When I was given Readership, I was asked what I wanted to be Reader in. I had just a few days to name my new job, capturing the themes of work I’ve already done, and setting out my stall for the future.

So I am going to spend some time this evening discussing what Relational Design might be, and explaining where it has come from within my work.
Along the way, I’ll talk about an eclectic collection of practices, including studio craft (silversmithing and jewellery), interaction design, human computer interaction, philosophy (lite), product design, wearable computing, electronic textiles, service design, and mental health.

The first characteristic of relational design is that it often happens across disciplines instead of staying where practice is easily defined. It does not emerge much from comfort zones.
This is a map I drew to visualise how I intended to engage with the different disciplines of my PhD, and I’m going to use this as the starting point of how I have come to think about design.

For me, craft is about visiting materials and things again and again to develop skills and build new meaning. I didn’t know what I was looking for in each of these fields, so the path was never going to be straight, but the enquiry would be looping, returning to domains, each time with increased experience brought from the others. I hoped that a new, hybrid way of working would emerge in the centre as a result.
I trained as a silversmith and jeweller at Glasgow School of Art. I don’t think I was particularly good, but making is addictive, and even when I have tried to give it up, it has come back to invade new practices.

One of these invasions happened when I retrained in multimedia, so that I might be more employable and make wads of cash in a regular job. Throughout my postdoctoral study I would notice that other people seemed to misunderstand when I talked about design. What I should have been talking about was craft, because design can be represented by diagrams and schematics, while craft, generally, is not.
Design has been abstracted as a way of thinking for over 50 years, and we use these diagrams in our teaching; design students can see where planning takes place, how playful, messy processes have a place, and above all, how solutions can be arrived at in answer to problems. In this view, design is “action aimed at changing existing situations into preferred ones” (Simon 1988).

If design is a reflective process engaged with problems (Schön 1983), craft might be better conceptualised as a reflexive process engaged with potentials. Herbert Simon talks about the ‘should’ in design science – what the world should be like. Craft, in contrast, deals in ‘could’s and ‘might be’s. As a colleague recently said “you’ve got to give them the ‘what if’s’”.
empathy is an intended outcome for craft, as well as a starting point
The digital jewellery I made as part of this research was the first working application of ‘Speckled Computing’, at the time a new enabling technology for the impending world of smart built environments. This is the science fiction, except that it was real, and it has already been surpassed by other, more accessible systems available as kits for hobbyists, hackers and makers.

“Someone should write a book about the crafts and science fiction”
speckled computing
It was also the first time I had worked with a ‘near future’ technology, still in development and not available commercially. I was trying to use craft to help people experience a possible future, and worked with five female friends over two years to develop and think about what the jewellery might mean for their friendship group. One of them, my mother, is here this evening. Here she is encountering the Bogwoman of Ballachulish in the Royal Scottish Museum in Edinburgh, using her digital jewellery to competitively avoid her friends ;-)
The technology, the ‘Speckz’, could include any type of sensor, and be programmed to collect any kind of data in real time. The design options were apparently limitless, but by sitting in on technical research meetings, I came to understand that what interested me was the way the ‘computer’ was no longer a single thing – it was distributed. It was the network that was powerful, not the individual nodes.
Each piece of jewellery contained one Speck or node, and the five neckpieces formed a network, in which all the nodes communicated with each other, sharing only the node identity (and therefore the wearer’s), and information on their relative proximity to each other. As a result, the women could tell from the coloured light patterns who was close by, and who was further away, even if they were not physically visible (radio signals travel through walls and floors providing there is no reflective material in a building).
One result of this work was the realisation that the interesting things were happening in the relations between people, between people and things, and between things and things. The women created meaning together about these new objects, and the computational objects made sense of the changing physical environment through dynamic collaboration.

This idea, about networks of things and people, their collaboration and availability to each other, and the resulting distributed nature of meaning and experience, is another key aspect of relational design: if the consumer electronics we are designing are networked, that is what we need to design with and for.
This chapter of my research to date brings those aspects of relational design together: the need to design for impending networks of things (‘smart’ cities and the Internet of Things), people in relation with each other, and the empathy of the maker listening respectfully to their material.

Some of the most consistent feedback I had about the digital jewellery was about other people, not the women’s own lives. Comments like “It’d be great for autistic kids!” or “Deaf people would love this” made me ask “really?” – and anyway, how would you go about finding out?

I spent some time messing about making objects that at first glance seemed to have no use value (what are they? Cushions? Toys?), but which seemed to get a strong affective reaction from people anyway. For the first time, I was using textiles to create sensors and switches as part of simple reactive objects. I found this intriguing - why did such simple things generate these kinds of reactions? Could this be tested in any meaningful way? Who with?

*Stille* was about centring yourself through somatic gesture (neck rolling); about that transition from a private to a public space, say before giving an inaugural lecture. Silver ink switches screen-printed around the collar are activated by skin contact, triggering sounds of insects celebrating sudden rainfall in an Australian drought.
HUG was commissioned by the City of Edinburgh Council’s Traveling Gallery, also in 2007, and again used soft switches to trigger sound, this time of a cat purring, and also vibration, like a heartbeat (achieved by hacking Build-a-Bear toy modules). HUG went on a tour of Scotland, had to be rebuilt after 3 weeks due to excess cuddling, and generated over 30 pages of visitor feedback.

The exhibition was called ‘Access All Areas’, and was curated to include artworks that addressed all the senses, not just sight. Visitors included school children from remote areas of the country, and children with diverse and special needs. The apparent simplicity of HUG, compared with the strong reactions it generated, still intrigues me (and we’ll see an update on this project towards the end of the talk).

So…can we claim that these two projects have any bearing on wellbeing? Mindfulness? Companionship? Are they doing good? Are they remedies? And if so, for what? And for whom? How do we conceptualise the beneficiaries of design – as patients, or simply as people?

Going back to that quote - I’d like you to ask yourselves if you agree with it or not, and to reflect on how your own training and attitude to care influence your gut reaction to it. Perhaps Stille and HUG start to change its meaning for you a little?
At this point, I must just take a minute to point out that all of this work has of course been supported by and undertaken in collaboration with many other people. Two people in particular have influenced how I think, and the development of the project I am about to describe. They are Isabel Jones, artistic director of the participatory arts charity Salamanda Tandem, and Richard Kettley, my husband and Person-Centred psychotherapist. Both are in the audience, so I want to say a public thank you and take the opportunity to embarrass them a little.

I first came across Isabel at a symposium in Leeds in 2007, where she had been invited to speak about her work with people with diverse and often complex abilities. I was then full of my revelations about craft and authentic experience, and very sensitive to language concerned with listening and respect and meeting. Isabel described her practice through an interaction with a young boy, who others had found difficult to engage; I won’t be able to do her justice here, but her ability to be present for that boy, while still meeting him in his own world on his own terms, developing contact by rolling a ball back and forth, made a huge impact on me.
Isabel’s articulation of evaluation in the moment, moment-by-moment, of the situation, seemed to me to have a lot in common with the attentive attitude of the craftsman. And the use of such a simple toy, a ball, to achieve such profound psychological contact (the first condition necessary for personal growth and psychological change), was both amazing and entirely familiar to me. Salamanda Tandem are based in Nottingham, and Isabel has been generous with her time as a friend and more recently as a member of An Internet of Soft Things’ advisory group.

Richard was a guidance teacher at a large high school in Edinburgh before retraining as a counsellor at the Sherwood Psychotherapy Training Institute – a 4-year experiential Masters course. His immersion in Carl Roger’s Person-Centred Theory and approach to care, education and conciliation, has led us to have many wine-fuelled discussions about the common centrality of the relational in these and craft practices. He has been a core member of the Internet of Soft Things team, leading on all things Person-Centred. However, the more Richard and I talked about humanistic ways of working, the more I noticed that design was doing something quite different.
This quote is from Don Norman, one of the early founders of a design field called Human-Computer Interaction (‘HCI’), and whose books are on the required reading lists of almost every undergraduate design course in this country. He is a cognitive scientist, responsible to a large degree for the user-centred approach that every (product design) student is now carefully coached in. The quote was used in a presentation at the 50th Anniversary Design Research Society conference a couple of weeks ago in Brighton, by a young researcher trying to work with hard-to-reach individuals (ie, in a secure unit). His presentation, and others in the same session, were indicative of what I see as a serious issue for design; no-one in that session was able to articulate the foundations of their own research methodology according to philosophies of the human, nor were they aware of the differences in care philosophies they were experiencing as problematic in their multi-stakeholder projects.

Don Norman may claim we are all applied behavioural psychologists, but we don’t need to be; rather, we need to be aware of all the options available, including cognitive, social and humanistic frameworks. We need to have an awareness of the philosophies of knowledge and ‘truth’ that inform research funding, and care practices, because these impact us greatly in what we can hope to achieve, and how we go about doing our work. We have a choice in our methodologies and should be able to explain what we’re doing and why.
At another workshop in the same week, at a prestigious arts university in London, I experienced similar issues, this time in a student project led by a senior tutor, who happened to be friends with a leading psychiatrist, who had asked him to bring some ‘design thinking’ to bear on young people’s experiences of poor access to services. Again, the question about philosophies of care and the human met with blank stares, and worse, questions about the impact of doing research, on the young people themselves, and on the students, were met with some surprise: the psychiatrist had said “it would be OK”.

Here is a further issue for the design researcher: what’s the difference between psychiatry and psychology? What about psychotherapy? What is the relationship between these professions? Where does social care fit in? And further, how are practices funded, commissioned and accessed? The landscape of mental health research and care provision in the UK is extremely complex, dynamic and politically charged. Power relations within it have a huge bearing on who gets to do research, in which environment, and on how participants are thought of in that research process. At the very best, this means that design research does good by accident (but cannot be called rigorous research if there is no understanding of underpinning theory); and at worst, it is deeply unethical and is apt to do serious psychological harm.
In the examples I just gave, basic ethical concerns such as informed consent, vicarious trauma, and the impact of power relations on participants were simply not considered. If there is one thing you take away from this talk today, I’d like it to be that DESIGN KNOWS NOTHING about working well with mental health.
But I am getting ahead of myself. Let’s rewind three years to the growing hunch that Design wasn’t aware of how it was approaching research with health in general, and that its understanding of mental health and wellbeing was even less well founded. I had been thinking about Craft as a methodology, and the Person-Centred Approach (‘the PCA’) offered a valuable established theory and decades of professional practice with similar values (this image is from the PCCS Books conference last year, where the theory and practice of the PCA continues to be developed); perhaps the PCA could be investigated as a framework for design research in mental health and wellbeing?
And so this brings us to the project that I suspect most of you have heard something about, **An Internet of Soft Things**.

I still count the proposal we wrote for this project in 2014 as one of the greatest achievements of my academic life. The UK’s Engineering and Physical Sciences Research Council (EPSRC) funded us despite us not telling them what we would actually build, or exactly which technology we would be using to build it. And I’m saying ‘we’, so here is a line-up of the team....
What we knew was that the EPSRC were interested in how technologies of the future could be designed with and for actual people. The technologies they were interested in researching were the new generation of the stuff inside the Friendship Jewellery, Speckled Computing. The new term is the Internet of Things (IoT), which means networks of computers of all shapes and sizes, some obviously computers, but most hidden inside everyday objects, combined with embedded sensors in everything, gathering and sharing enormous amounts of (‘big’) data, which can then be analysed to show patterns of behaviour.
What is this for? Smart homes? Comparing your exercise achievements with the national average? Insurance purposes? Marketing?
Illich emphasized the need people have not only to obtain things, but to act upon their world. As a methodology for achieving this, Illich called for “negative design criteria for technological devices” (1973, p31) in order to put constraints on the institutionalization of ‘needs’
With our emerging concern for the human, for their mental health and their experiences of power relations, we asked how such abstracted, behavioural systems, could be designed in a more humanistic way (so that design could see the difference in action). In other words, what would a Person-Centred Approach to Design look like?
To find out, we worked with the Nottinghamshire Mind Network in Worksop, and devised an 18-month project with three phases:

e-textile workshops
participatory service design
Future Workshops
Very briefly, e-textiles are yarns and fabrics that include conductive fibres so that circuits can be made partly flexible. The future of smart watches and fitness trackers, those things that have become known as ‘wearables’, is predicted to be ‘soft’, enabled by electronic textile technologies, but of course, engineered textiles are all around us in the built environment, in some people’s bodies as medical devices, as architectural structures, geological infrastructures, and of course in our domestic interiors. Textile sensors and displays are becoming more feasible, and commercially available all the time, and indeed, Trent hosts world leading engineering research in the development of new yarns that can incorporate entire circuits.
What we did | Service design toolkit

- We provided elements visually representing participants' journeys such as cars, roads, people, trees, traffic lights, animals, etc.
- We asked the participants to describe their journeys to and from MIND
- Our aim was to establish any potential anxiety triggers
Service Design is a way of thinking about people’s experiences with services rather than physical products – how do people first hear about and make contact with a service, whether that is a mobile communications provider, or a mental health service, and what is their experience like throughout? What can be improved or redesigned? Service design uses a lot of paper-based graphical representations of the different interested parties (‘stakeholders’), processes (‘journeys’) and contact points (‘touchpoints’) typically with groups of relevant people (users, consumers, staff and managers etc) to make experiences more visible.
Future Workshops came out of Austria in the 1970s as a form of active citizenship; people came together to air concerns about urban projects, envisage ideal futures, and create feasible action plans, in the process, taking back control of their own lived environments. The format can be used to bring together people who feel they have been ignored in policy, with those who have the power to make things happen (maybe we should be exploring this more in the UK?). It is typically quite an intense process of just three full-day sessions.
The guiding principles of our approach, informed by Carl Rogers’ theory and practice, include:

Meeting people as individuals rather than examples of a demographic
Trust in individuals’ accounts of their own experience
Moving from a concept of design as solving problems, towards design as exploring potential
guiding principles

- Meeting people as individuals rather than examples of a demographic
- Trust in individuals’ accounts of their own experience
- Moving from a concept of design as solving problems, towards design as exploring potential
These principles change everything. For example, we did not need to know what diagnoses people had been given, and we didn’t invite participants based on living with similar mental health conditions. We had some basic mental health awareness training from Mind before meeting participants, and had psychotherapists on the team to help us work well with people, and also to help us recognise our own emotional reactions to working in this space. This is very different to a medical model of mental health, which seeks a diagnosis in order to treat and cure.
Anonymous and Consent

- Participants will be made anonymous
- Images/recordings will be used with permission only

How Information will be used:

- Research papers
- Conference papers
- To develop further work with Mind and other mental health communities
- Research reports to our funders and Nottingham Trent University

Further opportunities

If you have enjoyed taking part in these workshops you might like to join us in Phase 2 (‘In The Smart Flat’) and Phase 3 (‘In The Wise?’) in 2015.

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The outcome of the process would not be a design concept that would solve a problem, but a series of explorations of what it might be like to live with mental health in a world enabled by the IoT and textile interfaces. In gathering research data, we used a range of media to collect feedback, working with diverse communication capabilities, rather than relying on itemised questionnaires. We took what people expressed at face value, rather than seeking to unearth some hidden truth. We didn’t interpret them, so much as work in dialogue with them. We had to be prepared to learn to really listen in the moment, and to accept in the end that our voices were also important.
As an example of this, I’d like to show you a short film. Three participants (Chris, Meg and Elaine) agreed to be interviewed after taking part in the six e-textile workshops in phase one. At the workshops we had an average of six participants, working in pairs with facilitators (all referred to as ‘co-researchers’). Martha Glazzard and Sarah Walker prepared the technical content of the workshops, and Rachel Lucas and Richard Kettley framed them in the Person-Centred Approach. We have created workshop guides, kit lists, and even a training manual for future facilitators, which you can find on the project website at http://aniinternetofsoftthings.com/.
This is Chris. You will hear him being interviewed by Isabel. The film was made by Isabel with Geoffrey Fielding and can be found through the project site and at https://www.youtube.com/watch?v=YixEuzl0Wfc.

As an audience I’d like you to bear in mind one or two things: we sought to work with our participants as they were on the day; we tried not to impose a creative vision on the film where it would override the person’s own expression; and each day is different and unpredictable for individuals living with mental health. This means that you may find Chris’ speech indistinct, simply because he was taking a new form of medication for the first time that day.
When we show this film, we recognise the small things that reveal something about Chris’ experience of the workshops, over and above what he actually says. But this is because we were there at the time, and have had other conversations with him and with volunteers and staff at Mind who know him. For example, we experienced Chris as being mostly non-verbal for the first three weeks: being able to speak on camera with relative strangers after six weeks was in itself a significant accomplishment. And you might have noticed the packet of cigarettes in his shirt pocket – not knowing what Chris’ usual process was, we didn’t realise until told (by himself, and other volunteers) that he would normally leave a group situation about ten times to have a fag and manage his anxiety, whereas he had left each of the 3-hour workshops only once.

We therefore found that one of the problems for research with mental health is that expectations of evidence as ‘objective’ do not really work. The whole point of the workshops was the quality of the subjective experience that emerged from relations in the room, which in turn emerged from shared focus on working with unfamiliar materials.
There is a point to make here about informed consent too. We agreed with participants that we would not film within the workshops, and that images would not include faces. Some of the most powerfully positive moments we experienced are simply not visible in transcripts of the audio capture, and even if I could show you happy smiling faces, you would have to take my word for it if I told you what people were grinning at. I would rather you trust us when members of the team tell you what a positive experience it was, rather than looking for spurious ‘evidence’.
Having said this, I do need to include this image of Mind volunteer and co-researcher Josie, who thoroughly enjoys wearing her earmuffs and wristband, created in the workshops.
I hope you can see the pieces staring to come together – we have replaced Herbert Simon’s *should be*, with Craft’s *could be*, removing what the PCA would term the *external locus of evaluation* in order to give power back to the individual. Much mental health is a result of people’s reaction to multiple and powerful ‘scripts’ in the world around them; in doing design research with mental health, we suggest that an awareness of this is crucial.
There is therefore impact in the moment for participants in work like this – experiencing being listened to, and experience of efforts to relate by another person, are powerful therapeutic factors. The e-textile workshops also seemed to offer therapeutic benefits that were different to other crafts and arts classes: they were inclusive of gender, going beyond the standard cultural stereotypes of women’s (textiles) and men’s (electronics) work. They offer a safe but challenging environment in which there is no ‘comfort zone’ for anyone – the technical specifications are simple, but making them work using textile materials takes perseverance and some humour. Workshop facilitators are as likely to experience failure as participants, which creates a level playing field, and models imperfection; Mind like this aspect of the workshops in particular because it supports discussions about expectations of success in recovery from mental health issues. The Mind model of mental health is not so much one of complete recovery (‘cure’) as one of management and acceptance of the self.

As a dialogical and relational approach, this helps to answer some of the concerns being voiced about the ‘well-being’ agenda, typified by self-help mindfulness training, in which the responsibility is put back on the individual to build his or her own resilience, as part of a larger cultural narrative of productivity and efficiency.
Now that the project is finishing, at the end of August, we are handing over to Mind, leaving them with 50 workshop kits developed with local company Kitronik. We have delivered training sessions for staff and volunteers in how to use them, and members in Mansfield and Worksop will experience e-textile workshops this autumn. Hopefully, we’ll be able to take them further, across the East Midlands region, to wider patient and public involvement groups, and eventually to National Mind.
The project also included a Service Design phase, in which people could experience sending sensor data from a textile object to a remote laptop (beginning to build the network of things). This allowed participants to start designing with data as well as with materials – what connections would be valued, and which avoided? What data should be captured, and who should see it? What might it look like? Or sound like? This image is a design concept by Katrina: she explained that for herself (and many others), anxiety is not caused simply by triggers in the world around her, but is a self-perpetuating state. If a child runs across the street, she feels anxious; but if things are calm, she starts thinking about conversations she’s had, or what somebody might think of her, and the empty space fills again with anxiety. In this concept, she imagines owning a textile handheld object that can be squeezed to relieve anxiety in the moment; each squeeze sends a signal to a leaf on the decorative tree, and when she returns home, each leaf glows with colour to help affirm her overcoming all those moments of difficulty. It is the Tree of Positive Reinforcement. Katrina and the group then elaborated on this idea to discuss different numbers of trees, sizes and contexts, what materials the leaves might be made of (like stained glass?), and how different services could emerge from decisions about connections. Ultimately we’d like to build one of these for Mind and all its members.
This is an example of how Service Design techniques helped us to explore data and objects together for Mind, but there are other contexts in which this can be useful. For example, service providers are keen to know how accessible their services are for people who need them. Earlier this year, two Masters students worked with myself and Rachel to deliver a co-design workshop for the student counselling service team here at NTU. This helped staff express their own experiences of delivering services, where there were issues, and where improvements had been made. At the end of this week we will take this further, working with managers and staff from all services across the whole student welfare system. Again, as service design becomes more established, we believe that particular care, and attention to the relational is needed when applying these tools in the mental health sector.
And finally, these show three short projects, supported through ‘quality related’ research funds by the university this year, which have come out of An Internet of Soft Things.
Firstly, we have produced a literature review of how design does research with mental health. At the start of the project, we assumed such reviews existed, and that we would be able to find accounts of the modalities and philosophies of practice involved; as you can tell from this talk, this wasn’t the case. There have been good quality reviews of design as it engages with health, but not mental health, and we believe this is an important piece of work for design research. Doing this gives us confidence in our claim that, currently, design’s level of awareness is woeful. It will be available on the website soon as a report, and we’ll be looking to publish it as a journal article too.
Electric Corset (and Other Future Histories) is a playful exploration of the costume archives held at Newstead Abbey – it seeks out obsolete and forgotten items of clothing – spats, jumps and stays, pocket bags – and reconfigures them as part of a future wardrobe of endlessly connectable wearables. My favourite at the moment is the chatelaine, a personalised bunch of expressive tools worn around the waist; the crocodile clips in the future version could be connected to any functionality....
And really finally, HUG, as promised, is being developed again; we are testing different fillings (mung beans, feathers, polystyrene beads) in forms that fit around the body. We are creating a range of reactive embroidered surfaces using conductive yarns, with simple feedback (heartbeats, glowing light, purring), and will shortly be taking the objects to Mind, Oak Field School and Salamanda Tandem for people to play with; through this we hope to think about wellbeing in different, non-verbal ways, through the body.
Thank you for coming this evening; I hope I have given you enough detail about the projects you were interested in, without boring you too much. Most importantly, I hope that I have gone some way to explaining what I mean by Relational Design, and its roots in Craft and the Person-Centred Approach.

Apologies to those who wanted to know more about Relational Aesthetics, but I leave you with this quote from Bourriaud.

A massive thank you to all the individuals involved in these projects, and here’s to doing more.
references

• Meg, Bassetlaw Mind member, 2015