this was a relative:

Dad was a panel-beater [body fabricator] and he taught me a lot from a young age. (Clark)

My uncle had a truck dealership and he was the one who got me interested in old cars. (Chiron)

For others, it was a family friend or a school friend. The research also included examples of participants themselves carrying on this form of cross-generational mentoring:

It's become a family thing. My sons grew up working on the cars with me. The other day some of my grandkids were over and I was showing my grandson how to do a few things - standing on a chair to reach the bench! (Surtees)

On the other hand, one participant made a conscious decision not to encourage his son to become involved:

I didn't teach my son this stuff when he was a kid – I didn't want him to get my 'disease'! In the last few years he's got interested anyway... (Chiron)

For the most part, the relationships described were markedly gendered, with both mentor and student being male. However, the research was very fortunate to include one exception to this. One participant, Cobb, a teenage girl of Asian heritage, volunteered at a major transport museum as part of a youth development scheme, and was mentored by Barnato.

I was working on the Napier so told her a little bit about it and said she could polish the body and talk to visitors while I was working under the car. I then heard her telling visitors everything I'd told her – except in chronological order and in better English! (Barnato)

I think I impressed him and he's started teaching me how to do things -check the tyre pressures, measure how much fuel is in the tank. (Cobb)

Many participants expressed concerns about the lack of younger people (and women in general) in the hobby. This is an area the researchers hope to investigate further.

Many participants continued to learn key skills through informal mentoring relationships into adulthood:

There was an older guy, an aircraft engineer, I hung out and got some advice from him. (Moss)

These relationships appear to have much in common with the master-apprentice relationships described by Lave and Wenger (1991). However, even the most experienced and expert participants emphasised the importance of their network of fellow enthusiast restorers in supporting their current projects. Car clubs played an important role in facilitating these networks:

A group of us who were more interested in restoration than the social side formed the MG Restorers Club. We get together every month to talk about our projects and one person gives a presentation on their car. (Surtees)

However, 13 participants emphasised the importance of contacts they had developed more informally, even serendipitously:

I had this car out on the driveway and this guy was walking past and stopped to chat. He was interested, and it turned out he was a retired Qantas engineer. After that, he'd stop by and lend a hand. ... I'd never have been able to sort out the wiring harness without him. (Webber)

These networks of social knowledge sharing were often based on relationships spanning decades:

I had this mate from school who was into cars. We started working on them when we were 15 and we still get together and talk about cars and we still help each other out. (Straight)

Participants' accounts, however, made it clear that their social networks were not only a source of expertise or material assistance, but were also an essential source of emotional support:

The club was like a touch-base sanity for me ... you can't do it on your own. (Webber)

Talking to other guys in the club is really good. It keeps your enthusiasm up ... It helps to know there are others in the same boat! (Surtees)

Issues of social isolation and inability to express their emotions amongst men has long been of concern in western society. The study's findings suggest that the male participants in the study found both social connection and emotional support through the friendships their involvement in car restoration afforded.

Furthermore, all participants talked in explicitly affective ways about the satisfaction that working on their cars gave them; a satisfaction that was frequently missing in other parts of their lives:

These days you don't feel like you're achieving anything. I trained as an engineer but now I'm in charge, I do admin, not engineering. When I'm working on the car, I can see that I'm doing something! (Clark)

Participants also described the important role that working on their cars played in helping them deal with stressful events in their lives:

[My wife] has been battling cancer for the past few years and I've been looking after her ... mucking about with these old cars has kept me sane! (Webber)

Whenever I've had stresses or problems in my business or family, I've come out here [to the garage] and worked on the cars. (Moss)

Participants' heart-felt discussion of the satisfaction of making things with their own hands carries strong echoes of Marx's (1964) concept of *alienation* and suggests it may have a newfound relevance in the context of the post-modern, post-industrial world. It may be that in engaging in the hands-on practice of restoring their cars and in being able to see and touch the material outcome of their labours, the participants are able to experience a sense of accomplishment that Marx argues is largely absent in the modern world. The authors feel that the emotional affordances of embodied practices is an area warranting significant further research.

Discussion

Analysis of the findings suggest that the project and information practices of car restoration are complex and knotted together. Untangling this knot reveals that the project of restoration is not only connected to performative knowledge about how to restore vintage cars, but also to social knowledges about community membership, and to narratives about being an older male. Engaging with the epistemic and documented knowledges of their information environment contributed to participants' intersubjective understanding of the restoration projects and shaped their identities as restorers. However, it is the development of their information landscapes, and the employment of information practices such as observation and reflection (learning by doing), that enabled participants to access the embodied knowledge of others and allowed them to access to nuanced ways of knowing that were not available to them in documented form. The construction of information landscapes therefore references the mapping of specific and nuanced and embodied ways of knowing which are established over time and reflect long developed expertise and nuanced performative knowledges (Orlikowski & Scott, 2015). More importantly to the men in this study, it appears that social networks not only act as sites to access nuanced knowledges but also to access a community, which shapes the men's identity and provides them with emotional support

This emerging analysis of information practices in the project of remaking represents a rejection of behaviourist approaches to practice which according to Savolainen (2008) apply a need driven approach to information seeking and use activities in problematic situations (Savolainen, 2008). This approach narrows the capacity of understanding how behaviours reference the social-discursive, material-economic, and social political dimensions which arrange a social site and produce its discourses. By focusing on information affordances furnished by human and non-human actors, and embedded in social norms and discursive rules, the study reveals how knowledge is constructed and what knowledges and practices are important and which are secondary. The study's findings demonstrate that the embodied and the discursive/linguistic do not occur in separate spheres. Rather, each informs and shapes the other. We would therefore argue that any theoretical or empirical approach which focuses atomistically on one to the exclusion of the other does the field a disservice.

While digital technology is employed within the project of restoration, the affordances technology provided appear more limited than the researchers had initially assumed. Participants (many of whom are experienced with technology) preferred the nuanced sociality (and trust) that comes from the tangible social interaction of being in the world of restoration, and engaging with the lived experiences of others with similar interests and varied levels of expertise.

This suggests that when the primary focus of research becomes the digital world, and technology as primary source and tool in information seeking research, the effect can be a narrowing view of people's important social and physical relationships with information, which occur over time and help to cement their identities (as car enthusiasts) and alignment with their restoration community. This can have implications about what types of knowledges and ways of knowing are privileged in library and information science research, and what are relegated to secondary. It also leads us to suggest that virtual technologies (e-repositories, video-sharing sites etc.) have inherent limitations in the contexts of embodied practices, especially in relation to the haptic elements of information practices. This particularly problematic in light of the study's findings that participants gained considerable satisfaction from the tactile nature of the embodied practices associated with restoration. We would argue

that this potential relationship between haptic engagement and positive user experience is one that warrants greater attention from information science researchers.

Conclusion

For participants in this study, the project of the car does not simply represent the remaking of a physical object. It is also intrinsically tied to complex knowledges and narratives that surround discourses of expertise, embodiment and male solidarity. Significant to this analysis is the emotional affordance furnished by the project, and its contribution to identity formation. The findings indicate that the practices are significant because they reveal that participants are engaged in much more than applied problem solving. Rather, they suggest that, for most participants, their engagement in the social world of car restoration and the networks of social knowledge sharing it affords is significant for the emotional support it provides in an epistemic context where, for older men, such opportunities are limited. In a sense, the participants are not only rebuilding their cars but also their own sense of self, in a world where they may feel that traditional notions of masculine identity are questioned. We believe that the relationship between information practices and identity construction is a central one for our field, one that narrower approaches focused on individual information seeking are not equipped to address. We feel that the present study offers an example of how an information practices perspective can afford information researchers a richer construction of the contexts and communities they engage with.

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