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Method& Critique *Frictions and Shifts in RTD*

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A Smartphone in the Nursery

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Abstract: Through experiments in design, this research explores the role of smartphones for mothers and young children.

Forming part of the material paraphernalia surrounding mother and child, smartphones are used as connection with work or social realms, as entertainment, pacification and educational resource, thus blurring boundaries between the private and the public and between work and play. As a result, smartphones offer competing discourses that this research explores.

Through the processes of drawing and making, a series of experimental designs were created to develop this research space. Evoking behaviours brought by the use of smartphones during childcare, these designs present mothers as complex users and explores the possibilities for design to reshape our relationship with technologies in family life. The development of these proposals formed a first exploratory stage in this research.

A second stage took place in the encounters between people and the designs. Through narratives that were suggestive and open to multiple interpretations, the proposals encouraged conversations about motherhood and the implicated role of smartphones. As research objects, they allowed for discoveries both for me as researcher and for those that encountered them.

Keywords: smartphones,motherhood, drawing,making,toys, experimental,critical design, inventive methods

Figures 1 and 2. Experiments in drawing and making

Figures 3 and 4. Experiments in drawing and making

Introduction

This paper describes a design exploration into the role of smartphones for mothers and young children, focusing on situations where mothers have the primary role of childcare. During this period, at times of isolation (Lee et al., 2017; Rokach, 2004; Stadlen, 2004), many mothers use and adapt available means to create suitable environments for their children and to attend to multiple, often conflicting demands. In this realm of resources, which includes bottles, pacifiers and toys, smartphones have a particular significance, performing multiple roles. Flexibly transforming from tools into playthings, smartphones are used for connecting to work or social spheres, for keeping children quiet or distracted or for support with breastfeeding or other childcare activities (such as managing schedules, accessing tips and videos or locating public breastfeeding places (Balaam et al., 2015)). Shared and variably given and taken away, smartphones become both desired objects and rivals for parental attention. Often sources of conflict in family life, they offer multiple and competing discourses that this research investigates.

Through the practices of drawing and making, a range of experimental and suggestive designs were created. These processes became forms of sense making as recurrent narratives and themes of the research emerged. The result was a collection of sketches and artefacts evoking behaviours around the use of the smartphone during childcare and its significant yet conflictive role. The designs were used in workshops with participants, encouraging discussions and reflections about the protagonism of smartphones and about practices, often private, that involve ambivalence and guilt.

Figure 5. Multiple uses of the smartphone

Motherhood, psychoanalysis and critical design

In 1953, British paediatrician and psychoanalyst D.W. Winnicott published his famous theory on Transitional Objects, proposing that infants develop a strong relationship with a preferred object (a teddy bear or blanket, for example). A child's first possession, the transitional object lives in a space of transition between mother and infant and signals the beginning of the child's experiencing the world as a separate entity, providing comfort when the mother is unavailable. Though Winnicott's contribution has been unquestionably recognised, feminist psychoanalysts have in recent decades challenged such psychoanalytic narratives that place the mother as an entity entirely responsible for the child's wellbeing, and began exploring maternal experiences. Lisa Baraitser, for example, proposes that the mother also has a unique relationship with the transitional object, distinct from that of her child (Baraitser, 2009), suggesting multiple affordances. Roszika Parker explored maternal subjectivities, presenting mothers as separate objects from their children, with both positive and negative traits (Parker, 1995). Parker suggests that there is a cultural ambivalence towards accepting complex, often difficult aspects of motherhood, resulting in the embracing of portrayals of mothers as benevolent, impossible icons. Motherhood, a socially constructed aspect of femininity (Choi et al., 2003), often works on ideologies of pure devotion to children, offering market opportunities for guiding

mothers into 'good motherhood' (Cook, 2011; Clarke, 2014). Such idealisations affect the conceptualisation of designed goods, which tend to work on ergonomic needs around mobility, sterilisation or safety (for example), but often under explore users' psychological complexity. One important contribution made by critical design is in its exploration of our complex relationship with objects, often presenting users as contradictory, 'even neurotic' (Dunne & Raby, 2007). In its challenge to conventional and solutionist design narratives that present users as uncomplicated, critical design can offer a useful perspective for exploring mothers as complex users of technology, thus contesting gender stereotypes in design.

This research explores these families of ideas through the design practices of drawing and making. The resulting proposals were used to engage in conversation with participants, aiming to comprehend how mothers understand their experiences around the use of smartphones during childcare. More generally, the work explores ambivalent attitudes in society towards the presence of technology in family life and the possibilities for design to explore potentials for change.

Drawing as research

Drawing was an integral activity in this research. Mäkelä et al. (2014) propose that research is both creative and rationalising, where drawing can be a reflective process with a crucial role of moving the research inquiry forward, while Rosenberg (2008) considers drawing an epistemological tool that works in tension between the known and the unknown. Informed by toy design, literature on transitional objects, observations and autobiographical experiences, drawings worked as suggestions, allowing a playful exploration of ideas without pressures about how they would be made or indeed if they should be made. Inhabiting a suspended imaginary space in which concepts and forms merged and mutated, drawing began as a description of the A,B,C of an infant's world, gradually incorporating the smartphone, producing suggestive and often strange combinations, a visual process of sense making. Sketches told stories about the smartphone, its uses and missuses in the material realm of infant and mother, a world populated by toys, bottles, blankets, pacifiers and milk.

Through the production of many narrative drawings, certain themes started to surface: the smartphone as an object of rivalry, as a sort of pet, a mediator between mother and child, a form of childcare, a toy and tool, a transitional object. An assortment of sketches drawn over 150 sheets of paper was compiled and put together in a book. As a collection, they reflect the manner in which an understanding of the research space unfolded on paper.

'Drawing is another way of telling; it flows and unfolds with time, both hand and head working together.'

Tim Ingold, 2013

Figure 6. Sketch exploring the smartphone as a mediator between mother and child

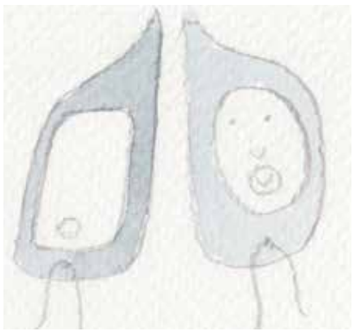

Figure 7. Sketch, the smartphone as object of rivalry

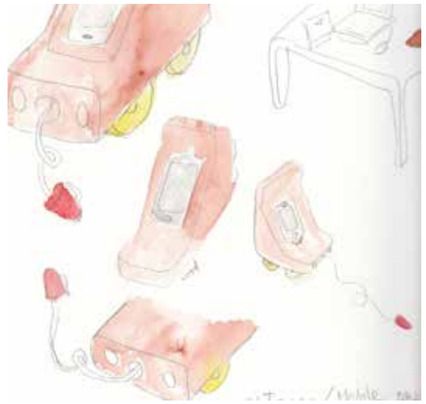

Figure 8. Exploratory sketches: the smartphone as tool and toy and its prominence in childcare and feeding.

Making as research

Margetts describes making as a series of repetitious acts, incrementally shaping objects with meaning, stimulating a non-verbal curiosity towards the unknown and widening our abilities to communicate (Margetts, 2011). In this research, making and drawing became processes of sense making that informed and complemented each other. While ideas were explored on paper, a series of iterations also took place through the adaptation of materials, textures and ready-made objects such as bottles, wooden wheels and machined models. This exploration also included the smartphone as a material that offered technical effects (Chatting et al., 2017).

While some proposals progressed from sketch to object, others were made, redrawn and remade, each variation offering a new interpretation. A sketch re-drawn in CAD would sometimes become clinical, masculine, less childish, at times reminiscing science-fiction imagery. Turning a drawing into a 3D object helped ideas exist with other objects, offering some tangibility to abstract ideas (Bødker, 1998). The incorporation of simulated apps and animations on the smartphone suggested its agency, stimulating further play with forms and materials. As forms on paper were transformed into tangible objects, their three-dimensionality also made them more intimidating as protruding features became real. Though materially palpable, the objects retained some of the ambiguity seen in their hand sketched forms. The result was a collection of experimental and suggestive artefacts.

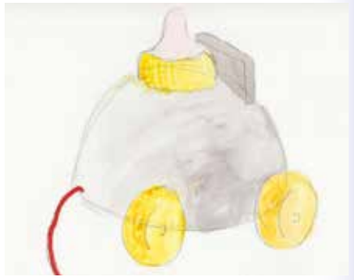

Figure 9. Exploratory sketch, the smartphone as comfort object

Figure 10. Trying out shapes

Figure 11. Existing toy, sketch model and experimental artefact

A collection of artefacts

A spectrum of experimental artefacts was produced. At one end of this spectrum are artefacts that are provocative, abstract and critical, performing as conversational objects that invite reflection and discussion. At the opposite end are artefacts that are conversational, but also potentially deployable and offer conceivable possibilities for managing the intrusion of smartphones.

Figure 12. Ambivalent Objects 1.

Suggestive and provocative, these objects evoke the use of smartphones as a form of childcare. Causing both fascination and rejection, they invite dialogue and reflection.

Ambivalent Objects represent unintended uses of technology in family life, suggesting the role of smartphones as pacifiers. They challenge conventional user portrayals by presenting mothers as complex users of technology.

Figure 13. Ambivalent Object 2

This artefact suggests the smartphone as a comfort object and invites discussions about ambivalent attitudes towards smartphones and young children.

The smartphone, awkwardly rammed in, evokes its intrusion into the world of infants, often perceived as natural and organic.

Figure 14. Herby.

Herby uses humour to make difficult issues 'safe' to discuss. Using the smartphone's embedded accelerometer, it reacts when it is being used as a toy. It gets annoyed when pulled along.

The faster it is pulled the angrier it gets, and the angrier it gets, the more ridiculous it seems.

Herby argues "I am not a toy" or "take me to your mum". It evokes the mother's reluctance to share and her plea to leave the smartphone alone.

Herby suggests the phone as a grumpy family member. Making the phone angry gives it agency.

Figure 15. An Uncanny Pet.

An Uncanny Pet uses the metaphor of a sleeping pet. It is a charging station.

The smartphone is temporarily unavailable, it snores and its eyes are closed.

It loses hairs.

Evoking sleeping routines, easily understood by young children, it invites adult and child to take a break from the phone.

Suggesting that the smartphone is part of the family, it proposes a temporary break, not a permanent solution.

Using objects and images as a form of inquiry

Susanne Bødker refers to prototypes and drawings as representations with tangibilities that can be pointed out and discussed back and forth between designers and users (Bødker, 1998). Using artefacts to draw out specific responses from participants is an established practice in design and HCI research. Examples of this approach can be seen in projects such as The Prayer Companion (Gaver et al., 2010); the Fenestra project (Uriou and Odom, 2016) or Family Rituals 2.0 (Kirk et al., 2016). Such projects use highly finished, deployable artefacts (thanks to sufficient financial and human resources) but other projects with less finished and more conceptual designs have also resulted in fruitful discoveries. For example, Counterfunctional Things, by Pierce and Paulos (2014) used experimental artefacts with intentionally limited performances, conceived as conversational objects that enabled researchers and subjects to engage in conversation and reflection during one-hour interviews. Suggestive, unfinished and conceptual designs can be open to interpretation and ambiguity (Sengers and Gaver, 2006; Gaver et al., 2003 and 2004; Pierce, 2014), enabling reflections about ideas that may not necessarily need to be developed, or that may lead to further explorations for possible outcomes, while giving proposals performative qualities (Bødker, 2009; Danholt, 2015; DiSalvo, 2012). In this research, the evocative nature of the proposals invited participants to interpret them, and in doing so, to tell of their own experiences towards smartphones in family life. For the purpose of this paper, I present only a selection of the responses emerging from the encounters between the designs and people.

Encounters between the designs and people: Conversation Pieces workshops

Three workshops called Conversation Pieces invited participants to meet and discuss the designs. Recruitment took place through social media, personal contacts and flyers distributed at nurseries, cafes and a child clinic in SE London. Each session lasted under two hours. Ambivalent Objects were shown first, followed by Herby and Uncanny Pet. Sketches were shown at the end of the sessions.

Figure 16. Conversation Pieces workshops

"These are narrative objects, aren't they, you are showing potential scenarios, but they actually already exist"

"the mother is trying to maintain and wrestle back, it's like wrestling most, you know you are trying to keep back a bit of yourself through the phone, and what it represents to you, and the child develops a relationship with it that is not necessarily what you think it is"

quotes from workshop participants

The objects and drawings worked as triggers for conversation. Participants' interpretations of the designs prompted revelations about their own use of smartphones. The proposals produced both rejection and attraction, inciting participants to identify and tell of practices, often held in private, that produced guilt and ambivalence. Examples of themes discussed were mothers' need to use a network of objects during childcare, including smartphones as forms of childcare support, and the social expectation that mothers should protect their children from the dangers of too much screen time, a fear that was described as old and that started with television sets. There were accounts of regret for having relied too much on technology as distraction, either for mother or child: a mother expressed concern about having used it to keep her toddler entertained while she breastfed her baby, worrying it might have caused his speech impediment. Another mother observed how feeding times can be repetitive and 'endlessly boring', the smartphone offering her some distraction and respite. There was also a recognition of the phone's significance for the mother, distinct from what it may represent to the child. Another insight that emerged was the importance of not judging mothers, who are often condemned for the ways in which they manage childcare (particularly in public).

Ambivalent Objects generally produced negative responses to begin with, although upon conversing further there were recognitions that they might be useful at particular moments (when the mother may be unavailable, for example), with recommendations of how to make them more ergonomic or where they might sell well. This duality of responses might point to a general ambivalence towards the notion smartphones entering children's realms, perceived as organic and belonging to the world of nature, with technology seen as bringing both intrusion and relief.

Participants seemed to enjoy pulling Herby along, while ignoring its pleas to be taken seriously as a tool. Herby's requests, which often interrupted our conversations, prompted some to suggest it could incorporate parental commands for young children. Despite an initial rejection towards the notion of toys integrating smartphones, some participants saw in Herby the possibility to introduce young children to the world of technology and coding (despite the fact that Herby could in no way teach to code). In this case, technology, seen as polluting, was made safe through its perceived educational potentials.

An Uncanny Pet's metaphor of a sleeping animal was welcome in its possibilities for offering a break from the intrusive presence of the smartphone for both mother and child. Some participants pointed to the strong contrast between the fur-like texture and the hard, masculine aesthetics of the phone, here softened and domesticated.

The provocative nature of some of the objects prompted reflective discussions about the ways in which technology can at times offer relief from the demands of looking after young children alone, which enabled some participants to share accounts about the difficult aspects of motherhood. As the designs exposed unintended uses of technology during childcare, they prompted participants to recognise aspects of themselves, sharing and comparing experiences with others, in a manner similar to that of playgroups. This resonated

Figure 17. Conversation Pieces workshops

"they are like an addictive thing, you know, you can see, it's like an addictive Pringles... especially yesterday, I had a day, 14 hours on my own with them, and actually you do look at your phone more on a day like that because you're on your own, not talking to anyone, 14 or 15 hours"

quotes from workshop participants

with Parker's suggestion that mothers often use other mothers as mirrors, in a search of confirmation that their own maternal experiences are right, or at least not wrong (Parker, 1995, p.1). Such uncertainty seemed entangled with that of current debates about the possibly negative impact of smartphones on health and social wellbeing, that many mothers feel their duty to protect their children from, becoming yet another undertaking in the maternal task.

Conclusions

While this paper only partially presents selected aspects of the research, I hope that these approaches, concepts and ideas can encourage the examination of previously unexplored subjectivities of mothers as complex users of technology, here recognized as a source for the production of knowledge. The design of products for mother and child often revolve around constructed narratives and ideals of motherhood that contribute to gender stereotypes. By presenting, through design, the perspectives of mothers as users I aim to add to the exposure of a diversity of experiences and viewpoints that can help diminish the space between user and designer (Bardzell and Blevis, 2010). Furthermore, this research aims to contribute to discussions that recognise the significant yet conflictive role of smartphones in family life and the ways in which it is implicated in contemporary constructions of motherhood.

Drawing and making are integral activities of sense making in the design practice and I hope that this work can support a better understanding of the particular contribution that design research can offer. Moreover, the design led approach of this project, using suggestive and experimental proposals to draw reactions and reflections has produced a number of possible directions for design and research that may further address ways in which to manage the intrusive nature of smartphones in family life. I hope that these will be useful contributions to the design research community.

"Oh, I feel a bit, um... sort of shivery about seeing baby things integrated with phones, ... makes me feel quite uneasy... I suppose it's because I feel that children, babies should not have that much technology around them, but then I think oh actually often they do, often we do sit with the phone all of the time..."

quotes from workshop participants

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