

INVISIBLE FLOCK

*Remote
Contact*

For Mary

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4 - 9 June 2018 Bloomsbury Gallery

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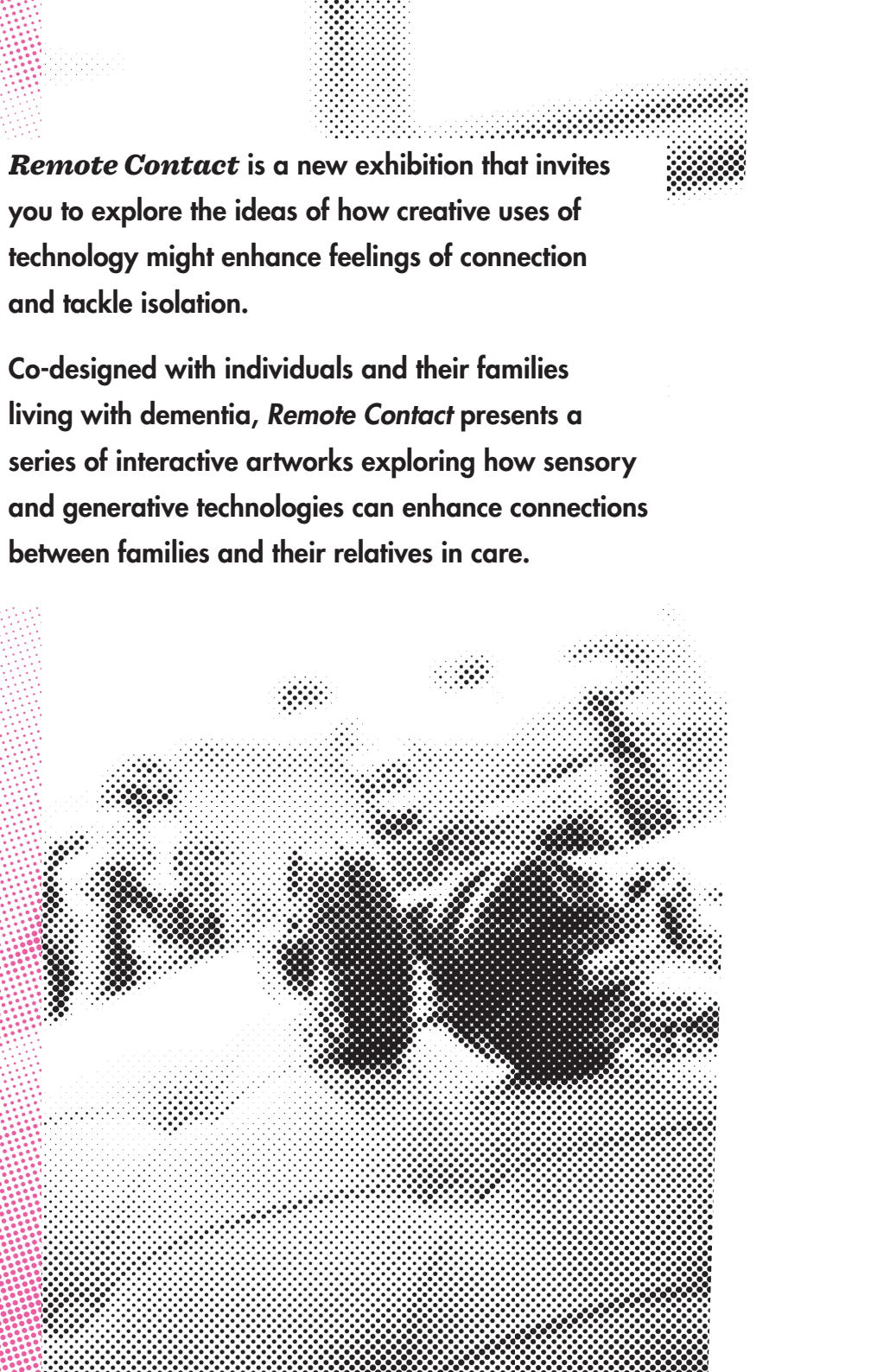
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Remote Contact is a new exhibition that invites you to explore the ideas of how creative uses of technology might enhance feelings of connection and tackle isolation.

Co-designed with individuals and their families living with dementia, *Remote Contact* presents a series of interactive artworks exploring how sensory and generative technologies can enhance connections between families and their relatives in care.



Ways of Feeling

**Professor Carey Jewitt,
Director of the
IN-TOUCH Project**

Just two decades ago touch technology was a feature of science fiction books, then came technologies and devices that rely on touch sensation to create the illusion of shape and textures that enable users to feel a variety of virtual objects and control remote manipulators, followed, just over a decade ago, by game consoles using digital touch (like Nintendo DS).

Today, touch is at the center of a re-imagining of digital sensory communication: from the mundane vibration of mobile phone to the emergence of touch in Virtual Reality and the Tactile Internet. Is this rapid expansion set to reconfigure touch and the tactile in much as optical technologies transformed sight and the visual (from the telescope and microscope to Google Glass)? While touch may not be much spoken about, it provides significant information and experience of the world; it is the first sense through which humans apprehend their environment and it is central to our development (Field, 2001); it is crucial for tool use and is central to communication: 'Just as we 'do things with words' so, too, we act through touches' (Finnegan, 2014: 208). Indeed, knowing how to infer meaning from touch is considered the very basis of social being.

The centrality of the senses to how we experience and know ourselves, others and the world, underpins the need to understand the social consequences of how touch is being digitally remediated.

The contemporary global communicational landscapes from which digital touch technologies are emerging (and contributing to), albeit unevenly, is characterised by changes in how physical distance, work, family and relationships are thought of and managed. Increased portability, connectivity, and power of the digital and new material forms of are also a feature. New forms and practices of share-ability and the public availability of information are evolving, and along with this, different types of touch and sensory interaction are emerging. The possibilities for touch these realize point to the 'shifting, contingent, dynamic and alive' character of the senses (Jones, 2007:8), and the ever-closer relationship between the semiotics of touch, technology and communication. Are we at a tipping point for digital communication moving beyond 'ways of seeing' to include ways of feeling?

Countering the exciting and positive discourses of labs and the tech industry

pushing the boundaries of touch technologies in creating new sensory devices and experiences, interfaces, devices and environments, digital touch also prompts sceptical discourses of concern and loss. From touch-deprivation, the loss of physicality, to the chilling concept of 'sensory extinction' - the quieting or displacement of the body's senses (Jones, 2007:30). The digital is seen as precariously balanced in the reduction of social distance and the intensification of alienation in which people are digitally comforted by the illusion of 'relentless connection' leading to 'a new solitude' (Turkle, 2011:15). The tensions raised by digital touch challenge what it means to communicate in the 21st century, questions that the *Remote Contact* exhibition sets out to prompt and explore.

Working with interactive arts studio Invisible Flock provides the IN-TOUCH team with new routes into interrogating digital touch communication. At a time of significant social and technological change, this collaborative investigation of digital touch, what it is and might be, how it may newly constitute our experience of communication with close and distant others is timely and essential.

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Jones, C.A. (ed.) (2007) *Sensorium: Embodied Experience, Technology and Art*. Massachusetts, USA: MIT press.

Turkle, S. (2011) *Alone Together*. New York: Basic Books.

Memory Album



Memory Album was co-designed with Olga O'Grady, Jennifer Connolly, Jim Brinkley, Paula Hughes, Jo Cullen, John Cullen and Green Heys Care Home. It is designed to be used by care home residents, carers and family members together.

One of the most common residing issues for family members is feeling that their presence has no impact and feeling frustrated that they can not be there enough physically to understand what life is like for their loved one day to day in the home.

Memory Album promotes digital inclusion and aims to tackle issues of physical and emotional isolation in care, connecting residents to their families and the wider world in an instant and sensory manner. It creates agency for families when they are not physically present, providing a framework for them to actively connect and share with the home and their loved ones.

The book was created in a research context looking at how Human Computer Interaction and the Internet of Things (IoT) can be used to improve the quality of life of people in residential care and solve common problems of isolation.

Memory Album takes the familiar act of looking at a photograph album and augments and heightens this experience. It melds the tactile pleasure of touching and turning physical pages with multisensory media playback.

Memory Album is designed to be used as a shared experience, an activity that families, residents and carers can undertake and curate together.

A beautiful piece of furniture, it becomes an embedded and familiar part of the home. It allows older, smaller photographs to be seen lit up and at a larger scale, a page turn away from a video recorded by a grandchild of what they did at school that day, it provides residents with images of their past as much as it can help them connect to their present lives and the outside world.

Memory Album is designed to be used and updated by staff and by family members. Staff recording moments to show visiting families what has happened that day and families feeding in their day to day experiences, thoughts and messages to residents. This triangle of sharing tackles the impulse to only look back at residents life before care but to build new memories and positive experiences within the care home.

Time for personalised interactions can be difficult to prioritise, new staff and volunteers can get to know residents lives both past and present quickly and visually through the book, allowing a closer connection with residents through a tactile, shared and intimate experience.

I wanna hold your hand

Remote Contact INVISIBLE FLOCK I wanna hold your hand

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How different is each of our touches and ways of touching?

What ways do we communicate through touch instinctively with one another, a squeeze of a partners hand, a gentle stroke of your child's forehead, the weight of one hand in another?

Touch is something we don't think about so much.

I wanna hold your hand, was made with and for Phil and Julie Dickinson. It is an artistic expression of their touch.

When we asked Phil and Julie how touch is used in there day to day relationship they said we don't really have specific touch patterns, whilst her legs were rested over his, hooked together in a perfect spoon.

We have a thousand intimate and unique touches with those who are closest to us, that we don't really consider. How does it affect us when these start to change or when we lose them completely?

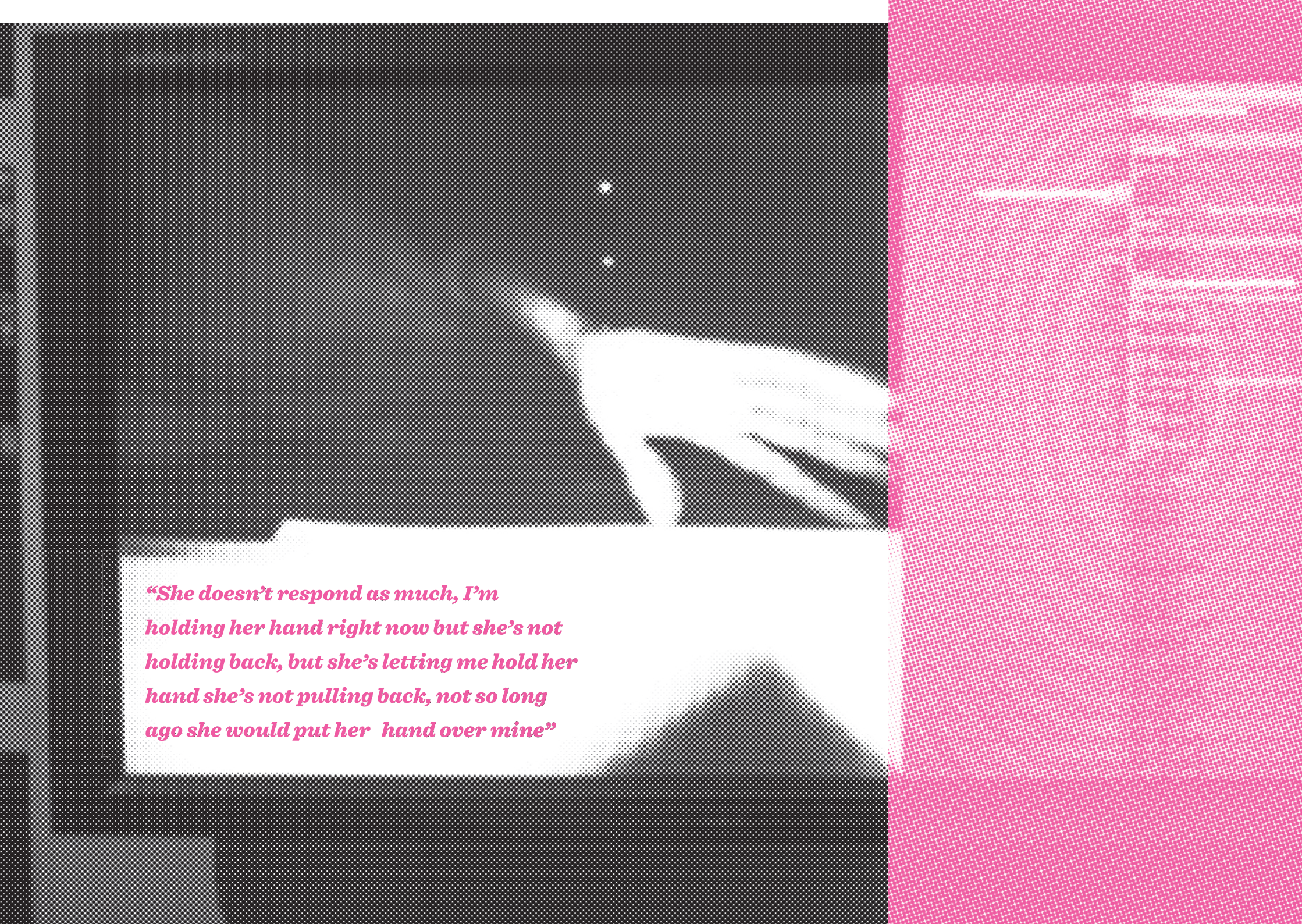
Phil has dementia, and Julie is his wife and his carer, they are completely in love.

Phil and Julie have always held hands, they tell us, and their favourite thing to do together is walk in their local park just across from their house, hand in hand, every day. Julie tells us that as Phil's dementia has developed his mobility has become worse, so walking now can be a challenge. She tells us that there are two types of touch now that exist when they walk, the loving touch of companionship and also the touch of support. Phil is in a wheelchair and they head down to the park with the wheelchair and walk a short distance without it, this walking Julie tells us helps Phil's mobility improve, although it is difficult for him, it is also a routine that she is determined to keep between them for as long as they can.

We created a pair of gloves for Phil and Julie, to map their walks together, a record that explores the touch that exists only between the two of them.

The gloves measure the GPS route of their walk, as well as pressure, flex and galvanic skin response. We hope it asks questions about the importance of understanding how touch works, and how the more we know about it the more we can use it actively to care for one another.





“She doesn’t respond as much, I’m holding her hand right now but she’s not holding back, but she’s letting me hold her hand she’s not pulling back, not so long ago she would put her hand over mine”

Motion Prints

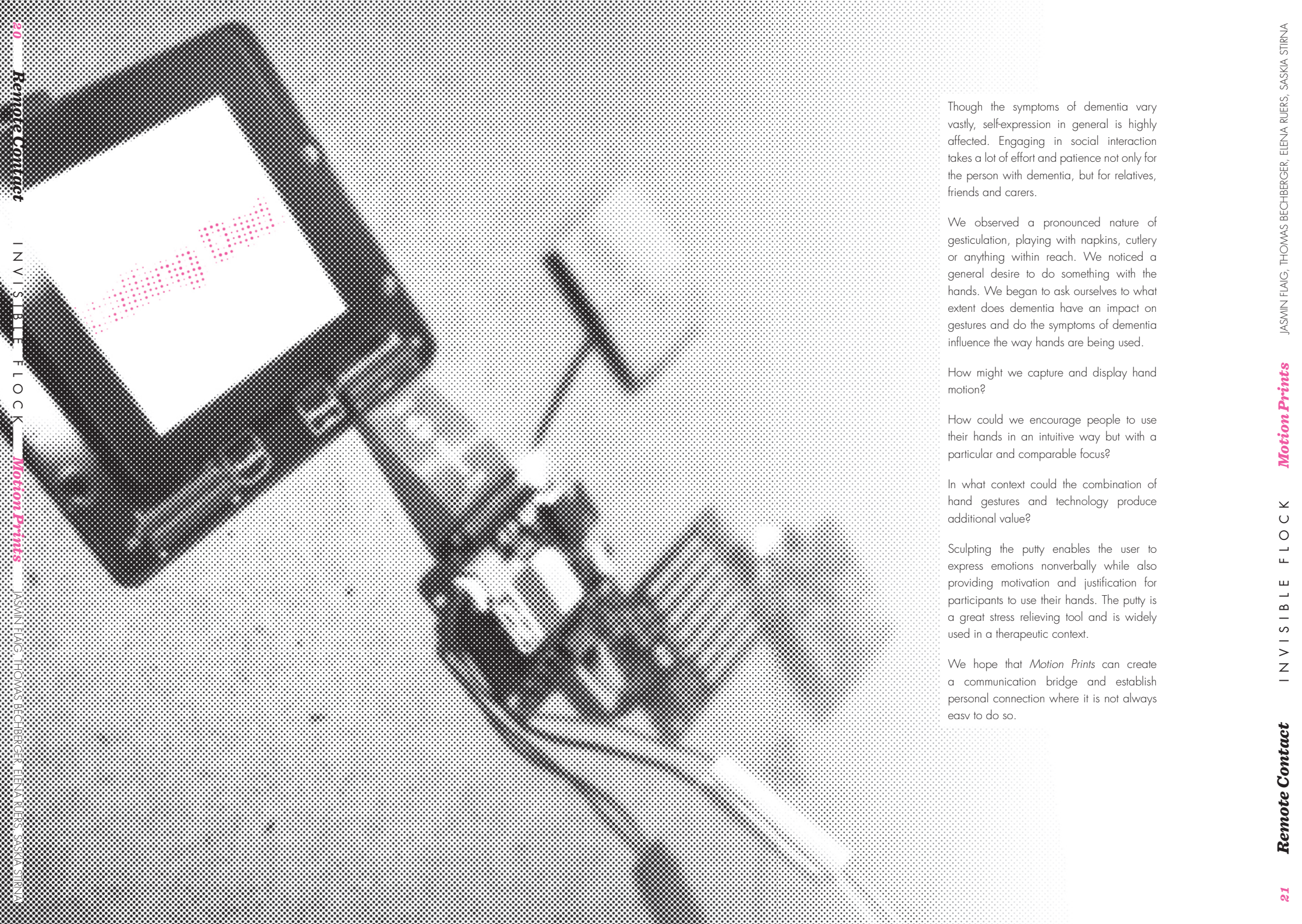
Motion Prints began as a conceptual design created by Jasmin Flaig, Thomas Bechberger, Elena Ruers, Saskia Stirna students undertaking the MA Design Future Society course at Mannheim University of Applied Science (MUAS), Germany. The idea was developed during a project titled Design for Social Impact; a collaboration between mHabitat, the School of Design at the University of Leeds and MUAS in Germany.

The students worked with Invisible Flock over a period of three months, sharing research methodologies. The conceptual design created by Jasmin, Thomas, Saskia and Elena was then developed and fabricated into a working prototype by Invisible Flock.

Motion Prints is designed for use in Dementia Care Homes, encouraging residents and their relatives to express themselves in an artistic way by modelling putty.

The installation is designed in a way that enables an intuitive interaction. During the process of modelling, the motion data of the muscle movements are transformed into a unique visualisation and a digital landscape is molded based on how the putty is manipulated by two users working together.

Interviews conducted by Invisible Flock revealed that people with dementia faced difficulties with verbal communication.



Though the symptoms of dementia vary vastly, self-expression in general is highly affected. Engaging in social interaction takes a lot of effort and patience not only for the person with dementia, but for relatives, friends and carers.

We observed a pronounced nature of gesticulation, playing with napkins, cutlery or anything within reach. We noticed a general desire to do something with the hands. We began to ask ourselves to what extent does dementia have an impact on gestures and do the symptoms of dementia influence the way hands are being used.

How might we capture and display hand motion?

How could we encourage people to use their hands in an intuitive way but with a particular and comparable focus?

In what context could the combination of hand gestures and technology produce additional value?

Sculpting the putty enables the user to express emotions nonverbally while also providing motivation and justification for participants to use their hands. The putty is a great stress relieving tool and is widely used in a therapeutic context.

We hope that *Motion Prints* can create a communication bridge and establish personal connection where it is not always easy to do so.



Water Synthesiser

by **Simon
Fletcher**

Water is both an everyday commodity and the singularly most important substance on Earth, essential to life. The *Water Synthesiser* is an instrument that aims to transcend the mundane, allowing this common material to be elevated to the creative; building a tactile sensory experience where you can touch and feel the texture of the liquid while creating soothing sounds evocative of water in nature.

The flow of water is an uncontrollable, almost alchemical force, more art than science and this water bath uses the unpredictable technology of multi frequency capacitive sensing to mirror the untameable, organic nature of this elemental substance. Through simple computer learning, the water synthesiser can be taught to recognise your interactions, allowing you to tailor your movements to alter pitch and sweep

through frequencies. The simple, intuitive design allows even the most technophobic to quickly learn to make sounds and has the scope to allow more complex interactions for the more musically inclined.

An exploration into water, this instrument can be engaged with in a variety of ways and hopes to bring you a clearer sense of the wonder and grace of one of our most important resources.

The *Water Synthesiser* was built as part of *Aurora*; a project reimagining water. *Aurora* is commissioned by FACT, in partnership with Liverpool City Council, Invisible Flock and Dingle 2000. Supported using public funding by the National Lottery through Arts Council England, and British Council.

Tangible Interfaces

Optic Sense

by Digital Nativ

Tangible user interfaces are a way of thinking about human-computer interaction that ventures beyond the point-and-click archetype. Taking advantage of the human ability to grasp and manipulate the physical, and rather than trying to make digital features feel like physical ones, we are infusing physical objects with digital properties.

While computer mouse and touch-screens as interfaces work for most situations, the simplicity of a physical object such as a dial, offers an explorative yet efficient navigation means. The facility of the gesture taps into muscle memory, which we believe enables higher precision in control.

Optic Sense allows users to manipulate data on a digital display simply by placing the dial on it. Using Optical Wireless Communication (a system which utilizes the visible light spectrum to transmit and receive data wirelessly), the position of the dial can be determined by blinking the screen in a set pattern, clicking the dial reveals contextual menus, which provide further control/navigation, from any position, from a network of screens.

A fluid mechanism for interacting with multiple devices in synergy, this tangible computing approach breaks open the computer and weaves its contents into the physical world.

Touch & Technology

by Prof. Sara Price
of the IN-TOUCH Team

Our everyday interaction with touch technologies is typically through our smartphones, ipads and other touch-screen devices. Here, the kinds of touch we primarily experience are pressing, tapping, swiping and alerts through vibration. These technologies have extended and augmented communication capabilities, both in terms of personal communication and information access. We can send messages to friends and loved ones at any time from, pretty much, anywhere: written or audio messages, emoticons and photographs or video of things we want to share. While such 'touch-triggered' digital communication has exponentially increased our capacity to be 'connected', what if we look beyond these devices to think about how technology might extend other kinds of touch: what might this mean for personal and/or remote communication?

A hugging experience is important in 'feeling close'. Interestingly, using Hugvie - a human-shaped hugging cushion with no embedded technology - combined with speaking on a mobile phone, has been found to improve the quality of remote communication (Yamazaki et al., 2016). Given this, how might technology further enhance feelings of close communicate

and connection with one another through physical touch, that we use in everyday face to face contexts, like a hug, a squeeze on the hand or stroke on the arm? One approach to enhancing a feeling of connectedness, is through using 'wearable technologies', like force feedback or vibrotactile sensors, actuators or heat sensors embedded into clothing materials or accessories in the form of jewellery. Wearable devices can heighten and extend touch to communicate connection across distance, for example, sending a 'hug' through Ring*U, a touch ring that provides vibrotactile feedback through an embedded eccentric mass vibration motor (Choi, 2014), or stroking someone wearing digitally augmented clothing (Tactile Sleeve for Social Touch, Huisman et al., 2013), or through simulating sensations of kissing (for instance via Kissenger, Samani et al., 2012). An alternative approach draws on the importance of physical warmth in 'feeling connected': 'HotMits' are designed to convey the feeling of holding hands over a distance (Gooch & Watts, 2012), and 'Huggy Pajamas' and 'TJacket' that use inflatable air pockets and heating elements to communicate hug-like sensations (Teh et al., 2008; Schaaf et al., 2014).

Wearable technologies can also be used to communicate information about the wearer to the wearer themselves or remotely to relevant professionals. Vibration sensors embedded into shoes can guide navigation (Rowley, 2016); or stretch sensors embedded in a cardigan that can measure the movement of elderly wearers to correct their posture (Van Dongen, 2015). The software identifies correct and incorrect postures, while the wearer gets vibration feedback in the clothing to indicate which way to rotate e.g. the ankle.

We are also seeing the emergence of non-contact haptics. Electro-vibration is an augmented reality (AR) technology that generates a weak electric field around the user's skin, allowing them to perceive textures and contours of remote objects, without the use of gloves or specialized devices (Bau, 2012), while ultrahaptics uses ultrasound to create air pressure changes around the user (Chi et al., 2017). These developments offer new opportunities for touch in VR and new kinds of augmented reality experiences that allows us to 'touch' or feel virtual objects.

These are just a few examples of the advances in haptics, virtual reality (VR) and bio-sensor applications, which are reshaping what can be touched, as well as when and how, and who can be touched. While this opens some exciting and useful opportunities to enhance touch-based communication, it also raises a number of questions for the ethics and social implications of touch: who controls touch? How do we consent to and authenticate touch at a distance? What touch sensitivities, and values might we need for this new tactile environment? Do we need to learn to touch in different ways? Ultimately, we ask is the digital mediation of touch changing what we understand as touch?

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Connected Care

Exploring the potential of Digital Artworks for Care Homes by Ben Eaton

“If I was in a nursing home I would want my iPad or a phone, this is our generation now, its got to move with the times”

In a typical care home, digital technology provision and staff support for creative activities is limited by infrastructure and technical skill shortages.

Working in Liverpool with Community Integrated Care (CIC) and FACT, Invisible Flock investigated infrastructural and logistical opportunities and complications that might be present when creating digital artworks for Care Homes.

The rise of opportunities for creative technology interventions in care homes is an opportunity both for the care sector but also for creative technologists and designers. There is however a very real risk of a process led by design rather than need which results in products and money being used incorrectly or not at all, increasing the risk of staff and managerial reticence in further investment and ultimately reduced quality of care for residents. Part of the way

to solve this is to understand and accept the baseline level of digital literacy in the sector and care homes in general and ensure that all solutions are designed with this in mind.

It seems like there is a vast and untapped resource present in every care home waiting to be unlocked through a combination of more permissive and catalytic thinking around personal technology use and some creative thinking around the solutions and potential that creative technology can offer the sector.

Excluding medtech from a conversation around digital infrastructure means that we can focus on day to day operational activities and resident care and wellbeing; how digital technology currently feature and how they could feature more.

“Don’t limit the amount of people you might think would be applicable for it, we shouldn’t rule out the people we support and have faith in trying new things”

The internet is such an all pervasive presence in our everyday lives outside of contexts like the care home that its presence can suddenly be taken for granted and our use of it simply be ‘business as usual’ rather than a deliberate tool that with some thought and experimentation could be used to great effect.

“There’s probably only one person resident at the moment who could request a song, we are doing all the decision making for them”

As artists and creative technologists custom built creative technology is the space that we occupy and the perspective from which we approach the care homes.

The sector of dementia care and residential care is a sector that is full of potential. The demographics of dementia mean that there is a lot of interest in the design world for products and solutions many of which fulfill a wellbeing and social need. The needs that these solutions or products fill are generally more self generated and led by process.

Conversations with senior members of CIC indicate that there is difficulty justifying the spend on products that are more experimental and often by their very nature have shorter shelf lives. The idea of a piece of kit rotting away in a cupboard somewhere is a recurring theme and obviously something that anyone considering investing in gear will consider.

“We used to have this big touchscreen game and it was good but then it broke and now its in a cupboard somewhere”

There is a strong role for artists and designers creating interventions and products but perhaps moving beyond the model of single solution and instead through ongoing interventions and relationships. This could be through care homes positioning themselves as hotbeds for innovation, working with artists and designers to secure funding and grants and looking at how they can be creative partners in a project rather than simply receivers of an experiment or research.

Dementia Connect is led by the University of the West of England, in partnership with FACT and the Royal College of Art. Connected Care was developed with support from Community Integrated Care and in collaboration with Green Hevs Care Home and Eccleston Court.

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Remote Contact was co-designed by Olga O’Grady, Jennifer Connolly, Jim Brinkley, Paula Hughes, Jo Cullen, John Cullen, Roy Foden, Gina Shaw, Graham Gavin, Phil Dickinson, Julie Dickinson, John Hughes, Debbie Higgins and Sarah Butchard. With support from FACT, Community Integrated Care and SURF Liverpool. Special thanks to Green Heys Care Home and Eccleston Court.

We would also like to thank; Sally Baxendale, Angie Smith and Nicolai Marquardt for their support and expertise during Research and Development stages of the project.

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Remote Contact is commissioned by IN-TOUCH: Digital Touch Communication, an ERC-funded research project led by Prof. Carey Jewitt (UCL). It is funded by Arts Council England and Leeds City Council, supported by FACT and Community Integrated Care. Research and Development funded by a Wellcome Trust Arts Award, in collaboration with Prof. Nadia Berthouze (UCL).



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