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HOSPITAbLe: Critical design and the domestication of healthcare.

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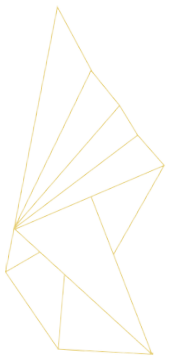
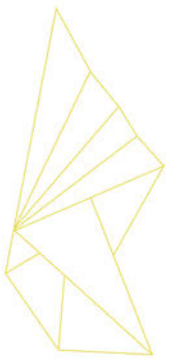# HOSPITAbLe – critical design and the domestication of healthcare

Paul Chamberlain and Claire Craig

Image credit: Paul Chamberlain.

HOSPITAbLe – critical design and the domestication of healthcare

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Abstract: The challenges society faces in providing future healthcare suggests radical changes to the way health services are delivered and the way we engage with them. There is recognition that this is likely to demand more self-care and a shift of care from hospital to our home. The home and hospital bring together very different cultural practices and environments and the inexorable geographical shift in care has potential to impact on our physical and emotional relationship with our home space. These cultural practices/experiences can be mediated through objects, which in turn can provide vehicles through which to gain understanding of the richness and complexity of people's lives. The research draws on the value of 'thinking with things' as a method and central to this is the notion of exhibition as a research tool that becomes a meeting space that enables this to happen. Exhibition provides a theatre for conversation and becomes the medium and method for data collection and creates the conduit, through which societal assumptions relating to ageing and healthcare care can be made visible, explored and challenged. From a critical design position we propose artefacts through structured engagement with individuals and communities might help develop insights and inform responses to the complex challenges facing current healthcare services.
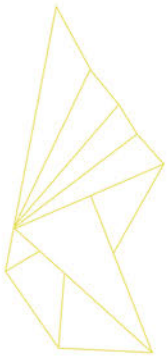
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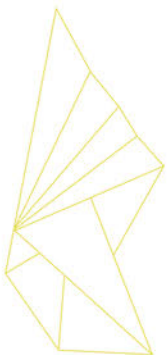
Introduction

This paper describes an ongoing programme of research and current phase of a qualitative research study to explore how technology might be most appropriately designed to support personal healthcare at home. Using a critical artefact methodology the study has focused particularly on exploring the needs of groups of individuals who are often under represented in this research arena including older people and individuals from diverse ethnic communities and those classed as being of high socio-economic need. We create and use critical artefacts as physical metaphors to prompt discussion that might help inform our understanding and emotional relationship with this new hybrid ambiguous landscape and how future care at home might challenge the symbolic meaning and relationships within our home. We discuss the value of 'thinking with things' and define our position against the proliferation of current design research references to critical design and cultural probes. We shall reflect on what we believe is a critical approach to critical design in providing a scaffold for user engagement and presents opportunity for positive impactful outcomes.

The broader context

 An ageing society demands innovative thinking to reshape our future healthcare and technology is considered to play a key role in changing both how and where care is delivered (Huang 2013). Escalating costs of healthcare services and a shortage of personnel and facilities have put pressure on the healthcare system to deliver more support and treatments on an outpatient basis. While tending to health needs within the home has a long history, and a variety medical devices have been adopted in the home for many years, we are now witnessing an increasing migration of devices and emergent technologies into the home setting. Foucault (Foucault 1963) described the 'medical gaze' where the hospitalised individual becomes a patient, then an object, through the practices of medicine. Foucault argues that the hospital was organised as an 'examining apparatus' enabling almost constant observation of the patient. In this creation all extraneous variables such as the home environment, family, friends and usual activities were excluded, the hospital providing the ideal laboratory setting where the causes of symptoms could be isolated and the effects of treatment monitored. Gardner (Gardner 2000) warns the ambience and safety of the home can potentially be shattered by the invasion of illness- related technology and has the potential to destroy the nurturing and therapeutic environment of home as a means of promoting health recovery. He advocates a need to develop sensitivity to the space of the home as one of sanctuary with multiple social and emotional functions that serve to increase the well-being of people in health and illness.
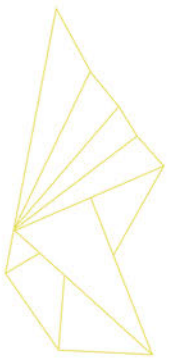
Domestication of Health

Berker et al (2006) discuss theories around domestication and shed light upon the process in which a technology changes its status from outrageous novelty to an aspect of everyday life which is taken for granted. They describe how; 'Domestication in the traditional sense, refers to the taming of a wild animal. At a metaphorical level, we can observe a domestication process when users, in a variety of environments, are confronted with new technologies. These 'strange' and 'wild' technologies have to be 'house-trained'; they have to be integrated into the structures, daily routines and values of users and their environments.' According to Greenhalgh et al (2013) things we use and make (technologies) are not neutral objects but embodiments of ourselves and cultural values. Where a disconnect between the technology and these cultural values emerge this impacts on the individual's relationship with the world. Technologies can thus be disabling as well as enabling, disempowering as well as empowering. Illness experiences and assisted living needs of older people are diverse and unique; hence do not lend themselves to simple or standardised technological solutions. This paper describes a programme of collaborative research using creative research approaches to understand the complexity of the challenges.

Thinking with things – a critical design perspective

There is increasing literature that discusses knowledge generation through the creation of artefacts. Much of this where designers move from a position of problem solving to the generation of knowledge for problem setting through the creation and deployment of artefacts is often conveniently labelled Cultural Probes or Critical Design. We will explore further these approaches and applications to help position our approach and methodology 'thinking with things.'

There is wide recognition in the value of engaging users early in and throughout the design process. The utilisation of models, prototypes and objects to engage users/clients, test and inform ideas and gather information has a long tradition in Design. Koskinen et al (2011) present a case for research through design or constructive design, which "refers to design research in which construction, be it product, system, space, or media, takes centre place and becomes the key means in constructing knowledge". Increasingly we see a diverse range of research tools developed and adopted to facilitate user interaction for creative and exploratory ends. For example; construction kits, picture cards, random objects and persona cards to name just a few and increasingly these are loosely tagged 'cultural' or 'design' probes'. Cultural Probes have been applied in an expanding range of contexts and researchers have begun to survey some of the different uses and values of probes as an approach in
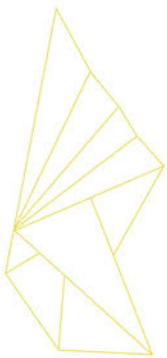
design/research projects. Cultural Probes developed by (Gaver et al., 1999) "were originally designed to provoke inspirational responses from elderly people in diverse communities." These probes were packages with maps, postcards, a camera and a diary, that were 'launched' at different sites and the researchers, according to Gaver, would receive the completed materials "in a piecemeal and leisurely fashion," (Gaver et al 1999). Designers' engagement with the information gathered through probes is intentionally subjective and primarily to inspire the design that follows. Gaver et al. have always been wary of the temptation readers may have to deploy the probes as a way of undertaking social scientific fieldwork and stressed their probes "don't emphasise precise analyses or carefully controlled methodologies".

Mathews & Horst (2008) provide a useful overview of how Cultural Probes have been used, adapted and arguably misappropriated. They examine the ways in which knowledge might be generated through the variety of interpretations and uses of cultural probes. Most variants of cultural probes are generally based on Gaver's probe package but Paulos and Jenkins, (2005) expand the notion of probes significantly, to include interventions and artefacts. They use 'urban probes' that directly intervene to alter and/or disrupt usage, actions, or flow within the urban envelope. Consequently while there are attempts to develop a taxonomy of cultural probes the broad extension of Gaver's definition has arguably engendered such a diverse interpretation it confuses rather than providing clarity.

Dunne & Raby (2013) do not describe their work as probes but coined the term Critical Design in the mid 1990's. They claim it is a position rather than a method. They present conceptual design as a form of critique where critical thought is translated into materiality. They acknowledge critical design might be borrowed from art methods and approaches however they argue critical design needs to be closer to the everyday: 'where its power to disturb lies'. They claim if too weird it is discussed as art while if labelled design it is more disturbing. They propose that critique of critical design should focus on crafting its coexistence in the 'here and now' and the 'yet to' exist. However they acknowledge without an intellectual framework it is very difficult to advance the practice of critical design.

Malpass in his PhD (2012) contributes to the increasingly ambiguous contextualisation of critical design and proposes a taxonomy for critical practice. He proposes three distinct types of critical design practice that he terms; in summary 1) Associative Design, an approach to present means for both designers and users to rethink dominant traditions and values in designed objects and their environment. It subverts expectations of the ordinary and the everyday and offers poetic inquisition. 2) Speculative Design, that poses challenging statements that attempt to explore ethical and societal implications of new science and the role product design plays in delivering it. 3) If Speculative Design focuses on the future then Critical Design focuses on present social, cultural and ethical implications of design objects and practice. Objects
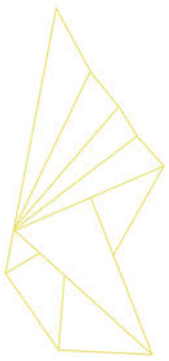
are proposed that would not exist in normal models of consumption because of social or cultural embargos. These objects suspend the user in an uncomfortable place between reality and fiction.

Bardzell & Bardzell (2013) ask 'what is 'critical' about critical design' and directly challenge some of the notions presented by Dunne & Raby. 'Understanding what's critical about critical design might be easier if Dunne and Raby's work clearly explicated a healthy range of critical outcomes that have emerged from critical designs'. They state if the specific critical goal is to leverage design itself in bringing about more critical attitudes in the public and critically innovative thinking among designers Dunne & Raby offer few specifics on how this is done. In particular they challenge the binary perspective of Dunne & Raby that a design is either affirmative or critical. Within this they argue Dunne & Raby attach strong value judgments to it: 'affirmative design is the common practice, and this practice is amoral and ultimately a dupe for capitalist ideology, while critical designers are described as moral agents who seek to change society for the better'. Bardzell & Bardzell ask, 'Who then decides whether a design is affirmative or critical?' and propose any given design may be both affirmative and critical. A symbolic object and the status quo are each infinitely complex, and their relationships must be explicated if aspects of a design are to be deemed affirmative or critical. They highlight a social problem that critics confront is helping citizens achieve cultural competence: the ability to perceive the (dis)value of cultural products, to perceive and make delicate discriminations, to have

sensitive and insightful rather than crude aesthetic reactions. They posit Critical design's ability to inculcate critical thought and the imagination of alternative futures is dependent on how insightfully people can read designs: aesthetic perception, imagination, insight, and experience are not effects simply caused by visual stimuli. Bowen (2008) alludes to this challenge and suggests the selection of 'the right kind of stakeholders. Those easily able to engage in creative thinking and those who are interventionists'. He adopts Von Hippel's (1986) strategy of using lead users while acknowledging the danger of elitism and exclusivity.

So from a Bardzell & Bardzell's perspective, 'a design research project may be judged "critical" to the extents that it proposes a perspective-changing holistic account of a given phenomenon, and that this account is grounded in speculative theory, reflects a dialogical methodology, improves the public's cultural competence, and is reflexively aware of itself as an actor—with both power and constraints—within the social world it is seeking to change'. Kerridge (2016) also emphasises critical design must provide analytical accounts of the activities they undertake, so that knowledge about their practice can be shared with others. Without robust analysis, critical and speculative design is tied to modes of writing that offer limited and rhetorical accounts of its features.
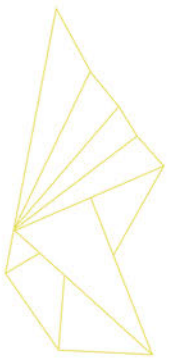
A case for critical furniture

The lead author has a track record of research through design practice or as Koskinen et al (2011) define, research where constructive design is central to knowledge creation. Trained and practiced as a furniture designer he has applied his practice to the creation of artefacts from the more open ended exploratory approaches of critical design through to pragmatic problem solving approaches of design. There is a history of using architecture and furniture as vehicles for exploring new design philosophies and visions of everyday life. Dunne & Raby suggest even William Morris's chairs were an opposition to utopian ideals of capitalist industrial models through artistic production. Italy: The New Domestic Landscape' an exhibition at MOMA (Museum of Modern Art, New York) in 1972 was a seminal moment in Design history. A series of prototype environments and installations by leading Italian designers would reflect upon changing domestic living patterns within contemporary society. The exhibition is generally regarded as a statement that design in Italy was moving beyond being an applied art and was becoming a language capable of making a commentary on reality.

Ball & Naylor (Malpass 2010) more recently have utilised furniture as objects that offers commentary on the impact of design on society. Ball refers to 'design poetics' coined and used in the same way as literary poetics and poetry. He says, 'something doesn't have to make literal sense it has to make poetic sense. In literary poetry you can put words together that wouldn't necessarily make figurative sense but elicit a different kind of meaning. In literature there is a recognisable relationship between ordinary prose and poetic language. Poetic language uses the same words as ordinary prose it just puts words in different orders. When we're working with chairs we're making objects that are familiar but we're remaking them to be simultaneously unfamiliar'.

Critical engagement

Lack of user involvement in the design process has been identified as a particular issue (Hanson et al., 2010) for the uptake of health technologies. This has been particularly problematic when designing for older people. 'Older' people are frequently targeted as the core users of health services but 'older' people are a wide and diverse group, associated by only their physical age; individuals may not hold the same values as another and each person's abilities, motivations, aspirations and understandings can differ widely. Thus, not all older people will have the same relationship with health technologies. The challenge of participatory Design and Co-Design is developing creative and appropriate methods for meaningful engagement. Concepts such as 'communicative space,' 'the counter public' (Dentith et al, 2012) or 'discursive approach' (Cook, 2012) which are encountered in participatory methodology, underline the fact that the challenge of participation is fundamentally a challenge of communication. Although they draw on different concepts, authors continually stress how important it is that the research process
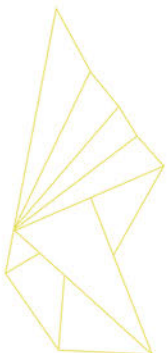
opens up spaces that facilitate communication. They argue that it is crucial for research that a safe space is created in which openness; differences of opinion, conflicts, etc. are permitted. Research also shows that it is necessary to find ways of engaging with individuals and groups in ways that do not assume that individuals are able to verbally articulate and express their ideas. Rather than assuming that individuals are able to adapt and engage with the methods and experience of the researcher the methods of data collection focus should build on the participants' everyday experiences. This makes it easier for individuals and groups to understand the concrete procedures, promotes confidence and encourages engagement as the research begins with what is familiar.

Engagingaging - a critical approach

Older people are generally still viewed through the 'medical model' that focuses on impairment and from a position that reflects the idea that old people need to be monitored, need help and assistance. Older people have therefore tended to be viewed with pity as passive recipients, rather than active participants in research. It is less common to find research that focuses on the broader aspirations in relation to their lives. The methodology of our research draws on an existing body of work developed by the authors Chamberlain and Roddis, (2003) Chamberlain and Yoxall (2012), Chamberlain and Craig (2013) which uses objects and artefacts as methods to stimulate and scaffold thinking, offering valuable vehicles through which the complexities of lives can be understood.

Figure 1. Engagingaging. Photo: Chamberlain.

In the trans disciplinary research project engagingaging, exhibition provided the theatre for conversation and the medium and method for data collection and created the conduit, through which societal assumptions relating to ageing could be made visible, explored and challenged. We developed the equivalent of a grounded theory approach, transforming data collected through interviews into 'critical artefacts' which were then exhibited in a number of prestigious galleries including the Museum of Contemporary Art, Taipei, the Building Centre, London and The Taipei Cultural Centre. Stories from individuals within communities in the UK and Taiwan, meaningful objects from those communities and a collection of critical artefacts Stigmas (furniture collection designed by the author) comprised the 'critical collection'. A series of structured workshops were held in the UK and Taiwan in
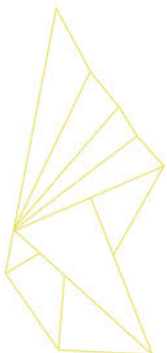
conjunction with 'exhibitions'. Objects and artefacts offered valuable ways to begin to understand the richness and complexity in people's lives.

Thinking outside the box

The authors have previously described (Chamberlain, Craig 2013) how the concept of the exhibition is embedded within the culture of art and design and has a long history as a form of gathering employed to prompt academic discourse. The period (17C) in which salons dominated has been labelled the 'age of conversation' and salons themselves 'theatres for conversation'

Building on methods developed within engagingaging the principles of the traditional exhibition were translated into a format that was more flexible, accessible and inclusive. 'Exhibition in a box' (Chamberlain & Craig 2013) distilled the essence of the exhibition into a suitcase, a la Duchamp that could be transported to diverse environs including the home. Rather than the onus being placed on older people to physically access traditional exhibition space, 'exhibition in box' seeks to bring the exhibition to the older person and to transform the home into the research arena providing individuals a tangible prompt to scaffold conversation. The contents and furnishings of the home becoming an extension of the critical artefacts in the box.

Twelve boxes were produced and distributed for use with health specialists in collaboration with older users across Europe. These boxes

Figure 2. Exhibition in a box. Photo: Chamberlain.

comprised of everyday objects, photographs and textual material defined through the user-workshops undertaken in conjunction with the earlier large-scale exhibitions in 'engagingaging'. The objects were carefully selected to code, represent and prompt further discussion on themes that had emerged from earlier research and we would argue became critical artefacts. Key themes included mobility, hygiene, relationships, identity, communication, technology, food, art, money, recreation, safety and work and these were represented through the set of everyday objects that included, keys, dice, soap, pencil, watch, stone, glove, post-card, spoon. The objects could and did combine to create objective correlatives prompting and enabling participants to express emotional responses. e.g. pencil and post card prompted discussion around travel, communication, technology (analogue vs digital). Traditional qualitative research methods

using structured and semi-structured interviews can preference the views of the researcher who can make assumptions about what the issues are. The objects have allowed different ways for participants to express their personal identity and in many cases their creativity prompting them to describe things they have made previously in their life and suggest new was of doing things. Working in partnership with older people has developed a set of principles that primarily position the older person as the expert and encourages choice and decision-making. Within the first phase of the research we identified and worked with four occupational therapy departments in Universities across Europe including the Hogeschool Zuyd in the Netherlands and the Zhaw Institute in Zurich. Exhibition in a box has been utilised and evaluated during the past two years as tool for occupational therapy students in support of their engagement with the community. The critical objects offered scaffolds for open communication and because they were at one and the same time both concrete and abstract, participants in thinking through the objects in the box were able to think outside of the box.

Insights into Telecare and Health Technologies (inTaCT)

The recent phase of the study utilises and further tests exhibition in box in facilitating our methodology of thinking with things. In total thirty-two socially and ethnically diverse community living older people were recruited to the study through a number of voluntary and third sector organizations. Individuals were invited to attend one of four workshops that were held in community venues and were facilitated by the research team. Each workshop lasted on average for two hours. The workshops began with a general introduction from the research team and an invitation for participants to share (verbally or through drawing) the images and associations that came to mind when they heard the word technology. Exhibition in a box was then introduced and participants were invited, in turn, to select and to respond to the objects it contained. Written consent was obtained to video and audio record the session and these were transcribed following the group events. This data was analysed using framework analysis (Ritchie and Spencer, 1994). This enabled the development of a matrix of themes and related sub-topics from the data as well as identification of the links across themes, different participants and venues.

The strength of the critical artefact methodology is that the objects transcend boundaries of culture, language and age and whilst the objects remain unchanging the associations they prompt and the stories they elicit are dynamic and ever changing. More details of the outcomes are published by the authors (Chamberlain, Craig 2016) but in summary four themes emerged during the exploration of the objects:

1) Digital beings in a digital world : Digital technology was seen as part of everyday life and access to computers and the Internet as being necessary to undertake fundamental activities of daily living. Lack of access was regarded as a form of social exclusion.
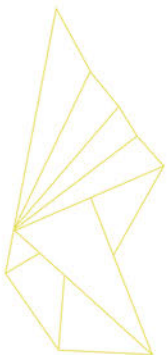
2) Navigating change : Digital disconnectedness was a real concern and the rapid evolution of products, the speed of change as a consequence of in-built obsolescence of many digital devices were regarded as real challenges. Challenges of mastering new technologies and products were compounded by deterioration of physical and cognitive abilities, attributing difficulties to failing memory and deterioration of skills.

3) Trust and control : This was seen as being particularly important in relation to health devices and existed on multiple levels including trusting devices not to break, trust in terms of where the information is being sent, trust in relation to accuracy.

4) Conceptualisations of health: Participants described the importance of seeing both evolving models of healthcare and technologies in a far broader societal context. World events are constantly changing and challenging our understanding of existing technologies. Increasing publicity relating to cyber-crime, terror threats played out on a global stage all impacted on the ways participants in our study related to existing home digital technologies.

Early findings of this present study suggests that acceptance of digital health solutions is more complex. The present generation of health technologies are predicated on the assumption that end-users have already embraced the shift in the healthcare paradigm, which increasingly moves responsibility from the clinician and the hospital to the patient and

the home. Participants in this small study raised questions regarding this and the, 'underpinning assumption that self-management of illness at home will occur in the same way that medical management happens in the hospital by generating, analysing and manipulating objective measures of health status' (Greenhalgh, 2013).

The outcome from the study has informed and prompted HOSPITAbLe a collection of critical artefacts (Designed by Chamberlain) to further explore these findings through wider engagement via exhibition and structured workshops. HOSPITAbLe becomes the embodied knowledge from the workshops that is conceptualised through a collection of critical artefacts. HOSPITAbLe (main image, fig. 3, 4, 5 show a sample of the collection) reflects upon and challenge an ambiguous future domestic landscape that presents hybrid functionality and confused visual language and soundscape. A transient world of alien objects that not only challenge trust, but prohibit control and access. New objects defined by emerging technologies that at times attempt to hide and camouflage. Providers of these future objects ever more concerned with our health and safety, nudging us into behaviour change but fearful of litigation. An interconnected landscape within which, access to health data and information is ubiquitous, incomplete and confusing. Objects that help, support, betray and confront our own mortality. These critical artefacts will now be central to a series of further exhibitions and facilitated participatory workshops that iterate our critical design cycle.
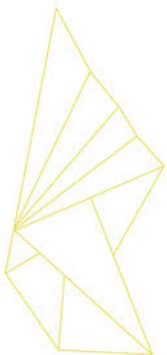
Infusion lamp (main image): Are we to welcome the reordering of the home as a clinical work space, instead of placing value on the home as a private, comfortable space that is imbued with personal memories and a sense of history and belonging. Subverting the meaning of healthcare products and aesthetic tension presents ambiguity of place for both care giver and care recipient.

Google aid (main image): The individuals who engaged in this present study did not see the move from care being delivered in a hospital to the home as preferable to existing systems and struggled to come to terms with this. The efficacy of many of the current medical innovations and new paradigms of health were questioned, in particular the constant bombardment of contradictory health messages. Within this the irony that technology had contributed to people leading more sedentary lives, leading to medical problems was not lost.

Dining chair (main image): *'There is no technical barrier in collecting data. It is the presentation of that data. If people are able to collect and monitor data they have to be educated to what is normal. People can get data interpretation wildly wrong either by accident or design'. (Workshop participant).*

Coffin table (fig 3): We tend to avoid talking about death and dying, and people don't always make plans in advance for end-of-life care. A greater shift of healthcare into the home is likely to nudge us into facing our own mortality. For better or worse?

Figure 3. Coffin table. Photo: John Hartley.

Secure Unit (fig. 4). Access to data and self-management of healthcare can empower patients, breaking down barriers with health professionals. However it is inevitable there will be some control over access to information and pharmaceutical products that raise issues about what aspects or parts of our home in future will be beyond our control and ownership?

Grande Commode (fig. 5). While It is generally acknowledged that Design offers a creative skill set to improve the quality of healthcare products it is not as simple as producing stylish desirable technological solutions. Delight is not just associated with the materiality and formal qualities of an object but the tasks and activities we engage with through objects. Can objects that concern ill health ever be desirable?
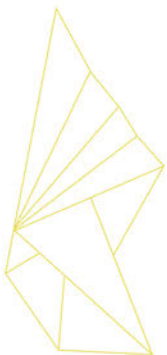
Figure 4. Secure Unit. Photo: John Hartley.

Critical reflections

Critical artefacts are core to our research approach and methodology that draws on thinking with things. As discussed furniture has a history for

Figure 5. Grande Commode. Photo: John Hartley.

exploring new design philosophies and visions of everyday life and is also the vehicle for our critical design. Furniture as a 'recognisable archetype' and through 'design poetics' represent our objects of critical design (as defined by Malpass 2010), 'which suspend the user in an uncomfortable place between reality and fiction'. While the HOSPITAbLe collection of furniture and exhibition in a box are critical artefacts or critical designs as a result of new design construction, we would also argue the everyday objects selected for use within exhibition in a box are also critical artefacts. Bardzell & Bardzell challenge Dunne & Raby's view that an object is either affirmative or critical and propose any design can
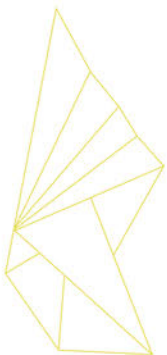
potentially be both. The everyday objects we selected did and do present challenges to participants from different generations, ethnic communities and cultural groups who participate in our research. They are often defamiliarizing and as such we would argue become critical artefacts because of their purposeful intent to explore for example cultural aspects of aging and attitudes to technology rather than simply seek a response to the functional attributes there were designed for.   The critical artefacts in exhibition in a box engage participants through structured workshops and the incongruous associations that emerge prompt conversation and facilitate both abstract and concrete thoughts again suspending the user between reality and fiction.

Dunne & Raby suggest 'an intellectual framework is needed to advance (critical design) practice', Kerridge argues the need for 'more analytical accounts' and Bardzell & Bardzell propose the need for a 'dialogical methodology' for critical design to be more critical. The critical artefacts that comprise the HOSPITAbLe collection offer more than just whimsical commentary and are not intended to stand in isolation. HOSPITAbLe (and Stigmas) are importantly critical collections and through exhibition aligned with facilitated structured workshops form the core of our critical design research methodology. This is both important in helping citizens achieve cultural competence and critical design's ability to inculcate critical thought. Our approach provides the safe open space and forum to encourage communication to facilitate co- design. Environment can impact on the meaning of objects and in turn objects can impact of the

meaning of environment. Consequently we strategically continue to acknowledge and reflect upon environmental and contextual factors hosting workshops and exhibitions in a variety of academic, public (museums, hospitals, community centres) and private locations (homes).

And what of the outcomes of our critical design? Exhibition in a box continues to be used as a research tool through structured participatory workshops and increasingly in more diverse research topics. As mentioned it has been firmly adopted as tool for occupational therapy students in Switzerland. The knowledge and method emerging from our research is published, some of which is cited in this paper, and this knowledge is informing award winning consultancy work (see Phillips et al 2014). Within the context of the inexorable shift in the geography of healthcare our current study indicates a challenge beyond the application of design to resolve technological, ergonomic and aesthetic issues but a more complex challenge to explore how critical design can provide some insight into how we might first accept this paradigm shift.

Acknowledgements
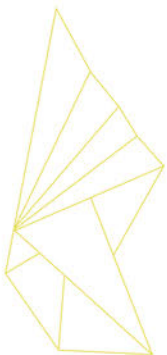
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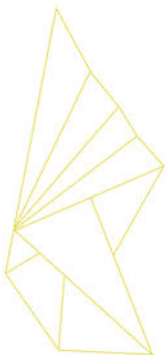
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