

# The Matter at Hand

by Sally Cooke

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## Abstract

The Matter at Hand This paper questions what the experience of hand-making, with its haptic qualities and tactile sensations, might still have to offer in a culture increasingly defined by digital technology and 'economic rationality'. Grounded in the literature on craft theory (Adamson, 2013; Gauntlett, 2011; Frayling, 2011; Sennett, 2009) the nostalgic view of craft is rejected in favour of a more critical and forward thinking one based on a broad and inclusive concept of craft making, which embraces the use of digital technology. Using the author's own textile design and print practice as the core experiential driver for enquiry, the contrasts between working with hand based and digital technologies are closely observed. What starts as an exploration of the aesthetic differences between analogue and digital processes of design and production in the field of textile print (Fig. 1) quickly becomes an exploration of the experiential differences of working in these two contrasting ways. The paper is based on a two-stage method. First, reflexive and critical observation of the author's own practice was conducted through the production of placement prints on two textile test pieces (Fig. 2). From this emerged three areas of difference when working with analogue and digital processes, which relate to physicality, mode of thinking, and sense of agency. In order to gain a broader perspective, stage two involved semi-structured interviews with fellow contemporary designer/makers who work with both analogue and digital techniques, and a survey of design undergraduates, of a younger generation, also testing out both ways of working at the start of their careers. Analysis of the interview and survey responses revealed commonalities and underlying factors at play in the contrasting experiences of working with hand based and digital technologies. Analogue processes, where there is a wider range of sensory feedback, and actions are seen to have more consequence, are compared to digital processes where the material relationship is repeatedly postponed. Strikingly, analogue processes, with their greater physical constraints and risk of failure, can give rise to a greater sense of agency and accomplishment. Based on these observations three significant themes are discussed with reference to the increasing dominance of digital technology: • materiality and embodied knowledge - considering the hand as a site of learning to which materiality offers feedback in a relational sense (Sennett, 2009); • individuality and embodied meaning - considering the degree to which the individuality of expression can resist the 'rigidity' of coded technology (Lanier, 2011); • perceptions of freedom and control in the process of making and their impact on the creative experience and its outcomes. Reflecting on Lanier's suggestion that 'the most important thing about a technology is how it changes people', the paper concludes with a critical reflection on these themes in relation to the development of the author's own practice (Fig. 3), within the wider context of an emerging 'maker movement'. [471] Sally Cooke, June 2017

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## Introduction

This paper explores the making of material things and its links to the meaning we find in, or express through, the objects and garments we engage with every day. In short, 'why we make things and why it matters' (Korn, 2015) and why the resurgence of interest in making things now (Barton, 2011)? These issues are explored from my perspective as a maker with reference to ideas from craft theory and material culture.

I am a maker of textile things. My practice, which includes surface print design, encompasses a range of hand processes including drawing, painting, collage, collagraph, lino and screen printing, flat pattern cutting, grading and sewing. I have a specific interest in placement prints, where the surface pattern and flat pattern for an object or garment are printed on a single piece of cloth which can then simply be cut out and constructed. The haptic experience of making absorbs and fascinates me. However, the direction of my work increasingly leads me to engage with digital design and print technology.

Over the last decade, the Web 2.0 era of technology and social networking has opened up opportunities for small craft based businesses, which question some of the economic assumptions of mass production and continual growth (Wanders, 2009). Over the same period, the availability of digital textile print technology has created new possibilities for textile designers and makers of textile wares. This technology is of interest to me as it brings within reach outputs that were previously impractical, wasteful or prohibitively expensive to produce.

However, comparing and contrasting the experience of design and production using digital and hand screen-printing methods highlights differences, both physical and aesthetic, that reveal something of the challenge presented by increased digitisation and some possible implications of this ubiquitous cultural shift. Drawing on the experience of others to supplement my own first hand observations, this paper questions what the experience of hand making might still have to offer in a culture defined by 'economic rationality' and digital technology and why this might yet be important in the future.

Based on this exploration, some thoughts are put forward on the significance of craft learning and the art of making for the future and a personal strategy for responding to the 'proposal' presented by digital technology is suggested.

## Why Craft?

A textile practice of the nature I have described above would be hard to find referenced in the literature surrounding craft. However, it is here that I find the richest source of thinking relating to my practice. There are many possible reasons why this work sits on the periphery of what is written about, not least that textile practice linked to home sewn products may be too closely associated with quotidian domesticity and therefore hobbyism or 'amateur' rather than 'professional' craft. The work is undoubtedly situated as craft in lay terms but proves more difficult to place as such within craft literature.

Using Risatti's (2007) criteria for the craft object my work has both 'objecthood' and 'function' in its favour but in the taxonomy of craft that results from his meticulous analysis it would sit at best on the margins what is defined as craft. Where attempts are made to pin down craft in relation to art or design there is much discussion about: whether it is 'materials and techniques' or 'ideas' that are the maker's primary concern (Risatti, 2007); whether developments are 'maker-led' or 'market-led' (Rees, in Dormer, 1997 p.117); and whether the maker has a hand in the whole process or just one part of it (Risatti, 2007). Wherever binary

oppositions are constructed to bring us closer to a definition I find myself on both sides of the line. I believe, as Adamson (2013) suggests, that in a 'post-disciplinary' age these kinds of divisions are increasingly undermined. That is not to say craft is not distinct and should not be championed as such, but that old boundaries appear less relevant and new possibilities ripe for exploration.

Some suggest that the craft object must by definition be 'substantially hand made' (Metcalf in Dormer, 1997: 70 and Risatti, 2007). But again the dichotomy at the heart of the perennial hand/machine debate, also seems blunt in a digital age where the machines have become computers and the highly networked digital revolution of the last decade has changed the world we inhabit in ever more profound, fine grained and all encompassing ways. Just as people might once have constrained craft to the working of largely 'pre-industrial materials' (Metcalf in Dormer, 1997: 70) the exclusion of digital technology from this field represents a nostalgic stance that would appear to deny the very creativity at the heart of craft practice. That is, the will and ability to fashion available materials to the vision of the maker in relation to the needs and interests of any user of, or as Korn would have it 'respondent' to, the crafted thing (Korn, 2015: 50).

It is when craft is conceived a verb as well as a noun (Korn, 2015: 30); a 'way of working' (Sennett, 2009; Gauntlett, 2011) and not just as a 'type of object' (Risatti, 2007) that craft literature really starts to speak to what I do. In *The Craftsman*, Sennett explores at length the habits of the maker and the 'tacit knowledge' essential to the practice of any craft. A key point in this exposition is the close link Sennett (2009) finds between problem solving and problem finding in craft practice and with it a rhythm to the process of making that is familiar to me. When trying to elucidate my own experience, I struggle to disentangle activities that might come under headings of 'design' and 'make'. I switch frequently between thinking in two and three dimensions through a process of inspiration, abstraction, placement and construction in such a way that some *making* is involved in creating *design* elements and some of the *design* happens in the process of *making* the final thing. Unlike an industrial process, these activities have an enmeshed rather than a linear relationship. It is through 'mind, hand and body' (Korn, 2015: 51) working together that the thing comes into being. This flow state is a significant motivation for me as a maker.

The political positioning of craft also has resonance for the way that I work and the direction of my practice. Craft has long been associated, in the UK at least, with political and philosophical ideas of a humanistic bent, be this: the socialism of William Morris linked to 'good work', by which he meant meaningful and fulfilling work as well as quality products; or the philosophical pragmatism of Sennett associated with the 'quality of experience'. As western economies have moved from being manufacturing to service based in recent decades, something similar to the Fordist distribution of knowledge that once transformed assembly lines has now taken place in white-collar work. Both Sennett (2009) and Crawford (2010) describe the disempowerment workers experience as jobs are broken down and codified to fit performance criteria. Dormer too notes the tendency toward knowledge being 'embedded in the system rather than in individuals' (1997: 141). The more this is the case the greater is the potential for workers to be replaced by technology (Wakefield, 2015). If Crawford's (2010) experience of office work feeling 'bad' and fixing things feeling 'good' is a common one, this might also go some way to explaining the recent rise in interest in craft and small, local, craft-based businesses in particular.

Finally, there has long been an association of craft with nostalgia. This was a common criticism of the Arts & Crafts movement, which with the benefit of hindsight Harrod (2015) suggests obscures the extent to which the movement was also influential, including for the pioneers of the Bauhaus (Korn, 2015). According to Frayling (2011) the Bauhaus manifesto, radical and forward-looking at the time and enormously influential since, has been repeatedly misquoted as expounding a 'return to the crafts'. Frayling suggests a correct translation would be to 'turn' rather than 'return' implying craft might have solutions for the future not just the past. It is this forward facing view of craft that I am interested in. It feels now, as it did in the 1970s when the surge in craft

interest had a distinctly feminist edge, that there is more to the current craft consciousness than just retro sentimentality and mass-produced pastiche. This feeling and the possibility that craft experience still has something to teach us that remains valuable and applicable in a digital future are recurring themes in what follows.

### **What craft?**

For practical, environmental and economic reasons, I have become interested in exploring digital textile print. There is less dye waste and water usage with digital print (Bowles and Isaac, 2012) and comparatively low set up costs allow for less wasteful, small scale and made to order production (Wanders, 2009). This is especially relevant for the production of placement prints on garments, which would prove prohibitively expensive to produce as multiples by other means. These factors make digital print highly desirable for use in my practice. However, my experience reveals challenges presented by digital design and print processes that are explored here.

### **Hand and digital processes**

Through practice-based research, the different aesthetic results achieved from hand silk-screen and digital print processes were initially explored. Using the same imagery for both processes, conclusions were drawn about the advantages and applicability of each. The bold shapes, overlays and offsets that work in hand printing do not always translate well digitally, for me the boundaries are too crisp and the offsets too regular, giving results that can look flat and lifeless. What digital design and print does offer is unlimited colour and tonal variation allowing for high quality replication of photographic or painted imagery, although achieving colour accuracy through digital print remains a challenge (Collis and Wilson, 2012).

Following this initial research, two test pieces - a hand screen printed toile and a digitally designed and printed silk scarf - were developed to illustrate the conclusions drawn. My intention was to bring the hand and digitally printed closer together aesthetically through shared motifs and colour palette. However, more interestingly, working on both during the same short period of time revealed differences in my experience when working with hand and digital processes. It is these differences, relating to physicality, mental processing and sense of agency that I reflect on here.

Firstly, the haptic, sensory experience of hand making, well documented by craftspeople and theorists, comes into sharp relief when contrasted with digital alternatives. From the hand mixing of colours, to the coating of screens, the laying out of fabric, the pressure and rhythm of screen-print pulls and the checking of screens and fabric for the necessary dryness to proceed with the next step, the whole body is engaged in the process with both eyes and fingers giving constant feedback. By contrast, in the digital sphere the surfaces encountered, the keyboard, the mouse, the screen, are all similarly smooth, dry and impervious. There is no smell, no variety of haptic sensation and I have only my eyes for sensory feedback.

Secondly, I notice a difference in my thinking and the nature of the decisions I make when working with analogue and digital processes. In the analogue space each decision about colour or composition has direct consequence. It physically changes what I have in front of me and it is in response to this, as it now exists, that I make my next decision. In this sense it is like an on-going dialogue with the thing that is being made. In contrast, the decisions I make in the digital space are reversible at the touch of a key. I am still making decisions about colour, composition and layering of imagery but I frequently flick back and forth between options questioning which is better. I am fully absorbed as I try to visualise physical end results but the decision making, when multiple options are quick to represent and equally available until the last moment,

becomes prolonged. Perhaps this is a just indecisiveness but it is the feedback, the sense of a dialogue that I miss. My relationship with the thing I am making is repeatedly postponed.

The third difference I notice, which links to my initial aesthetic considerations, is that I feel a greater sense of agency when working with analogue processes. Despite the greater risk of failure and my options being more constrained by physical resources and the material nature of the process I feel more engaged and in control of what I am doing. This may partly be due to greater familiarity with the techniques I am using but might it also be that the limitations have a function in my creative process?

By contrast when using Computer Assisted Design (CAD) there is limited risk because the end product remains virtual until the design is finalised. The tools and materials I work with here (code and pixels) open up options for multiplicity of colour and imagery they are in some way more difficult to manipulate to my ends. For all the sophistication of the software used there are assumptions within it about what I, the user, might be trying to do. The binary absolute of pixels that are either coloured or not can be at odds with the qualities of expressive, ambiguous and gestural line. I resolve this by using tools that allow for direct representation of marks I have made in the physical rather than digital sphere but still I feel I am working in collaboration with a partner (a coder or software engineer) who lacks understanding of my creative intent.

Of course the more adept I become at 'crafting the digital' the less of an issue this might be. However, my observations leave me thinking what else might be at stake? Do these factors play a part in the perceived need to 're-connect' (Greenlees in Barton, 2011) in a material sense? To explore this further I sought the experience of others.

### **The experience of others**

Two approaches were taken to seek the experiences of others using analogue and digital processes. Interviews were conducted with two designer/makers and a short questionnaire was sent to a cohort of surface pattern and printed textile design undergraduates.

The two interviewees were a surface pattern designer and a jeweller. Both trained in analogue techniques in fine art and silversmithing, respectively. Both embraced the use of digital technology partly for economic reasons - to limit print set up costs in one case and reduce hand time in the making in the other. The surface pattern designer had consciously rejected the use of digital technology as a means of producing artwork, keeping hand drawing at the heart of her practice. By contrast, the jeweller had moved from traditional silversmithing to designing and 3D printing elements of her jewellery in nylon and in some cases combining the two.

Both interviewees touched on the physical engagement and enjoyment they experience when working with analogue processes. For the surface pattern designer this was about contact of pen or pencil on paper and:

*the sensitivity that you get with line when you are drawing, it's taking in the information...and being able to convey something of that.... I don't think you can do that, with the greatest of talent even, using a graphics tablet or on a computer. (Interview One - 5 November 2015)*

The jeweller, who tended to design by working directly with wire, described the satisfaction of knowing she had physically made something. Both refer to skills honed through using their hands in this way.

The surface pattern designer used digital techniques primarily as a way to 'layer imagery together, to resize and to play quickly with scale, proportion and add colour' (ibid.). Her attachment to the physical world, with all

its sensory information and material objects, is palpable in the description she gives of visiting the factory where some of her wallpaper is roller printed. From the smell of the ink and the age-old machinery to the roller itself, which will be archived amongst others the factory has used, she clearly finds meaning in and derives pleasure from this. She also points to the consequential nature of decisions made when working in the analogue sphere, stating: 'You can't rescale a roller once it's engraved!' (ibid.).

The jeweller, who used Rhino software to draw designs for 3D printing, describes the experience as challenging but ultimately worthwhile because it allows her to make things she can visualise but couldn't otherwise make. She describes ways in which she has had to change her thinking to work with this software. Referring to a commission for a five point star pendant she says of the digital design process:

*I really have to rethink how I am trying to draw something.... Originally I was going to draw one [diamond] and then array it round but I realised that actually to get the perfect geometry I need to be dividing a central circle into five. So in Rhino you are drawing a cage or mesh or shape that isn't actually the final piece but trying to construct a method to get to the point where you are drawing the bit that is going to be printed. It's a completely different way of working. (Interview Two – 10 November 2015)*

The way she describes her initial approach reflects her analogue process working with wire. The new way of conceptualising this to allow for the exacting geometry of the software is to concentrate first on the negative space - the immaterial.

Happy though both makers are with the results they get, neither mentions enjoyment when describing working digitally. There is a sense here of it being a means to an end compared with more intuitive and enjoyable analogue processes. Even the jeweller, who has made the digital process central to her practice, is challenged by the standards that it sets for her. The word 'perfect' comes up a lot. From unwrapping her first digitally printed piece:

*It came out as perfect – which was a strange concept – came out as mathematically perfect, no joins. All the things you strive for to some extent when making by hand. (ibid.)*

To talking about the challenges of combining the 3D printed elements with hand worked silver:

*Then there are thoughts about whether the soldering needs to be perfect. I've had one gallery say you can see your solder join on this very thin wire. Part of me doesn't have a problem with that because I don't mind seeing the hand [in it] but obviously there's a point at which that is seen as shoddy workmanship, but how long should I spend trying to clean that up? (ibid.)*

Both interviewees, like me, work with digital technology but came to it late. It is possible our common experience of being challenged by the technology is linked to this. To seek a broader perspective a cohort of recent surface pattern and printed textile design undergraduates were asked via questionnaire about their experience of designing and printing using analogue and digital techniques. Although the questionnaire elicited only four responses the key words and phrases used by respondents highlight some interesting contrasts in experience. The average age of respondents was twenty-one. One had a clear preference for digital design and print processes while the other three preferred to work with a combination of both analogue and digital techniques.

On aesthetic outputs, familiar issues arise referring to flatness, lack of movement and difficulties with colour management when working digitally but unique fluidity, brilliant colour and more futuristic qualities are also mentioned as advantages here. Although the students describe being pleased or happy with the end results of

their digital work there is no mention of satisfaction or reward in these responses. By contrast responses relating to analogue techniques describe material challenges overcome and pride and satisfaction in what has been achieved. The idea of things being special, personal or unique is raised in their descriptions of work produced by analogue means. One student in particular described relational qualities to the experience of analogue process:

*Because the piece had so many layers that I had watched build up it felt very personal.... when producing something by hand, I like that you have less control over the final outcome. When it goes right, it is rewarding as it symbolises the experience of producing it including the highs and lows. (Anonymous, questionnaire response)*

The word 'control' comes up here and in other responses. Perceived degrees of freedom (lack of limitations) and control appear to be important to the digital and analogue preference expressed by students.

### **Why now?**

I am interested in what significance, if any, these contrasting experiences might have for the maker, the encounters others have with the things they make and in relation to modern concepts of craft and its place in our digital future.

Digital technology is an inevitable part of our future and a valuable tool in the context of my own practice. As this technology advances it will undoubtedly become both more responsive and more intuitive to use. Those who engage with it more fully, who inhabit its virtual worlds and are more in touch with its underlying code will already have a sense of this. These are the gamers, the virtual reality pioneers and the 'hackers and modders' of digital technology. But this technology is a tool rather than a medium for me, used in the service of making other things. It is on technology as tool, based on the experiences outlined above, that I want to reflect from my perspective of as a maker of tactile, textile things.

### **Materiality and embodied knowledge**

I have already identified that joy in the haptic experience of making is a strong motivator within my creative practice. Perhaps unsurprising then that one of the main differences I identified between working with analogue and digital technology relates to the physical tactility of what is at hand. The most striking difference being the smooth and impervious nature of the digital interface compared with the variety of physical sensations encountered when hand making.

In both cases there is a tool (or intermediary) between maker and object, mouse and screen in one case, silk-screen and squeegee in the other. The difference is perhaps partly in the specificity of the haptic and kinaesthetic sensations of making. When hand printing, these sensations are varied and although not unique to that activity, in concert as embodied feedback mechanisms they are very specific to the task at hand. By contrast, when working digitally although the mind is fully engaged with the material effects visualised on the screen, the physical experience at a physiological level – in the nerve endings of the fingertips and the proprioceptors of the musculoskeletal system – are much the same as for any other computer based task.

The variety of haptic sensations experienced through direct engagement with materials gives us valuable information about the physical world we inhabit. As we negotiate the resistance and inconsistencies materials present to us we learn implicitly something about the physical properties (e.g. gravity, friction or viscosity) that shape our world. And, although we cannot recite this knowledge we can apply it as we visualise the impact of our actions and take decisions in the process of our making. Through trial and error this becomes the

prehension and tacit knowledge Sennett (2009) finds in practiced craft. The materials in all their awkwardness and resistance appear to give something back. As we think through making, materiality offers feedback in a relational sense that informs us.

As sensate beings, everything we do is to some extent affected by our situation within our own physical form. Our bodies shape and are shaped by what we physically do. So a variety of physical sensations and activities impact not just what we are able to make but also fundamentally who we are. Through making in the material world we hone skills and gain knowledge that is embodied within us.

Increasingly, we have evidence from neuroscience to back up the long held belief of craftspeople, artists and makers alike that the hand is fundamental to human understanding. Sennett (2009) offers two examples. Firstly, that the act of having held a ball improves a person's understanding of a picture of one i.e. the ability to read, understand and find meaning in the 'sign' that is the image. The second example references the work of F. Wilson with patients experiencing both apraxia (loss of skilled movement) and aphasia (loss of the ability to comprehend words). Wilson suggests that retrieving physical skill first through the treatment of apraxia aids recovery from aphasia by improving the patient's understanding of language, giving meaning to the 'signs' that are the words in verbal instruction.

Often referred to as the Cartesian dichotomy, the separation of head and hand that has been with us since the enlightenment (Korn, 2015; Sennett 2009), over-emphasises the pre-eminence of mind in intelligence and under appreciates the role of physical sensation and the hand in particular as a site of learning. Sennett concludes that 'when head and hand are separated, it is the head that suffers' (ibid. 44). So the physical nature of making and the bodily sensation involved in that process may have more value than is often thought and might yet have as much relevance to our future as to our past.

### **Individuality and embodied meaning**

The human relationship with material things is complex. The clothing we wear and the objects we own have long been used to express identity and belonging. Through object-based research, the field of material culture explores what material things tell us about ourselves and other cultures past and present. As a maker, material things are also a medium of expression for me, which brings another dimension to the subject/object relationship.

Self-expression comes through the choice of materials, the sources of inspiration and the nature of the marks or images made and incorporated into the designs that are then printed onto textiles. The subjective choices at play here are both conceptually and emotionally driven and in the case of expressive mark making in particular are also circumscribed by my own physicality. These factors all add individuality to the crafted thing.

In a traditional craft practice, direct use of the hands at all stages of the making transfers something of the maker, their physical presence, to the object. At its most intense this relationship has been described as a merging of maker and matter. Sennett (2009) relays the glass blower Erin O'Connor's example of the moment attention is drawn from eye, hand and pipe on ledge to the molten matter that she is learning to fashion into a glass. In that moment in which self-awareness is lost '[w]e have become the thing on which we are working' (ibid. 174) or in Merleau-Ponty's words we experience 'being as thing' (ibid.).

This direct relationship is expressed through the resulting object. When we work in the digital sphere the makers' presence is one step removed, mediated through the software used. This by no means limits the possibilities for creative self-expression – in fact the lack of physical restrictions in the process in many ways broadens the range of possibilities – but the individuality of that expression is perhaps more easily lost.

Descriptions of lines being too crisp or offsets too regular, included in my reflections on digitally designed and printed fabrics are perhaps a matter of personal taste. But there are common themes in other's responses to digital work. One interviewee described a loss of sensitivity when working digitally and student questionnaire responses included reference to digital prints looking too static or flat. These observations reflect something of the code underlying the software used. As Lanier puts it: 'computers can take your ideas and throw them back at you in a more rigid form, forcing you to live within that rigidity unless you resist with significant force' (2011: 134).

Although I am keen to embrace digital technology for the wealth of new opportunities it opens up, this presents a challenge for me and for other makers. If the code becomes too dominant in the aesthetic end result then something of the individuality of the design is lost and with it some of the expressive meaning in what results. This matters to me, and it seems to other makers too. But, might it also matter to those who encounter the material things we make?

### **Freedom and control**

The digital sphere gives greater freedom in one sense, more varied use of colour at no additional cost, complex tonal variation, opportunity to evaluate multiple potential outcomes, it also comes with its own constraints which can be at odds with the creative desire for self-expression. In contrast, analogue ways of working, with all their material challenges, can feel more liberating. The maker is free to make adjustments in the moment. By contrast, at the point of digitally printing in 2 or 3D these decisions are literally out of the maker's hands and there is somehow less play in the system.

Digital processes tend toward order which, if not the desired aesthetic, must be somehow overcome. In contrast, the analogue sphere tends toward chaos, which it takes the maker's skill to keep at bay. This messier, less predictable process offers an iterative and immediate relationship with what is being made and with it a sense of physical and emotional empowerment that can be harder to achieve in the digital realm where materiality comes so late in the process. Which brings us back to the question of whether material constraints might have some positive function in the creative process. They certainly offer physical resistance, something to interact with, push against and creative tension – decisions made early in the process rule others in or out – which enhances engagement. Material constraints also dictate the pace of work, for example, when screen-printing the time spent waiting for screens to dry provides an opportunity for valuable reflection.

For Risatti (2007), the constraints of our physical world are also what link us via craft objects - the origins of which are in physiological human need of things that contain, cover or support - to our natural environment more generally. The scale of the crafted thing is also constrained by the human body to which in use it will relate. The significance of this becomes more apparent as the environmental limits of the world become ever more obvious and demanding of our attention.

But as digital technology becomes a dominant force and an almost irresistible tool in the process of making, questions arise about how its freedoms might be used to the advantage of the maker and what constraints might usefully be self imposed to achieve best results from it?

## Conclusion

I have identified myself as a maker and aligned myself with craft since the things I make are intended for use and I take a role in the whole process of making from conception to final construction. For practical and economic reasons I am increasingly using digital technology alongside hand making as part of my practice. I have explored ways in which experience of the two differ physically and aesthetically and will conclude here by briefly using these observations to reflect on my relationship to technology as a creative tool.

Lanier suggests that ‘the most important thing about a technology is how it changes people’ (2011: 4). As I try to get the desired result from the digital design and print processes I find that to some extent I am designing for the technology - trying to identify where and how it impacts on the visual end results and what works well or badly. Risatti (2007) suggests this is always the case for designers as opposed to craftspeople. But I would argue the same is also true in relation to tools and processes used in more traditional craft practices – a pot thrown on a wheel is always going to be round pot although not all pots need be round. It is the power and ubiquity of digital technology in shaping our culture, our behaviour and the aesthetics of our material world, which make its role in any creative practice seem so significant and worth reflecting on now.

Despite being a passionate advocate for the potential of technology and virtual reality in particular, Lanier (2011) describes ways in which we risk the diminution of our own sense of ‘personhood’, by fitting in with the models digital technology presents to us. Going back to an earlier age, Sennett (2009) describes differing reactions to the advance of machine production in the industrial revolution. Here he suggests that as well as the machine evangelists and their detractors, there were also those who took a more reflective view, for whom ‘the comparison of man and machine caused them to think more about man’ (ibid. 83). He goes on to summarise the ideas of Diderot and his contemporaries as follows:

*The enlightened way to use machines is to judge its powers, fashion its uses, in light of our own limits rather than the machine’s potential... A machine, like any model, ought to propose rather than command, and humankind should certainly walk away from command to imitate perfection. (ibid. 105)*

It is with this idea of the *proposal* rather than the *command* in mind that I want to proceed with my work. Aware of the power of technology and its ability to change us, it seems more important now than ever to approach its use reflectively and find ways to use it that express individual intentions. In adopting a broader more inclusive definition of craft, which would include the use of digital technology, it might perhaps be ‘evidence of the hand in the thing’ that provides continuity with the past rather than the thing being ‘substantially hand made’. My interest is in the space in-between the analogue and digital, where the human hand is brought to that which is digitally made (and vice versa) and both material and virtual play are evident in the practice and the resulting aesthetic.

Discussing the importance of making, including ‘*making a mess*’ Edmund de Waal (Gibson, 2015) recently championed the need for ‘the strangeness of craft within a culture that wants to make everything glossy’. Digital technology, for all its sophistication and enormous possibility, can by its very nature tend toward a kind of homogenous binary ‘perfection’. By contrast, the messiness, ambiguity and ‘imperfection’ of human beings, brought into stark relief by our encounters with the material world, bring a different aesthetic. My aim is to ensure that as I embrace technology for what it has to offer, the ‘human-ness’ is still perceptible in the material things I place in the world. It seems to me that just as there is value in the experience of making by hand there is also value in seeing ourselves reflected in the material things with which we engage; to bring something of our strangeness and complexity to bear on our surroundings in contrast to the smooth, ordered world that smart machines and codified systems otherwise bring. This is one possible response to the ‘proposal’ presented by digital technology.

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## References

- Adamson, G. (2013) The Invention of Craft, London: Bloomsbury.
- Barton, R. (2011) 'Maker's mark: A new generation of artisans are reviving arts and crafts' The Independent (online) 23 October
- Bowles, M. & Isaac, C. (2012) Digital Textile Design (2<sup>nd</sup> Edition), London: Laurence King.
- Collis, A. & Wilson, J. (2012) 'Colour accuracy in digitally-printed textiles: what you see is not (always) what you get', Journal of the International Colour Association 9: 20-31.
- Crawford, M. (2010) The case for working with your hands, or, why office work is bad for us and fixing things feels good, London: Viking.
- Dormer, P. (ed.) (1997) The Culture of Craft, Manchester: Manchester University Press.
- Frayling, C. (2011) On craftsmanship – towards a new Bauhaus, London: Oberon Books.
- Gauntlett, D. (2011) Making is Connecting: The Social Meaning of Creativity, from DIY and Knitting to YouTube and Web 2.0, Cambridge: Polity Press.
- Gibson, G. (2015) 'Edmund De Waal in Black and White', Craft, November/December 2015.
- Harrod, T. (2015) The real thing – essays on making in the modern world, London: Hyphen Press.
- Korn, P. (2015) Why we make things and why it matters, London: Square Peg.
- Lanier, J. (2011) You are not a gadget, London: Penguin.
- Merleau-Ponty, M. (2004). The world of perception, London: Routledge (first published in French, 1948)
- Risatti, H. (2007) A theory of craft, Chapel Hill: University of North Carolina Press.
- Sennett, R. (2009) The Craftsman, London: Penguin.
- Wakefield, J. (2015) 'Intelligent Machines: The jobs robots will steal first' BBC (online), 14 September.
- Wanders, Anne Theresia (2009) Design Critical Texts Volume 3: Slow Fashion, Zurich: Verlag Niggli.