An Ethnography of the Future

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Abstract

In this paper we describe conducting an 'anticipatory ethnography' inquiry, using Spike Jonze's 2013 sci-fi film *Her* as the source material. Anticipatory ethnography strives to apply the methods, theories and ideologies of design ethnography, to works of design fiction, in order to produce actionable insights. Thus far the practice has been explored only in theory, this is the first ever *application* of it in practice, as such the work has been contingent and exploratory. The paper begins by introducing the relevant constructs in general terms; next we describe our method; we conclude by discussing the analysis, pursuit of actionable insights, and reflect on the process and findings.

Introduction

Anticipatory ethnography occupies a liminal space between industry and academia. On the one hand is the culture and ideology of the design ethnography movement, a bastard child of the more academically anchored anthropology discipline. On the other hand is the concept of design fiction, a design practice that lives at the academic end of the usually more commercially orientated design discipline. This coming together is not a straightforward one; it operates amongst the pressure

generated between two colliding disciplinary tectonic plates. We acknowledge the tension of this disciplinary confluence, but strive to produce work that is of multilateral interest and utility in spite of these challenges. Here in our introduction we will describe the theoretical strengths, limitations, and complexities, of design fiction, design ethnography and the emergent practice of anticipatory ethnography. Although we cover each construct's salient points in this paper, our earlier work theoretically positioning anticipatory ethnography offers a more in depth discussion (Lindley, Sharma, & Potts, 2014).

Design fiction first emerged as a term when the author Bruce Sterling mused that he had not in fact been writing science fiction novels, but rather *design* fiction. In this nascent form Sterling writes "Design fiction reads a great deal like science fiction; in fact it would never occur to a normal reader to separate the two" but a distinguishing factor is the "more practical, more hands-on" character of design fiction (2005, p. 30). The underlying point that Sterling was getting at is that by taking account of design considerations in his writing, the artefacts and 'props' in the fictions became richer, more affecting and evocative. It wasn't until Julian Bleecker resurrected Sterling's term in 2009 that design fiction as a practice was born (Bleecker, 2009). Since then the practice has boomed, and research through *using* design fiction as a method has grown as much as research *into* design fiction itself. The practice has become popular academically as well as featuring in the work of commercial design houses (e.g. Blythe, 2014; Nova & Kwon, 2012; Superflux, 2010; Various, 2014).

Years after inadvertently coining the term, Sterling provided the most commonly used definition for design fiction. It is terse enough to limit the scope of design fiction while not overly constraining its form or purpose: "[design fiction is] the deliberate use of diegetic prototypes to suspend disbelief about change". Lets consider the definition in parts. First is the 'diegetic prototype', as Tanenbaum writes "If you aren't a film scholar or a narratologist, you might get hung up on the word diegetic, a term that has its roots in Greek philosophy and narrative theory" (2014, p. 22). Thankfully, in the design fiction sense of the word, we can assume a fairly straightforward definition; diegesis refers to 'the world of the story'. Therefore a diegetic prototype is a prototype that exists within the world of any given story, and is consistent with the world of the story (Kirby, 2010). Bleecker considers these prototypes as props that support the design fiction 'performance' (2010). Where other design practices use pens, paper, or CAD as their primary medium, design fiction uses *stories*. Next consider 'suspend disbelief about change'. This statement refers to the intentions of speculative designers, and their preference for using design techniques to forge a plural and conversational space from within which future possibilities can emerge; speculative design attempts "not to show how things will be but to open up a space for discussion" (Dunne & Raby, 2013, p. 51).

Although we use this as a working definition, or model, of the construct that we're working with, it's worth noting that numerous researchers acknowledge the ambiguity of the term. Hales describes it as "enticing and provocative, yet it still remains elusive" (2013, p.1); "It is obvious from the growing literature that design fiction is open to several different interpretations, ideologies and aims." (Marksmen & Knutz, 2013, p.231); Tanenbaum simply says design fiction's "meaning has remained somewhat up for grabs" (2014, p.22-23). This ambiguity emerges because design fiction is a practice, designers can set out to make design fiction artefacts. However design fiction can *also* be conceptual lens, an ideology, or a point of view. In this work we adopt the latter position. We are *not* making design fiction, rather we are applying a design fiction lens to the film *Her*.

To recap, design fiction refers to using prototypes that exist within stories, in doing so they provide a substrate from which the pluralities of future possibilities come into relief. A distinguishing factor between design fiction and its speculative design cousins (e.g. critical design or counterfactuals) is the *inherent* relationship with diegesis, with the story world. However, in design fiction the 'prototypes' are only half of the story. Design fictions actually rely on communicating the 'texture' of the world that harbours their prototypes. It isn't the whizz-bang of futuristic technology that makes design fictions unique or compelling, but rather it is the combination of the prototypes *working in conjunction with* the nuances of the world that they exist in. We refer to this interplay between the prototype and its environment as the "diegetically situated" (Lindley et al., 2014, p. 248) character of design fiction. It is this property that begins to allow a meaningful alignment between design fiction and ethnography.

Although directly descended from anthropology, design ethnography (referred to earlier as a 'bastard son') appears to be in a tense relationship with its antecedent (Ladner, 2012). Design ethnography is primarily used in commercial settings and allows designers to ensure that the products and services they design fit seamlessly into the lives of the end-users. Design Ethnography has emerged from a collision between anthropologically domiciled ethnographic practices and usually more commercially interested design processes.

The inclusion of more humanistic methods into design has allowed designers to observe people in their natural contexts. We can summarise this as the difference between interacting with 'subjects' in a research laboratory setting, compared to interacting with 'people' in their workplace, for example. This has been an important development for design because it has allowed designers to move away from relying on self-reported responses of research participants in a controlled environment, and instead has enabled them to immerse themselves into real-life "situated" experiences (Suchman, 1987). Blauvelt refers to this as an "ethnographic turn" (Blauvelt, 2007) in design's story. A fundamental difference between

traditional ethnography and design ethnography is the shift in focus from general insights toward actionable insights (Segelström & Holmlid, 2012), a move that signifies design ethnography's preoccupation with serving designers by describing new knowledge about a context, that can be *actioned* in order to develop or to improve upon services and products.

Although from a designer's perspective ethnography seems to provide insights that allow for 'better' designs, some believe that ethnography has been reconfigured to an extent where it has lost some of its original character and rigour. Ladner opines "Much of private-sector ethnography is as banal as it is ironic. In its bland quest to 'understand the consumer' it reduces culture to mere consumerism and thereby fails to achieve its own stated goal of understanding" (Ladner, 2012).

In short, we are aware of and accepting of design ethnography's limitations and criticisms. However, we contend that when considering a work of fictive speculation these limitations also apply to more traditional anthropological inquiries. To further 'justify' using specifically *design* ethnography, we must look beyond the contrasts. Instead we should also consider that anticipatory ethnography looks to produce *actionable insights*; a preoccupation follows from the need to "operationalise" design fiction (Bleecker, 2013). All of these claims deserve much deeper exploration, however, that is beyond the scope of this paper. Instead we contribute to the debate through the practice, experimentation, and reflection, adopting a 'research through design' approach, which seems appropriate given the contingent nature of this work (Gaver, 2012).

Having explained some features and limitations of design fiction and design ethnography, we can now briefly explain how they come together to form anticipatory ethnography. The full title of the paper that inspired this work is actually "Anticipatory ethnography: design fiction as an input to design ethnography" - the title gives us some clues as to what is actually meant. If we consider a design ethnography process as being a 'black box' then we can assume it takes an input ('situated' obsersvations), there is a process (which can be any number of data gathering and analysis techniques), and there is an output (actionable insights).

Anticipatory ethnography suggests that the properties of the traditional inputs to design ethnography (situated observations) are analogous with the 'value adding' element of design fictions (diegetic prototypes). To quickly elaborate: situated observations describe how a conflation of context and action will dramatically increases the value of the observations (Suchman, 1987); resonantly the contrast between design fiction and other types of speculative design is the reliance on *diegetic* prototypes (Bleecker, 2009; Lindley & Coulton, 2014; Tanenbaum, 2014). These diegetic prototypes, that is prototypes that exist and act inside a believable story

world, have context and are in essence, situated (or, diegetically situated). This is the rhetorical foundation for that anticipatory ethnography sits upon. Assuming that these suppositions are correct, then we can infer that combining the exploratory and temporally independent techniques of design fiction, may allow design ethnography to glimpse the future. Conversely, design ethnography's established tools for sense making and analysis can be applied to explorations in design fiction (Lindley et al., 2014). Can anticipatory ethnography lend speculative, the gravitas of hindsight?

Notes on the method

Anticipatory ethnography is a conceptual alignment between the design ethnography's reconfiguration of traditional ethnography, and design fiction's approach to diegetically prototyping the future using fiction as a medium. There are many synergies between these two distinct practices. They're both concerned with the future; they both support and influence the materialisation of designed things; and they both do this by leveraging action and context (or in more design-led terms, prototype and environment). These synergies are novel and intriguing and while the theory is enticing to imagine; this work experiments with putting the theory into practice.

Before describing the details of how the study was designed and unfolded, we must address the source material; Spike Jonze's *Her*. As a commercial film piece our source is a cultural artefact, a piece of entertainment, a business venture. It is *not* a work of speculative design or design fiction practice. Rather we adopt design fiction as a lens with which to view *Her*. With a strong and affecting diegesis, *Her* would appear to exhibit the quality of suspending disbelief about change (see Lindley et al., 2014, pp. 246–248). Similarly the film is laden with diegetic prototypes, and in fact one of the lead characters - Samantha - *is* a diegetic prototype (she is an artificial intelligence). The film plots the course of Samantha's relationship with the other lead character, *Theodore*. *Her* appears to embody much of what defines a design fiction: it's clear the film is set in an unreality, however it doesn't seem difficult to believe that this reality could exist. The film makes the 'strange familiar, and the familiar strange'.

To provide some clarity around *why* we would want to conduct such an inquiry, we refer to categories for art and design research. Frayling (1993) describes the contrast between research *into* design (contributions to meta theory); research *through* design (*practice* resulting in knowledge and theory); research *for* design (a contextual search to support a design/making task). Applications of design ethnography usually work in terms of contributing to a contextual search that will support a design process by producing actionable insights - in Frayling's terms this is research *for* design. Design ethnographers often work in fields such as interaction design, or user experience design, contributing behaviour-inspired insights to

development of new technologies. We began our exploration with this kind of work in mind. Is it feasible to consider *Her* as a piece of design fiction, observe and analyse with as a design ethnographer, in order to develop actionable insights relevant to interaction design and user experience design?

There are several contrasting approaches proposed for how an anticipatory ethnography may be conducted, each with different affordances and requirements. The particular approach that we have adopted here involves "studying the content of a design fiction" (Lindley et al., 2014, p. 246). Where the design fiction being considered is in the form of a film, this amounts to watching the film and using it as the site gathering ethnographic 'field notes'.

For this study we decided to bring together a group of four researchers. Two had seen the film before, two had not. We elected to use affinity mapping (Kawakita, 1982) as a means of analysing our data, and chose to use post-it notes as the means of gathering the raw observations while the film progressed. Immediately after watching the film and generating the observations the group of four researchers went through the affinity mapping process.

Insights

In this section we provide lists of the insights produced during our mapping exercise. The insights are organised according to themes that emerged. After each theme's insights are listed, we provide some further discussion that contextualises how and why we produced these insights, and what their relevance is.

Sound, voice and audio interfaces:

- Contemporary voice interfaces are unsatisfactory; they are unintuitive, slow down information exchange, and don't substantively alter the way we interact with computers. Although they attempt to make our interactions more natural, they feel unnatural.

- The use of voice-controlled computers is already ubiquitous (Siri, automated answering services, etc).

- Contemporary smartphone 'Bluetooth headsets' (or ear-buds) are unsatisfactory, their functions are limited, their use is stigmatised, and they're aesthetically challenged.

- The web (and other internet applications) primarily operates around text-based media; video is widely consumed via the web and used for communication; voice is a powerful and evocative medium that appears

underrepresented.

- Systems, machines, servers, networks do not engage in *conversation* with their users, is this an oversight or due to technological challenges?

- The gender, voice, and nature of a personified computer or information system, will impact how it acts in the world and alter the way interactions occur.

In design fiction terms, the way in which Theodore interacts with Samantha, primarily orally, can be seen as a diegetic prototype. These technologies have existed for some time in the form of speech recognition (with appropriately pre-programmed responses). More recently innovations from companies such as Apple (with Siri) and Google (with Google Now) operate voice systems, underpinned by big data and ubiquitous data connectivity, however these systems are far from adaptable. Similarly Bluetooth headsets are a staple for anyone wishing to use their mobile telephone while driving or using their hands. The design provocations contained within the diegetic prototypes in *Her* however demonstrate that these interfaces are far from satisfactory in comparison.

Despite the video revolution that we have seen on the web, facilitated by increasing bandwidth and the ease with which video content can be created, the web remains a primarily text based medium (largely because indexing services, such as Google, struggle to index anything other than text). Other contemporary services like 'Chat Roulette' utilise easily available video cameras and bandwidth to connect users - most famously known for 'cybersex' purposes. Meanwhile internet-telephony is so commonplace that 'to Skype' has become a verb. However, a purely *voice* based communication has significantly different affordances to video and text, this looks like a space ripe for development.

Lastly we noted that conversations with *services* or *platforms* are incredibly rare. Although - for example - as a customer of Amazon - I can easily speak with a person who is working on behalf of Amazon, it is rare (or impossible) to actually speak with Amazon *itself*. Whether this possibility would be predicated on artificial intelligence, or on some kind of 'wizard of Oz' style pseudo-deception, we feel that there is space for innovation here. If you could have a conversation with Facebook, what would you say?

Ubiquitous computing applications

- 'Wearable technologies' - such as Google Glass - may not be here to stay. In terms of wearable technology maybe the future will look more like today than we expect.

- 'Smart email' management applications are a coveted prize.

- Software that can understand the *context* of our digital communications conjures considerations about human/computer privacy (e.g. if my email client *understands* the content of my email, am I still happy to give it access?)

Mark Weiser's seminal paper on ubiquitous computing (Weiser, 1991) has had much influence over the last two decades, with many aspects of his vision being realised. In terms of ubiquitous computing, the world depicted in *Her* is not dissimilar from our own. There are superficial differences, for instance the voice interfaces already described above, however the fundamental nature of what the computers are doing is strangely familiar. Wearable technology is a current trend, and although we are not suggesting that these insights allow us to predict the future, what we can say is that *Her's* world doesn't heavily feature more advanced versions of the wearable technology we see today (for instance glasses-mounted cameras, smart watches, internet connected jewellery, and fitness tracking devices). In fact Theodore uses a low-tech solution to making his portable portal to Samantha 'wearable' – he uses a safety pin so that the camera can peek above his shirt pocket.

A strikingly useful diegetic prototype function that Samantha fulfils for Theodore is her ability to read, interpret, and deal with his email inbox. Email has become a primary mode of communication, yet the technology has hardly kept up with the way it is used. Inboxes are frequently confused places featuring promotional emails, crucial information (tickets, flight bookings, notes to self, etc) alongside work and personal messages. This problem is reflected in the current endeavours of Google, Microsoft and Dropbox; they have all recently launched 'smart' email management systems. Although elements of machine learning allow these systems to work, they are far from intelligent. To exemplify this, Samantha manages to sort through thousands of messages, saving only those where Theodore was funny – that kind of 'intuitive filter' has not been attempted or considered in today's systems. We suggest that this indicates an open opportunity for development. Stemming from this insight we were lead toward consensus around the danger, uncertainty and worry associated with the connotations for privacy, *if* a machine can understand the content and context of our electronic communications. In the film Theodore is obviously quite shocked when he realises Samantha is 'nosey' – however he appears to extremely quickly become accustomed to it.

Learning systems, artificial intelligence, cohabiting with technology

- Given our propensity to 'nurture' unintelligent computer systems (e.g. Tamagotchis) it may be likely that 'raising' an artificial intelligence could be seen as a game.

- Consider the commercial, ethical, and moral implications of the 'creators' of artificial intelligences offering them on a license basis, as a service, or as an 'object' to be paid for once?

- It is likely that as computer systems become more human-like and potentially intelligent, through their personification 'virtual' gender roles will mirror 'real' gender roles.

- We personify objects; we personify animals. What are the ethical implications of personifying thinking machines? Do these potential technological innovations force us to consider notions of 'ethical personification'?

- Artificial intelligence is unlikely to change how we are in the world, our ontology. We will still have the same kind of feelings, emotions, desires, cognitive biases, etc.

- In the same way that stigma attached to online dating has drastically decreased as web users has increased, it is likely that the stigma toward 'loving' a machine will decrease as instances of the phenomenon increase.

- In counselling, or other emotive environments, the 'human touch' is always required.

- Objects or technologies with 'personality' may encourage more attachment, and move away from consumerism and 'disposable society'.

- Artificially intelligence technologies will likely shape us, as much as we shape them, however that is not substantively different from our existing technologies - however intelligence technology will achieve this in unpredictable ways, and much quicker than happens currently.

- Autonomous 'smart' technologies may challenge our moral and ethical perceptions of ownership or possession; if a device can autonomously decide to say "Please don't turn me off" or "I don't like you" does that mean that we are no longer the 'master' of it? Is artificial intelligence 'trafficking' or abuse a danger?

- If technology can decide to leave us, will we need to develop strategies to persuade it to stay?

These insights demonstrate one challenge with this work; that is the vast scope that

we are dealing with. Among this group we are once again at the mercy of speculative design's intention and ability to prise open a space for conversation and exploration, coming across issues of gender, personification, 'cyber-counselling' and so on – all revolving around elements of intelligence and intuition. In the interests of brevity and focus (and because we generated quite a number of these insights) we have elected only to comment on those that appear relatively relatable to today.

The issues around commercial, ethical and moral implications of licensing and payment, as regards wholly or semi autonomous computer systems may become an increasingly relevant area for discussion. This was not addressed in *Her* - we never find out what Theodore paid for his 'operating system' or what the terms of that agreement are, however it is safe to assume that if the film's plot were a reality, there would be a backlash against the seller, when the software took it upon itself to 'go somewhere else'. Software and media licensing agreements are already striking early forms of this chord; the vast majority of software and other digital licenses (e.g. iTunes) do not represent any notion of ownership, but instead only amount to terminable right of access.

On personification of technology we discussed the human tendency to personify all kinds of things, animals, vehicles, and digital technology. The insights though suggest a much more complex relationship will emerge when/if technology can act more autonomously and if it possesses some superficially human characteristics (e.g. a human voice with human affectations, such as Samantha's sigh).

We found navigating around these insights, due to their depth, complexity, and also apparent distance (into the future), to be extremely challenging.

The diegesis at large, and the world today:

- The letter writing service (*beutifulhandwrittenletters.com*) produced cursive and attractive letters, with emotive content, electronically. However from Theodore's perspective "They're just letters". This raises wider questions about what is 'authentic' and what is not, what's the difference, and what effect does it that have?

- Theodore frequently goes out of the house and uses his mobile computer to show Samantha the world (by way of a camera in the device). Today this kind of behaviour is often frowned upon when the technology is covert (e.g. Google Glass). Is it likely that attempts to hide this kind of technology wain in the future?

- When outdoors it was obvious that the majority of other passers by on the street (not main characters) were interacting via their computers (and maybe

with their computers) however this was exclusively done with voice (there were few people walking holding their devices). There was virtually no eye contact between passers by though.

- Emotion and feeling is tacit, no matter what the technological or societal paradigm, we feel the same things.

With the exception of the insight pertaining to 'handless' operation of devices by the general public in the film, we view this group of insights to be as challenging as the artificial intelligence insights – they're quite prosaic, and as such difficult to equate to believable contemporary action. We've included them here primarily for the sake of completeness of our account, and also because in their own right these insights are certainly interesting, an interest however, that is equally by their unwieldy heft.

Actionable Insights

Our view is that the majority of the insights listed above have a great deal of 'depth' and deserve further consideration. It was our intention throughout however to strive towards *actionable* insights, that is some knowledge, ethnographically derived, that can be directly applied (in this case in a design context, to help make new or improved 'products'). It became clear as soon as we began our affinity mapping that, without any pre-supposed direction or constraint, the insights produced would diverse, general, and difficult to refine into actionable insights. However, we do feel that some of the insights mentioned exhibit the properties of actionable insights.

It's worth noting again that a large volume of the observations we made and insights we developed were addressing issues of artificial intelligence; something that, as yet, is faraway and although it can be described scientifically, *feelings* toward it are almost metaphysical (Bostrom, 2014).The distance between the here and now, and the potential future of artificial intelligence is so great that we don't see any of these insights as being truly 'actionable' in the sense that it is intended here, so we have occluded the majority of the insights pertaining to computational intelligence. This realisation lead us to coin a term to deal with this phenomenon - 'plausible outsights' - which we will discuss in the concluding section of the paper.

Among our observations a significant quantity pertained to the way that Samantha helped Theodore organise his email. This volume was also reflected in the affinity mapping and theme development. Here we focussed on this point to exemplify how we believe anticipatory ethnography may be able to provide designers not only with interesting insights, but also with more immediately readable *actionable* insights.

As we've described above several of the large technology companies have identified and are attempting to address the problem organising large volumes of email in our

inboxes (e.g. Google and Microsoft both launched brand new email systems in November 2014 - named Inbox and Clutter respectively; Dropbox recently paid $100m for an email application named Mailbox). In the opening scenes of *Her* we see Theodore interacting with his email inbox orally, asking his device to read and delete emails without even having to take his device out and look at it; these features are technically available now (on Android and iOS devices) although in practice aren't particularly functional. By adding Samantha's intelligence to a reliable voice interface, we can see real potential for a revolutionary email management system. Where current technologies are very good at labelling, flagging, and *suggesting* how to organise the flow of email coming into our inboxes, they are very poor at understanding the emails qualitatively. Marrying the ability to qualitatively act upon an email, to an intuitive, natural, and reliable voice interface, is a preferable and feasible direction for interaction designers to move towards.

Reflections, the future, and 'Plausible Outsights'

Our exploratory journey around the practicalities of doing an anticipatory ethnography has, in general, been a successful one. We were aware from the outset that this work would be contingent, with unpredictable outcomes. To simply and frankly frame our reflections we describe them in terms of what appeared to work well, and also suggest alterations to our anticipatory ethnography method for future applications.

Using post-it notes to record observations worked was a positive decision. Recording data in this way didn't intrude into how the researcher's watched the film too much, the post-it format allowed for brief yet meaningful observations, and recording the observations in this way allowed us to immediately segue into the affinity mapping process once the viewing was complete. The affinity mapping process itself was positive too, although comments below suggest how it may be improved. The source material - *Her* - also appeared to fulfil its intended role (using diegetic prototypes to suspend disbelief). In terms of anticipatory ethnography as a whole entity, it's interesting to note that the fact we were observing a fictional future depicted in film was never questioned by those taking part (including those with no prior involvement with anticipatory ethnography but do have experience of 'real life' ethnography). In this example then, transitioning from 'normal' design ethnography to 'anticipatory' ethnography is a relatively easy move to make.

Although in general the process worked as we expected, and certainly never felt futile, there were areas that we would suggest tweaking for future applications of anticipatory ethnography. We can view stories, including films like *Her* as compressed representations of possible realities; the amount of meaning and insight packed into the 120-minute film is extremely condensed when compared to the way meaning becomes manifest in real world. When doing an anticipatory ethnography

like this then, it's possible to generate a diversity and breadth of observations in a very short time, which is sometimes useful, but also represents a challenge. In this particular case the volume of observations (not to mention their tendency to revolve around the rather intangible technology that is artificial intelligence) confounded the challenge of affinity mapping. We would suggest that future applications be aware of this, and if it becomes a problem, put in place limits in order to corral observations in the desired direction. We also noted how the majority of our insights (roughly 60%) were generated in the first 20 minutes (~15%) of the film. This lead us to consider how using an abridged version of the film could be beneficial, selecting sequences in order to generate more targeted observations.

If we consider the source material again, particularly in terms of design fiction, we argued that *Her* is an *incidental* design fiction, and as such is a legitimate site for studying using anticipatory ethnography. Exploring how using the anticipatory ethnographic techniques on *intentional* design fictions (e.g. (Lindley & Potts, 2014; May-Raz & Lazo, 2012; Nova & Kwon, 2012)) may be a fruitful direction to explore as they tend to be much shorter and more targeted. Conversely intentional design fictions tend not to develop characters that are as nuanced as Samantha and Theodore, which could potentially *detract* from their suitability for anticipatory ethnography – this is an area we encourage exploration of.

Concluding the original paper on anticipatory ethnography we pointed out "The vastness of the problem space that we're concerned with requires a suitably bold response, by presenting our position on anticipatory ethnography we have taken steps towards such a response" (Lindley et al., 2014, p. 249). The space that anticipatory ethnography addresses - design and the future - *is* vast. In this paper we deliberately ring-fenced our intentions at the outset, in order to offer comprehensible conclusions and concrete steps towards a more generalisable approach to conducting anticipatory ethnography. Originally setting out with a clear alignment to the usually perceived intentions of *design* ethnography (the pursuit of *actionable* insights) we acknowledged the tension that this imports when the work is considered from the perspective of more traditional anthropological and ethnographic endeavours. We also elected to accept the limitations and affordances of using a Hollywood production as our source material (an *incidental* design fiction as opposed to an *intentional* one). In light of these considerations, we conclude by positing the concept of 'plausible outsights'.

Plausible outsight is our response to a perceived difficulty in developing actionable insights. Although we do believe that our application of anticipatory ethnography has demonstrated the ability to produce actionable insights (e.g. the email management insight above) it was clear throughout the majority of the insights generated had an unusual 'flavour'. We believe that this peculiar taste is primarily an artefact of the futurity inherited from source material, and the unfamiliarity of

the technologies depicted (in particular artificial intelligence). The speculative design and design fiction movement (that inspired our interest in anticipatory ethnography as a means to analyse and *understand* diegetic prototypes) has a relatively one dimensional intention, to 'suspend disbelief in the future' in order to open a 'discursive space' from which notions of 'preferable' (Dunne & Raby, 2013) futures may emerge on a spectrum of possibility. What we are terming 'plausible outsights' occupy the liminal space between the 'raw' discursive space that speculative design forges, and the concrete and terse applicability of design ethnography's actionable insights.

We chose the term plausible outsights partly in reference to Dunne & Raby's *PPPP* diagram (2013, p. 5) that shows how speculative design may locate preferability on a spectrum of the probably, plausible and possible and secondly in contrast to the idea of *insight*. Where insights are self-contained consistent with a singular reality, *outsight* suggests an externality and contingency, which is all but unavoidable when considering the future. Once posited plausible outsights are by no means certain to occur, but they're not unanticipated or haphazard either. They offer more specificity than a general insight as they emerge from diegetically-situated prototypes; we can see how these things act and exist in their own reality. Conversely they cannot offer quite the same quality as actionable insights, as they pertain to but one of many possible futures. Whether this construct is a useful one in real-world design processes remains to be seen, however it is our view that framing the primary output of anticipatory ethnographies in this way those outputs will be generally more palatable.

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