Message threads

Exploring interpersonal communication through smartphones – how we weave our lives in a hypermediated world

Jayn Verkerk

11/06/2013 8:07 AM

can you pick me up from
the bus stop on cuba st in
petone, i missed my bus.

never mind the bus came

Ok good. Have a nice
dayxxxx

12/06/2013 7:20 PM

I got that anime film castle
of castiglione in, we can
watch it friday k?

12/06/2013 8:38 PM

yay, cool

See u tomrw for gk 😊

12/06/2013 9:23 PM

yep

14/06/2013 1:42 PM

Have you posted
sherlock?

14/06/2013 3:27 PM

no i forgot, but i'll text dad.

Dont forget!!!!!!!

16/06/2013 3:04 PM

We in petone, pickin u up
in 10

Finally!

17/06/2013 3:53 PM

Coming to get you now k?
Meet me out front about
415

okay

front entrance.

There in 2

okays

18/06/2013 7:47 AM

i dont have my research.

Geez! i guess i can email
to your teacher and ask
nicely if she can pass it
on? Or can i email to ur
gmail and can u log in?

no gmail is blocked on
school computers, you
can send it via my teacher
though. as long as you
send it w the thing saying
i'll be picked up early.

Yup

okay, cool.

19/06/2013 7:40 AM

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See also <http://messagethreads.wordpress.com/>
<https://vimeo.com/86656170> and <https://vimeo.com/86663720>

How does smartphone texting communication facilitate and dictate the way we relate to each other and ourselves?

This thesis is about human behaviour as it relates to computer mediated communication. Smartphones are an accepted part of everyday life. We use them to wake us up in the morning, we play games on them while we wait for the bus, and take photos with them. Smartphones also enable communication. We can phone while in transit, coordinate meeting up with friends, share our lives on social networking sites, and check in on email and text throughout the day.

How does this technology affect how we interact? In public situations we retain contact online, but this multitasking affects how we relate to others socially. Smartphone texting allows us to keep in constant touch with friends and family, though interaction is fragmented and asynchronous. As we are always available, and never alone, these open lines of communication also affect how we see ourselves.

In choosing the smartphone I critically question the attention and priority given to these devices in daily life. Mobile phones have changed the soundscape in public places: dialtones, beeps and people speaking in public on their phones is common. Users interact continually with their phones, store substantial data on them, communicate through, and consequently develop a bond to, the physical object. What could these ubiquitous portable computers tell us if, instead of being passive agents in a dependent relationship of user and phone, they actively listened, or could reflect back the nature of their role in our lives?

Introduction

In this paper I discuss firstly the role of texting and the smartphone in society and current user habits including the detrimental effect of immersion in these devices. Initial research focused on documenting user behaviour when engaging with smartphones through photography and a survey honing in on the significance these devices. Outcomes from this and research on communication theory and the importance of non-verbal cues in understanding the sender's intentions led to a decision to concentrate specifically on texting.

The communication process is examined, looking briefly at different forms, ranging from handwritten letters to texting and how each form functions. A parallel historical context and the drivers for the introduction of these tools and ultimately computers is discussed. Following this I touch on the implications in marketing AI (artificial intelligence) for smartphones as a communication tool.

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Contextualising the function of media tools, key media experts are referenced on the development of media technology and the relationship to the user. From this perspective of the user I move to the internal personal experience of texting and implications for the understanding of the self.

Having established my perspective and defined a brief, I progress to a discussion of 2 concepts for smartphone apps (applications), and an explorative study in recording and observation by iPhone camera. My third, chosen design concept is explained with reasoning for that choice as a departure from that of a planned smartphone app product. In choosing physical outputs I contrast the crafted artifacts with the instant text messages.

Thematic and aesthetic influences are explored, leading to the production of three series of fabric hangings or banners as part of my designed outputs. Topics discussed in relation to this work are data visualisation, life-logging and weaving.

Other outputs include a fibre optic weaving. The relevance of online connection and textiles, as is evident in terms such as the internet, web, message threads.

A video contextualises the topic, combining captured

footage of people on phones with the action of weaving. This emphasises the tactility of texting and its similarity with weaving and the association of weaving to interpersonal communication.

In closing I discuss the implications for the design and development of smartphone products and the responsibility of users and designers in the use of this tool.

Smartphone – history and habits

The first mobile phone was manufactured in 1973 by Motorola. In 1983 in the US, and 1987 in Australia, the first generation of analog cell networks powered widespread mobile telephony. 2G or 2nd generation mobiles appeared in the 1990s, in the form of the IBM Simon Personal Communicator. Weighing five-hundred grams it could send and receive faxes and email. Other features included an address book, calendar, appointment scheduler, calculator, world timeclock and a simplified type of SMS. Currently the features of smartphones include an alarm clock, camera and video recorder, diary, gps, gaming apps, media player, wifi and broadband capable browser, email and messaging – the term ‘phone’ is an inaccurate description. For the subject of this paper I am defining the smartphone as a mobile computer and communication device.

Growth partnership company Frost & Sullivan (2013) researched smartphone use in New Zealand, and predict that by 2018 New Zealand will have 90% smartphone ownership, substantially up from the current 64% rate. Currently 44% of users mainly engage in mobile media, 61% access social networking at least once a month. As functionality and connectivity improve it is expected that smartphones will become the preferred device over laptops.

UK group Ofcom (2012) recorded 200 billion texts and IMs combined sent in the UK in 2012. The average UK consumer sends 50 texts a week.

In a study from Norway in (Ling, Bertel, & Sundsøy, 2012) using a dataset of nearly 400 million text messages, teens as early adopters were found to be the biggest texters by far, with girls dominating. Across all age groups users generally had texting partners of the same age group, mainly of the

same gender, with most texts going to a small number of people – half of all texts went to just five people. Although this research is Norwegian, as a small western country it could be comparable to the New Zealand population.

Constant connection via mobiles to text and continual checking of messages is an increasingly acceptable and common social behaviour. This results in less presence and awareness of the physical environment. Multi-tasking, though enabled by technology, leads to distraction and less effectiveness. In research on media multi-tasking from The National Academy of Sciences in the United States of America:

...results suggest that heavy media multitaskers are distracted by the multiple streams of media they are consuming, or, alternatively, that those who infrequently multitask are more effective at volitionally allocating their attention in the face of distractions.

Ophir, E., Nass, C., & Wagner, A. D. (2009).

Cognitive control in media multitaskers. *Proceedings of the National Academy of Sciences*, 106(37)

At the time of writing there is a downward trend in the numbers of texts sent in both New Zealand and the United Kingdom (Garside, J., 13 January, 2013). Due to the convenience of wifi connection, the lower cost IM (Instant Messaging) is preferred and more in use by younger generations. There

are close similarities between IM and texting. The differences are minor on iPhones which switch seamlessly from iMessage to texting. For the purpose of this paper I consider research regarding instant messaging to apply to texting also.

Approach and process

I was initially drawn to the subject of mobile phones by observing the public face of smartphone use in the level of engagement of individuals with their phones.

The contradictory nature of engaging in a private immersive media while in a public place led me to capture the physical process of users engaged in the process of connecting on their phones. Photographing how users engage with their devices I recorded people interacting with their phones rather than observing or talking to those around them, companions and strangers alike. Users were often bent over the device for several minutes and longer. Sometimes people were waiting for public transport, often people were alone, though groups of people were equally likely to be checking their phones, including in typically social situations, for example where dining couples were both immersed in their phone. Notable was a lack of an awareness of being photographed, most of the subject's attention appeared to be focused down into the phone. Recording the external expression drew me to want to know more about the internal, personal process.

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I wrote and delivered a questionnaire to a small number of people to find out more about the habits of user interaction with their smart phone. These were presented to an initial set of ten smartphone users. Topics included the level of attachment to the phone, preferred use of the device (for example, business, arrangements to meet up, keeping in touch) and protocol around use in social environments. In reply to one key question asking what the most precious thing on their phone was, overwhelmingly people chose photos (*see below*). Though there were mentions of messages that were important and were kept and valued, these were felt to be too personal to share.

At this point I chose texting as the smart phone function to explore further as the form is defined by mobility and differs sufficiently from email or phone calling. The task of communicating through texting is facilitated by the smartphone and is particular to that device.

Texting allows users to contact friends instantly, it therefore functions as a useful tool for coordinating everyday arrangements with others. Effectively transcending geographic limitations, users can feel closer to loved ones far away. Useful as a form of light social interaction, SMS is ideal for instant contact. The one to one nature of mobile messaging gives the impression of privacy and so it can be used to send deeply personal messages. As text messaging involves the complex human process of communication there can however be confusion about the intention or mood of the writer.

The contradiction of a device that enables communication while causing misunderstanding due to the nature of that media is puzzling and fascinating, and an ideal focus for exploring further.

Ways to communicate

Multiple methods of communicating are commonly in use today, in different ways these have either preceded SMS or work alongside it. The elements that allow interpretation of the writers' intention differ across these media.

The now rare form of a handwritten letter has a materiality, a physical presence. Time and care is taken in the writing of a letter, there is a perceived presence, similar to what Walter Benjamin termed 'aura', in the knowledge that the sender has expended effort in putting a pen to the same paper the recipient reads from, it is an original artifact as it is the same paper that the writer's hand moved across. We can interpret meaning from the paper type, variations in the writing style indicating a possible change of mood, the writing on the envelope and the way the paper is folded.

Typewriters were a way to mechanise writing. This method of writing can be seen as a remediation of the handwritten letter, as it eventually replaced the handwritten. Typewriters allowed more anonymity than handwritten texts as any cues to mood in the individual style of hand writing is removed. An early adopter of the typewriter was the philosopher Nietzsche, who was sight-impaired. In a letter typed on his Malling-Hansen 'writing ball' typewriter, he wrote 'Our writing tools are also working on our thoughts', and noted that he wrote in a more abbreviated form when typing. The philosopher Heidegger (1998) commented on the technology of 'mechanical writing' as providing the advantage of concealing the handwriting and thereby the character. The tactility of the typewriter keyboard is retained in the process of emailing and texting. This distancing effect of a mechanised process limiting the modes of expression of the writer is also evident in the texting function of the smartphone.

Calling by telephone allows a different set of cues: inflection, pauses, tone of voice, even the sound of breathing. This form is immediate and synchronous – the two parties are exchanging information in real time. Talking by landline is more direct than texting as ambient noises can be heard so the participants are aware of the others' surroundings. In the US Pew Internet Research group (2012) reports a decline in the use of landlines, and a rise in texting and instant messaging.

Email is generally more formal than texting, and more easily archived than text messages. There are no restrictions in message size.

Texting is a remediation of phoning on a landline. There are similarities to emailing in that messages are electronically sent. Texts are generally informal in style and often short. Smartphone texting allows longer messages than on a simpler mobile phone, although consideration for a recipient’s phone capacity or type, and historic restrictions on message sizes mean smaller message sizes than email.

An important consideration when discussing these technologies that allow communication, is the parallel story of the development of the first computers and the historical context that informed their invention.

Key developments in technologies that enable communication alongside milestones in the development of computers, culminating in the smartphone.

Machines, calculators, computers

The first mechanical computer was invented in the Industrial Age, at a time when hand tools were being replaced by power tools such as the steam engine and the power loom. As a result large factories were built in cities to house production for iron, chemical manufacturing and industry. Populations were condensed, living standards rose and economies thrived.

It was in this environment, in 1821, that scientist, inventor and writer Charles Babbage designed a calculation machine to resolve problems caused by calculators of the day, which were the people employed to make calculations. In this period inaccuracies in data calculations created serious problems in navigation, astronomy or any industry requiring mathematical accuracy. As a forerunner to the first computer, his Difference Engine was designed to make accurate, speedy calculations, eliminating the human error that was part of the manual process of calculation. The machine included a printing function.

In 1834 Babbage became aware of the Jacquard loom, a mechanised loom that worked twenty-four times faster than previous looms and allowed unprecedented fine detail. This drove him to devise a more complex machine named the Analytical Engine. This new machine was conceived as a general machine which would run different processes with different series of cards, an idea adapted from the Jacquard loom which would weave different patterns from different punch cards. The Analytical Engine was never built, the detail of the machine was highly challenging for the toolmaking capabilities of the time. As a prolific inventor, Babbage was inspired by the technology of this loom and as such it was a speculative machine with no predetermined function.

Babbage used terms related to the textile industry to describe the workings of his engine. He referred to 'the store' and 'the mill' in much the same way as we speak of memory and processor of today's computers. This illustrates the importance of the textile industry at this time in England, and adds to the now unlikely idea of a loom influencing the design of computer.

The telephone was patented in the 1876 by Alexander Graham Bell. Providing communications over distance via electrical signal, the telephone formed the basis for modern

communications systems. The purpose was to provide faster communication over distances.

The first form of mechanical writing was the typewriter. Invented in the 1870s by several producers simultaneously, it was first designed as an aid for blind or deaf people.

Mathematician and computer scientist Alan Turing worked for the Government Code and Cypher School at Bletchley Park Britain's codebreaking centre during WWII. He was the key figure in building the Colossus computer which cracked the code of the German Enigma machine, which was crucial in aiding the allied war efforts. Widely regarded as the originator of the idea of Artificial Intelligence, Alan Turing theorised about a computer functioning as a substitute for human interaction. In his 1950 paper *Computing Machinery and Intelligence* Turing (1950) posed the question "Can machines think?" and introduced the 'imitation game' which was designed to test how well a computer might emulate a human. In this test, an interrogator sat in a closed room and asked questions of two subjects, one human and the other a computer, both were unseen. The interrogator would decide which was human and which a computer. If the subject could not decide then the computer could be said to be 'thinking' as well as a human. In his book Hodges (2012) notes Turing's prediction: 'One day ladies will take their computers for walks in the park and tell each other, "My little computer said such a funny thing this morning!'. This scenario is not dissimilar to current reactions to smartphone Artificial Intelligence (AI) apps.

The Apple Computer AI service is named Siri, and was launched in 2010. A google search for 'siri said', results in twenty-four thousand links to websites sharing curious responses from Siri. On the Apple site (2014) advertising for Siri appears to promise something beyond what Turing predicted – the human qualities of understanding, knowing, obedience and smartness:

Siri. Your wish is its command... Siri lets you use your voice to send messages, schedule meetings, place phone calls, and more. Siri not only understands what you say, it's smart enough to know what you mean.

– www.apple.com/ios/siri/

This is more than the thinking computer that Turing spoke of.

While offering convenience in helping to manage user's lives smartphone AIs provide a form of artificial communication originating from technology which clearly contrasts with communication mediated through technology. AI apps promise management of user's data, but by marketing the human qualities of 'understanding' and 'knowing' a substitute to human communication is offered, creating the contradictory effect of isolation rather than connection.

An overview of the development of these first computers shows shifts in the function of computers. Babbage's Difference Engine facilitated calculations, military advantage was the driver for making the Colossus, in the 50s IBM's SABRE, organised airline ticketing as an aid to industry. ARPANET, the forerunner of the internet, was initiated for sharing knowledge in research labs and universities. By the late 70s computers entered the office desktop and home, and became conduits for communication with the advent of email. Becoming smaller still, and mobile, the computer in the form of the smartphone is now linked to the individual, and merged with the mobile phone. The driver for smartphone products are the perceived escalating market for more connection, efficiency and entertainment.

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As a method to understand the effects of media forms on the human condition, media theorist Marshall McLuhan (1986) wrote the *Laws of Media*. In that system the cell phone enhances communication but reverses into a controlling leash.

In 1986 in *Gramophone, Film, Typewriter* media theorist Friedrich Kittler (1986) refers this offering a more extreme scenario:

Media are not pseudopods for extending the human body. They follow the logic of escalation that leaves us and written history behind it.

In reviewing smartphone products, the 'logic of escalation' of what is technologically possible and marketable appears to be a main impetus. Smartphones allow connection with others over distance. However, when considering the current functions of the smartphone, connection is erratic and psychological distance is created. In the escalating development of functionality for smartphones, it is not only written history that is left behind but also the subtlety of human interaction.

The experience of texting

Contradictions of interpersonal communication are evident in a closer look at SMS. Though texting offers immediate, personal, one-to-one connection, communication is often asynchronous – in that it is not clear when a message was received or read. There is minimal space for the subtleties of phrasing, tone, inflection, body language and expression and the lack of these qualities can lead to misunderstanding on the intention of the sender.

Sherry Turkle has written extensively on the effects of technology on human social behaviour; she has a PhD in Sociology and Personality Psychology and is a Professor at MIT. In her book *Alone Together*, Turkle (2011) reports that many mobile users choose interacting by text over other forms. The safety of messaging from a distance means users are less likely to expose their intentions through physical cues and are less vulnerable to feelings of rejection. Because of this it can be easier to say things that might not be said in person. In a recent paper Birnholtz, Guillory, Hancock, Bazarova (2010) found ‘butler lies’, or lying when texting, was a common way to manage availability. Examples of this are ‘I’m on my way’ or ‘I have to hang up’. In their findings 10.7% of texts were considered to be lies.

Messaging also affects the style of interacting, because of the limited space of mobile screens users employ abbreviations and emoticons, creatively condensing mood and emotion. ‘Hey’ instead of the usual ‘hey’ can mean the sender is angry. Recipients will often make conjectures as to the deeper meaning between the lines.

Communicating online, social networking and constant contact via mobiles is part of a growing trend to see the self reflected by others. Turkle suggests that for many people the ability to connect instantly through ubiquitous technologies leaves less space for introspection or solitude. Shifts in the role of technology in daily life is particularly prevalent amongst teenagers as a generation that has adopted the mobile phone at early adolescence, partly due to this they are more active texters than any other demographic. In a United States study on texting (Lenhart et al, 2011) which collected data on 799 teens aged 12-17, the median amount of texts sent per day was 60. Social networking site Facebook is a place to announce

experiences and feelings to the crowd of Facebook ‘friends’, thereby validating oneself. While smartphones are tools that allow instantaneous connection with others when needed, they also allow users to avoid introspection and face to face contact.

A starting point for designed outputs expressing my perspective was within the media being critiqued. With this in mind I worked on a number of concepts for smartphone apps.

Outputs

The brief was to expose the reliance of users on smartphones as tools for constant connectivity with others and the resulting lack of self-reliance on a psychological level. At this point I questioned how a device on which we rely might work if it actively listened and how it might on a subtle level retain or interpret user information.

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Wordpool

Wordpool – an app that analyses texting conversations for clues to our true feelings. Words arise from the waters of our unconscious. Prevalent use of certain words expose what is occupying the texter’s thoughts, and reveals our emotional state. Negatives (don’t, no) or positives (yes, nice, good, happy) surface after analysis of a given text exchange.

We pour traces of our life into our smart phones. Instead of experiencing events we choose to record and share them. Our phones become a depository for our unconscious. As the object that is with us always and recording our lives, exposing this knowledge could give insight into how we really feel.

Live-typing

Live-typing, sends messages progressively, as typed, showing editing over time, updating every 5 seconds or so. For a more personal, revealing messaging experience, showing thought patterns and pauses. For example confident, fast typing with no errors vs. slow, thoughtful, much edited.

Many smartphone users like communicating by SMS as it allows time to think, edit and delay responses. While multitasking however, distance is created and misunderstandings occur. As a way bringing people closer I propose a tool that would transmit instantly as the sender types, exposing the sender's intention in drafted messages before a final version is officially sent. As a critical design output, this app challenges the safe distance of texting. Some privacy is lost by exposing oneself to the other as recipients see the editing process.

A resource for this approach is the work of Sophie Calle. In her exhibition *Take care of yourself*, made for the 2007 Venice Biennale she invited 107 women to comment on an email from a boyfriend in which he ended their relationship. A wide range of experts including a psychologist and a lexicographer were included, and opinions were given as to the writer's intentions or integrity. There are gender issues as these women analyse the intention of the male writer, but there is also a challenge in analysing a computer mediated, emailed letter. All conclusions must be based on the typed words alone – the cues of face to face communication are missing. This project documents the subjective process of interpreting complex interpersonal online messages.

Fifteen minute photo journal

The images below document a tracking process by smartphone, exploring what a smartphone could show if it actively recorded a user's movements. A portrait of a day is made by capturing one still image by iPhone once every fifteen minutes. Collated photos result in a single overview of a day. The collection of banal everyday moments are representative of the changing nature of photography through cheap and accessible digital means. The recordings are similar to the fitbit apps such as pedometers that record daily movements and processes. The aim is to challenge the self-involved process of capturing life on our devices, and to question the usefulness of these habits. How revealing or informative can data-tracking of the self by smartphone be?

The end outcome of a set of collected images are more intriguing than each image individually. Are the quantified minutes of a life more important or revealing than the subjective perceived impression of how a day was?

My intention with all these designs was to present the smartphone as a type of 'active listener', not just recording data but in some way exposing the subtleties of user behaviour, emphasising the psychological aspects of a reliance on smartphones.

Chosen design concept

My choice of outputs was driven by a number of factors. Creating a serious app would involve consultation with communications, psychology and technical experts and could run the risk of not being received as intended. Making a subversive app might not warrant this level of consultation, the process might not require extensive testing and the opportunities to learn or reveal knowledge could be limited. Ultimately I intuitively felt the processes in creating apps was more project based and commercial. Alternatively making a physical object that explored the differences between physical and media design fields, was a more open exploration in which the results were less certain, more exploratory, and more accessible. In critiquing the smartphone texting function as a form of communication, using that same medium in order to express my perspective seemed antithetical. I was also drawn to make outputs that could be universally experienced outside of the specific tools that I was critiquing.

The chosen form to communicate my point of view was a physical one. To me, an interesting aspect of texting is the ephemeral nature of messages. Text messages are immediate and rarely archived which may contribute to the tendency of users to type things they tend not to say face to face. Without non-verbal cues, spelling, the use of emoticons and the extent of time delays in reply times can be scrutinised to determine

a sender's intention. Linguists Tagliamonte & Denis (2014) refers to texting as having qualities in common with both spoken and written language. It is similar to writing in the graphic nature of some IM forms of expression like emoticons and elongated spellings, and similar to speaking in that contact is instant, and includes abbreviations and short turn-taking.

Initial sketches imagining a continuing complex discussion over time took the form of lines representing woven threads of communication. I wondered how the back and forward of two people in a conversation might be represented, including

breaks and misunderstandings. 'Weaving a story' or 'losing the thread' and 'spinning a yarn' are all metaphors used to describe ways of interacting. Specific to texting communication is the term message thread, which describes a series of messages between two parties. Developments since the industrial age, such as electrification and telephone lines use connective threads. Computers are connected through a network of fibre optic cables and wires.

Through sketches, I was able to explore the erratic flow across different technology. People build relationships by connecting across different media – text, phone, face to face and email. Communications weave across these different forms, connections can be interrupted, and broken. Interaction is more fragmented as it travels across these forms. In progressing first sketches of the texting process I considered the particular habits of writing, sending, reading and understanding messages. When viewing smartphone screens users can scroll over comments to consider what or how much was said and the pattern of responses.

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This led me to question the visual language of this process as represented by speech bubbles by two parties and how these are a visualisation of an interaction. I kept conversations on my iPhone over time. I thought it limiting that a whole interchange is normally hidden from view, and that just one screen of speech bubbles is viewable at a time. By photographing a stream of speech bubbles and pasting them together I recreated a map of the process of interaction through texting. Through capturing meters of speech bubbles covering a period of months I was able to look for trends that might show the nature of a whole relationship. An image I had in mind was that of physically entering a phone to view a space containing multiple vertical banners with the data of exchanges inscribed on them. When viewing the graphic outlines of the flow of communication between two parties, patterns emerged. For example, one party would talk more than the other, receiving few replies possibly due to lack of credit of the silent party or a lack of interest. In some exchanges both parties had an even exchange of short answers. In other cases one party was consistently the initiator and the last to reply also.

Influences

In developing an aesthetic and form for my outputs I searched for diverse perspectives in film and industrial design.

An influence in making my work was the films of French feature film and prolific music video maker Michel Gondry. In *The Science of Sleep* (2006) the main character's dream world is represented as a physical film set, cleverly and simply made

from cardboard boxes. In a 2007 interview in *The Guardian* Gondry's diy aesthetic is discussed as a way of adding an element of chaos to making a film, balancing out the organised and highly technical element of the process. The translation of the unconscious sleeping world into an unlikely material form and the blurring of boundaries of the dream world and the real world is relevant to the immersion of smartphone users in their devices, where each person is connected in a different way to their own other reality and identity. I imagined a physical box representing a communication machine with which two parties could interact by feeding physical words into it, reenacting the clumsy process of online exchanges.

David Cronenberg's *Existenz* (1999) tells the story of a

society immersed in video gaming by ubiquitous use of a bioport technology that physically plugs into the human body. Cronenberg is a Canadian film maker who often touches on themes of body transformation, merging with machines and infection, as addressed in horror sci-fi *The Fly* (1986) and *Videodrome* (1983). The themes of how new technology can shape human behaviour is related to my own

perspective. In *Existenz*, involvement in the game world is such that characters and the audience are sometimes unsure what is real. This is more credible in 2014 than at the

time of the film's release, in 1999, as games have become more sophisticated the experience is richer and more immersive than ever before. Insertion of an ergonomic and familiar skin-like tactile game pod presents as a seamless experience for the user. The development of tactile surfaces and forms that merge better with the body is ongoing in current development of wearable technology design, such as watches or devices worn on the head. A natural progression in the design of technology that is constantly carried and worn on the body is offered in *Existenz* in the form of the bioport. The paradoxical use of organic prehistoric life forms in the shape of reptile bodies used in the production of the sophisticated gaming technology in *Existenz* inspired my combination of the online ephemeral with the physical and tactile.

Independent filmmaker, actor, artist Miranda July (2013) tells a story around everyday human relationships.

For the characters in *The*

Future, life appears stagnated and is slipping away without noticing. The overwhelming prospect of a real life commitment to a dying cat is a catalyst to facing the future.

Part of the solution appears to lie in eliminating the distracting

forms of technology, leading the main character to search for ways to manage and respond to these objects. As one character is filled with grief, time appears to stand still, as though life were able to be paused or replayed at will when the outcome is not as expected. July plays out the themes of the emptiness of modern life and isolation through technology.

The maker and crafting trends are areas that informed my choice to make physical objects. The approach of Thomas Heatherwick (2013) as documented in his book *Making* involves moving across multiple disciplines to find the right solution to a challenge or brief. A work that especially inspired was *Bleigiessen*, completed by Heatherwick in 2002. Designed for the Wellcome Trust, a London charity that funds biomedical research, the piece covers a 30 meter high space

with a pool below. The solution required ‘depth, complexity and meaning’. The designers experimented with falling liquid forms, settling on a shape created by pouring molten metal into cold water. A final version of the metal form was recreated in iridescent glass beads, on a complex construction of strings hanging vertically in the final space. Through the representation of a real process, that of liquid metal responding to water, the final piece has integrity and meaning. I felt an affinity with this way of making a form based a real world process. This inspired me to use methods outside of media design tools, to create sewn banners based on actual online conversations.

Both Cronenberg and July explore the relationships with technology and the effects of immersive and distracting online worlds and identities. Cronenberg deals with gaming and captivation in other worlds, leading ultimately to physically plugging a device into the body. July tells a story of discontent, distraction and a lack of fulfilment. As a graphic designer with limited hands on experience with media design tools, looking at those who work flexibly across different disciplines encouraged an intuitive way of working to fit the brief. The smart and playful style of Gondry and his inventive depiction of internal unconscious workings motivated me to think creatively outside of expected channels.

Physical outputs

My decision to work with my chosen materials was informed by the appropriateness of the contrast between the fleeting nature of CMCs and tactile, permanent, unique, imperfect artifacts. In choosing to machine embroider outputs I felt it appropriate that the manual manipulation of the sewing machine effectively digitises the traces of a human social interaction. This echoes the way that the medium of texting shapes how users convey information.

Three series of fabric banners were sewn with variations on depictions of the graphic language of texting. A video was created along with an output of a fibre optic light. These were exhibited independently, this in turn was filmed to accompany this document.

The first set of banners were sewn as minimal lines on an opaque, stiff nylon fabric, with a sheen and moire that creates a form of visual interference as the banner moves. Through a transfor process the lines are an exact depiction of the outline of a discussions as documented on iPhone screens. Each colour represents a speaker in the conversation. Temporal pauses are shown with a short vertical line on both sides.

Discussions from others peoples' phones motivated a second set of banners. These were made using a more aesthetic fine, light silk, a lustrous fabric that drapes well. The lines originate from the shapes of a sequence of speech bubbles, these were processed in Adobe Illustrator, using preprogrammed blends to create new forms. Some make new lines through blending a static vertical line with the shifting outer line and each side of a discussion, others are made by combining the line on each side to make a form that is derivative of the space in between the two speakers. Intensive stitching resulted in a dense form, gathering and pulling the fabric to the centre line. All threads are purposely left hanging alluding to the disjointed nature of talking by text alone and the metaphorical conversational lost threads that can occur in this media. The material tactility of this form contrasts with the tactile interaction of smartphone touchscreens.

Pink and blue were used as these are equivalent to full tint four-colour offset printing process colours, cyan and magenta. These colours are visually near equal in value, so neither colour dominates, with subtle fine stitching and fabrics, these tones were easily distinguishable on white fabric.

Settling a lift

1
+

1
+

1
+

1
+

A third set of banners use the language of data visualisation. This visual form of storytelling is a useful tool in increasing reader engagement, when used online interactivity can further engage and inform readers. The trend in this form of presenting information is largely enabled by the data collected through ubiquitous mobile phones, cameras, computers and other tracking devices. In this third set, the main subject of a message thread sits alongside the outlines of the texts. The viewer is left to draw possible conclusions about the role of each speaker and the character of the relationship.

A related trend that is enabled through technology is life-logging as embodied in Quantified Self (2013), ‘a collaboration of users and makers of self-tracking tools’. As written on their site: ‘Our aim is to help people get meaning out of their personal data.’ Established in 2010 and active in 34 countries, QS advocates recording various facets of a users life and through analysis of this data gaining more knowledge of themselves. The implication here is that learning quantified data about ourselves will lead to a more productive or possibly happier life. Though there are real benefits for those with chronic health issues, for example diabetes or allergies, where reactions or relapses could be tracked to having eaten certain foods or behaviours, is it generally beneficial to track, record and quantify our lives?

29

The Feltron annual reports series are a thought-provoking, beautifully crafted, personal series of documents that visualise the detail of designer Nicholas Feltron’s daily life – photos taken, food eaten and friends visited.

From his website:

Nicholas Felton spends much of his time thinking about data, charts and our daily routines. He is the author of several Personal Annual Reports that weave numerous measurements into a tapestry of graphs, maps and statistics that reflect the year’s activities.

feltron (2014)

These reports showcase the processes of data visualisation, utilising various formats to tell an objective and playful story of his life. Feltron collects data by methodically recording much more than the information normally recorded on fitbits such as pedometers and social networking and online tracking tools could. In reconstructing a story of his life, his annual

reports present the ultimate self-tracked life.

Although related to data visualisation in a depiction of personal details of a life, my banners represent an interpersonal interaction rather than a the record of one individual. Pie chart graphics are used in my banners as a way to record each participants' proportional mention of I (I) and you (U), and positive words (+) proportionally compared to negative words (-). For example in the piece pictured below with the title 'opshopping / her blogging', the pink participant uses substantially more negative words (for example no, can't, won't, hate) than positive words (yes, love, good, peace). This person uses slightly more words indicating the self (I) than words referring to the other (U). In viewing the outlines of the speechbubbles, the pink person speaks less than the other, implying less interest than the other participant. The participant represented by the blue

thread shows different qualities of communication and mood. Pictured together the image is representative of the relationship of this pair and clues to the balance of interaction. In keeping data to a minimum I chose to encourage the viewer to draw subjective intuitive conclusions from the images. Calle's work was an influence in the manner of using specific analytic processes. Through experimenting with analyses of complex interpersonal exchanges my aim was to illuminate the awkwardness of communicating through this media.

A starting point for my fourth output were the themes of weaving and textile terms as they apply to digital media. Repeatedly adopted in reference to both computers and communication, the metaphorical link between textiles, weaving and digital media remains today – textile terms such as the web, internet, holes,

networks, spiders, have all been adopted for use in describing the internet. In Nicholas Feltron's website for example the opening blurb talks of his 'tapestry of graphs'. Individual text discussions and emails are often called message threads.

Weaving dates back 20,000 years to the Upper Palaeolithic age. Many myths and fairytales have weaving as their subject: Ariadne's thread, the Greek Fates were spinsters. European fairytales tell of the mysterious process of weaving in Rumpelstiltskin and Sleeping Beauty for example. Textile weaving is a communal and social activity and is traditionally women's work.

We may say most aptly that the Analytical Engine weaves algebraical patterns just as the Jacquard-loom weaves flowers and leaves.

– Ada Lovelace from Essinger (2007).

In the 19th century the Jacquard loom was the most complex machine in existence and the inspiration for Babbage's Analytic Engine. As written earlier, there are numerous terms in computer language that allude to the traditions of textiles and weaving. After initially deciding on weaving and sewing for my outputs I found references in literature from Ada Lovelace, who wrote about and collaborated with Babbage, and media writer and philosopher Sadie Plant who connects the traditions of sewing with the detailed repetitive work of those at Bletchley Park , decoding for the war effort.

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These factors informed my decision to use weaving in my design outputs.

Fibre optic lighting cable in particular was used in reference to the fibre optic cable which enables high speed internet. Kittler opens *Gramophone, Film, Typewriter* with the following comment on the connective qualities of fibre optics:

Optical fiber networks. Soon people will be connected to a communication channel which can be used for any kind of media – for the first time in history or for the end of history

Kittler (1988)

The work of Astrid Krogh also inspired the use of fibre cables. Working with textiles and light, Krogh uses fibre optics to create woven installations, some of which change colour in response to ambient light or foot traffic.

Captured footage of members of the public checking their phones is here combined with images of hands weaving on a loom. Through this process I show the captivation of users by their smartphones and associate the themes of weaving a relationship through online connection. The use of hands in this process is emphasised, a connection from one texter to the next is implied, conversation partners appear to communicate across the loom. The end products are a video installation showing weaving actions and a functioning fibre optic light, woven with various coloured threads.

The weaving was completed on a simple custom built frame, using fibre optic cable and silk cord. This piece is representative of the complexity of interpersonal communication by typing and texting messages. The weave is purposely loosely woven. The colours do not directly represent specific message content. The act of weaving was filmed, cables were later cut and looped to connect to an led lighting unit.

From 29 November to 1 December 2013 all work was exhibited independently. This process was productive in crystallising my perspective, through summarising my points in an invite, collecting my work in one space, sharing and getting feedback from interested parties, and the challenges of customising a commercial space for my purposes. A fitting element when planning the space was the inclusion of a 1960s manual typewriter with an invitation to leave comments. This challenged the viewer to work with an unfamiliar form of media and was a reminder of the origins of the typing process now still in use when texting. A short film with footage from this is included as documentation.

Conclusion

“It’s strange, how in the end you feel like a prisoner to your device,” he said. “It’s the one thing you wanted to work, more than anything.”

– New York resident on the experience of being without connection during Hurricane Sandy. Wortham, J., How New Yorkers Adjusted to Sudden Smartphone Withdrawal, *The New York Times*, (2012)

In 2012, in a period of a several days without cell phone connection people reported difficulties in making arrangements, a lack of information especially regarding the continuing power cuts, and more connection to the people around them. The experience of withdrawal was positive for many.

38

Increasingly, smartphones have become an integral part of life for many, facilitating connection, keeping us in contact when we make arrangements, holding friends within thumbs reach when we need them, and keeping us informed and entertained when our direct environment is not fully captivating – for example when those we are with are online. Socially, in business meetings, and in schools, we prioritise and accept interruptions to check phones, though it is proven that multi-tasking is unproductive. Being alone in public spaces alters with a mobile device as they project an image of self-containment. Reflecting on our own thoughts or feelings is postponed through incoming texts and the narcissistic habit of sharing – while connected with today’s high functioning smartphone we are never alone.

The quality of the smartphone experience in the screen resolution and the escalating range of available apps and functionality grows along with a freeing up of social, business and public protocols around acceptable use. Consequently when constantly connected we are more distracted when relating to one another, our immediate environment, and ourselves, than ever before.

As a device with which users continually interact, smartphones are ideal for data collection. The current trend of self-quantifying is enabled through smartphone apps,

although not in the form of the apps I first designed – an app that analyses text messaging threads for an analysis of a relationship. A commercial smartphone app analysing texting communications could be a feasible and marketable product. However, I doubt the intrinsic value of such a product – if understanding is the aim then face to face communication is the right mode. As my view is critical both from the perspective of communicating in everyday life and in designing online, I advocate instead more responsibility in the use, development and design of smartphone products.

In challenging the role of the smartphone I chose instead to design outside of media technology, translating data into a tactile, playful representations of complex relationships that are grown, in part, through this medium. Through hypermediated lives each user has their own conversation with their own personal technology, affecting one another through sharing, interrupting, messaging. Graphic translations of texting conversations reveal specific patterns of communication as determined by the parameters of the smartphone. These patterns reflect how we weave our lives: how much one person talked in comparison to the other and the balance of attention on the self or the other.

39

In a book accompanying a MoMA exhibition *Talk to Me* designer Khoi Vinh (2011) writes of designing interactive experiences in a continuum:

The designer's job is not to execute the vision of one person but to establish the conditions under which rich, rewarding conversation can happen.

Vinh (2011)

In this comment Vinh hints at the separation of the designer, through empowering the user there is less involvement in determining the exact experience and less culpability also, instead more power lies with the user. Though there must be responsibility in designing good experiences.

What does designing responsibly within smartphone technology look like? There are apps that specifically address dependence on communication devices, like the android app *Nomophobia for phone addiction* (2013) which measures how many times you checked your phone. Though using an app to support users to not use their smartphone seems contradictory. In reviewing the function of computers and the core purpose

of communication devices, the increasing capability of mobiles appears to be driven by technological capabilities and market profit rather than a real, conceived need. As a designer considering the function of the smartphone I question the value of creating products that promise constant connection, information and understanding, while delivering disruptive, distracting, isolating experiences and encouraging dependency.

How do we as users best engage with mobile computers? The answer is not to remove technology from our lives but to learn to live with it in a responsible way. Means of communication have materialised in various innovative forms: woven stories in tapestries, smoke signals, semaphores, words on paper, and messages sent electronically. When researching the habits of texting it struck me how adaptable and creative people are in using punctuation to develop emoticons – an inventive layer of meaning in the small space dictated to by the smartphone. As users of these devices the challenge is to be aware of how these tools shape our behaviour, to manage the facilitating role they take in our lives, and to dictate how this technology instead adapts to our needs.

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were planning sat late afternoon

Ok then i can ring tmrw night

Radical!!

12/07/2013 11:56 AM

Income, _ar i g_

12/07/2013 12:06 PM

Also can i hang out with phoebe after school because she is going to europe for four weeks? Nnot for ages, like i'll be home at 5.30ish

12/07/2013 12:07 PM

Muuuummmmm

Ok you're w phoebe right. Whats the other message? Income-marriage? Like a xword clue?!?

Yes, a crossword. It was earnings though

Somehow i link income w marriage? That wd be sad

Yes, very sad. And im not with her yet, it's just i wanted to know before school finished

Yup ok, stay dry

14/07/2013 9:53 AM

How you going? Pick u up around 10.30-45?

HEY!!!!!! Either answer me or phone on landline

14/07/2013 10:31 AM

Hey, can it be 10.45 i wanna have a shower?

Sorry i only just got up

Well clearly yes, i havent left the house as i wasnt sure you were up or there or anything. Will leave around 10.50, be there 1120 or so

Okay thank you. sorry

14/07/2013 11:18 AM

Im here, come down yes

14/07/2013 2:24 PM

Ok xxx

15/07/2013 11:13 AM

You should stuck into sewing dolls today. Tomrw we can go out, weather