Using Narrative Research and Portraiture to Inform Design Research

Connie Golsteijn[1,2] and Serena Wright[3]

[1] Digital World Research Centre, University of Surrey, Guildford, GU2 7XH, United Kingdom
[2] Department of Industrial Design, Eindhoven University of Technology, Den Dolech 2, P.O. Box 513, 5600 MB Eindhoven, The Netherlands
[3] Institute of Criminology, University of Cambridge, Cambridge, CB3 9DA, United Kingdom
info@conniegolsteijn.com, sw639@cam.ac.uk

Abstract. Employing an interdisciplinary perspective, this paper addresses how narrative research and portraiture - methods originating from, and commonly used in social sciences - can be beneficial for HCI and design research communities. Narrative research takes stories as a basis for data collection and analysis, while portraiture can be used to create written narratives about interview participants. Drawing on this knowledge, we show how a focus on narrative data, and analysis of such data through portraiture, can be adopted for the specific purpose of enhancing design processes. We hope to encourage design and HCI researchers to consider adopting these methods. By drawing on an illustrative example, we show how these methods served to inform design ideas for digital crafting. Based on our experiences, we present guidelines for using narrative research and portraiture for design research, as well as discussing opportunities and strengths, and limitations and risks.

Keywords: Qualitative research, methods, narratives, story-telling, narrative research, portraiture, design research, interaction design, craft.

1 Introduction

The use of qualitative research methods originating from social sciences – for example, interviews, ethnography, and data coding – is well established in HCI and design research communities. In practice, however, there is still a significant gap between disciplines, because social science methods adopted in HCI do not always provide a close fit to the method's original ethos, often 'fail[ing] to do justice' to the kinds of insights that such methods can provide [1, p.549]. There is still plenty of discussion about the role of the social sciences and humanities in the inherently 'interventionary' world of HCI, which was again illustrated by a vivid panel discussion about this topic at CHI 2012 [2]. This interdisciplinary paper aims to contribute to the discussion on how HCI may learn and benefit from closer investigation, appropriation, and collaboration with the humanities and social sciences, and enable the diversity of human life to come to life through our research. This paper is aimed particularly at researchers in interaction design who seek to generate qualitative person-centered data to aid both

P. Kotzé et al. (Eds.): INTERACT 2013, Part III, LNCS 8119, pp. 298–315, 2013.

the design process and the understanding of the users, but who do not have an extensive social science background. As such, researchers familiar with social science methods may already be aware of some of the points made in this paper, although we hope that they may still benefit from the discussion around the adoption of such methods in a design process. Specifically, we address how the HCI field can benefit from adopting the practices of narrative research and portraiture from the social sciences, and we illustrate how these practices can be used together in a design research process, firstly, to gather, analyze and present data, and secondly, to inform idea generation activities. Narrative research and portraiture methods provide means to engage creatively and holistically with research participant data. As we will illustrate, this approach is beneficial for increasing understanding in users, their diverse motivations and behaviors, and the context of use. In addition, these insights can then be actively utilized in the design process to create novel and appropriate design solutions which are sensitive to these diversities.

The next section will address narrative research and portraiture in the social sciences, as well as the use of related methods in HCI and design. We then present an example of the use of narrative research and portraiture in a study on craft and ideation for 'digital craft', followed by a section with specific guidelines on how to employ these methods in design and HCI. We conclude with a discussion of opportunities and strengths, and limitations and risks of using these methods.

2 Related Work

2.1 Narrative Research, and Related Methods within HCI

Some twenty-five years ago, Bruner [3] posited the concept of 'life as narrative', arguing that human beings construct meaning, make sense, and engage in 'world making' [3, p.11] through 'narrative' – that is, through creating, telling, hearing, recording, and reading stories. Relatedly, the field of narrative research seeks to engage analytically with the storied ways in which we make sense of meaning and experiences, within the wider context of our social world and those social others within it [3, 4]. As such, narrative research is particularly useful for exploratory research projects, which seek to engage with experience and meaning-making processes of diverse individuals or groups, with such approaches being utilized across a range of subjects in the social sciences, including education [e.g. 5], health [e.g. 6] and crime [e.g. 7], as well as representing a primary staple of ethnographic research in any field [8].

The use of 'narrative' data has long been established and recognized as crucial in the attempt to understand users' needs within the HCI research community. In the main, however, we would argue – as Dourish did with reference to ethnographies [1] – that narrative-based research methods have been read too narrowly within the HCI and design field. For example, narratives and story-telling have featured primarily as an outcome or goal of design research [e.g. 9, 10, 11] rather than being fully embraced as a research approach across the entire process. Narrative research approaches

appear almost exclusively within experience-centered design, which 'aims to understand and design digital technologies that support rich, social and meaningful experiences in our everyday lives' [12, p.1506, 13], rather than engaging in depth with the stories and lives of the research subjects. Here, the concept of 'narratives' has, for example, been adapted as a conversational interview technique, through the use of cultural probes [14], whilst other uses of 'narrative' in HCI research focus more on possessions and technologies than on individual lives, e.g. 'deep narratives' [15] and technology biographies [16]. Moreover, whilst some HCI methods share some common ground with narrative research – e.g. contextual inquiry's commitment to increasing understanding of users and their actions 'in situ' [17] – they lack other crucial aspects (that is, CI focuses solely on the user in relation to their work, whilst most narrative studies within the social sciences go beyond the phenomenon of interest, engaging with the personal, social, and cultural life history of users). Similarly, whilst ethnographic approaches to design research [e.g. 1, 18] share some key aims with the narrative research and portraiture methods that we adopted for our research (e.g. deep understanding of individuals; rich descriptions of subjects and their environments; positive bias towards subjects' perceptions), they have been read 'too narrowly', with an over-emphasis on 'implications for design' [1]. In contrast, instead of focusing on 'implications for design', the approach we are advocating in this paper aims to increase the importance of ethnographic data, by importing narrative data, integrity intact, into the ideation phase. Despite the presence of some common goals more broadly speaking, however, this does not render ethnography and narrative research methods synonymous; as noted by Lawrence-Lightfoot, 'key contrasts' exist between the two [19].

In conclusion, whilst there is clearly a tradition of utilizing storied and narrative-centered approaches within the field of HCI research, currently this appears to be primarily limited to the area of experience-centered design. Furthermore, methods designed within the social sciences have not always been adapted in a way that remains faithful to their original ethos.

2.2 Portraiture, and Related Methods in Design and HCI

Whilst a diverse range of methodologies exist for analysing storied data [20], the one that concerns us here is that of the 'research portrait' (often referred to simply as 'portraiture'). A research portrait is a written narrative – for example, about an interviewee – which aims to 'capture the richness, complexity, and dimensionality of human experience in social and cultural context' [21, p.3]. The purpose of this is to attend to 'the aesthetic whole' [22, p.48] of the research subject(s), and as such, a portrait must be strongly specific and contextual [19, 21]. The use of portraiture methodologies is most dominant within the social sciences, primarily within the sociological study of education and educational leadership [e.g. 22], but its use extends to criminology [e.g. 4], psychology [e.g. 23], and health research [e.g. 6].

Similar methods to the research portrait also have some degree of prominence within HCI and design research. However, here they primarily exist as a means for distilling and communicating the results of ethnographic fieldwork. For example,

Wright and McCarthy [24] highlight the narrative method of 'ethnographic vignettes' – 'short pen pictures of people in a setting [which] have been used to capture the felt experience of working in a particular place or setting' [24, p.642] – as a means to elicit empathic responses from readers [25]. Whilst Wright and McCarthy's method shares with narrative and portraiture an interest in 'felt experience' and the use of 'pen pictures' (which are, in essence, short research portraits) [24, p.642], it lacks our study's full integration across the design process, e.g. as a dedicated tool in ideation.

Similarly, 'scenario-based design' and 'character-driven scenarios' share with sociological portraiture a focus on capturing users' experiences in a storied form, which then facilitate the creation of fictional 'rounded' character descriptions [26], which act as placeholders for individual users. This is also a key aspect in the creation of 'personas', which are composite fictional characters, based on user data from field research, which embody multiple users' unique characteristics and beliefs [27]. Other methods related to personas are 'pastiche scenarios' (uses fictional characters from well-known cultural sources – e.g. novels, movies, plays – to encourage designers to explore alternative interpretations of technologies) [28], 'extreme characters' (uses fictional characters with exaggerated emotional attitudes, e.g. a drug dealer, or the Pope) [29], and 'design alter egos' (uses fictional characters based on the recollections and reflections of designers) [30]. Much like our own study, these approaches also utilize narrative/storied data within the ideation processes, however – to paraphrase Lawrence-Lightfoot and Davis – what they lack is the commitment to maintaining 'a view of the whole' of each individual user, which is the art and science of portraiture [21]. In the aforementioned portraiture-related approaches, character sketches or personas are most frequently summarized and/or blended descriptions of multiple users into one or more realistic and characteristic – yet importantly, fictitious – users [31, 32]. Such an approach risks a lack of depth, detail, and 'wholeness' that is so central to portraiture, potentially leading to superficial, and even erroneous, assumptions [30]. Moreover, such approaches eschew the important reflexive question of the role of the researcher in producing the data generated, and through doing so, effectively 'neutraliz[e] out of existence' the researcher in each individual instance [21, p.86]. This is highly problematic since it is 'crucial that [the researcher/s] voice be monitored' [21, p.86]. To fail to do so risks the dominance of the researcher's interpretation of the user's data, and the loss of what was originally important to the person being consulted.

Conversely, the portraiture approach addressed in this paper tells the story of each interviewed or observed person in a separate individual portrait, within the context of use and staying true to the real users, with an ever-present eye to reflexivity and researcher 'voice', considering at all times whose perspective is being presented when the researcher relays a point. We believe our approach therefore minimizes the risks of stereotyping and oversimplifying users and their experiences inherent to the aforementioned methods. In addition, we propose importing these holistic descriptions of real users directly in the ideation process. This ensures that attention remains focused on the diversity of the people in the target group throughout the process. This approach therefore contrasts quite strongly with the ways in which narrative data is used within personas, which are usually created between data collection and ideation

phases, thus generalizing and summarizing – risking the loss of individual diversities - before ideation has begun. This may cause interesting insights to be lost earlier in the design process, which portraiture aims to prevent. To sum up, the narrative research and portraiture approach addressed in this paper distinguishes itself from other ethnographic data gathering approaches – e.g. ethnography and contextual inquiry – by engaging holistically with users' stories and by providing tools for integrating these stories throughout design processes, and from other data representation approaches – e.g. scenario-based design and personas – by retaining researcher reflexivity, and by carrying forward the stories of real users throughout the design process and into the ideation stages, which helps to retain the diversity of the target group, for both the communication of ethnographic fieldwork results and the generation of broad spectrums of ideas.

3 Illustrative Example: Using Narrative Research and Portraiture to Design for Digital Crafting

In this descriptive section, we present an illustrative example from our own study to demonstrate the ways in which a narrative and portraiture method of data generation and analysis contributed to our research within design and HCI. The section which follows on from this, which is more analytically-focused, will center on the ways in which the lessons we learned can be extrapolated for the benefit of wider design and HCI communities.

Broadly, the study we will address was concerned with 'everyday craft'; that is, the creative processes people engage in to carefully make things [33-35]. More specifically, we wanted to better understand everyday crafting practices with physical materials, in the attempt to initiate design explorations of how characteristics and processes of craft may be extrapolated to the digital realm. The study also looked to developing ideas for new products or systems related to 'digital crafting' (that is, crafting with digital materials and/or tools). Because in this paper we merely aim to illustrate the use of the method through the example of our craft study (and not so much to discuss the topic of craft itself), a literature review of what constitutes 'craft', and related HCI and design work, lie beyond the scope of this paper.

In total we interviewed eight individuals who were involved in crafting/making things with physical materials in a diverse range of settings. In order to explore the breadth of everyday crafting, we recruited individuals with varying levels of expertise, and included professionals, semi-professionals, and amateurs, hoping to cover all types of crafters from the 'certified […] genius', to those individuals who just 'seem[ed] to like making things […] in everyday life' [34, p.75]. Each individual was chosen specifically for their work in craft- or art-oriented disciplines, in the hope that they would inspire our development of the 'digital crafting' concept. As such, the interviewees were: a guitar builder, a jewelry designer, a hairdresser, a paint artist, a glass artist, a silk painter, a wood and metal hobbyist, and a mixed media artist. We felt that the narrative and portraiture approaches were particularly appropriate because we wanted to engage with the meanings these individuals attached to 'crafting' and

the characteristics, processes and purposes behind its physical manifestation, in the hope that we could extrapolate these findings to better understand 'craft' within the digital realm.

In order to illustrate the procedure of our method we will describe how the first author went about interviewing one of the participants – Paul, a Dutch guitar builder – using a narrative approach, before describing the process of 'portraiture' (i.e. writing Paul's research portrait), and how we used this to generate ideas.

3.1 Interviewing Paul Using a Narrative Approach

Paul's interview took place in his home in a small town in the south of the Netherlands. Before going to meet him, we had developed an interview guide that would act to encourage storied responses, rather than potentially close such responses down (often an issue with standard semi-structured interview guides) [4] – after all, one cannot work with narratives if one does not provide the conditions for their construction in the first instance. This was therefore a crucial step, one which is explored in detail in Section 4.1 below, to prevent the tedium of repetition. Briefly, the interview guide consisted of a list of topics we were interested in rather than a concrete set of questions, and included: how and why the participant started crafting, the process of crafting, how they learned it, and materials and tools they used. We further left plenty of room for discussion of unanticipated topics that were brought up by the participant.

While the introduction was started in the living room, immediately thereafter the interviewer was invited to Paul's workshop, which was located in the garage, which had been refurbished and dedicated to the craft of guitar building. Much like it is beneficial for contextual inquiry and ethnographic research more broadly, being in the guitar builder's workshop also aided the narrative interview for a number of reasons. Firstly, it illustrated some of the topics Paul was talking about, and allowed the interviewer to better understand and document (both through taking notes and photographs) the context of the crafting practice. Secondly, it gave both interviewer and interviewee handles for new topics to address, and thirdly – crucially – it benefitted the narrative character of the interview as Paul naturally (without prompting) started telling stories about materials, tools, and examples in the workshop.

Because the main interest lay in exploring the breadth of the practice, it was important to let Paul talk about his craft and his workshop freely, in order to facilitate the generation of storied data that was personally relevant to him. We began the interview by asking questions that would elicit storied responses [again, see Section 4.1], such as "Can you tell me something about the kind of crafting you do?", and "Can you tell me how and when you started building guitars?" During the interview, the participant was encouraged to draw on examples and stories of personal relevance to him, generating ideas previously unanticipated by the researchers. A new topic was only introduced by the interviewer when the participant had finished a story. Interviews lasted half an hour to little over an hour (44 minutes on average) and were audio recorded to allow the interviewer to more fully engage with the participant. The few written notes that were made focused mainly on aspects the audio recording would not capture, such as the interviewer's observations and impressions during the interviews, e.g. on participants' use of examples, the mood and personality of the crafter, and the appearance of the workshop, e.g.:

"As the interview takes place in his workshop, it gets hands-on by default and throughout the interview Paul keeps walking up and down the workshop, opening drawers, taking things from shelves, and handling tools and materials to show me exactly what he is talking about. I get the feeling the workshop further serves as a mental map to give Paul new handles for things to talk about and he visibly enjoys using the half-finished guitar parts lying around as examples."

3.2 Creating a Written Portrait

After the interview the audio recordings, written notes and photos were used to write up a 'research portrait' about Paul. Because of the narrative character of the interview, rich qualitative data was collected and a two-phased analysis process helped to identify which parts of the interview and which quotes provided interesting insights, and helped to retain and communicate a coherent picture of Paul as a craftsman. In the first phase, notes were taken on interesting comments and observations while listening to the audio recordings, reading notes, and looking at captured photos. During this phase, relevant sections of the recording were transcribed verbatim, e.g. Paul's explanation of why he likes building guitars, or his experiences learning the craft. Also notes were included on the context of the interview and when an example was shown.

In the second phase these notes were written up as a portrait which followed the structure of first introducing Paul's craft and the context of the interview, before looking at when and how he started, and the materials and tools he used, followed by any other interesting themes from the interview, including working by assignment, risks, and teaching guitar building. This meant that the portrait did not need to follow the sequence in which interview questions were asked. The portrait, in which the participant's name was anonymized, was a rich description supported with lengthy quotes from the interview where this was considered useful, e.g. because of the level of detail or the relevance to the research aims. The portrait further combined 'first order' narratives (those of the participant), and 'second order' narratives (the stories the researcher is conveying) [36], including interesting observations, and interpretations that would later become important for ideation, such as Paul's creation of his own tools:

"As I look around the workshop I see, apart from an impressive collection of the obvious tool such as saws, chisels, and files, many devices and tools that are unknown to me. Paul explains to me that he makes these himself to support parts of the process: 'Most of the work involved in building a guitar is precision work and each time you have to measure something there is risk of error, so you start looking for ways to limit this risk and create tools for this.' He modestly adds that the ideas for these tools do not all come from him, but also from colleagues, books and the internet. His self-made tools range from hand-powered tools (for example, a large, round, slightly hollow sanding disc for sanding the top panel of the guitar's belly, and a compass with a chisel to cut out a circular groove for the rosette around the sound hole), to advanced electronic devices (e.g. a sanding machine for shaping the large, thin wooden panels for the top and bottom of the belly, and an intricate-looking device for bending the thin panels for the sides of the belly with

the aid of a heating element). Paul tells me that when you start doing something as a hobby you have to prioritize and choose which devices to get within your financial possibilities. For the rest you have to make do with what you have, and 'what you can do yourself… it is also fun to build that.' He adds: 'sometimes I get so into making a certain tool and when that is finished, you can just sit down, look at it, and enjoy it. That's wonderful. […]'"

Paul also told the interviewer about how he had started teaching guitar building to small groups of students who, like him, *"don't want a cheap guitar; they want the adventure of building it. They want the experience of the development of that thing and feeling what happens with the wood."* He said he was reluctant to teach at first, but when he saw that so many people were interested he decided he wanted to share his hobby and expertise. He likes these sessions with students because they are interested, and the following closing excerpt from the portrait aims to capture how important this interest and appreciation from others is to Paul:

"Throughout the interview I have gotten a strong feeling for Paul's […] appreciation of my interest in his craft. He explains to me that sometimes people come over who just have a glance at his workshop, ask him questions like: 'So, how many guitars do you make a month?' and they leave after 15 minutes. 'They should just stay away,' in Paul's opinion. Not me, however, being a guitar-player myself I would have been unable to hide my enthusiasm and appreciation even beyond the scope of this interview, much to Paul's liking. As I prepare to leave he repeatedly thanks me for listening and chuckles: 'In 30 years' time, when I've made my 200th guitar, come back and I can tell you much more.'"

This further illustrates how researcher reflexivity was included in the portrait. Moreover, in recognizing the appreciation of the first author's genuine interest in guitar-making, it enabled us to use this reflection to understand the importance of teaching, authenticity, and commitment to Paul's crafting, which provided the basis for the 'Online Guild' idea outlined in the following section.

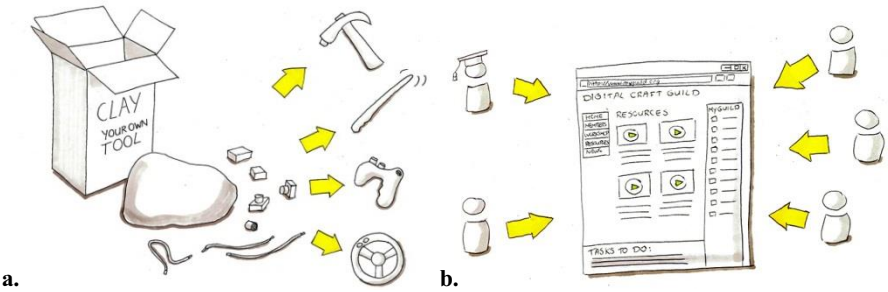
3.3 Idea Generation Based on Paul's Portrait

Because the explored practice of crafting was so broad and there was no predefined direction in which design ideas for its digital equivalent should be sought, the crafter portraits were considered useful to provide a focus to ideation compared to using themes or design directions. The ideation phase consisted of individual brainstorm sessions by the first author in which each separate session focused on a specific crafter. Inspired by our new understanding of what practical, hands-on crafting meant to those engaged in it, brainstorming centered on asking: "If this crafter would instead be crafting with digital media or digital technologies, what could be designed for him or her?" A brainstorm session began by writing down a few key points for each crafter that arose from the portraits. For Paul these points were: knowledge of materials, patience and spending a long time, teaching the interested and appreciative, making his own tools, and the workshop as a mental map. Ideas were generated around these and other themes arising from the portrait, and the portrait was used intensely during the session: sections were read and reread, which triggered new ideas. Ten ideas were generated inspired by Paul's portrait, which included:

- A craft timer that captures the time spent crafting an object in the object itself or on a timeline, and connects relevant occurrences in your life to the crafted object, or captures things you have done or said to be embedded hidden in the object – based on the time and patience Paul has for creating objects, and valuing slow processes.
- A digital craft workshop, such as a desktop or software lay-out, that can function as a mental map by being flexible in how tools and media are organized and by showing small previews around icons of specific tools and programs of what you have been working on last – based on the observation that Paul's workshop seemed to function as a mental map for him.

After this initial idea generation phase, ideas were distilled into a set of four or five idea statements that summarized and highlighted interesting ideas arising from the portrait, interview data, and design ideas, which for Paul included: contextual information implicitly visible in photos (expertise of materials); online workshops and guilds rather than a 'take what you need' mentality (see idea below); and create your own digital tool (see idea below). Finally, two ideas were selected and concept sketches were made for further exploration and discussion within the research team:

1. The Clay Tool (Figure 1a) allows you to create your own computer input device by making use of a set of sensors and actuators and a lump of clay, so you can make the appropriate tool for each task at hand instead of having to rely on manufactured, generic tools – based on Paul's creativity and interest in making his own tools for situations where standard tools do not suffice.
2. The Online Guild (Figure 1b) is a place where interested crafters can get together to share their love for their craft. Rather than being able to download anything, members have to be invested in the guild and contribute to the community. It is a more personal environment than a forum and its functions could include: learning from a remote master, exchanging experiences and skills with peers, browsing a digital workshop, or having tailored sets of tasks within a learning scheme set by another member – based on Paul's desire to teach only those who are interested and committed enough.



a. b.

Fig. 1. Concept sketches for a. the Clay Tool, and b. the Online Guild.

This method of narrative interviewing, portraiture, and ideation was applied to the eight interviews and over ten ideas per crafter were generated in the initial brainstorm rounds. Out of these ideas one or two ideas per crafter were selected, which resulted in a set of thirteen conceptual ideas for new forms of crafting with digital media or digital technology, based on the practical art as constructed within the research portraits we had created. These ideas were not only true to the crafters we interviewed, but also formed a varied set that addressed multiple angles on crafting. For our study, one of the ideas was chosen and developed into an interactive prototype for further evaluation and development, which lies outside the scope of this paper, but illustrates that the method is highly capable of supporting the generation of ideas that are suitable for going into further design development phases.

4 Lessons from Our Example: Applying the Tenets of Narrative Research and Portraiture to Design and HCI

4.1 Generating Narrative Data

Because we were interested in understanding the nature of crafting, our own interview guide – as noted above – included topics for discussion with each crafter (e.g. how they started, and their materials and tools), which were supplemented with a range of discussion 'prompts' (e.g. perfectionism, risks, and social aspects of the craft). This can be applied to any area of research, so readers wishing to adopt this method should similarly choose a list of topics – around ten to fifteen is ideal – which cluster around the area of substantive interest, and a list of related prompts which seek to provide depth in understanding the issue at hand. It is important that deviation from this guide – as happened in our study with the discussion of unanticipated topics brought up by the participant, such as personal challenge – should be considered positive, since it may generate ideas previously unanticipated by the research team.

Of course, having constructed a topic guide is of little use if one cannot ask a question likely to occasion a narrative response, and since the concept of narrative is inherently bound up with that of storytelling, it is crucial that the research methods chosen are capable of eliciting storied data. In this sense, narrative-focused interviews are distinct from run-of-the-mill, semi-structured qualitative interviewing strategies, where even the favoured 'open-ended question' can act to suppress – and even eradicate – the impulse and opportunity for storytelling [cf. 4]. To illustrate this, Hollway and Jefferson [4, p.35] recommended that researchers 'narrativise topics'; that is, 'turn questions about given topics into story-telling invitations'. For example, a question that we might have asked in a more semi-structured interview under the topic heading 'Learning about crafting' – e.g. "How did you learn your craft?" – could easily be answered in one short sentence, for example: 'Through my college degree and placements.' However, by 'narrativising' the question in the way suggested by Hollway and Jefferson above, and instead asking "Could you explain to me the processes and people by which you learned your craft?", we increased the likelihood of

eliciting a personally relevant and detailed story about processes, experiences, and interactions with others.

Also crucial to the construction of narrative data is the idea of situated context. For this reason, and based on our own experiences, we would suggest interviews are undertaken within design environments or workspaces relevant to the study and design goals (as noted earlier, this is a common aspect of both narrative/portraitures, and methods of contextual inquiry and ethnography), although we acknowledge that this may not always be logistically viable. Researchers should also seek to ask questions which look to the broader personal histories and social influences behind an individual's reasoning, in order to provide shape and depth to the portrait.

An audio recorder may be more important during narrative-focused interviews than standard interviews, owing to the centrality of rich descriptions and quotes so crucial in the analysis and portraiture stages of the research. Moreover, using a recording device frees up the interviewer's note-taking to focus on the observations, non-verbal data, and reflexive considerations – which provide a depth and wholeness to the interview, and can be used to build up a far more detailed research portrait at a later stage.

In our craft study, it was also considered beneficial that the first author was involved in the whole process from interviewing the crafters, data analysis and writing up the portraits, to the idea generation. This helped to build up a thorough understanding of the crafters, and the characters they represented in the ideation. However, as a basis for idea generation, the portraits are believed to be a powerful tool to support designers even if they have not been involved in the data collection. Because of their richness and realistic qualities, being based on real, individual people, they are able to act as 'substitute whole' for even those without access to the raw data [4, p.70].

4.2 Writing the Portrait

Research portraits, which can be used as analytical tools for any design research involving experiential and storied data, are particularly useful when exploring insights of populations who have traditionally been denied a 'voice' within more mainstream research [21]. However, we also found it to be a useful tool for maintaining the presence of the participants within the analytical process. Therefore, you do not need to be working with an historically 'voiceless' population; simply, you need only an interest in keeping focus on the context (personal, social, and otherwise) within which participants' insights arise, and an acknowledgement of the benefits that can be gained from doing this rather than removing the individual early in the process (as is the usual practice with personas, for example).

A research portrait should include large, verbatim chunks of interview data. It should detail the setting in which the interview took place, and feature the researcher's feelings about the setting and the individual participant. In terms of structure, it should cluster around the key 'narratives', or storylines/plots, that underpin what the participant is telling you, 'documenting their voices and visions – their authority, knowledge, and wisdom' [37, p.51], as illustrated to some extent by the excerpts in the previous section. It should also include observations from the researcher, who acts both as witness to, and interpreter of, participant 'voices', and who engages in

sketching the design context, and systematically 'scanning the action' [21, p.87], documenting important contextual observations.

An important tenet of both narrative research and portraiture is that of reflexivity (although not exclusively to them, since it is also central to ethnographic and feminist approaches, for example), which focuses on the importance of researcher(s) reflecting on the research scenario and their interaction within this context [38, 39]. When conducting narrative research, it is important that one always considers the ways in which one's own personal autobiography (think for example about gender, age, social class, educational/employment status and rank) might impact upon the biographies disclosed within the interviews [40], and the same is true of writing a research portrait, which is 'shaped through dialogue between the portraitist and the subject' [37, p.51]. Researchers employing this method should be aware – as we were – that their own backgrounds (in our case, interaction design and criminology), and even their hobbies (e.g. playing the guitar, or not) impact variously on their own views of the topics at hand, the ways in which interviews are conducted, and in which the portraits are written. For example in our craft study, where the first author with a design background conducted the interviews, some participants felt intimidated at first to talk about their craft because they felt the interviewer was 'very creative', and extra attention needed to be given to reassuring participants that we were not assessing their skills but were interested in their stories.

Whilst these interactions can be problematic if one is unaware of them and is writing up the findings oblivious to this, the reflexive researcher acknowledges such phenomena, writes him or herself into the research in order to demonstrate this, and makes clear in writing up the point at which first-order narratives become second-order. We also advocate following Miles and Huberman's advice, who suggest that participants be allowed to read, and comment upon, their own portraits, being sure to question whether our interpretation of lives are 'credible to the people we study' [in: 21, p.246]. This allows us to see where individuals may challenge the interpretations we have made from the data, and provide scope for us to more carefully reflect and consider those instances where our own autobiography may have acted to unwittingly shape that which we had written.

4.3 Ideation and Idea Development

Building the portraits into a tool for design ideation moves beyond their original uses in the social sciences, and employs them as an active part of this innovative phase. Based on our experiences, designing for a broad topic area in which the direction for design ideas was not predetermined, portraits can provide useful handles and focus for idea generation in those cases where 'anything is possible'. Of course, as with any ideation method, the use of portraits is not a guarantee for good ideas, but we found them to be effective when used as described below. We recommend that brainstorm sessions focus on generating ideas around the main question: "If we would be designing [the design goal or topic] for this person, what would that need to be? What would be important to them?" As we have shown, this can be done in a process of first distilling interesting or striking findings from the interview in the form of short

statements, generating ideas around these findings, summarizing the key points from these ideas, and selecting or developing the main ideas. However, we have found it important to treat ideation as an iterative process and intensely use the portraits in this process: we recommend reading and rereading the portrait several times during the session because ideas may trigger different interpretations of the portrait and thus new ideas. Also, as in any idea generation approach, it is important to allow all ideas, no matter how unfeasible or 'crazy' they may seem.

In most cases more than one participant will be interviewed and as such each participant should get their own dedicated brainstorm session. We acknowledge that this is time consuming – however, we felt that in terms of outputs generated, this was a fair trade-off. As with most brainstorm approaches it is important to follow up an ideation phase with an idea selection and idea development phase. In this phase ideas are evaluated on originality, feasibility, cost, and any other practical demand the project may pose. For using portraiture in ideation we recommend at this point to put together ideas arising from different participants, look for overlap and possible opportunities to combine ideas, and select the most promising ideas.

Further attention in this phase should go to assessing how specific to each person an idea is and how it may be generalized to a larger audience. Despite the fact that our ideas were generated starting from one specific person, we found that the resulting design concepts could be extrapolated to other target groups and use contexts: through the process of idea generation, selection and development, ideas were generalized, categorized, summarized, and extended to larger target groups, making sure they were relevant beyond idiosyncratic individuals whilst retaining their unique relevance to the interviewee. Similar to the designing for extreme characters approach [29] and pastiche scenario [28] approaches, we found developing or reformulating concepts to reach a broader audience afterwards generally easy to do, and the unique inspiration the individual initially provides, weighted up to this extra evaluation step. On the whole, we found that the embracing the portrait across the research process helped us to maintain the individual inspiration and diversity for idea generation that could have easily have gotten lost if categorization, generalization, and summarization had been done immediately after the interviews, as is the case with personas. As such, using portraiture for design takes into account the diversity of different people within a target group throughout the whole design process, and retains this attention for the individuals until the conclusion of the ideation process.

5 Discussion

Drawing on our experiences using narrative research and portraiture approaches in a design research process, we will critically assess the opportunities and strengths, and limitations and risks of these methods. Being highly qualitative in nature, and resulting in different findings for each participant, it is difficult to validate the method presented in this paper in any traditional sense, since its efficacy cannot objectively be measured. Further, because of the unique dialogue created between researcher and each researched individual, replicating any such study would be 'exceedingly

difficult' [37, p.55]. However, we believe the strength of this method goes beyond the success of any individual idea generated, or the level of increased empathy for the user. Its strength extends to the possibilities of studying and designing for topics which are broad and undefined, and which require a great deal of attention to diversity within the topic area and the target group throughout the design process, as we have aimed to illustrate. Moreover, employing a narrative and portraiture approach in the ways we have described allows for retaining the accounts of the individual users throughout ideation phases while generalizing and summarizing afterwards, as opposed to other methods, such as personas, which do so earlier in the process and thus increase the risk of oversimplifying and loosing interesting design opportunities.

Following the guidelines we have provided we believe this method can be applied to a large number of different topics and projects, with 'craft' being just one example. We see the described method as exploratory, both regarding the topic under study and the ideas generated, and as with most methods aiming at ideation, further development of the ideas and evaluations for feasibility are required in later stages of the process. We are further aware that the excerpts of the portrait provided in this paper may seem, to some extent, decontextualized – however, this is due to the limited space for the inclusion of full portraits. We believe that narrative research and portraiture have great potential for providing more contextualization of interview findings, and the 'full picture' about an interviewee, because they combine participant and researcher narratives. They can therefore be a valuable tool in design processes, as long as the researcher takes into account and documents contextual specifics in the portrait, i.e. social, cultural, of the topic or activity that is under study in the interview.

5.1 Opportunities and Strengths

As we have shown, portraiture symbolises a creative means of organising and presenting research findings that can further be used to inform design activities. It forms a departure from often-employed thematic techniques of analysis, which may otherwise undermine the 'holism' of the user. In presenting the data holistically – including verbatim data from the transcript, researcher's observations about the participant and their environment, as well as the use of contextual visual data (photos of the workspaces, materials, and tools) – the researcher may also find an 'overarching vision' [21, p.248]; that is, in viewing the 'whole' as well as the thematic. While more commonly-used methods such as personas are often created after data collection by summarizing and blending multiple users into one or more fictional users – thereby letting the real users fade to the background *before* idea generation – portraiture takes into account the diversity of individual, real people, and retains valuable insights about these people throughout the design process. This can be greatly beneficial in preventing the adoption of superficial and erroneous assumptions [30] early in the process while ideation has yet to begin.

As our case has illustrated, the portraiture method also offers the opportunity, particularly in explorative research where little is known about the topic or design, to generate a range of emergent themes and ideas. For the craft project there was no predefined direction in which design solutions should be sought, which made the data

collection and analysis cover a large variety of topics. Where a thematic analysis did not provide enough focus for the idea generation because of the breadth of the study and the large number of potential themes to explore, the portraits acted to provide depth and focus, because rather than thinking about 'anything' we could think about the needs of one specific person – a real person – and what could be designed for this person. Afterwards ideas could be extrapolated to a larger target group. Apart from focusing the idea generation, the portraits provided new insights which led to new, out-of-the-box ideas. When looking at designing based on portraits as opposed to designing based on specific design requirements or research questions, the portraits were perceived to be less restrictive and limiting. Quite simply, this is because whilst strict design requirements can act to stifle creativity and idea generation, portraits opened up the design space and allowed for the removal of limiting criteria, which was of vital importance to our brainstorming process.

5.2 Limitations and Risks

A potential limitation of the narrative approach is that not everyone will be able to narrate their lives and experiences. Although we did not encounter this in our study, not all people are equally capable of giving responses in storied form, even when prompted to do so [20]. This may lead to a distressed participant, a frustrated researcher, and a wasted time slot for all concerned. It may therefore be worth having a back-up interview schedule, with more structured questions for those who – as the interview progresses – appear to lack the impulse, inclination, or ability to narrate.

As already noted, narrative research approaches require a change in interview strategy: questions must provide opportunities to elicit storied responses [4]. This introduces the risk that the novice interviewer may experience difficulties, which could result in the data generated not being suitable for the intended analysis or ideation. Bear in mind also that with this approach a single interview can generate many hours of data. Therefore it is important that whilst participants are given time and space to compose their stories, your topic list should be short and focused. .

A narrative approach to research and analysis encompasses a range of unique ethical concerns in addition to those traditionally associated with qualitative research, particularly around anonymity, because of the level of contextual and personal detail [41]. The ways in which the words and meaning of the research participants are represented is also a contentious issue, and researchers must also be wary around claims to 'give voice', when the reality is that the main aim of the research is to help the interviewer, not the interviewee [42]. These critiques are counterbalanced by practices of self-awareness, reflexivity, and the explicit identification of the researcher's own perspective within the portrait [19], as we noted above in Paul's portrait. Furthermore, the perceived lack of means to assess the 'validity' is answerable by reference to the championing of multiple perspectives and 'situated truths' rather than absolutes, which characterizes both portraiture and narrative inquiry more broadly [20, p.185, 21]. Ultimately, it remains the task of the responsible, reflexive, and conscientious researcher to see to it that these concerns are met, which may provide a challenge to the creation of portraits based on narratives.

Despite these challenges, narrative research approaches and portraiture have widely been used within the social sciences, and with our treatment of the methods and by providing guidelines to how they may be used for design and HCI, we hope to inspire researchers in these fields to continue to learn from social science practices and adopt these methods where appropriate to benefit their design and research processes.

6 Conclusion

As we have shown in this paper, the holistic incorporation of the portraiture approach to data analysis into idea generation processes can offer some additional benefits compared to existing methods within HCI and design research which utilize narratives and storied data. For us, the portraiture method comes into its own within the realm of design research, since it has the potential for dual functionality within this field. Firstly, it represents a deeply holistic and contextual means for analyzing and disseminating findings, thereby facilitating rich understanding of the users and their design needs. Secondly, in doing so, it can act as an active catalyst for innovative ideation, informing, shaping, and enhancing the subsequent design process. We have illustrated the use of narrative and portraiture methods for design research with an illustrative example from our research on digital crafting, and have provided transparent documentation as to the ways in which we achieved this. We have critically discussed the opportunities and strengths offered by the incorporation of these methods in our own study, as well as addressed its limitations and risks. We hope we have not only indicated the benefits these specific analytical methods hold for HCI and design communities, as part of the wider trend towards narrative-centered research in these disciplines, but also the ways in which – as methods which hold at their core a commitment to maintaining participants' voices and a sense of their various individual needs – these represent key methods in the important endeavor of 'designing for diversity'.

Acknowledgements. This work was supported by Microsoft Research through its PhD Scholarship Programme, and the Economic and Social Research Council. We further thank the participants in the interview study, our colleagues at the University of Surrey and Microsoft Research Cambridge, and in particular our PhD supervisors, David Frohlich, Abigail Sellen, Elise van den Hoven, Roger Tarling, and Karen Bullock.

References

1. Dourish, P.: Implications for design. In: Proc. CHI 2006, pp. 541–550. ACM Press (2006)
2. Bardzell, J., Bardzell, S., DiSalvo, C., Gaver, W., Sengers, P.: The humanities and/in HCI. In: Ext. Abstracts CHI 2012. ACM Press (2012)
3. Bruner, J.: Life as a narrative. Social Research 54(1), 11–32 (1987)
4. Hollway, W., Jefferson, T.: Doing qualitative research differently. SAGE, London (2000)

5. Sinclair Bell, J.: Narrative Inquiry: More than just telling stories. TESOL Quarterly 36(2), 207–213 (2002)
6. Williams, G.: The genesis of chronic illness: narrative re-construction. Sociology of Health and Illness 6(2), 175–200 (1984)
7. Presser, L.: Collecting and analyzing the stories of offenders. Journal of Criminal Justice Education 21(4), 431–446 (2010)
8. Van Maanen, J.: Tales of the field: on writing ethnography, 2nd edn. University of Chicago Press, Bristol. University Presses Marketing, Chicago, Ill (2011)
9. Bhömer, M.T., Helmes, J., O'Hara, K., Hoven, E.V.D.: 4Photos: a collaborative photo sharing experience. In: Proc. NordiCHI 2010. ACM Press (2010)
10. Cao, X., Lindley, S.E., Helmes, J., Sellen, A.: Telling the whole story: anticipation, inspiration and reputation in a field deployment of TellTable. In: Proc. CSCW 2010. ACM Press (2010)
11. Golsteijn, C., den Hoven, E.: Facilitating parent-teenager communication through interactive photo cubes. Personal and Ubiquitous Computing 17(2), 273–286 (2013)
12. Clarke, R., Wright, P., McCarthy, J.: Sharing narrative and experience: digital stories and portraits at a women's centre. In: Ext. Abstract CHI 2012. ACM Press (2012)
13. McCarthy, J., Wright, P.: Technology as experience. MIT Press, Cambridge (2004)
14. Wright, P.C., McCarthy, J.C.: Experience-centered design: designers, users, and communities in dialogue. Synthesis lectures on human-centered informatics. Morgan & Claypool Publishers, San Rafael (2010)
15. Jung, H., Bardzell, S., Blevis, E., Pierce, J., Stolterman, E.: How Deep Is Your Love: Deep Narratives of Ensoulment and Heirloom Status. International Journal of Design 5(1), 59–71 (2011)
16. Blythe, M., Monk, A., Park, J.: Technology biographies: field study techinques for home use product development. In: Ext. Abstracts CHI 2002. ACM Press (2002)
17. Wixon, D., Holtzblatt, K., Knox, S.: Contextual design: an emergent view of system design. In: Proc. CHI 1990. ACM (1990)
18. Millen, D.R.: Rapid ethnography: time deepening strategies for HCI field research. In: Proc. DIS 2000, pp. 280–286. ACM Press (2000)
19. Lawrence-Lightfoot, S.: Reflections on portraiture: a dialogue between art and science. Qualitative Inquiry 11(1), 3–15 (2005)
20. Riessman, C.K.: Narrative methods for the human sciences. Sage Publications, Thousand Oaks (2008)
21. Lawrence-Lightfoot, S., Davis, J.H.: The art and science of portraiture. Jossey-Bass, San Francisco (1997)
22. Chapman, T.K.: Expressions of 'voice' in portraiture. Qualitative Inquiry 11(1), 27–51 (2005)
23. Davis, J.H.: Balancing the whole: Portraiture as methodology, in Qualitative research as psychology: Expanding perspectives in methodology and design. In: Camic, P.M., Rhodes, J.E., Yardley, L. (eds.), pp. 199–217. American Psychological Association, Washington, DC (2003)
24. Wright, P., McCarthy, J.: Empathy and experience in HCI. In: Proc. CHI 2008. ACM Press (2008)
25. Orr, J.E.: Talking about machines: an ethnography of a modern job. Collection on technology and work. ILR Press, Ithaca (1996)
26. Nielsen, L.: From user to character: an investigation into user-descriptions in scenarios. In: Proc. DIS 2002. ACM Press (2002)
27. Cooper, A.: The inmates are running the asylum. Sams, Indianapolis (1999)

28. Blythe, M.: Pastiche scenarios. Interactions 11(5), 51–53 (2004)
29. Djajadiningrat, J.P., Gaver, W.W., Frens, J.W.: Interaction relabelling and extreme characters: methods for exploring aesthetic interactions. In: Proc. DIS 2000. ACM Press (2000)
30. Triantafyllakos, G., Palaigeorgiou, G., Tsoukalas, I.A.: Design alter egos: constructing and employing fictional characters in collaborative design sessions. In: Proc. BCS HCI 2009. British Computer Society (2009)
31. Blomquist, Å, Arvola, M.: Personas in action: ethnography in an interaction design team. In: Proc. NordiCHI 2002. ACM Press (2002)
32. Chang, Y.-N., Lim, Y.-K., Stolterman, E.: Personas: from theory to practices. In: Proc. NordiCHI 2008. ACM Press (2008)
33. Csikszentmihalyi, M.: Creativity: flow and the psychology of discovery and invention. Harper, New York (2010)
34. Gauntlett, D.: Making is connecting: the social meaning of creativity from DIY and knitting to YouTube and Web 2.0. Polity Press, Cambridge (2011)
35. Sennett, R.: The craftsman. Yale University Press, New Haven (2008)
36. Harling Stalker, L.L.: A tale of two narratives: Ontological and epistemological narratives. Narrative Inquiry 19(2), 219–232 (2009)
37. Hackmann, D.G.: Using portraiture in educational leadership research. International Journal of Leadership in Education: Theory and Practice 5(1), 51–60 (2002)
38. Hill, D.A.: The poetry in portraiture: Seeing subjects, hearing voices, and feeling contexts. Qualitative Inquiry 11(1), 95–105 (2005)
39. Elliot, J.: Using narrative in social Research: Qualitative and quantitative approaches. Sage Publications, London (2005)
40. Cotterill, P., Letherby, G.: Weaving Stories: personal auto/biographies in feminist research. Sociology 27(14), 227–237 (1993)
41. Smythe, W.E., Murray, M.J.: Owning the story: Ethical considerations in narrative research. Ethics and Behavior 10(4), 311–336 (2000)
42. Atkinson, P., Delamont, S.: Rescuing narrative from qualitative research. Narrative Inquiry 16(1), 164–172 (2006)