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Co-creation in Professional Craft Practice

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Design practice involves several disciplines, and when the manufacturing process demands special skills, designers outsource the work to craftspersons. Traditionally, craftspersons make a living by taking orders and delivering handmade artefacts according to the designer's prescriptions. In this paper, we ask the following: What are the essential issues emerging when designers outsource the manufacturing of their designs to professional craft practitioners? We present a case study in which aspects of sharing and experiential knowledge are analysed both from the point of view of the designers and the craftspersons involved in the making of artefacts for an exhibition. We found that having experiential knowledge of various materials benefits the designer and that material agency is an important issue in this process because the properties and production processes play a large role in the aesthetics of the final artefact. Multiple questions of authorship are raised in this context because of the aspect of outsourcing, and we suggest that this could be better reflected in the presentation of the final artefacts.

co-creation, design research, experiential knowledge, authorship

1 Introduction

Co-creation is gradually being promoted in several research contexts, such as in recent evaluations of EU research that recommend that collaboration should be more enhanced in future EU projects (Lamy, 2017). There is a need to focus more on interdisciplinary collaboration (Clapp & Jimenez, 2016) because over an extended period of time, research has been focusing on expertise from a monodisciplinary perspective. Since the design philosopher Victor Papanek promoted political ideas in design, a more holistic and ecologically inspired view on design practice has been reflected in design research (Papanek, 1971) forwarding the designer's role to contribute toward a responsible change of society as a whole (Melles, de Vere, & Mistic, 2011).

Now, as we need to study expertise from an interdisciplinary perspective (Gibbons, 1994) it is of general interest to see the pros and cons of collaboration and to try to identify the various potentials and pitfalls of relationships in different contexts.



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In recent studies of co-creation, it has been emphasised that the relationships between the people in the project are decisive for success, such as in, for example, community-based health services (Greenhalgh, Jackson, Shaw, & Janamian, 2016). Greenhalgh et al. (2016) demonstrated the potential of co-creative research as an approach that can have a real impact in society because the research can adopt to local cultures. In orthopaedic engineering of prosthetics for children in the Cambodian countryside, the need for co-design emerged (Hussain & Sanders, 2012), and a fusion of horizons of understanding was aimed for (Gadamer, 2004).

As people's emotions and presence are central to human collaboration, it is especially interesting to look at this interaction in professional areas where sensitivity is of vital importance, such as in the art, design and craft contexts. In co-design practices in service design, shared motivations and responsibilities together with mutual trust and shared making practices have been pointed out as the enabling factors for successful collaboration (Pirinen, 2016). In the current paper, we will discuss co-creation processes between craft and design practitioners. We look closely at this issue through two cases and discuss emerging elements through the lens of experiential knowledge, material agency and authorship.

1.1 Literature review: Co-creation in craft practice

Craftspersons have traditionally been educated in craft guilds through apprenticeship and in communities of practice (Sennett, 2009). Recently, craft practitioners have also entered academic research environments, giving an insider's perspective of professional craft practice and studio-based processes (Groth, 2015; Groth, Mäkelä, & Seitamaa-Hakkarainen, 2015; Heimer, 2016; Mäkelä, 2016; Niedderer, 2012; Nimkulrat, 2009, 2012; Pedgley, 2007; O'Connor, 2005, 2007; Riis, 2016). However, few studies have reflected on the collaborative aspects of making and learning in a professional craft practise.

Thus, co-creation is a subject less studied within the field of *professional* craft practice. Together with her research group, design and craft researcher Pirita Seitamaa-Hakkarainen has extensively studied co-design within craft–design processes (Härkki, Seitamaa-Hakkarainen, & Hakkarainen, 2016a; Härkki, Seitamaa-Hakkarainen, & Hakkarainen, 2016b; Lahti, Seitamaa-Hakkarainen, Kangas, & Hakkarainen, 2016; Lahti & Seitamaa-Hakkarainen, 2005); however, these studies were mostly in educational contexts with student participants designing in learning environments.

Other examples of studies utilising collaborative processes in material arts and design are textile designer and weaver Anne-Louise Bang and Ceramic artist Arild Berg. Bang (2010) studied participatory processes in the textile design industry, and through a structured and systematic approach, she explored how to design textiles by using a textile-based conversation and game-inspired design methods. Later, she explored how material objects can enable actors in a network to articulate and discuss topics that otherwise would have been challenging to identify (Bang & Christensen, 2013).

Similarly, ceramic artist Arild Berg (2014) studied collaborative processes in ceramic art practice. The central finding in his study was that collaboration enhances the topic of artistic integrity, but also the integrity of the collaborators, both personal and professional (Berg, 2014, p. 212). Participation and collaboration can therefore be more encouraged in ceramic art making, and even in other disciplines, to further investigate communication in co-creative activities.

1.2 Outsourcing and multidisciplinary collaboration

Although product design, as well as industrial design, has often been strongly linked to the knowledge of making and materials, it is only natural that the product designer or industrial designer cannot be expected to have practical, or even initial, knowledge of all manufacturing processes in the different disciplines that they work in. When manufacturing processes demand special skills, designers sometimes outsource the work to craftspersons. In this process, the designer has varying knowledge of the processes of production. There might be a steep learning process for both parties;

the designer needs to become familiar with the different affordances and constraints of the material in relation to the intended design, and the craftsman has to internalise the designers' idea, as well as the atmosphere and style of the intended design.

1.3 Experiential knowledge

Experiential knowledge is an important aspect of any craft practice and deals with the longitudinal embodied experience and knowledge of materials and processes that have become automatized and that form the basis for skilful performance (Molander, 1993; Niedderer, 2012; Niedderer & Reilly, 2010; Niedderer & Townsend, 2014; Nimkulrat, 2009, 2012; Wood, Rust, & Horne, 2009; O'Connor, 2005, 2007; Sennett, 2009). This *a priori*, personal and tacit (Polanyi, 1958, 1966) knowledge cannot be taught; instead, learning in the field of arts and crafts happens in communities of practice (Paavola, Lipponen, & Hakkarainen, 2004) through scaffolding (Wood, Bruner, & Ross, 1976) and active engagement with materials and peers (Wood et al., 2009).

In this process, the affordance (Gibson, 1986) and agency (Malafouris, 2008) of the material is physically tested and evaluated (Groth & Mäkelä, 2016), creating a practice-based knowing that may be linked to the theory of embodied cognition. According to this theory, we build our minds through our experiences, and the more experiences we have of a certain action or interaction, the better we can anticipate and predict the possible outcomes from future similar actions and interactions (Lakoff & Johnson, 1999; Johnson, 1987, 2007; Noë, 2004, 2009; Thompson & Stapleton, 2008; Varela, Thompson, & Rosch, 1991).

This tacit, personal and bodily knowing is utilised also in the craftspersons' *planning* of the processes and techniques to be used in the making of the designers' artefacts. In this process, the craftsperson considers the material properties' affordances and constraints. Often, these 'feeling based' calculations are already communicated to the designer or other collaborators in the making of a contract or offer, where they are sometimes even written in text. However, more detailed communication on the restrictions of the materials and techniques happen verbally in the studio or after the process, as we will see in the presented case studies.

1.4 Material agency

Restrictions related to the studio or technical aspects are more easily communicated than the constraints that deal with the material properties because these are partly tacit and too vast to be communicated in a few sentences. In the case of using *new* materials, the craftsperson is taking the risk of the material behaving in unexpected ways. A theory in new materialism introduces the idea that material has agency (Bolt, 2007, 2013; Malafouris 2008) or that materials are *vibrant actants* (Bennett, 2010). Thus, we are invited to re-think our hierarchical attitude toward materials (Coole & Frost, 2010; Bennett, 2010) and to consider material as an equal actor in the making process (Bolt, 2007) and that affects the aesthetic outcome to a large degree.

Through the current study's co-creation project in craft practice, there was an opportunity to explore this further, and we present a design and making process that took place over a year's time, following the preparation of two designers who intended to create a joint exhibition in a craft gallery. The research question was as follows: *What are the essential issues emerging when designers outsource the manufacturing of their designs to professional craft practitioners?* Through a case study approach (Yin, 2009), we will learn the story from both the perspective of the designers and the craftspersons who were involved and discuss the different aspects of experiential knowledge and exchange that emerged. Next, we present the methodology used for the research and describe the two cases. The different aspects encountered are discussed in more detail in the discussion chapter, where we touch on essential issues such as the experiential knowledge exchange, mutual trust and authorship in co-creation.

2 The craft studio as a design research environment

A ceramic workshop and a glass studio are the two settings for the current research. Two designers initiated a collaborative project because they planned a mutual exhibition at a local gallery space. The designers had worked together previously, they knew each other since studying together at the same design school, and they shared a similar style and vision. Although being educated as Masters of Arts (MA) in a practice-based design school, learning hands-on techniques for manufacture, both designers have continued their design profession choosing to outsource the making of their artefacts to either industry or professional craftspersons.

The exhibition date was set one and a half years ahead, and the work on sketching the designs was started through a mutual discussion between the two designers. The idea was based on making unique artistic pieces that built on functional shapes while highlighting the different material qualities of the pieces. The designers wanted to push both the aesthetic and physical boundaries in their art, bringing the material to 'the edge' of collapse. The materials, colours and main idea was agreed on mutually while the actual shapes were developed individually.

When the manufacturing of the intended designs started, craftspersons specialised in the chosen materials were contacted. The two designers were both present during most of the making sessions to continue the negotiations on the mutual direction that the pieces should follow. One of the designers, designer 1, opted for ceramics as the main material but also designed a range of objects in glass. The other designer, designer 2, opted for glass as the main material but had some details in ceramics. The division of labour thus was split into two studios: the ceramic workshop and the glass studio. To facilitate the description of this research setting, we gathered the data into two cases, as described below: Case 1 for describing the ceramic processes and Case 2 for describing the glass-making processes.

2.1 Knowing from the inside

The qualitative methodology utilised for the current research draws on ethnographic methods in which autoethnographic reflections (Ellis & Bochner, 2000; Mäkelä, 2003) are supported by interviews, e-mail communication and documentation from the co-creation process. One of the participants, the ceramic craftsperson, collected the material and conducted the interviews, while also reflecting on her own experiences. Because the authors are familiar with the process of this case and the processes generally involved in the described craft practice, we draw on personal and experiential knowing, a perspective described by anthropologist Tim Ingold (2015) as *knowing from the inside*.

A total of 51 e-mails were exchanged between the two designers and the glass workshop, 21 and 30 separate e-mails, respectively. These e-mail messages were analysed through a data-driven and thematic content analysis by colour coding according to the emerging themes present in the messages and reflected in the interviews. Three interviews were conducted, one each with the two designers and one with the main glassblower. The interview data totalled 2 h and 54 min of audio recordings. These were analysed through transcription and colour coding in the same manner as the e-mail communication. All communication was originally conducted in the Finnish language; therefore, transcripts and quotes from this material were translated into English for the purpose of the present paper.

3 Case description

3.1 Case study 1: Co-creation in a ceramic process

The designer first approached the craftsperson in early March 2016, showing initial drawings and discussing the designs and proposed making process (Figure 1). Meetings then took place over the period of 1 year on 9 days, which involved 45 hours of work, including loading the kiln and other smaller tasks. The last making session occurred in late April, 2017.

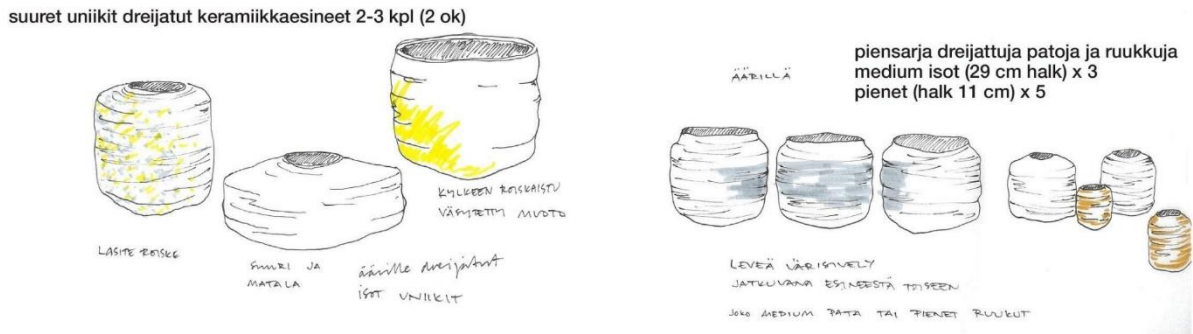


Figure 1 Initial plans and sketches for the ceramic pieces drawn by designer 1.

On each occasion, the process of making the ceramic pieces followed the same structure: the designer visited the ceramic studio with a certain shape or object in mind. The material and technical challenges related to the making of each object were first mutually discussed and then tried out in clay on the potter's wheel. Three different types of clay were used: white porcelain, black porcelain and a red coarse stoneware clay (Figure 2). Two of these clays were new to the craftsperson, and all three types of clay had very differing properties, affording the implementation of the ideas in different ways (Figures 3 and 4).



Figure 2 The ceramic craftsperson throws three different types of clay on the potter's wheel. Photo by the authors.

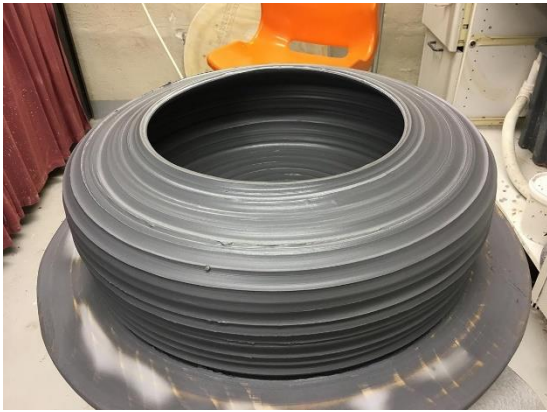


Figure 3 Newly thrown black porcelain pots. Photo by the authors.



Figure 4 Pots ready to be fired in the kiln. Photo by the authors.

The work in the studio was conducted in a way that allowed for the designer to sit down in front of the craftsperson and the potter's wheel. The shape was then sought for together while referring to the 1:1 drawn images that were placed in the studio. The designer reflected over this process in the interview:

Making with you (the craftsperson) is in a way like sketching through your hands. I can see how you kind of are drawing the shape for me in the clay, and I can say when it is good or when it is going in the wrong direction. You then also make suggestions and often we both know when the shape is just right.

Also, the craftsperson agreed on this seamless in the making process: "I felt like my hands were extensions of the designer's eyes. Our minds were working simultaneously, and we both fed into the process of making". Although there were problems that caused disappointments and unexpected changes to the plans, the mutual learning process was experienced positively by both the designer and maker. The designer reflected on this in the interview:

The results were not what I had expected, but it was better than that! All the processes that influenced the making made the pieces surpass my initial drawings, and in the end, we threw the drawings away. But still I feel that the pieces became just the way I had

wanted them, they carry the same spirit in them even if they are not exactly like the drawings.

The ceramic craftsperson felt it was a pity that the chosen materials had some problems with cracking and that the coarse clay was not suitable for making the pieces as large as imagined. However, the final pieces that came out of the process were expressive and challenged the aesthetics and material properties in an interesting way. The maker also felt she had challenged herself as a maker and knew she had worked on the edge of her physical ability.

3.2 Case study 2: Co-creation in the glass-making processes

The two designers initially contacted the glass studio with their ideas by e-mail. Designer 2 made the initial contact on behalf of both designers, sending the intended designs as images (Figures 5 and 6). The title of the initial e-mail message was: *Art glass project: glass blowing, tests and consultation; are you interested?*

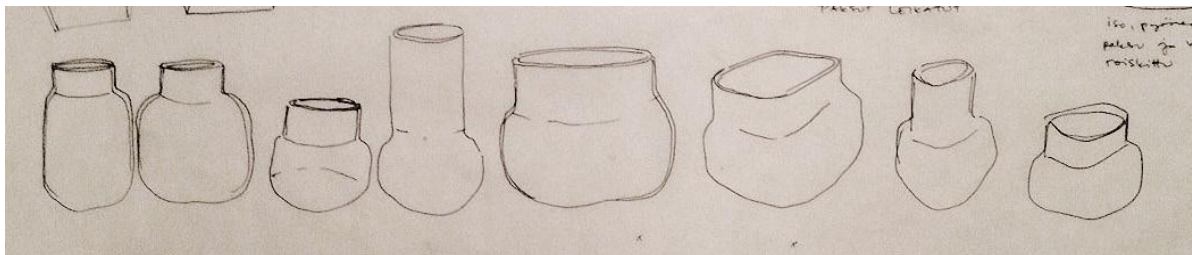


Figure 5 The initial ideas for the glass pieces by designer 1.



Figure 6 The initial ideas for the glass pieces by designer 2

The actual making process was proceeded by an agreed upon 'prototyping day' that would last for 7 hours. During the prototyping day, the designs were modified according to the results of the testing. The shapes were very unusual, and the glassmakers had never done something like this before; it was a learning process for both the designers and glassblowers, and the main glassblower said: "We have never done anything like this, great, let's go for it!". Through the tests conducted on the prototyping day, it was agreed that moulds were needed for the glassblowing. The moulds were then designed and communicated via e-mail and made by a separate mouldmaker prior to the actual glassblowing day.



Figure 7 Blowing hot glass into a wooden mould. Photo by the authors.

The final pieces were made over the course of a whole day of working in the glass studio, half a day for each designer (Figures 7–10). Because glassblowing is comparatively expensive, the timetable was very tight. The pieces of designer 1 demanded the need for two glassblowers and two assistants; therefore, four people were involved.

The pieces were also ground and polished in the cold workshop after cooling down, by yet another craftsperson specialised in grinding. The coldworking process was monitored by one of the two designers because the aesthetics of the pieces are much enhanced by the different coldworking options. Designer 1, who was not present in the cold workshop, said in the interview: “The cold worker made the suggestion to sandblast one of my pieces, and I hate sandblasted glass! But the piece turned out great and it was the most liked piece in the exhibition. I would never have come up with that idea myself”. Designer 1 also appreciated the friendly advice given by the glassblower in the choice of colours because the glassblower knew how the colour affected the behaviour of the glass.



Figure 8 The glassblower is shaping the hot glass using metal jacks. Photo by the authors.



Figure 9 Several craftspeople's collaborative blowing and shaping of the hot glass piece. Photo by the authors.



Figure 10 Shaping the blown glass by pressing. Photo by the authors.

In the end, the pieces were modified away from the initial design to a large degree. The addition of moulds and grinding made it too costly to use more time in the studio and to make additional try-outs of the larger pieces. However, the glassblower was generally happy with the process and the outcome, as she knew the restrictions that were present.

3.3 Exhibition opening

The pieces were finally exhibited in the *Lokal Gallery* in June 2017. The exhibition was promoted with a concept text that described the making process and underlined the two designers' intentions and mutual visions as a collaborative endeavour. One of the designers gave a speech on the opening night, describing the collaborative nature of both the designers' work, as well as the manufacturing processes and collaboration with the craftspersons. The glassblowers, the glass grinder and the ceramic craftsperson were all mentioned by name in the speech.



Figure 11 Exhibition opening. Photo by Katja Hagelstam.



Figure 12 'Äärillä' (on the edge) pieces. Photo by Chikako Harada.



Figure 13 'Äärillä' (on the edge) pieces. Photo by Chikako Harada.

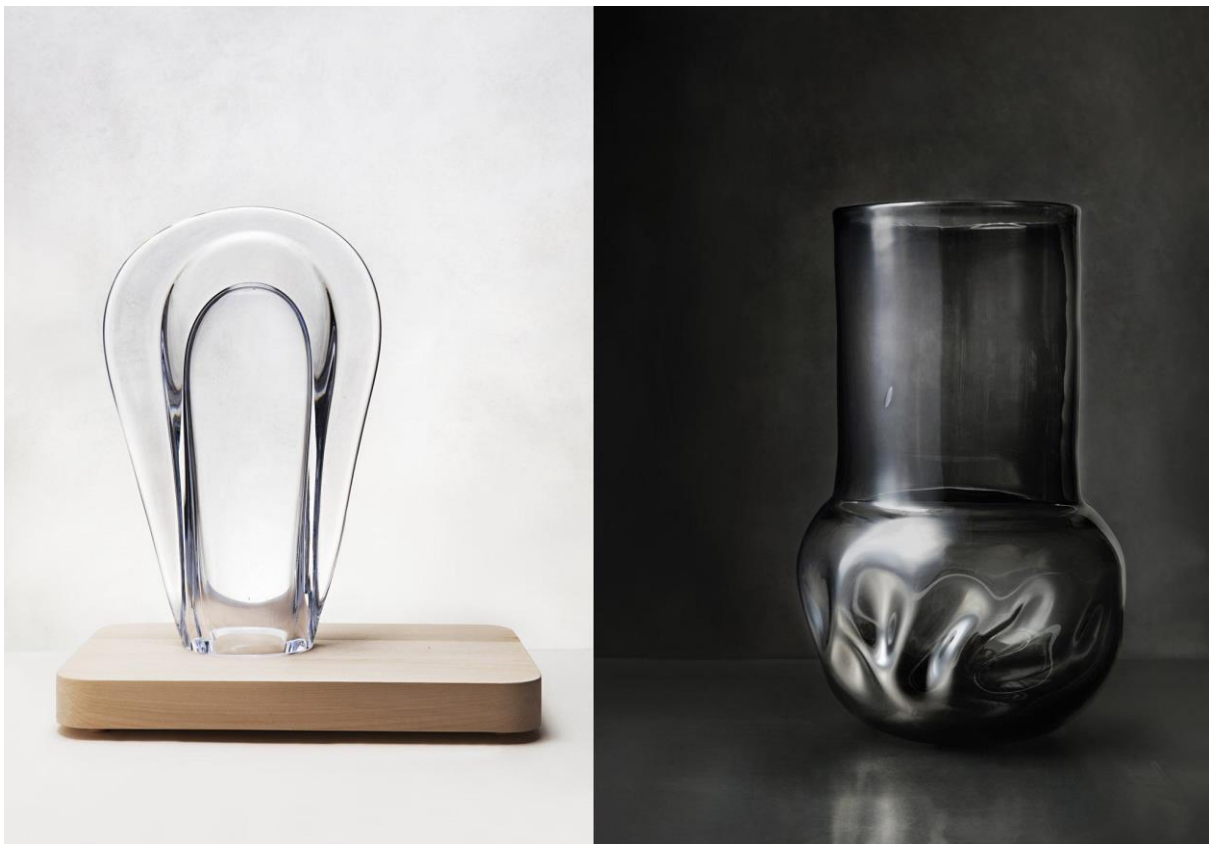


Figure 14 'Äärillä' (on the edge) pieces. Photo by Chikako Harada.

4 Discussion: issues rising from co-creation in design and craft

The project unfolded in a typical manner: the craftspersons materialised the ideas of designers. The final produced artefacts were not exact copies of the initial designs; instead, many factors played a part in the artefacts' final conception, and all together, nine people were involved in the making process. The materials and techniques utilised also had a say in how the designs turned out in the end. In this section, we look closer at what happened in the process, from drawing to exhibiting the artefacts.

4.1 Co-creation: mutual trust and distrust

The process followed the common procedures of outsourcing labour: the designers asked their designs to be manufactured by craftspersons according to the designers' instructions. However, their mutual input during the process made the project attain co-creational features. The analysis showed that the word *together* was mentioned 26 times in connection to making activities in the e-mail communication between the designers and glassblowers and was mentioned 73 times in the interviews. The 'making together' in this context refers to being present together, looking together, evaluating together or commenting on the process of making together. The verbal and bodily communication between the designers and glassblowers is seen as *the form of making* that the designers bring to the process.

Both designers expressed worries that their *making* in this respect would not be good enough or could be more skilfully conducted and that this has a direct effect on the successful or unsuccessful outcome of the hands-on making process of the craftsperson. In the interview, designer 1 said: "I was really nervous before going to the glass workshop. I worried that I would not be able to describe what I wanted well enough, and I was afraid that the pieces would not turn out well because of that". The two designers had discussed the issue during the project: 'We talked about how important it is to clearly explain and to speak up when things are going in the wrong direction. We cannot expect anyone to get into our heads'. Designer 1 said further: "It's important to create trust between the designer and maker so that the craftsperson dares to make suggestions that she thinks are good rather than just following the drawings blindly". From the glassblower's point of view, the collaboration went smoothly, and in the interview, she said:

It was good to work with such experienced designers because they are used to collaborating with others and they dared to ask questions and were thinking a lot about the process beforehand. In this way, we were ready to start working straight away.

The glassblower also highlighted the fact that in experimental processes, it is important that the designers are present so that they can better understand what challenges and constraints lead to the change of plans: "Some aspects can be planned for, but most decisions are made very quickly in the course of the making".

The two designers represented two different attitudes toward the manufacturing process. They especially expressed differing opinions on the issue of trust and reliance on the craftsperson's ability or willingness to collaborate and produce the intended designs as ordered. Designer 2 was unhappy with the defects in the finished glass pieces that came from the use of handheld tools and the manipulation of the glass via secondary materials, such as the gas flame, cold marks from the pressing of wood or air bubbles inside the glass. As a professional designer, she aims for the best of quality and does not want to settle for second best. This has a direct influence on her credibility as a designer because she feels that she wants to stand behind her designs 100% in the exhibition. She recognised the professionalism of the glassblowers and said, "They are really super professional glassblowers!" But designer 2 reflected over what she had learned in the process:

I try to learn from each of these projects and be humble over what mistakes I have done and where I could become better, and I really think I should be clearer in my briefing of the project and in my descriptions of how I want the pieces so that they really

understand what I mean. But I guess glass people are really much 'in the moment', and they might not plan ahead in the same way as we designers do. They just try out things and see what comes out.

Designer 1 expressed another view: he fully trusted both the glassblower and ceramic craftsperson to do their best in times of difficulty. He said: "Of course I was disappointed, but hey, what did I expect? I had imagined that I could achieve all those different kinds of designs and so many of them, of course it was not possible!"

In the mutual interview, conducted 5 months after the opening of the exhibition, both designers reflected on this difference in attitude and connected this to the different type of design education they had received. Designer 1 is educated in the ceramic and glass department and after graduating has specialised in ceramic product design. In the interview, he said:

An industrial designer has to use many different materials and is used to designing, for example, metals and plastic. Most such materials do not change or move very much during or after the process, not like clay that moves and changes a lot during the firing in the kiln for example. In contrast, someone educated in ceramics and glass expects these materials to change in the process of making, and they might therefore be more accepting of this process.

Designer 2 is educated in the applied arts and design department and after graduating has worked in various materials. She said in the interview:

I see myself as somewhere between industrial designer and product designer and admire craftspersons, and I wish I could make things too. My making consists of designing and drawing, the computer is an important tool for me because I have to be clear in the communication with both industry and crafts people, the ratios and the centimetres have to be exactly right so that there are no misunderstandings.

Essentially, the two designers had different scales for what was meant by quality in the craft process. Also, the glassblower described this aspect in an e-mail soon after the first prototyping day:

One has to make decisions about quality on the axis prototype-finished piece. Unique prototypes carry the process of making in them. Even if the result is something else than what was originally designed, the piece is a result of that process and a similar piece might never be made again. In such cases, the price of the artefact is made up of other qualities than perfection.

In the interview, designer 2 reflected that "well in the end it was supposed to be an artistic collaboration, so we should not have expected it to be so precise as we did. It would be great to learn to be so flexible and relaxed as the glassblowers were".

According to Patel, Pettitt and Wilson (2012), successful collaboration is achieved through the complex interplay of several factors and situational features, for example, the characteristics of the individuals and their interaction processes, the provided support they get and the characteristics of the context. However, some values can often be different when people collaborate, and conflicts might emerge from this. If this challenge is overcome, original, new ideas might rise (Berg, 2014, p. 218).

4.2 The voice of the material

The aspect of knowing the material and its affordances make up the experiential knowledge of the craftsperson. But to what extent is this knowledge useful for the designers? In our cases, the material properties played a part in the process that led to the change of the aesthetics of the finished pieces. When the designer's expectation of the material properties was not met, there was disappointment. However, these disappointments were overcome by a gradual process of

acceptance. This process happened in stages, mostly in the form of a learning process of the designer that was facilitated by the craftspeople explaining what is possible and not.

We tie this process to the acquiring of experiential and embodied knowledge through the act of physically manipulating material and learning what the material affords. Through this process, the mental image of the intended design is subsequently shifted toward a more realistic direction because the designer ‘makes sense’ of the affordances and constraints of the materials and techniques. This process is visualised in Groth’s (2017) model of embodied sense making (Figure 17).

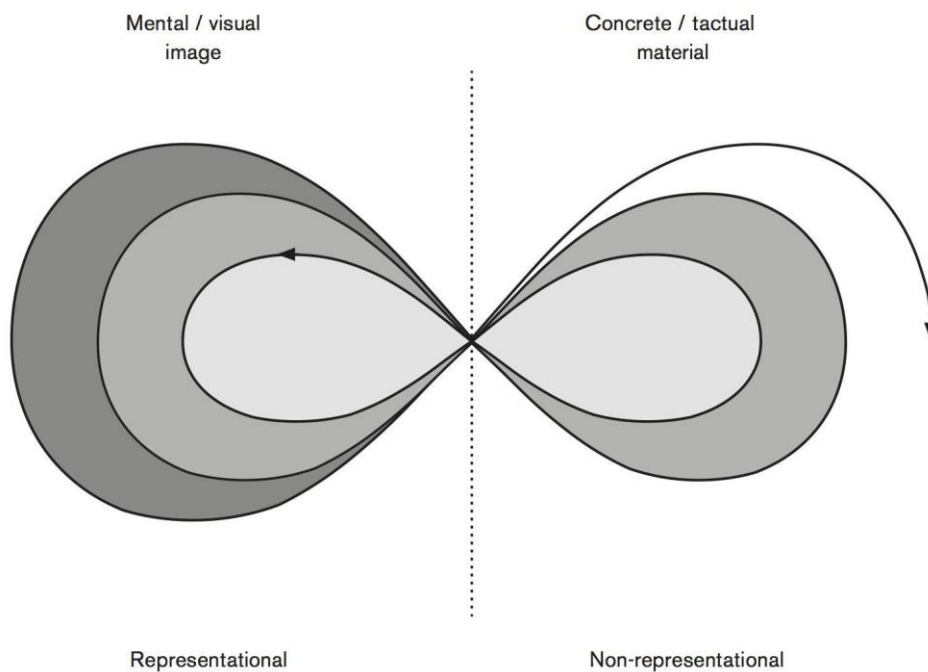


Figure 15: Model of embodied sense making in design and craft practices. Source: Groth, 2017, p. 64.

Here, the two modes of making — the conceptual and immaterial planning on the left and the material and concrete testing in reality on the right — are displayed. The designers’ process is visualised as a loop starting at the creation of a mental image or idea of a design, and this is tested in concrete material and readapted again in the mind of the designer until the idea of the design and the possible material outcomes have merged. This process is more thoroughly understood when experienced personally and physically rather than observing this process. Because the designers in the current case study also tried out manipulating the material themselves in some details, they could better accept the change that their design had to take because they experienced the material limits and understood on a concrete and embodied level the constraints of the material.

4.3 Authorship

The designs of the artefacts were negotiated from the start of the process until the very end. What was imagined was not practically or materially feasible, and the design was changed in the making process. In the case of ceramics, the initial designs were negotiated millimetre by millimetre as the shapes were thrown on the potter’s wheel, and the opinions of the craftspeople were asked and accepted. In contrast, the glassblowers were keen not to add any personal dimensions to the finished product and did not claim any authorship of the process at all and said: “We try our best to find and enhance the style of the designer we work with”.

However, when designer 2 was asked in the interview whose ‘hand print’ the pieces carry, she answered: “I would say that the pieces are 70% the glassblowers and 30% mine because they are not what I drew in my design studio”. Saying this, she acknowledged the fact that there is always hand marks and signs of the makers when outsourcing the design, and she further said that a 50%-50% ratio is what she strives for rather than 100% her own design: “But I was very happy with the exhibition in the end, when all pieces came together they fulfilled each other, and it looked very good”.

According to Hennessy and Murphy (1999), collaborative teamwork contains the challenge of actively communicating and coordinating the team’s accomplishments, but it also offers the incentive that the end results can be much more than the totality of individual contributions. As seen in this case, the pieces were altered through the making process, and authorship was blurred in the process; however, in the end, all the participants agreed that the pieces were now *more* than what they would have been if made individually.

There is a difference in the disciplines of unique glass and ceramics practice regarding how the authorship is perceived in cases where a unique art piece is made to meet an order. In the discipline of glass, it is more common to order a design to be made by a glassblower; although in the end, the piece might be signed solely by the designer. In this case, the glass pieces were not signed at all by either the designer or maker.

In the case of the ceramic collaboration, both the designer and maker signed the pieces with their name stamp while the clay was wet, a proof that the name was not added at a later point but that both were present during the making of the piece (Figure 18).



Figure 16: The ceramic pieces were stamped by both the designer and maker of the pieces. Photo by Chikako Harada.

This practice was initiated by the designer, who insisted on the use of both stamps. The craftsman found this a natural step because her hands had marked the piece in every aspect, and although the design was not hers, the shapes were the fruits of a mutual understanding on how to best interpret the 2D drawn designs and form them into 3D clay shapes. The glassmakers in this collaboration did

not make any claims of authorship; however, they did say that seeing their company name mentioned next to the pieces that they had manufactured for someone else made them happy.

The glassblower also said that she would never convey any opinion regarding the style or aesthetics of a design by a customer but instead always tries to do exactly as the designers wish: "There are so many different types of good, we cannot judge what is good for someone else". However, in her own practice, when designing and exhibiting her own work, she admitted to being very critical of what she chooses to display.

Shared authorship has been identified as a motivator and enabler for co-creation (Bhömer, Tomico, Kleinsmann, Kuusk, & Wensveen, 2012), but as in this example, the authorship is given up by the payment of a salary; the designers may not entirely trust the makers to have intrinsic motivation in the project, and they might not trust them to carry the same responsibility or 'worry' about the successful outcome.

This is of general interest in co-creation processes in other fields. One example is from film production and the relationship between a screenwriter and director (Pelo, 2010); here, the constitution and sharing of authorship are identified in both gathering ideas, sketching, building the story structure, writing drafts, rewriting and completing the final draft. Authorship in film production can be used as a model also in the designer and craftsperson relationship. In a film, the contributors and their role are listed at the end of the film. This resembles the references in an academic text, where it is a standard to refer to those who have contributed to the product and the common effort to expand knowledge on a topic.

In a similar way, in production processes in design and craft, the list of contributors could be listed as co-creators. Another general example is the rising demand from consumers to know about the production line in the food or clothing industry, where qualities such as ethical standards in the production and knowledge of the country origin are seen as a part of brand attachment and brand experience (Nguyen, Dadzie, Davari, & Guzman, 2015). Nguyen et. al (2015) claimed that this eventually contributes to the consumers' perceptions of the firm's intellectual capital and the corporate social responsibility of the company.

5 Conclusions

In the current paper, through an inside perspective, we analysed the process of co-creation in professional craft practice. The outsourcing of labour that involves monetary aspects and services is similar to how co-creation happens in other professional fields, such as in film making (Nguyen et al., 2015) and service design (Greenhalgh et al., 2016).

The designers calculated for the costs arising in the process of testing the designs and making prototypes. However, the limitations of the studio environment, the craftspersons' physical abilities, the materials changing properties or agencies and the influence of the mouldmakers' and glass grinders' work affected the initial designs to quite an extent. In product and industrial design practice, where the products are manufactured in production lines and by machines, this is naturally not the case, but in manufacturing involving handmade processes, this aspect is often present; sometimes, this is experienced positively and sometimes negatively.

Also, the complex question of authorship surfaced as an essential issue in the current investigation. Authorship is affected by the relationship of a paying customer and service provider and the setting of the collaboration. In an intended co-creation project, the authorship is naturally shared, but in a customer-service provider relationship, the authorship rests with the customers. Different disciplines, such as glass and ceramic practice, have different customs in this respect. The question of mutual respect and authorship is of emerging interest in co-creation projects and also in a wider perspective both in cross-disciplinary practical projects and the emerging amount of interdisciplinary research projects (Lamy, 2017).

In this case, it has been shown how pride and professional identity are at stake when outsourcing the manufacturing process to craftspersons, where the authorship stays with the designers. The outcome must meet minimum requirements of quality, but these are subject to internal and external negotiation because there are multiple types of qualitative standards. In the end, it is an issue of mutual trust between the collaborators and the recognition of the co-creation activities.

Because of the current study, we can say that co-creation is a sensitive collaboration in which it is important to build trust and respect for each of the collaborating partners. The communication of intentions and abilities, as well as informing each other of changed plans due to internal or external constraints, preferably needs to be done in real time because distrust easily builds in these situations. Therefore, it is advisable that designers take part in or attend the making process if possible because they are then able to better adjust to the changes made to the artefacts that may arise because of unexpected events, hence being able to see why these changes had to be made and sharing the experiential knowledge and sense making of the processes.

In addition, we propose that the authorship of the artefacts is more readily shared if the collaboration is extended to the making process. Therefore, it can contribute to the designer's corporate social responsibility and strengthen the brand value by ascribing shared authorship to the craftsperson in cases where the artefact is made by hand. These research perspectives might, however, still be in contrast to many design practices in the co-creation process, ones where the craftsperson is paid for the work; here, the payment often is seen as a compensation of the loss of authorship. Another perspective is that there might even be situations in which the craftsperson is not interested in the shared authorship of the product, especially if the craftsperson takes on jobs that might stand outside his or her sense of good taste. However, the current study might contribute to a change of craft practice toward more shared authorships. More research is needed in this topic, especially the opinions of professional craftspersons from different domains should be heard.

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