

Facing Collaboration: A Meditation on the Faces of Circular Textile Research

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Abstract

To achieve a circular textile industry – one that has closed complex resource loops at all stages of the lifecycle – collaboration is required between diverse stakeholders. Working with people from a broad set of backgrounds, cultures, training, professions, with different languages can be extremely challenging, and progress when working together for the first time can be slow. Traditionally, textile designers have been a silent link in the industry supply chain, but with the new challenges that collaboration brings that role is expanding. The research presented here poses this question: could textile designers play a more influential role, by using their unique methods and skills to support new collaborations working towards an industry where waste is more often utilised as a resource? The study focusses on practice-based design research undertaken by the authors –one with a background in textiles and the other in materials communication – to support the formation of effective working relationships between participants in the multidisciplinary consortium project: Trash-2-Cash. A series of experiments were conducted using photography, visual data mapping, silent meditation and drawing to bring participants closer together by focussing on faces. The authors conclude by proposing this approach as a new method for enabling shared understanding in a multi-disciplinary setting, starting with participants' portraits and using design practice to build connections between the people within the collaboration. The authors suggest that this method inform internal communication and facilitation tools as well as external communication of the collaboration as part of a wider strategy to engage external non-specialist audiences in the work being undertaken. The approach may be of particular interest to research projects where designers are working with other disciplines for the first time.

Keywords: Circular textile research; collaboration; cross-disciplinary and inter-disciplinary methods; faces

Subject classification codes: design research; fashion and textiles; sustainable design; recycling; fibre to fibre recycling

1 Introduction

The EU-funded Trash-2-Cash project, aims to develop innovative new textile, plastic and reinforced plastic materials from waste textiles, involving a multidisciplinary consortium of 18 partners. The focus at the start of the project, which took place over 12 workshops, was very much on presenting the materials technologies under development. In workshop 01 there was a 20-minute warm up exercise to reveal a few personal facts about some other participants, but no other time was scheduled to build relationships. As design researchers with experience in textile practice, design thinking, facilitation, and communication, the authors recognised that the time given to building relationships and understanding wasn't sufficient to sustain an extremely challenging collaboration.

In response, the authors created a series of interventions in the unscheduled times of the workshops focusing on the social connections within the group. Each workshop was very tightly scheduled and so investing time in activities unrelated to the work-plan was difficult to justify to the methodology team. However, the dual role of facilitation and leading the external communications package allowed the authors some scope to create a series of people-centred interventions, some within the workshops and others outward-facing, with the aim of building connections, trust and shared understanding within the consortium.

1.1 Beginning with Portraits

The authors began in Workshop 1 by taking portraits of the participants. Figure 1 shows how each intervention followed on from this first action (the pre-experiment) and linked internal relationship-building to external communications through the website and podcast series.

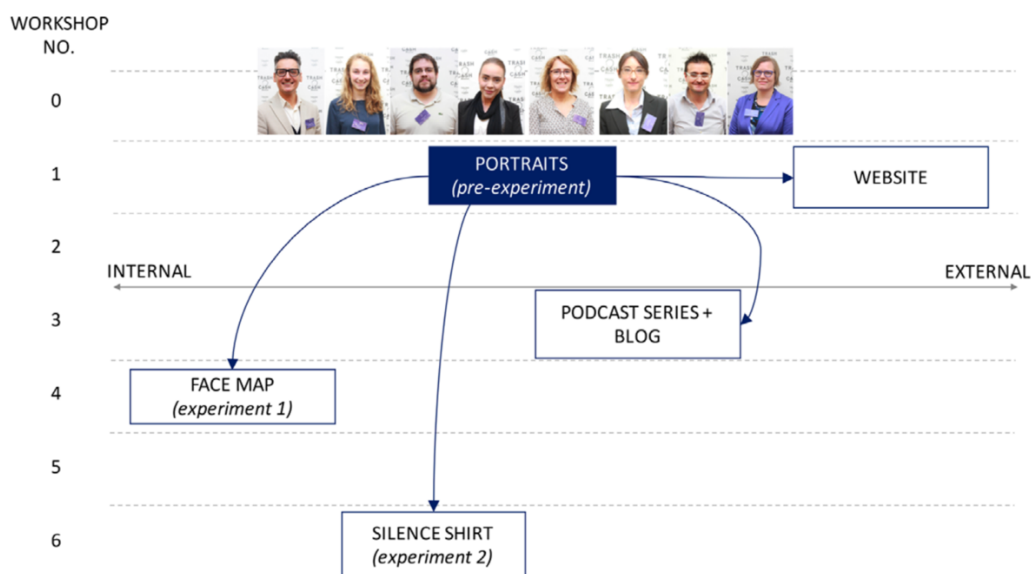


Figure 1. 'Taking Portraits' was the first step in a holistic and strategic approach to supporting internal communication and communicating the project externally. Image by R. Hornbuckle.

Experiments 1 and 2 drew attention to participants' faces, using visual mapping and textile design methods to develop relationships in unconventional ways. The website featured the portraits, and the podcasts added depth and meaning through spoken stories, introducing some of the participants to an external audience as well as allowing partners to learn about one another's' background, ways of working and expertise. Together these interventions represent a holistic and strategic people-centred approach to forging meaningful relationships within the consortium from scratch. The authors' 'hunch' was that building relationships using visual methods within a conventional EU project setting could strengthen the shared ambitions of the group, which would be particularly important for supporting collaboration between workshops when people were working independently. In essence participants would be able to take their colleagues faces and voices with them into their own organisations, extending the multi-disciplinary workspace beyond the conference room. Here, in between the workshops, the project partners work in disparate locations and with fewer opportunities for face-to-face interaction, with colleagues who are working on T2C but unable to attend the workshops. With the resources developed by the authors the hope was that everyone involved in the project could feel more connected.

The approach taken expands the traditional role of the textile designer and so in the following 'Research Context' section this is the first point of discussion.

2 Research Context

2.1 The Expanded Role of the Textile Designer

The work presented here feels to the authors like a natural progression along the path towards developing circular materials. Yet it is not recognisable as 'textile design' in the traditional sense. When the work was presented within this textile design forum the reviewers asked the authors to reflect on how it relates to 'textile design'. This provides a welcome opportunity to consider how the authors as designers came to this role and how design skills are becoming useful outside of the conventional disciplinary confines.

To begin with there was the motivation to do things differently, born out of a dissatisfaction with the unsustainable status quo in material production, use and waste. Researchers at the Textiles Environment Design (TED) research group (now Centre for Circular Design) at University of the Arts London, have written extensively on the transition from working as a textile designer in the traditional sense to working to create change – from new models and methods to mindsets of both designers and users.

Earley and Politowicz explored expanded roles through an AHRC-funded textile recycling project called *Worn Again: Rethinking Recycled Textiles* (2005 – 2009) where participating practice-based design researchers were asked to think about designing to reuse materials within contexts that also considered: ethical production approaches and the fair treatment of workers in the supply chain; the integration of new technologies; the design of systems and services to support the new products; and the idea of designing short- and long-life use in to the project at the outset. The strategic framework that resulted from the project was TED's The TEN (Earley & Politowicz 2010). These are ideas that support textile designers in working beyond the material considerations (which are covered in strategies 1-5) and in to roles which demand that they explore new production and business models and the behaviour of users (strategies 6-10).

Directly inspired and motivated by active involvement in this project and The TEN, Vuletich's PhD project explored the potential role of the *transitional textile designer* (2015) where designers embed empathy and reflexivity in to their practice by questioning *values* whilst working on the 'inner' state as well as the 'outer' aspects of personal and professional practice. The researchers have expressed this as *holistic* textile design practice (Earley & Vuletich 2015) where empathy and reflexivity were part of the learning journey of a fictional designer who also undertook 'inner' and 'outer' personal development work following a traditional education in sustainable textile and fashion design.

These research enquiries resulted in the proposition that training is needed to enhance traditional curriculum education of designers; to support the ability to enable collaboration researchers needed more than the traditional 'T' shape that Tim Brown supposes (2009). The horizontal axis of 'ability to understand multiple fields (disciplines)' needed to be matched with another breadth of enquiry, a second horizontal axis – that of the 'ability to understand oneself and others. Ability to embed ideas and give them impact'. The depth of knowledge that designers are expected to have, a particular expertise in one specific chosen discipline, needs extending to include a 'depth of knowledge and understanding of sustainable textiles and future scenarios' (Earley et al 2016).

Hornbuckle (2010) theorised that both a designer's 'individual scenario' (wanting to change own practice) and their 'work scenario' (having the means to work in nonconventional ways) determine whether a designer can work with materials more sustainably. Not only does there need to be an 'awakening' (Wahl & Baxter 2008) by the designer to concepts of unsustainability, but there needs to be an opportunity for them to work on different kinds of projects. Asking questions of personal practice through hands-on materials experimentation, demonstrates potential and opens up dialogue with other individuals and organisations who also want to make a change.

Increasingly the numerous challenges humans face, whether to do with health, material consumption, climate change or social inequality, are recognised as being more complex than any discipline can address in isolation, and research communities have responded by seeking unconventional

collaborations (Monteiro & Keating 2009). Consequently, designers and design researchers find themselves invited into projects outside the normal realm of design.

However, collaborations on the scale needed to effect CIRCULAR change (such as the project presented in this paper) are incredibly complex, and have massive interdisciplinary challenges. Although the research team are primarily textile design researchers, experts in circular textile practice and materials development, in the current project much of their knowledge and skills have been applied to the role of supporting collaboration and communication. Before the textile design work could even start the consortium were faced with the question of HOW to work together. The authors discovered that their skills and knowledge as designers can help to address some of those challenges, and the team actively recruited design researchers with complimentary skills and knowledge to help develop new methods for interdisciplinary communication and work. This accounts for the combined approach presented in this paper of textile design and communication design; each are very different in their format and medium but share a common appreciation of how people relate to one another and the value of creative social spaces as well as traditional 'work' spaces within the project workshop. So, not only has the role of the individual textile designer expanded but also the textile design research 'team', to include other skillsets which in turn changes the dynamic and adapts to the needs of interdisciplinary collaborative work.

A successful designer is already someone who can relate to people, know how they tick, understand their desires, their visual language and translate it creatively through manipulating material or imagery (Verganti 2009). Within an interdisciplinary project workshop this has meant that the authors intuitively identify opportunities to support social cohesion. These are experimental and far from perfect; it is not easy to ask a scientist to sketch their 'colleague' in their lunch hour; in some respects, designers shouldn't expect this of them, they are being asked to enter a space which is unfamiliar where they are likely to feel uncomfortable, stripped of their authority: the opposite of how they expect to feel in a project workshop.

Yet working in this experimental way with live feedback and the opportunity to try again at the next workshop has allowed the authors to identify the sticking points and build understanding incrementally. The work presented here is one example of the authors' experimental work in this project, but the broader findings about how to use the skills and knowledge which originated in design practice, to support interdisciplinary collaboration, will be the legacy of this project and will undoubtedly benefit (and challenge) textile design as a discipline.

2.2 The Authors' Positioning within the EU Project

Within the EU project the authors were positioned in two work packages concerned with communication; Work Package 8 coordinated external communication of the project and Work Package 1 was concerned with supporting the cross-disciplinary communication within the

consortium, involving designers, textile design researchers, scientists, social scientists, and manufacturers. The authors' decision to focus on 'faces' was very much linked to the understanding that the current project would succeed or fail based on new collaborative relationships between people, many of whom had never worked together before, in an environment that was geographically dispersed. Face-to-face contact was only possible during two-day workshops held every two to three months, where representatives from the partner organisations would work together in tightly scheduled exchanges (typically 35 people). Therefore, the need to enhance and support the collaboration as well as communicate to an outside audience was framed from the outset and opened up a research direction which was defined by the people involved in the work. It should be noted that although this seemed a logical approach to the authors due largely to their personal/professional stance and previous research (see Earley 2017 and Hornbuckle 2010, for example), this is not a conventional path for EU projects, which are usually characterised by a technology- and process-focused approach. Indeed, it is unusual for EU projects to include face-to-face workshops so frequently in the workflow.

In contrast to the intense face-to-face moments in the workshops there are also the 'in between' periods where communication is necessarily restricted to teleconferencing and emails. The numerous benefits of face-to-face encounters versus technologically-enabled communication is now well established, Arvey (2009) explains:

Face-to-face meetings allow members to engage in and observe verbal and non-verbal behavioral styles not captured in most computer mediated communication devices. There are nuances associated with hand gestures, voice quality and volume, facial expressions, and so forth that are simply not captured in email discussion, chat rooms, and the like. Even videoconferencing does not capture all of the dynamics of group members (e.g. the expression of others while one member is talking, etc.). (Arvey 2009:6)

Subtler advantages cited by Arvey include "sideline conversations" (2009:7) which occur when people are at ease with one another and have the opportunity to break away from the main group during coffee breaks or other social times, and "humour" which occurs much more readily during face-to-face exchanges and enhances social connections and relationships.

There are then two further areas of literature that the authors draw upon to substantiate this approach: i) business & design management and ii) the 'face' within psychology and social sciences, which are then presented before turning to the results of the research onwards from Section 3.

2.3 The Significance of the 'Face' in the Sciences

The 'face' has long been the focus of considerable attention from psychologists and philosophers. With the emergence of neuroscience and the ability to gather neurological data to study facial recognition and perception, knowledge and understanding about the significance of faces has grown enormously.

To the two design researchers who instinctively recognise the importance of faces to making social connections, reviewing scientific concepts relating to 'faces' provides some guidance (as well as reassurance) about the design interventions used within the action research setting. For this reason, a brief discussion of the relevant concepts is included here.

Psychologists studying 'face recognition' and 'face perception' have sought to understand how people process the complex information presented in a person's face, as Jeffrey & Rhodes explain:

Faces convey a wealth of information that we use to guide our social interactions. As adults, we swiftly extract information about identity, gender, ethnicity, age, and emotional state from faces. (2011:799)

The skill involved in interpreting and understanding this information is important from a very young age, enabling children to begin to read social cues, communicate and build relationships. The philosopher Jonathan Cole, who has sought to understand how physical abnormalities to peoples' faces have affected their social and emotional well-being in his seminal work *About Face*, explains:

Babies and children first reach out to the world not via abstract thoughts but through a relatedness to others based on an affective emotional need, and much of this relatedness is communicated through facial expression. If this is the case then the face has a role in the child's development of socialization and in the realization of others. (1998:6)

So, face recognition is powerfully associated with how we respond to people and our emotions (Curby *et al* 2012). Indeed, when combined with other physical cues such as vocalization, gestures and 'gaze' the resulting impression - termed *person perception* – provides a great deal of information for interpretation about a person and becomes the basis for social interaction and relationship building. When considered in the context of building collaborations, where complex social groups need to form relationships in the short timeframe and intense environment of the project workshop, the importance of faces becomes even more apparent. Indeed, Cole (1998) argues that the link between facial recognition, the organization of complex social groups and meaningful relationship-forming is central to what differentiates humans from other species:

One reason for the success of primates has been their development of complex social groups. These require regulation, based on mutual regard and hierarchy, and I suggest that facial display has a role in this. In humans, further advances have occurred which enable, through mutual regard, ways into others' minds. (Cole 1998:6)

The link between faces and social interaction is also considered through the concept of 'saving face' by Goffman (1967), who maintained that "the proper study of social interaction is not the individual and his psychology, but rather the syntactical relations among the acts of different persons mutually present to one another" (1967:2). In this respect 'the face' relates to maintaining actions which will not compromise the outward expression of the self, and so rather than simply a physical appearance, the face becomes an important symbolic outward expression of the person and how they relate to others.

Considering the power of face-to-face interaction, philosopher Levinas proposed that the gaze of another amounts to a 'command' and leads to an inherent sense of responsibility in the ethical sense, as Bergo explains:

This command and supplication occurs because human faces impact us as affective moments or, what Levinas calls 'interruptions'. The face of the other is firstly expressiveness. It could be compared to a force. (Bergo 2015)

In summary, there is a clear, but complex, link between the importance of facial perception and social interaction. As a basis for further investigation, from a design research perspective, focusing on the face could offer great potential for helping to build meaningful relationships in a pressurized environment such as the project workshop. What is more, the literature indicates the connection of facial recognition to other means of expressions such as vocalization which could be useful when trying to enhance the technology-enabled interactions in between face-to-face encounters. There is also the suggestion in Levinas theoretical stance, that meaningful face-to-face encounters are powerfully affective, making connections which could be invaluable to building the trust essential to collaboration.

2.4 Social Capital in Business & Design Management

Collaborative relationships are essential in industry as companies and organisations rely on business-to-business partnerships to deliver their products or services. These relationships are established through a gradual process of building rapport and trust. During this period, companies, and importantly the people who represent them, learn how to work together, while the relationships that don't work so well may be discontinued in future projects (Rieple et al 2005; Child 2001). Rieple et al (2005) argue that communication and the relationships between people are central to successful

industrial collaboration. In a project where almost every relationship is new, each participant has a different area of expertise, and speaks a different language (disciplinary, cultural and linguistic), and the relationships have to work for the continuation and success of the project, as has been the case with the Trash-2-Cash project, the question of how a project begins becomes extremely important. The rapport-building period is concentrated into just a few days.

The term 'team-building' is now familiar to most people who have been employed in large organisations and unsurprisingly there are numerous studies within business-, project- and design-management literature that look at strategies for improving collaboration. Gilley *et al* (2010) provide a useful overview and integrated model of the factors that affect teamwork. The 'forming' stage of a team in Gilley's model is particularly interesting for the present study:

The forming stage is characterized by a high degree of uncertainty about the group's purpose and goals, tentativeness, feelings of anxiety, and awkwardness, but members are enthusiastic and motivated to achieve desired results (...) the accomplishment during this first stage is to achieve an understanding of the group and the charge of the group and learn about other members of the group. (Gilley *et al* 2010:19)

The authors go on to emphasise the importance of "Synergistic Relationships" where "relationship skills allow team members to enhance their relationships with others so that they can build a positive, comfortable, and nonthreatening communication climate with others—one that encourages other people to discuss organizational issues, problems, and other ideas openly and honestly, without fear of reprisal" (Gilley 2010:23).

The problem of fostering effective collaboration among new geographically dispersed teams is also discussed by Kotlarsky & Oshri (2005) within the development of Information Systems. The authors see collaboration as a characteristic of social practice rather than an activity to be carried out in service of teamwork, advocating an emphasis on social experiences prior to, and after, face-2-face meetings, 'story-telling' and 'social ritual' in addition to the technical tools and solutions which appear to be the preoccupation of project management research.

There seems to be an emerging awareness in the literature therefore, that 'social capital' is an important part of successful teamwork and collaboration, and the 'bonds' or relationships between participants is of equal importance to shared understanding and effective communication. However, there is a clear absence in the literature of creative approaches and methods to building social capital and relationships in teams within a short timeframe, which presents a unique opportunity for design practice.

3 Methodology

The methodology fuses the textile design and communication design research approaches of the two authors.

Author 1 is a textile design researcher who uses photography, drawing and printing as practice-methods. Author 1 is also an experienced workshop facilitator who has a record of creating tools and tasks for designers in academia and industry, and who has previously written specifically about these methods.

Author 2 is a design researcher with a specific interest in how materials are communicated between disciplines. Her current work is concerned with how materials information is communicated and translated between designers, suppliers and technologists, to support materials development within a circular economy. Central to her approach is the idea of “Materials Translators”, people who can communicate material benefits or needs using appropriate language (visual, verbal, tactile...) for non-specialist audiences such as designers.

The methods developed for the experiments were a sequential process that moved between the experience of both authors:

- i. creating photographic imagery (textile design research method)
- ii. using this imagery to co-create a map and analysing this information (communication research method)
- iii. co-creating visual imagery for print design (textile design method)
- iv. collecting feedback from participants and analysing replies (communication research method)
- v. responding to the insights by making a textile artefact (textile design method)

The project set-up, as well as the different expertise and responsibilities, led to the formation of the first phase of the action research, the ‘pre-experiment’ which involved ‘taking portraits’ of each person at Workshop #01 (Stockholm, September 2015). Further interventions which followed on from this first response to the project situation, presented in this paper are identified as:

- Experiment 1: ‘Face-map’ – participants were asked to place themselves within a ‘map’ of the project using ‘face stickers’ (Workshop #04, Milan, May 2016), to create an expertise log.
- Experiment 2: ‘Silence Shirt’ – participants were invited to meditate and then draw each other’s faces in silence (Workshop #06, London, November 2016), to create imagery for a printed textile artefact.

4 The Pre-Experiment

The pre-experiment involved author 1 using photography – the technique most commonly found in the early stages of her creative textile practice projects – as a means to record participants' faces during project Workshop #01 (Stockholm, September 2015, figure 2).



Figure 2. R. Earley reviewing the photographs with Work Package #01 leader, Christian Tubito, Material Connexions Italia. Image by C. Kohtala.

Author 1 describes the importance of this first step in framing roles, developing trust and building relationships and its significance as the prelude to Experiments 1 & 2. As part of the leadership role of Work Package 8 (Communication, Dissemination and Exploitation) the portrait shoot by author 1 acted as a way to bridge the textile design expertise with the new design research communications role. Photography had previously been used to either create visual imagery research to inspire print design work, or the photographs had been used directly to create screen print or digital print design work. Here, author 1 used photography to build a sense of familiarity between collaborators, resulting in a series of collaged portraits that were used to announce the project on social media. The portrait shoot also served as a warm-up to the main events of the two-day meeting and provided essential material for the first deliverable – the project website.

This pre-experiment quite literally put names to faces, through creating a shared file for the project participants to access in order to remember who is who in the large consortium group. The logo-patterned backdrop poster gave the portraits a unified aesthetic, resulting in a set of visual images that contributed to the sense of a unified project team with shared objectives from the very first meeting.

5 Experiment 1: Capability Face Map

In between workshop #03 and workshop #04 (February to May 2016) author 2 was focusing on how to enable people within the collaboration to understand one another's expertise. This was seen as important in the project context as observations from workshop #03 suggested that peoples' roles and abilities within the workshop setting were still unclear. Author 2 proposed to the methodology team (a team of 'facilitators' that plan the workshop activities and exchanges) that they undertake a survey of workshop participants' expertise, creating a resource for the people in the project which could aid relationship-building and collaboration. This survey elicited a good response from participants with 40 responses.

Once the data had been generated the question remained about how to make it accessible to participants. This has been a central question throughout the project as some types of information presentation are more accessible to designers and others to scientists and engineers (Hornbuckle 2010; Ashby & Johnson 2002). Therefore, the multi-disciplinary nature of the workshop participants pointed to a two-pronged approach:

Stage 1: A simple tabular presentation of the capability data using colour coding to make the information easier to comprehend. A hard copy was given to each workshop participant and the digital version made available on the internal project website (see figure 3).

Stage 2: Face mapping sought to engage visual thinkers and make the information memorable to all through interaction (see figure 4). This intervention will now be discussed in more detail.

5.1 The 'Face-Mapping' Activity

Visualising information is seen as a powerful method of supporting understanding, Tufte comments: "we envision information in order to reason about, communicate, document and preserve that knowledge" (Tufte 1990:33). The recent emergence of the 'info-graphic' – as researchers and designers seek to make 'big data' available to a larger population and decouple accessibility from privilege (Boehnert 2016) – signifies an acceptance of the power of information visualisation.

The image shows a large, multi-page document titled "TRASH CASH PARTNER COMPETENCIES". It is a grid-based chart where each row represents a different organization or partner, and each column represents a specific competency or skill. The grid is filled with colored squares (red, green, blue, yellow, orange) indicating the presence of that competency for each partner. The document is spread out on a table, showing multiple pages of data.

Figure 3. Collaboration participants' capability data presented in a tabular format. Image by R. Hornbuckle.

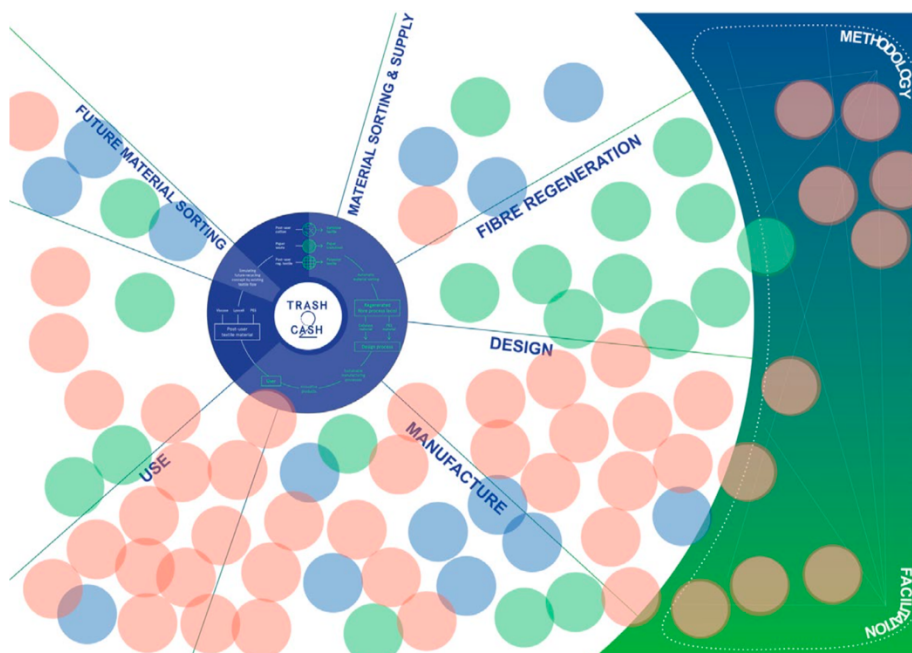


Figure 4. Capability map created by collaboration participants using their face stickers (faces removed for anonymity and coded by discipline: green=science blue=manufacturing red=design). Image by R. Hornbuckle.

The approach of author 2 therefore was to aim for data visualization to improve the accessibility to the diverse audience of project partners. Meanwhile, the nature of the data – being about the people in the project – proceeded logically from the ‘pre-experiment’ described above; using these ‘faces’ as powerful and affective symbols in the data presentation. Alternative symbols such as the person’s name or organization logo could have been used, but considering the psychological and philosophical significance of the face, discussed earlier, using faces could lead to a more engaging and emotive representation and could potentially enhance social connections and interaction in a way that other symbols may not.

Rather than simply interpret the data into an info-graphic and present it to workshop participants, author 2 proposed an interactive task to maximize engagement. A large poster of the project lifecycle was pinned within the workshop space and participants were given their own ‘face stickers’ to place within the project (see figure 4). This created a sense of ‘fun’ for people by handling and placing their own faces amongst other peoples’ and gaining a sense of location within the project and in relation to other people. It is perhaps worth mentioning the current zeitgeist of ‘selfies’ and Facebook as a contributing factor in understanding the potential power of making social connections in this way. Furthermore, it is not a big leap to suggest that people are now more accepting of ‘using’ their own self-image in an explicit and public way than they may have been prior to the rise of social media. This exercise perhaps borrowed some familiarity from this current trend but the exercise was based on the idea that the information needed to be emotive in order to be engaging.

The success of the activity can be gauged partially through participation levels and responses to the post-workshop survey. Every workshop participant took part and some even added other colleagues (who are involved in the project but not attending workshops) using post-it notes. The feedback from the post-workshop survey was positive, with partners asking for it to be made available online and stating that it will become “increasingly useful”. In the post-workshop analysis, the author was able to code people by their broad disciplinary category (design, science, manufacturing) which also gives an overview of where different types of knowledge reside within the project (faces have been removed for anonymity).

6 Experiment 2: The Silence Shirt

Author 1 uses the remanufacturing of the polyester shirt to explore ideas about sustainable textile design strategy, education and fashion innovation. The work focuses on building bridges between science, industry and academic researchers towards new models for the circular fashion textile industry. As this body of work has progressed, the value of co-creating the garments has become increasingly clear. In exploring new research questions the shirts previously created through workshop scenarios have provided very different kinds of insights when compared to shirts created by the author in a solo or partner context. Building on this body of practice research work, author 1 wished to use

unscheduled time in a workshop to co-create a shirt print design to understand whether spending time making something together could help bridge the divide between design and science partners and contribute to the formation of lasting working relationships.

6.1 Philosophical and Psychological Research Context

This section will present the premise for experiment 2 drawing on neuro-science and social psychology principals which emphasise the importance of 'faces' to social interaction and building relationships (Bargiela-Chiappini & Haugh 2009; Goffman 2005; Cozolino 2004). Researchers Kellerman, Lewis, and Laird (1989) set out to explore the effects of consistent eye contact on feelings of romantic love. In two experiments, people were randomly paired into opposite sex couples and given the instructions to look at their partner's hands or eyes, or count eye blinks. After that participants filled out questionnaires to assess their emotional responses to their assigned partner. The questionnaires showed that couples who participated in mutual eye contact in particular reported stronger responses than the others. Couples who looked into each other's eyes reported significantly higher feelings of affection, passionate love, dispositional love, and liking for their partner. Thus, as the researchers note, *"subjects induced to exchange mutual unbroken eye gaze for two minutes with a stranger of the opposite sex reported increased feelings of passionate love for each other."* (p. 145). In Aron *et al* (1997), researchers put pairs of strangers together and asked them to talk about intimate topics for 45 minutes. Afterwards, the participants rated how close they felt to the other person.

Stage 1: Practicing collaboration through making, project partners were invited to co-create an upcycled shirt during workshop 6, November 2016. *Silence Shirt* was co-created by EU project researchers who gathered together at work after lunch, silently meditated (figure 5), stared at each other in pairs for some minutes, and then quietly drew each other's portraits using transfer inks (figure 6).

Stage 2: The drawings were then scanned - (other textile patterns and constructions will later be created from the resized scanned images) - and then collaged, hand painted and printed on to a second-hand shirt by Author1. (Figures 7, 8 and 9).



Figure 5. Meditating – a quiet moment in the middle of Workshop #S06 – enabling participants to prepare for a creative activity with a person they do not know. Image by R. Earley.



Figure 6. Painting portraits of partners using transfer inks, WS06. Image by R. Earley.

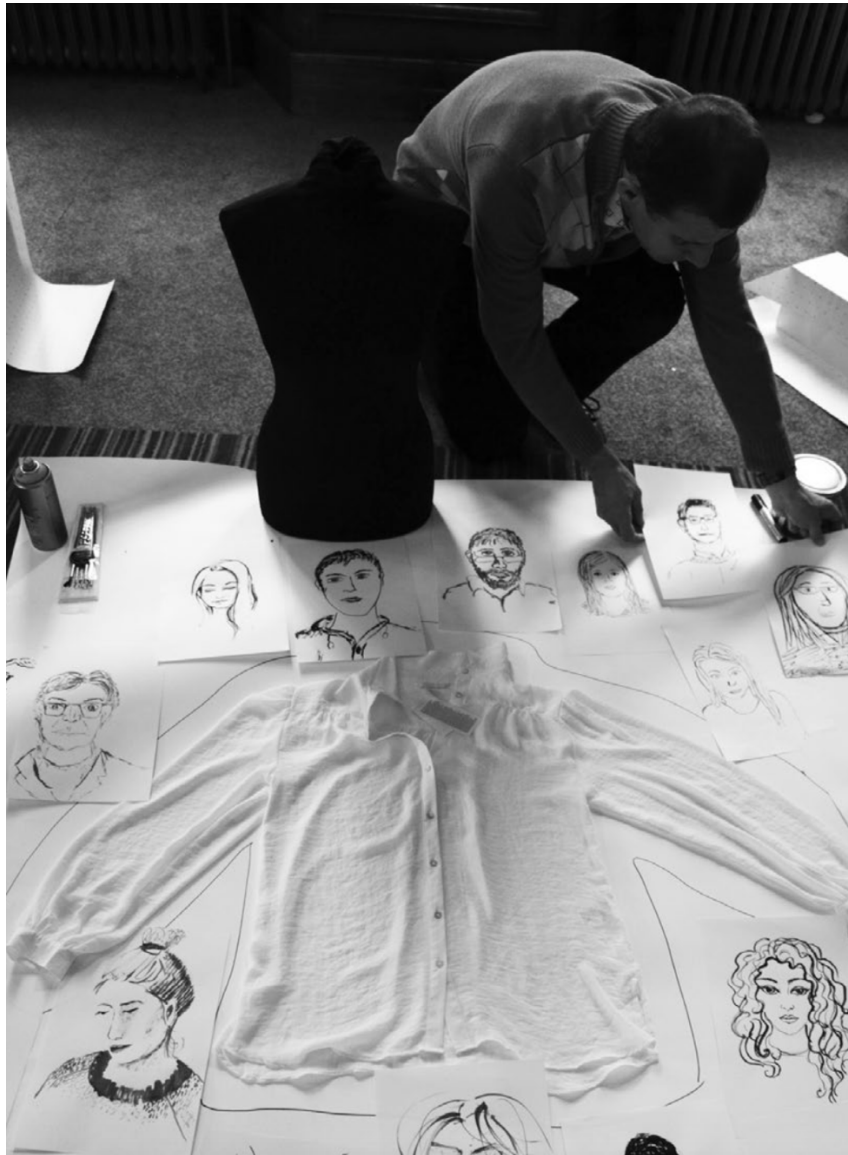


Figure 7. The blank shirt with the disperse dye painted portraits placed around it. Image by R. Earley.



Figure 8. R. Earley collaging the portraits together for the front and back shirt print panels and using hand painted textile patterns to make connections between the different portrait styles; and the finished collage. Image by R. Earley.



Figure 9. The finished co-created print and upcycled garment, *Silence Shirt (Long-Sleeved)* (Earley 2017). Image by R. Earley.

6.2 The Results of Experiment 2

The survey elicited 11 responses (65%). Below are the summarised responses which express the range of feelings experienced during the meditation and the portraiture session.

Question 1: Can you remember the experience of sitting there in silence with your own thoughts for a few minutes? What happened to you? After the silence how did you feel? In what way was it different to the experience of the rest of the day?

To stop and quietly meditate in the middle of a project workshop created mixed feelings for several of the respondents. At first the task unsettled them – but then they experienced a relaxing effect, ... *it was nice to calm down and detach a little from the “buzz” of the workshops and the conversations over lunch that we just had before.* Many of the other respondents also noted that there was ‘tension’ during the day as it can be very demanding to be working with so many different people. They said the meditation making them feel less tense: *Very nice to sit in silence for a moment as a contrast to all the intense presentations and exercises. Nice to get some stress relief when meeting a lot of new people...*

Question 2: What can you remember about painting the portrait of the person sitting next to you?

In this part of the session the responses showed that some were happy to attempt a portrait of the person sitting next to them, whilst others found that they felt out of practice, or worried about their inexperience and creating a poor portrait, or felt unhappy/dissatisfied with the tools available for the task. Two of the participants each saw much more than a face to draw. Both wrote independently about a much deeper experience facing each other during the portrait session they shared: *...something like a different proximity, a kind of human intimacy (at the beginning in has been a little bit embarrassing, then I just felt "authorized" to that kind of "intimacy" due to the exercise requests and the silence in the room)... The portrait of X just came out of a combination of wanting to do brushstrokes with the brush and ink and - maybe - X's hair... Some strokes went a little awry and I was worried that X looked angry in the drawing, when I see him rather as strong-minded and not prone to anger. I did not think long about this, but in a small way the portrait exercise did indeed make me think more about X and his leadership and teamwork style.*

Question 3: What did you think about the portrait they made of you?

A few worried about if the other person would like the portrait: *When I was painting X's portrait I remember that I was a bit worried that he wouldn't like the portrait I made, but I enjoyed quite a lot doing it, it was fun.* To most the final portrait didn't matter; they stated that the process was what was important to them: *I must say I cannot really recall the outcome. Seeing the result right now, it clearly wasn't finished. But I don't think it is/was about the result but the process. It's the road that matters for me in this case...*

Question 4: After it was over, do you recall feeling or thinking anything different - about the people in the project or the workshop, or the project itself?

For three respondents, there was a clear sense of a change in the way in which the partners felt connected: *In general, we all did come a bit closer, more personal, in my view... I think all in all it connected people a bit more... I did feel it created a certain connection.* For the two that drew each other - highlighted in the answers to question 2 above – the insights that came through the exercise were useful for understanding more about how to design-in to the project: ... *At the end of the exercise I have not a different perspective on the project itself, or about the workshop, but for sure I realized the enormous gulf in terms of personal knowledge of the people with which I work into the project, the human factor, their state of mind; how much is simple create a connection.*

The answers demonstrated that the experiment made many of the participants often feel uncomfortable at first – due to the strangeness of this kind of activity – being still, silent, and then staring at the face of their “front person”. Yet the comments also revealed that at this stage of the project people were comfortable enough with each other and the process to relax into it – even though staring at each others’ faces is an intimate act.

Drawing faces showed the skills of the designers – perhaps unrealized or demonstrated by this stage of the project. This worked in helping some scientists ‘see’ the skills of another discipline, but for one respondent it also might have created an unfair advantage and they noted a “neutral task might have been fairer.” For the majority of the respondents the process revealed closeness or affection between some (“adorable people”), and built more closeness between others, enabling some shyness to be overcome.

7 ‘Face-ing Collaboration’: A New Approach to Enabling Collaboration for Design Practitioners

Following the first presentation of this work at the Intersections Conference in September 2017, the authors undertook a review of the process described above to try to understand the mechanisms involved and make sense of the approach taken. The findings were synthesized into a new method for enabling collaboration based on taking participants’ portraits.

The authors propose a design approach to building relationships within a collaborative project, which focuses on people and visualisation. Whether the specific design discipline is textiles, fashion, communication, product or X, there is a valuable contribution that design practice can make to multidisciplinary working when practitioners use their skills and methods to draw attention to participant’s faces and the connections between people within the group. This research suggests that the method should be given priority (time) at the beginning of new collaborations and reinforced

throughout the project to build a foundation for effective communication, shared understanding and successful knowledge exchange. Figure 10 illustrates this approach.

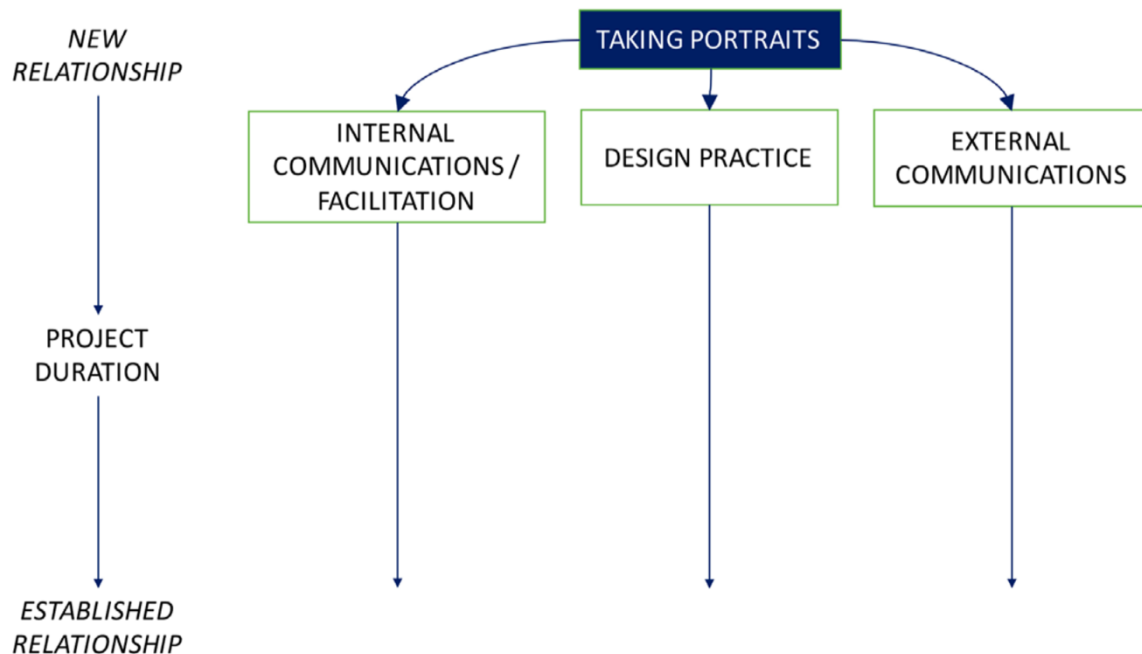


Figure 10. Face-ing Collaboration: a new method of enabling collaboration for design practitioners, beginning with taking portraits. Image by R. Hornbuckle.

Transitioning into a ‘collaboration enabler’ is quite demanding for a traditionally-trained textile designer. This sense of risk and the unknown can be amplified even more when working in large scale science-based consortium projects. Other researchers in the EU project are proposing similar departures from one’s normal process or method – to depart from the ‘comfort zone’ - as being essential to the progress of collaborative textile design research projects (Niinimäki, Tanttu & Kohtala 2017).

As the project completion nears and the authors begin to gather feedback on what might contribute to a successful Design-Driven Materials Innovation (DDMI) project, one of the key reflections from participants¹ is that they needed more time at the beginning of the project to get to know one another, in terms of expectations, perspectives, shared vision, language, expertise, roles and ways of working. While it is clear that all of these potential difficulties cannot be mitigated at the beginning of the project, the authors argue that prioritising these kinds of people-focused methods and giving them real workshop time early on (rather than squeezing them into unscheduled spaces) could provide a stronger foundation for resolving issues when they emerge. What is more, participants really valued

¹ Evidence collated from 1 x Methodology Meeting (Sept 2017) 8 x participant interviews (Feb-Mar 2018; 1 x workshop session to gather participants’ reflections (WS10 Feb 2018); and WS10 feedback survey (Feb 2018).

the social time outside of the workshop schedule, because it gave them the opportunity for a different kind of conversation, which further supports the people-centred approach presented. The combination of textile design practice methods with visualisation through communication design, afforded through 'face' imagery, provided a creative approach to enabling communication and understanding not usually available to multi-disciplinary Research and Development consortium projects.

8 Conclusions

In this paper, we have presented three ways in which we have used the faces of participants of an interdisciplinary project workshop combined with textile design and communication methods, in order to try to bring about new insights about how to collaborate and build partnerships in interdisciplinary projects.

The Pre-Experiment was a way to help bridge methodological approaches and to put names to faces, working as an ice-breaker at the beginning of a three-year project. It helped familiarise us with each other and it gave us a resource to use to help communicate as we moved ahead. It was an important first step which provided a visual tool to use in various ways within the workshop and set the tone for how we would proceed (using a people- as well as material-focussed approach) throughout the project and particularly in Experiments 1 and 2.

During Experiment 1 it became clear that using faces as a symbol to represent a participant, rather than logos or written names for example, enabled people to place themselves within the project and alongside others. Using playful interaction and humanising the data resulted in a high level of engagement in what otherwise could have been a rather dry and uninspiring spreadsheet, particularly for the 'visual thinkers' within the consortium. The hope was that this would help people to build relationships and understanding that would support the collaborative work.

In Experiment 2 we noticed that the task of making a textile artefact in the lunch break interested the group, and that drawing faces is very different to photographs and stickers of faces. An artistic subjectivity and intimacy was introduced which some found very helpful, others not so. Future work could include some analysis of the drawings of faces – perhaps it would be interesting to see what a portraiture expert would say. The responses and analysis to the finished shirts printed with the faces is still to come at the end of the project.

These experiments, although very different in style, nevertheless all draw on a common appreciation that building and supporting connections between people is fundamental to interdisciplinary collaboration. Textile design and communication approaches along with the work of psychologists,

sociologists and philosophers presented here has shown that focusing on ‘faces’ offers a powerful tool for achieving this goal.

It was the combination of these two different design research approaches – textiles and communication – which resulted in this particular narrative of experimentation; using faces to help participants to make connections with others. Moreover, the authors discovered that the interplay between textile design and communication design resulted in unexpected influences on one another’s experiments; the textile design practice became a vehicle for visualising social connections taking on some characteristics of an infographic scheme. This suggests that expanding the textile design research team to include other types of design can also enhance the overall creative offer for enabling collaboration.

While there will always be a place for traditional textile design practice, the authors hope to demonstrate how dynamic and adaptable textile design research (and practice) can be when that design knowledge, skillset and methodology is applied to meet the demands of developing ‘circular’ materials systems. In this case the authors have applied those textile design and communication approaches to enable collaboration; without successful interdisciplinary collaborations, developing new systems for circular materials will not be possible.

The successes of these initial experiments have lead the authors to continue to pursue and develop this approach. An EU project of this type, and the challenges presented by moving towards a circular textile industry, demand that we all try to get on well. Collaboration is essential to building bridges to link sectors and improve flows and innovation. Textile design approaches can nurture connections between people in ways that other disciplines cannot – through the silent co-creation of images and textile artefacts we can understand each other better.

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