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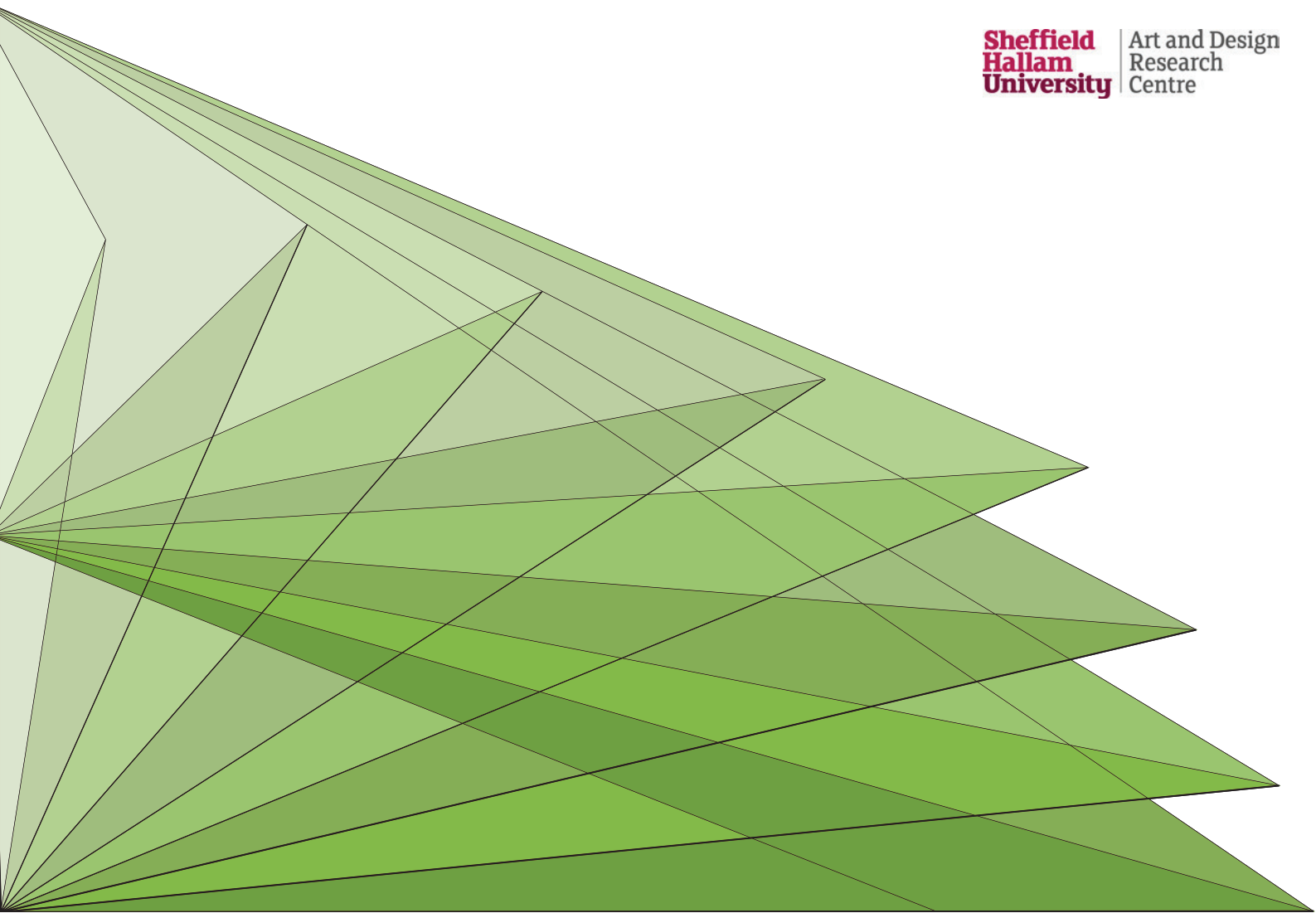
# Design 4 Health

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# Ethnography in Designing for Older People

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## *Abstract*

*As the global population rapidly gets older, designers are continually seeking means to gaining understanding and eliciting true user insights into older people's design, health and wellbeing needs. Comprehensive field studies that are both empathic and sensitive are cited as essential in this regard, with ethnographies predominantly heralded for achieving this (Seidel, 2009; Newell et al, 2010). However, it has been identified that Ethnography, because of its roots in Anthropology, has not been fully elucidated for the purposes of designing, particularly for older people (White, 2013). This paper will outline the stages and methods of design ethnography required when designing for older people.*

Keywords: Design for older people, Ethnography, Design Methodology

## Introduction

It is now well recognised that the world's population is ageing. It is projected that by 2050 two billion older people are projected to be alive (United Nations, 2013); this will account for one in five persons in the world (World Health Organisation, 2000). As the percentage of older people grows, demand will also grow to meet and understand their specific design needs. With this, the methods in which we approach design and the individuals we are designing for will change. Designing appropriate products and services for older people requires deep unbiased understanding of their health and wellbeing needs. In achieving this, person centric methodologies are becoming increasingly important. Methodologies particularly with empathy and sensitivity as a core are essential in this regard and Ethnography has been heralded in accomplishing this (Seidel, 2009; Newell *et al*, 2010).

The marriage between anthropology and design has evolved through the 20<sup>th</sup> century in its earliest incarnation through studies in material culture, consumerism, and the anthropological study of object in culture. Ethnography has been used within Design Industry since the early 1980's. Parc Xerox pioneered this for design interaction between people and computer software in the workplace using it in Computer Supported Cooperative Work. However it has been noted that Ethnography has not been fully elucidated for the purposes of designing, particularly when designing for older people (White, 2013)

This paper discusses and outlines the process of Design Ethnography specific to older people. It will reflect on the role of the design ethnographer and inform future practice; detailing the key stages and considerations of the process. This paper will firstly outline the early stages of design ethnography prior to fieldwork; noting the construction of a participant sample and the ethical considerations required. It will outline means of conducting field research and further to analysing ethnographic data for the purposes of designing. Finally the practical output of a design ethnographic study will be discussed through the creation of older adult personas.

## Constructing a Sample of Older Adult Participants

Ethnographic studies require participants that are "information rich" and that provide a trade-off between 'breadth' and 'depth' in a study (Patton, 2002 p.242). To best construct an information rich sample of older adult participants. it is proposed to recruit both prior to and during fieldwork. The sampling selection for this needs to be sufficiently broad, so as to facilitate the development of emerging theories, however allowing for appropriate movement between participants as fieldwork progresses. To achieve this, purposive sampling generates necessary boundaries and a representative sample. Coupled with this, chain or snowball sampling affords the design ethnographer the freedom to move with developing theories and to choose suitable participants to interview as they occur. This process of recruitment is very beneficial in developing a sample of older adults particularly for example, in retirement home settings, by gradually building the trust and confidence of a community.

Gatekeepers are essential in developing a sample of older adults. Gatekeepers for older people can be found amongst occupational therapists, managers within care homes, carers, community leaders,

and community board members. In the first instance, formal written letters of consent sent to gatekeepers outlining the scope, intent, and details of the research are helpful. However in addition to this a concise and easy to read information flyer can be more effective. This can quickly communicate the intent of the research in an informal way to older people. Recruitment through older adult communities can develop greatly through 'word of mouth'; in this regard it should be noted that within these communities another type of gatekeeper is present, these have been noted as "sub-gatekeepers" (White, 2013). Sub-gatekeepers assume the role of a spokesperson, representative or organiser and someone held in high regard within a community. Sub-gatekeepers were usually the first participant to be interviewed within the community. Once an interview is successfully completed with a sub-gatekeeper, trust is built and referral can be put to a number of friends or neighbours.

## Methodology

### Interviewing

Ethnographic interviews with older people should be informal and conversational in nature. Agar states that informality relies on semi-structured questioning, suggesting that researchers:

*" [do not have] a list of written questions. Rather have a repertoire of question- asking strategies from which you draw as the moment seems appropriate.... not taking on the formal role of interrogator" (Agar, 1980, p.90).*

To avoid an interrogatory approach to interviewing, it is firstly important to ease the participant into relaxed discussion. This allows for comfortable dialogue and for understanding to develop through deep and personal viewpoints. Interview questioning can mainly be achieved by semi-structured open ended enquiry, extracting information from participants whilst not interfering with natural flow of insight.

'Information-giving sessions' should be conducted before interview commences. This involves explaining the process of design ethnographic fieldwork, reviewing and signing consent forms, and showing the participant the equipment used in documenting the study. The interview can commence with broad informal conversation. This initial conversation could be in relation to a topical news story to increase confidence and informality, and this would be continued until exhausted. Following this, conversation can be steered more directly depending on conversation flow, maintaining informality whilst interspersing direct questioning when required. More direct questioning could be firstly used to help build a profile of the participant and gain a deep sense of personal and a cultural background. Spradley divides ethnographic questioning into descriptive, structural, and contrast questioning (1979). Throughout questioning, these techniques should be used in a casual sense, used when and if required rather than strictly adhered to in interview. In interview the researcher should adopt the role of listener rather than talker, ensuring conversation flow without interruption. Continually listening and understanding the participant's point of view, and reading the body language of the participant to interpret the flow of conversation.

Further informality can be added to interviewing by encouraging stories, storytelling and "oral histories" (Plowman, 2003, p.33) within interview content. This allows older participants to express individual and cultural experiences, nostalgic or otherwise, in a relaxed personal and narrative

fashion. This format was used successfully in an ethnographic study conducted by Sheehan *et al*, on Irish older adults and their experiences of falls in the domestic environment (2008).

## Observation

Observation forms an extremely important function in design ethnography. It is used to visually collect data relating to the material world of people. Participant and artefact observation can construct a holistic and true visual repertoire of the older adult culture, their surroundings, and artefacts. To obtain rich and descriptive data in observation, Spradley (1980) cites nine dimensions to be considered: Space, Actors, Activities, Objects, Acts, Events, Time, Goals and Feelings. These dimensions, according to Robson (2002), describe the setting, the people and the events that are taking place.

Observing all nine of these dimensions is important to design ethnographies, specifically Actors, Objects and their acts between. In design research observation of *objects* is important in understanding the arrangement and schematic together with the real and “perceived affordances” (Norman, 1988; Norman, 2004) of artefacts. In observation of older people “cultural inventories” (Collier and Collier, 1986: 45) can be collected and constructed by the use of photography. Examples of cultural inventories are: the style of the environment, aesthetic of the décor, activities of the household, the character of order of the household, and signs of hospitality and relaxation (Collier and Collier, 1986). Collecting these cultural inventories is very much of interest in design ethnography as they help visually construct rich observational snapshots of cultural and artefact activity. Observation extends to the *activities* older people have in usability and interactions with the *objects* within their *space*. Of particular interest is the observation and understanding of *acts* within these *objects* and the *goals* participants are attempting to achieve.

Developing descriptive scenes through observation requires an awareness of Spradley’s ‘structured’ nine dimensions. However, ultimately, observation should be conducted unstructured, freely, and openly. Observational data can be effectively collected and collated by photography. In anthropology Collier and Collier promotes the use of a camera in the ethnographic process to record patterns, relationships, and specific evidence relating to the goals of the research (1986). In using methods of observation in a design ethnography for older people it must be noted the obtrusiveness of this. Whilst the researcher is trying to observe what is naturally occurring, temptation can occur in “surreptitious observations” (Wolcott, 1995 p.152 ) or observation by stealth. Curiosity can lead a researcher to come in contact with data of confidential nature. In using observation with older people, it is important to continually reinforce and reiterate ethical consideration. An example of this was used in an ethnographic observation study of older people and beauty therapy; here Paulson (2008: 258) used what she cites as “Open ethnography”. In open ethnography the researcher reaffirms that “the research subjects were continually aware of the purpose of the study for which they were being observed and gave their verbal consent” (Paulson, 2008: 258). This requires the researcher to be conscious of when the participant does not want to be photographed.

# Participatory Techniques

A design ethnographic enquiry relies heavily on understanding artefact and human relationships, and it is essential to experience this relationship first hand. This can be achieved through active participation and the use of participatory techniques. Used primarily in product design research, participatory techniques are employed to gather data by using artefacts in context during interview. Participation should be used to observe interaction within the true context of use, to gain insight and empathy into usability acts. Furthermore, participation can be used to offer rich description to physical acts that could not be communicated by any other means. Participation and participatory techniques allow for the construction of thicker descriptions of occurrences, ones that cannot be achieved without physically participating with or interacting with objects.

Participatory techniques are used to observe artefacts, activities and acts between these. Furthermore to document theories in relation to how older adult participants perceive artefacts and the researcher's perception as an observer. For participatory techniques in ethnography and design, Sperschneider and Bagger (2003) utilise three methods. These are: "acting out", "researcher acting as apprentice" and "shadowing" :

## Acting out

'Acting Out' involves the use of scenarios, allowing the participant to demonstrate the 'normal procedures' in use of products. Allowing the participant to act out or re-enact normal routines or scenarios within the natural setting while being observed and recorded. For example, White (2013) investigated the barriers in which older adult users experienced difficulty or failure in thermostat operation. In this study participants was firstly allowed to give personal verbal understanding of what was occurring followed by operating the thermostat or 'talking aloud' so as to describe how it was operated (See Figure 1.)

## The Researcher Acting as Apprentice

This method involves the participant adopting a role of 'teacher' and the researcher of 'apprentice' to the participant. The researchers steps into the role of the participant (or user) and delves into the older adult perspective. It involves the researcher 'doing it themselves'. This method can be coupled with 'speaking out loud' the operation steps or thoughts involved in operation. During this method co design or participatory design sessions can also be introduced by questioning and collaborating with the participant into how artefacts could be hypothetically redesigned.

## Shadowing

Shadowing can be used freely throughout design ethnographic fieldwork, allowing the researcher to walk with the older adult participant and broadly observe their daily routine.

'Acting Out' 'Researcher Acting as Apprentice' and 'Shadowing' adapted from: (Sperschneider and Bagger, 2003)



Figure 1: Fieldwork Data Collection: Observation and Acting out

## Analysing Ethnographic Data for the Purposes of Designing

White (2013) suggests that design ethnographers should use traditional qualitative methods of analysis combined with design visualisation methods in order to execute analysis of data for optimum effect. In design ethnography for older people, it is important to visualise analysed data in a person-centric means, ensuring that data remains 'humanistic' and representative of participant's true requirements. Creating 'personas' of older people can satisfy the functions required for visualising data. Using the persona approach to collate and represent data for analysis is advantageous to designers for many reasons:

1. **Human centrality:** Developing and displaying hypothetical users preserves the human centrality of the data. Representing them in a true, personal, and humanistic format.
2. **Making sense of complexity:** Personas convey complex cultural archetypes with deep idiosyncrasies in a succinct manner.
3. **Maintaining focus:** To create theory from observations it is important that data is reduced to actionable insights. It is important to maintain focus on actual insights and people/end users rather than digressing off topic. Goodman *et al* (2006), suggest that presenting end users as personas helps a designer to focus attention directly on end users and thus creates empathy with them.
4. **Transition steps to designing:** It is appropriate to see the creation of personas as the first step in the act of designing. In a way, 'designing' the end user before designing for them.
5. **Validity and Reliability:** It is important for the purposes of validity and reliability in analysis to share finding and gain other interpretations and points of view from the data. Using personas in this regard focus's other viewers to understand and interpret collected data, this includes older adult interpretations.
6. **Confidentiality:** Creating fictional personas from data conceals actual individual identities.

7. Reuse: Personas can be easily re-used throughout numerous other stages of the design process. Personas can be an invaluable source of inspiration and grounding in design phases such as ideation, conceptualisation, user testing, and marketing.

To create personas, collected data firstly has to be organised, coded and analysed. Using colour to organise and code data is particularly applicable for design ethnography. As distinct from other coding methods, colour instantly provides clear visualisation and illustration to help develop meaning and coherency as coding progresses. Coding data in colour is an iterative process (Figure. 2). The design ethnographer is continually developing new themes and categories as coding progresses. This is achieved by reading, re-reading, highlighting, assigning and reassigning appropriate colours to patterns and themes in the data. These patterns and themes can be used in the development of realistic personas (Figure. 3).

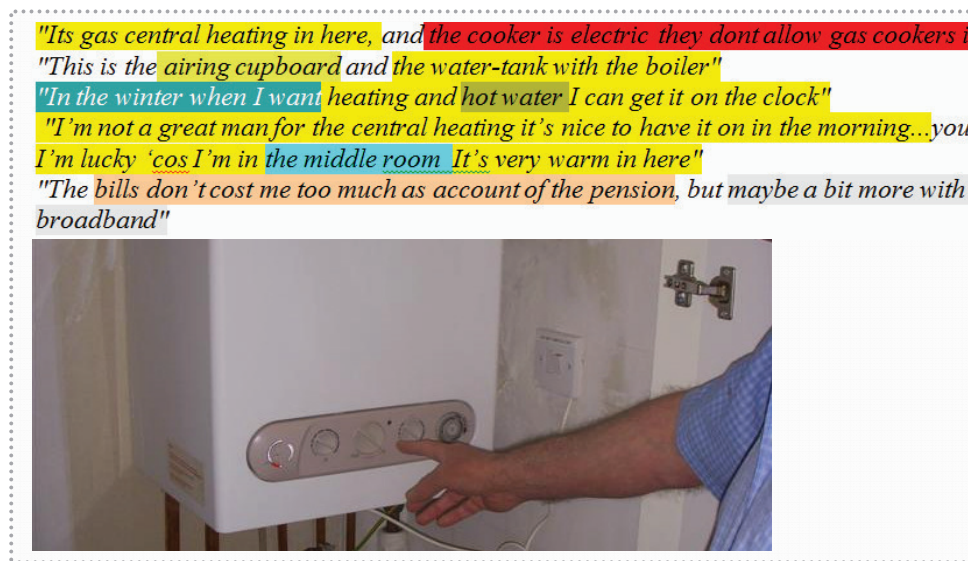


Figure 2: Colour Coding of data in process





Figure 3: Personas of Older adult participants developed from Colour Coding

Finally, when designing from design ethnographic data, it is important to describe the form of conceptual output that it creates. There is a vast quantity of implicit meaning derived from design ethnography whereby many abstract ideas can be created by this meaning. As a result, concepts can be critical and abstract in nature. Therefore it is important to maintain focus on the persona's requirements and, in staying true to person centric methodologies, triangulate design output with older people. This is where Co-Designing with older people can be useful, in reinforcing the data and in interpreting design output correctly.

## Conclusion

As the world's population rapidly gets older, designers are required to be more empathic and sensitive in their approaches to design. Considering that ethnographic methods have been cited in achieving these approaches, this paper has outlined the stages and methods of design ethnography required for older people. It considers methodologies from early stage research to the intermediate stages of fieldwork and through to creating designed output from design ethnography. Even though many of these approaches are not restricted to designing for older people alone, it highlights the care and attention designers require in investigating this emerging population. Further research is required to continue merging ethnography and design for older people's health and wellbeing needs. With this future research, reflection and practice are essential in its continual development. Only by reflecting on the acts of ethnography and the practice of designing from these methods can we truly develop empathic and meaningful results.

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