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# Object Handling with Contemporary Craft Objects: An Observational Study of an Embodied, Social and Cognitive Process

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### Abstract

This study focuses on the ways that people interact around contemporary craft objects. The ambiguous quality of these objects holds people's attention and inhibits autobiographical narratives. The study focused on the relationship between the perceptual language used by participants and the ways in which they interacted with the objects. The analytical approach taken here begins with close observation and careful description of single cases and working towards valid generalisations rather than imposing an interpretation from the outset by explicitly positing a hypothesis. Six pairs of women were invited to participate in object handling conversations in an art museum setting. The conversations were recorded using digital video cameras. Analysis treated interaction as an embodied process and drew on work, which interprets interaction the outcome of social and cognitive processes. We found that the interplay of language and action shifted fluidly throughout the conversations. Not all actions were verbally expounded on and these could only be interpreted tentatively. Utterances could change the meaning or purpose of an action without any apparent change in the dynamics of the action. When attending a complex quality, such as the material nature of an object, the relationship between language and action was correspondingly complex. Participants used a variety of frameworks to understand the objects and these shaped the qualities of the objects that they attended to. Participants' words and actions could usefully be interpreted in terms of meaning rather than just social action and with reference to findings from cognitive research on perception and action.

### Keywords

Perception, Language, Action, Embodied Interaction, Contemporary Craft, Qualitative Research, Observational Research, Museum Studies, Visitor Studies

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Northumbria University. The Faculty of Health and Life Sciences Research Ethics Committee at Northumbria University reviewed the study and granted approval to conduct the study. Funded: The study was self-funded and carried out as part of Davenport's study on the MSc Psychology programme at Northumbria University.

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## Introduction

Art museums<sup>1</sup> are places where people encounter each other and cultural objects. Depending on professional practices at particular venues, object handling sessions may be a regular part of a museum's public engagement practices. The ways in which people interact with each other and with cultural objects in these settings is a topic of ongoing interest to

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<sup>1</sup> The term "art museum" is not conventionally used in the UK, the term "art gallery" is preferred. However, the term "gallery" can be used to refer to publicly-funded organisations as well as to commercial art galleries (and a range of other organisations in between). The term here is used to disambiguate amongst these possibilities and indicate that the organisation is largely publicly-funded, is free to enter and is intended to provide a cultural (leisure) and pedagogical resource for diverse publics.

researchers working in museum visitor studies and to researchers interested in embodied interaction.

Prior work on visitor interactions in museum settings emphasised the importance of attending to verbal and bodily aspects of the interactions (Heath, Luff, vom Lehn, & Hindmarsh, 2002). These studies built on work in conversation analysis (CA) which itself emerged out of the ethnographic tradition. Originally, CA focused on spoken interactions (Stevanovic & Monzoni, 2016). Researchers in CA attend to the structure of an interaction and highlight how participants orient themselves to that structure and each other (Goodwin, 2009). Furthermore, that structure is skilfully co-produced (vom Lehn, 2006); participants in a conversation attend to each other's behaviour to understand what is happening between them, and the meaning of an interaction unfolds through the interaction (Deppermann, 2013). This observation leads researchers in CA to assert that the interaction does not have representative content and that interaction should not, therefore, be interpreted in the light of external constructs such as mental states or intentions (Heath & vom Lehn, 2004).

Other approaches to embodied interaction exist which also view interaction as being skilfully co-produced but which employ different approaches to the analysis of the data. Pragmatics draws on much of the same foundational research as CA but treats language as a communicative act and words as bearing representational meaning (Bavelas, Gerwing, & Healing, 2014; Clark, 2006; Recanati, 2006; Yasui, 2013). However, recent work in this field appears to blur the distinction between the two disciplines (Fitzgerald, 2012; Hazel & Mortensen, 2014).

The field of gesture studies emerges out of the same ethnographic position as CA and work in this area seeks to retain the rigour that comes from a focus on observable behaviour. Nonetheless, researchers have found that analysing the social function of gesture when participants can understand and respond to gestures without any explicit, verbal reference to what they mean, requires a recourse to cognitive and intentional terms (Streeck, 2013).

Other researchers have studied embodied interaction from a more psychological perspective and argue that interaction should be understood as emerging from both cognitive and social factors (Cienki, Bietti, & Kok, 2014; Hirst & Echterhoff, 2012; Kendrick, 2017) and can be interpreted in those terms (Bietti, 2012; Pickering & Garrod, 2014; Streeck, 2013).

This study primarily draws on this latter theoretical perspective to reconsider the behaviour of visitors in an art museum setting as a social and psychological process. Considering psychological processes as a factor in interaction means that findings from experimental psychological research considering action and perception can be drawn upon to inform analyses of behaviour. Such studies posit action as involving a predictive element (e.g., Thill, Caligiore, Borghi, Ziekme, & Baldassarre, 2013) which suggests that people are anticipating the object before they handle it. These studies provide potentially valuable insights, which are generally lacking from much of the work on interaction.

The current study uses video observation on pairs of people in an art museum setting to focus on the way they explore and talk about a selection of these contemporary craft<sup>2</sup> handling objects. However, they are used not because they are contemporary craft objects per se but because they are unfamiliar and/or ambiguous (i.e., they resist easy categorisation). Findings from an earlier, unpublished pilot study indicated that the character of contemporary craft objects made it difficult for participants to make autobiographical associations from the objects, so the conversation remained focused on the objects and their qualities. The intention was that

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<sup>2</sup> "Contemporary craft" is an art-form which emerged out of traditional crafts but which has a much stronger focus on aesthetic value and questions of meaning than on functional issues. Arguably, people who work in contemporary craft have a stronger focus on technique, material and tradition than people who work in contemporary fine art (Risatti, 2007).

this would enable us to explore the object-focused interactions and how the participants work together to create a shared understanding of the objects.

The study did not begin with an explicit hypothesis. The analytical approach taken here follows other work which advocates beginning with close observation and careful description of single cases and working towards valid generalisations (Kendrick, 2017) rather than imposing an interpretation from the outset by explicitly positing a hypothesis (Kent & Potter, 2014; Wooffitt, 2005).

The main themes identified through an analytical analysis are discussed, focusing on the interplay between perceptual language and physical action as participants develop their shared understanding of the objects. The paper seeks to argue that, notwithstanding the focus on observable behaviour, participants' behaviour can be usefully interpreted as emerging out of both social and cognitive factors.

## **Background**

The current study focuses on the behaviour of people in a single art museum in the north east of England. The museum, anonymised as the "Swan" Art Museum (henceforth, "the Swan") has a mixed collection of fine art and contemporary craft. In the mid-2000s, the staff at the art museum, working from an assertion that contemporary craft objects are best understood "in the hand," decided to acquire a contemporary craft handling collection. This became museum valuable resource for public engagement at the museum. Object handling in museums is rarely a private experience; instead it is often carried out in the company of others. Object handling is considered here as a form of embodied interaction involving the people present and the objects that they are attending to.

### **Embodied Interaction: A Social and Psychological Process**

When people interact, they can use a range of resources (Streeck, Goodwin, & LeBaron, 2011). Embodied interaction studies attend to the regularities in the use of multiple semiotic resources during human interaction. They explore how these regularities provide insights into the way that people work together to create meaning and/or achieve an interactional goal (Clark & Henetz, 2014; Goodwin, 2009). These resources can include spoken words, the rhythms of speech (prosody) and bodily resources such as body posture, gesture and direction of gaze. Indeed, Stevanovic and Monzoni (2016) argue that spoken words are much less important than is generally assumed. These interactional resources are not independent of each other (Deppermann, 2013; Knoblauch, 2009). Instead, verbal and non-verbal resources can be utilised in a fluid and complementary fashion (Clark & Henetz, 2014). They can mutually organise each other and, by themselves, each set of semiotic resources may be partial and incomplete (Hutchins & Nomura, 2011). Furthermore, interaction is understood as a process that occurs within, and draws upon, the material world of objects and environments (Goodwin, Streeck, & LeBaron, 2011).

Although the objects used in this study were intended to not evoke memories, exploration of group recall in naturalistic settings is still relevant. Group recollections are potentially, but not necessarily, richer than simply the aggregate of individual recollections, and evidence exists for both collaborative facilitation and collaborative inhibition of remembering (Harris, Barnier, Sutton, & Keil, 2014). Studies of multimodal aspects of collaborative remembering suggest that temporal alignment of speech and co-speech gestures also support collaborative recall (Bietti, Kok, & Cienki, 2013; Cienki, Bietti, & Kok, 2014) with gestures fulfilling a variety of roles including pointing to establish a focus of attention and

evoking a shared conception of a feature (see also Streeck, 2009). Postural sway and eye gaze also seem to play a role (Cienki, Bietti, & Kok, 2014).

We therefore focus on the resources that participants make use of and attend to in each interaction (Deppermann, 2013; Iwasaki, 2011; Knoblauch, 2009). Thus, any given utterance or action is understood within the micro-history of the interaction, that is, by relating that action or utterance to participants' behaviour preceding or following that moment. Also, attention is given to the actions that the participants take as being relevant in that moment (Iwasaki, 2011; Yasui, 2013).

The focus of the conversations in the current study is a sequence of objects. We follow the definition of objects as "discrete lumps capable of being moved from one place to another" (Pearce, 2012, p. 23). The fact that the objects in this study have been chosen by an art museum gives them cultural value and marks them out as objects to be seen (Pearce, 2012). Following our decision to use ambiguous objects and given that objects "acquire their significance through engagement with people and an object user's interaction with other people and objects" (Morgan, 2012, p. 101), we anticipated that participants would work together to understand, or create meaning for, the objects.

Different positions about the meaning of objects and how we ascribe meaning are possible. Rather than focus on the formal categories of contemporary craft utilised by curators (who tend to foreground material and technique), our intention was to follow Schegloff (2007) and focus on whether the participants in the interactions did so. Membership categorization analysis (MCA) studies people's methodical practices in describing the world and displaying their understanding of the world through the way that these categories are deployed in interaction (Stokoe, 2012).

Categories have category-tied predicates (Stokoe, 2012). If something appears to contravene what is known about members of a category then the knowledge of that category is not necessarily revised. Instead the object can be interpreted as being exceptional or defective (Schegloff, 2007). The meaning of an object is not fixed but developed by the words and actions of the people in the conversation (Fitzgerald, 2012; Streeck, 2011) and that meaning might shift as it comes to be "refract[ed]" (Schegloff, 2007, p. 469) through different categories.

Similarly, the meaning of an object is understood as being not merely "abstract and discursive, but [also] embodied, felt, interactive and cumulative" (Morgan, 2012, p. 102; see also Dant, 2008). However, objects have specific affordances (Chemero, 2003) which frame how they can be made meaningful, or relevant, in each situation (Hazel & Mortensen, 2014).

Because we take the position that social interaction is shaped by both social and cognitive factors (Streeck, Goodwin, & LeBaron, 2011), it is therefore pertinent to briefly discuss human interaction with objects from a cognitive perspective. Perception is both a bottom-up and top-down process with perceptual signals from various receptors being integrated with propositional information about the object being attended to (Linden, 2015). The balance of bottom-up and top-down information may vary, depending on whether the object being perceived is familiar or unfamiliar (Deshpande, Hu, Lacey, Stilla, & Sathian, 2010; Lacey, Flueckiger, Stilla, Lava, & Sathian, 2010). Such perceptual experiences have been posited as being at the foundation of more metaphorical concepts (Williams, Huang, & Bargh, 2009). For example, experiences of physical warmth become the basis for more metaphorical uses and understandings of the term "warmth."

The traditional approach to perception is to treat each modality separately and (if at all) consider perceptual integration as a final stage (e.g., Mather, 2009). Relatively recent work into perception (Beauchamp, 2005; Goodale, 2011; Linden, 2015) has led some researchers to argue that perception is fundamentally supramodal (Ricciardi, Bonino, Pellegrini, & Pietrini, 2014) and that the structure of the brain is organised around tasks rather than modalities (see also Goodale, 2011; Murray, Lewkowicz, Amedi, & Wallace, 2016). Theories of situated action

focus on a close coupling between perception and action during goal achievement and propose that the environment plays a central role in shaping cognitive mechanisms. The *perceptual symbol system* theory proposes a single multimodal representation system in the brain which can handle the various cognitive processes (Barsalou, 2008). Whilst there is broad acceptance that representations of concepts draw on an assemblage of multiple perceptual and semantic sources (Amedi, von Kriegstein, van Atteveldt, Beauchamp, & Naumer, 2005), there is debate as to whether the representations themselves are supramodal (Struiksma, Noordzij, & Postma, 2009), modal (Harley, 2013) or amodal (Shallice & Cooper, 2011). The supramodality hypothesis seems to offer the best fit with other work on embodied linguistics and is followed in this paper. Supramodal object representations are taken to be the cognitive correlates of the predicates of object, or material, categories in MCA (Stokoe, 2012).

Another important concept emerges from the study of mirror, and canonical, neurons. Mirror neurons stimulate a rehearsal of an observed action in the sensori-motor neurons which would be responsible for the action, if the observer were carrying it out (Decety & Grèzes, 2006). Canonical neurons encode aspects of an object that the observer needs to understand in order to manipulate the object. The function of these neurons is to prepare the individual for potential forthcoming tasks (Thill et al., 2013). Similarly, the utterance of verbs has been found to stimulate sensori-motor networks in the brain (Coello & Bidet-Ildei, 2013; Jacob, 2013), preparing the hearer for possible future actions (Nazir, Fargier, Aravena, & Boulenger, 2013).

Cognitive research thus suggests that object handling begins before the object reaches a participant's hands: Participants will be rehearsing the perceptual qualities of an object based purely on visual qualities of the object as well as the way that a facilitator physically and verbally presents each object. These rehearsals will act as preparation for interacting with each object and will influence the ways in which they reach out for the object. However, the accuracy of their rehearsal will be based on their prior experiences and expertise (Murray et al., 2016; Taylor & Zwaan, 2013) and these will be rapidly updated as participants begin to manipulate the object.

### **Rationale: Behaviour in Context**

In this study we focused on commonly occurring moments within museum settings—moments where the object is both a resource and the topic of conversation and where the participants are being encouraged to come to an understanding of the object rather than recall prior knowledge. Social situations have a formative influence on behaviour (Speer, 2002). The setting and activity were familiar to participants, and the participants were familiar to each other, although the presence of the researcher and the video cameras were intrusions in that environment. So the setting is properly described as quasi-naturalistic rather than purely naturalistic (Kissman, 2009). All situations are socially constructed, and we anticipate that the familiarity of the setting means that the use of this approach is legitimate (Kendrick, 2017; Speer, 2002), in line with earlier work which utilised engineered situations (Heath, Luff, vom Lehn, Hindmarsh, & Cleverly, 2002), and likely to produce insights which are relevant beyond the immediate setting.

The [dyad in conversation + object] was the central unit of analysis (Bavelas, Gerwing, & Healing, 2014). The role of the objects is not seen as predetermined, rather it was assumed that the participants would draw upon each other, the objects, the environment, and the researcher to collaboratively create meaning for the object and the situation (Clark & Henetz, 2014; Lauer & Handel, 1983) as the conversation progresses over time (Goodwin, 2009).

Treating interaction as an outcome of both social and cognitive processes potentially offers greater theoretical and practical insights into these moments than if they are treated as

purely social or linguistic. The work on perception and action expands our notion of when object handling begins and what it involves.

We recognised that cognitive processes are not directly tractable within such an everyday, social setting and the focus of the study remains on observable behaviour (Heath, Hindmarsh, & Luff, 2010). Furthermore, the author follows the approach that restricting the focus of analysis to the recordable audio-visual data wherever possible provides a warrant for any subsequent analytical claims made by the author (Wooffitt, 2005). Nonetheless, the observable behaviours were interpreted in terms of cognitive and social processes (Bietti, 2012; Pickering & Garrod, 2014; Streeck, 2013).

### **Context of the Researchers**

The research was carried out as a component of Davenport's MSc Psychology at Northumbria University. Thompson was the dissertation supervisor. Davenport previously worked at the "Swan" and, whilst there, was responsible for acquiring the handling objects used in the study. Teaching through contemporary craft objects became part of his daily professional practice at the museum. Since then, Davenport has sustained an interest in understanding object handling and the current study is an outcome of that. Thompson's research interests focus on workplace psychology and the use of qualitative methods, particularly the use of video analysis, within institutional settings.

### **Method**

The purpose of the current study was to examine the way people explore and talk about a selection of contemporary objects within an art museum setting. In particular, the researchers were interested in understanding the moments where the object is both a resource and the topic of conversation and where the participants construct an understanding of the object.

A video-based approach was adopted as it allowed a focus on naturally occurring interactions where there was minimal research influence (Kissman, 2009). Participants were invited to attend, in pairs, an object handling session where they were presented with a sequence of contemporary craft objects for them to interact with and discuss. Objects were placed between participants and they were free to talk about and handle the objects as they chose. Sessions were recorded using digital video cameras. The situation reflects the normal practices of a contemporary craft gallery and within the expectations of seasoned visitors (Kendrick, 2017). These meetings were video recorded to ensure collection of naturalistic data.

### **Recruitment and Participant Information**

Six pairs of people, all female, were invited to participate in object handling sessions at the "Swan Art Museum." Participants were initially recruited from community groups that regularly used the Swan for their own group meetings—the Quilters and the Weavers. Five pairs of participants were recruited from these groups. This was done so that they would be familiar with the gallery as a space and familiar to each other (Kendrick, 2017) and settle into the object handling session more readily. An additional pair of participants were recruited from students on a MSc Psychology programme from a nearby university. The students were familiar with each other and, although they had never visited the "Swan" previously, they were at ease in gallery settings.

Good practice for qualitative research is to present short pen-portraits of each participant. However, the utility of this sort of information for interaction analysis is questioned

(compare Knoblauch, 2009 with Streeck, 2013). Consequently, the current study presents pen-portraits of each group rather than the individuals. See Table 1 for description.

Table 1. Pen portrait descriptions of participant groups

Participant Group	Description
Quilters	The Quilters meet every Wednesday at the Swan. The group comprises older, mostly retired, women. They meet to quilt in a social setting, to chat and to offer support as they work on their individual projects. Quilting is an important part of many of the members lives and some exhibit their quilts at exhibitions across the country. The Quilters have a strong relationship with the museum, which holds an extensive collection of quilts and, in the past, the museum has hosted several high-profile exhibitions of international art quilts.
Weavers	The Weavers meet every Thursday at the Swan. The group comprises older, mostly retired, women. Their gathering is both social and a chance to share their work and support each other. They occasionally work on group projects. Weaving does not have the same strong association with the museum as quilting does.
Students	Both students were middle-aged women. They had young children and engaged in family-oriented craft activities. Both had been personally involved in craft activities at some point in their lives though less so at the time of the research. One woman was a frequent art museum visitor whilst the other was not, though the latter had taken her children to events in museums when they were at pre-school.

## Materials

The object handling sessions utilised objects from the Swan's contemporary craft handling collection. The objects chosen for the conversation are shown in Figures 1 – 8.

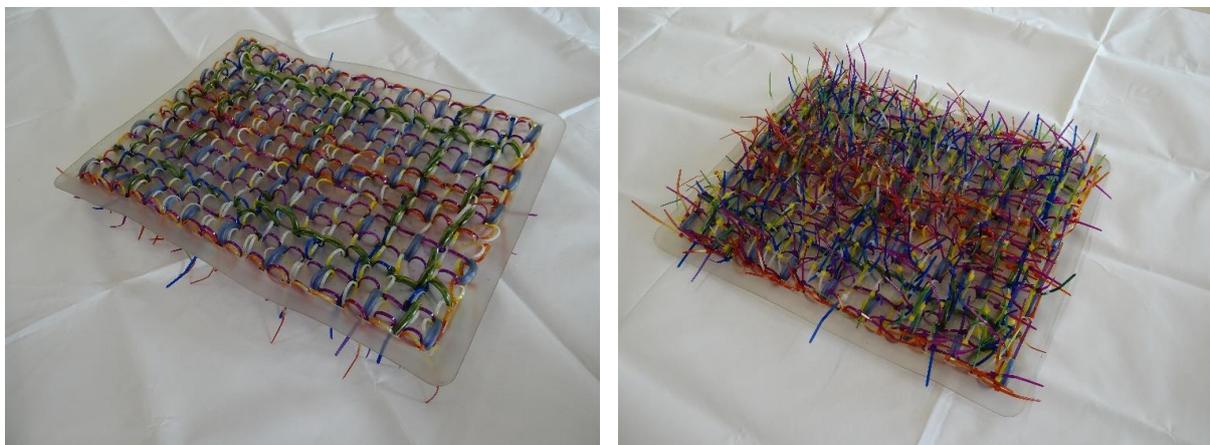


Figure 1a & Figure 1b. Cable-tie quilt. Showing the (a) smooth side (left hand image) and (b) the spiky side (right-hand image).



Figure 2a. "Front" of the ceramic piece by Robert Cooper



Figure 2b. "Rear" of the ceramic piece by Robert Cooper



Figure 3a & Figure 3b. "Teabowl" by Robert Cooper, seen (a) from the side (left-hand image) and (b) from the top (right-hand image).



Figure 4. "Metropolis" pieces by Lubna Choudhary



Figure 5. Limewod "vase," maker unknown



Figure 6. Blue glass bottle by Jane Charles



Figure 7. "Seed & Pod" by Christine Constant

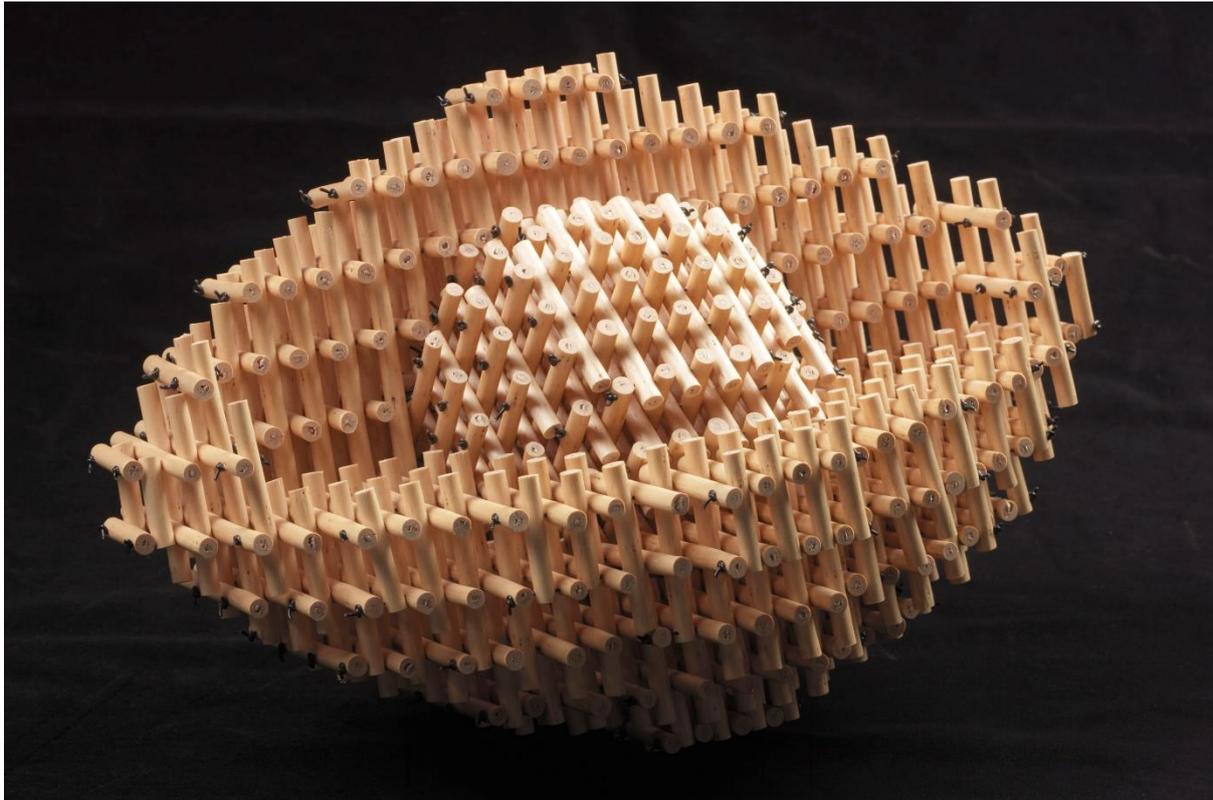


Figure 8. "White Fruit" by Dail Behennah

After the first two conversations, "Seed & Pod" was observed to be heavily damaged. After some reflection, this was replaced with another object: "White Fruit," which was similar but more robust.

The objects were selected for their unfamiliarity or ambiguity and for their capacity to provoke discussion. This judgement was based partly on the author's experience of using the objects with various audiences. The source of each object's ambiguity was different: an object might be readily identifiable in one aspect (e.g., material) but not in others (e.g., construction). Data from the conversations indicated that participants had not previously encountered these objects.

### Procedure

The participants gathered, as they normally would, in their group's meeting space. The researcher (Davenport) then invited pairs of participants to accompany him. The students travelled to the gallery on a day when other sessions were being recorded. They explored the gallery until being invited into a conversation. The sessions took place on days when the groups would normally meet, and participants were free to choose who they paired up with.

The object handling sessions took place in the Study Centre in the Swan; a room containing cases of studio ceramics, a PC and a table. The room was lockable, so members of the public could not enter the room. The participants were seated so that they were partially facing each other and the object on the table. Two video cameras were used throughout for data collection. A schematic of the situation is shown in Figure 9.

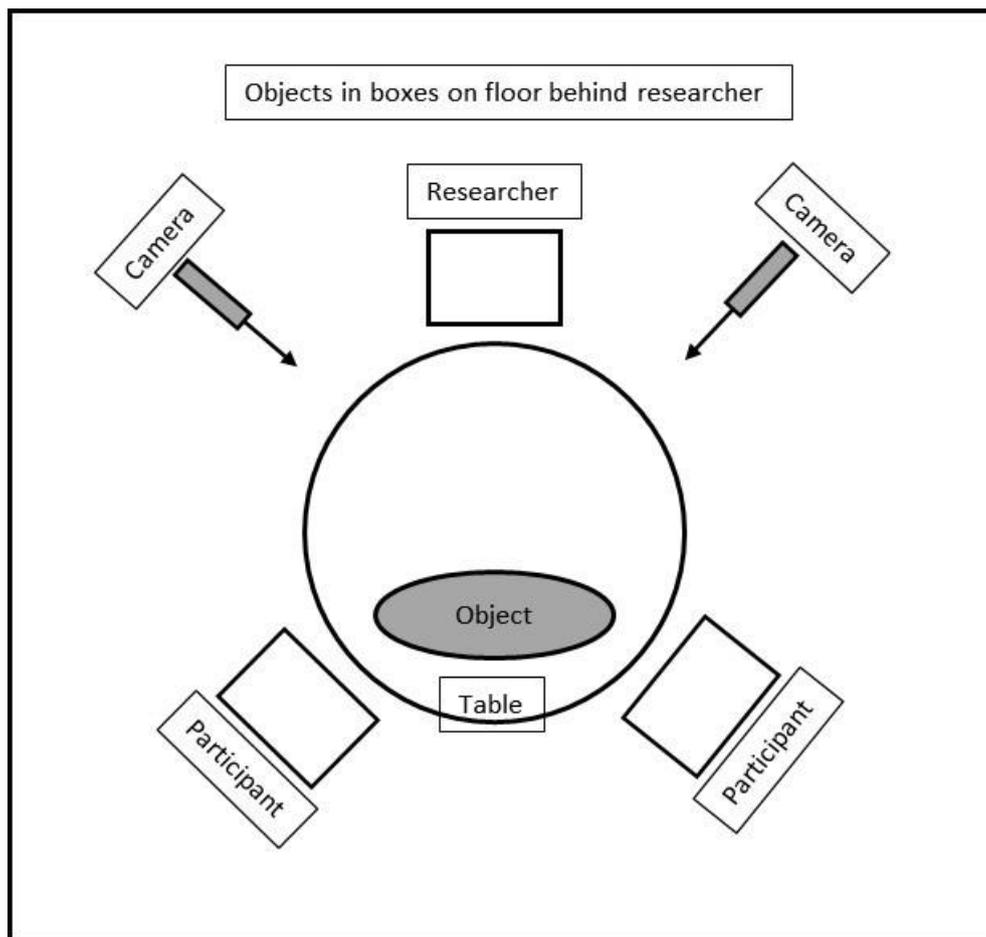


Figure 9: Schematic of the layout used to record the object conversations.

Consent forms were completed prior to each object handling session. Once these were completed, the researcher re-iterated the plan for the session: that he would present them with handling objects, that they could touch them and that he would ask them, "What do you make of this?" This question was used when the first object was presented but proved unnecessary for subsequent objects. Objects were placed between participants and they were free to talk about and handle the objects as they chose. After about the fourth object, and subsequently, the participants were asked if they wished to carry on or whether they wished to leave. All the dyads wished to carry on.

At the end of the conversation, participants were thanked, and the cameras switched off. The researcher accompanied participants back to their group and asked if more people were still interested in taking part. The procedure was then repeated. Each group was debriefed once all the participants who wished to take part had done so.

The researcher endeavoured to be as unobtrusive in the conversation as possible. The researcher provided prompts when the participants seemed to be getting stuck and answered questions when asked directly. The only exception to this was a statement regarding the cable tie quilt sample, intended as a deliberate provocation. We accepted that the researcher and the video cameras could not slip into the background (Knoblauch, 2009). The participants aligned to the researcher as the expert on the objects. However, this fits within normal museum practices where object handling sessions are generally facilitated by a staff member. The researcher could therefore have been understood as occupying that role.

## Transcription

Transcription constituted the first phase of the analysis. Davenport transcribed the conversations using an annotation system based on the work of Jefferson (Wooffitt, 2005). Conversational overlaps, hesitations, and pauses were indicated in the transcriptions, but pauses were not timed, and prosody was not indicated. As transcription progressed, attention was also given to non-verbal features of the interaction such as eye-gaze, gesture and object manipulation. The transcription system allowed for noting relevant non-verbal features such as ((laughter)). During the transcription process it rapidly became apparent that actions such as gesture, bodily actions and object manipulations were essential to understanding the interaction and the (()) convention was used to capture these within the transcript. The transcribing was done in an orthographic fashion to facilitate ease of reading and with the intention that the flow of the reading would match the flow of the conversation.

Transcription was based on the recording from the left-hand camera. This was chosen to provide consistency and because right-hand camera failed during the second Quilters conversation. All timings given here are based on the timings of the left-hand camera.

The researcher made notes on the recordings as transcription progressed. This was used primarily to capture aspects of the interactions that appeared to be analytically interesting or relevant to the research question. Arguably, experience is needed to learn to “see” what actions are relevant within each moment of the interaction (Charmaz, 2014; Kissman, 2009; Schindler 2009). The researcher drew on the literature above to focus on potentially relevant actions but the justification for attributing the meaning or purpose of an action remained problematic throughout. CA approaches argue that the data itself provides the evidence for the analysis, but this is not so readily achieved when the relevance of actions is not explicitly stated by the participants (Deppermann, 2013; Stokoe, 2012; Streeck, 2013). Consequently, the researcher sought to make all inferences explicit throughout the analysis process.

The participants were anonymised by referring to them by the conversation they were in and their position at the table as seen on the cameras. Thus, W1L is the participant sitting on the left-hand side of the table during the first Weavers’ conversation and Q3R is the participant sitting on the right-hand side of the table during the third Quilters’ conversation. Images of participants used in this paper have been modified to make it more difficult to identify participants.

## Analysis Strategy

Davenport carried out the analysis of the data with support and guidance from Thompson. This began with note making during the transcription. The conversation transcripts were subjected to content analysis using QSR NVivo 11. The coding focused on the perceptual qualities of the objects that participants spoke about or attended to. There were moments within the conversations which related to the assumptions built into the study (e.g., the role of the researcher in the social interaction) and these were also captured in the note-making and coding process. Analysis proceeded iteratively drawing on the video data, notes and the NVivo projects to explore analytically interesting themes.

The six conversations provided a rich data set. The analysis presented here focuses on the perceptual qualities of the objects that participants talked about and how this related to the way they interacted with the objects, including object manipulation and gesture.

After initially attempting to organise the data according to perceptual qualities that participants attended to, the authors determined that the most efficient and effective way to transform the data and present the data in a format that would be useful and accessible and

engaging to readers was to return to the themes originally noted during transcription. This led to a focus on *material qualities*.

The original NVivo project was searched for instances in the transcripts that had been coded under “Material” AND “Perceptual Qualities.” The output from this, plus the original notes (with themes highlighted), were used to direct the final round of analysis of the video data. During the search, the author reviewed interactions around the moments of interest to look for other instances that related to the topic. Transcriptions can become the object of study and the move from observed behaviour to transcript can be overlooked or effaced (Law, 2004). Hence the analysis proceeded by continually returning to the video data. This led to new, analytically interesting, moments being found. A new collection of instances relating to material qualities was collated, along with new annotations where relevant. The themes discussed below emerged out of this focus.

## Results

### Summary of Findings

Six conversations were hosted and recorded. In each conversation, the participants were willing to discuss all the available objects. The durations of the conversations are given in Table 2 (below).

Table 2: Duration of the object conversations

Conversation	Duration (hours:minutes:seconds)
QC1	00:34:05
QC2	00:43:26
QC3	00:36:40
WC1	00:55:55
WC2	01:11:33
SC1	00:36:00

As intended, the conversations remained focused on aspects of the objects. The content of the conversations can be summarised as involving: immediate emotional responses to the objects and aesthetic judgements; interactions around the perceptual qualities of the objects, their material and construction; discussions using frameworks drawn from prior knowledge and experiences to understand the objects.

To develop an understanding of how the participants engaged with the objects, this section progresses through a sequence of topics: whether the participants attended to the whole object or a succession of features; moves between exploration and communication; attention and frameworks for thinking about the object; the material nature of the objects as a complex quality which was explored and discussed.

### The Whole or the Features

In the majority of cases, when an object was first presented, participants responded with phrases such as “Oh! I like that!” which implied an immediate, largely unreflective and emotional response to the object as a whole. However, in every case this response was rapidly followed by extensive exploration of the object. During this phase, it was less clear whether the participants were considering the object as a whole or as a sequence of features.

**Excerpt 1 - WC2 {54:03}**

*((W2L is touching/examining the top. Turns the bottle slightly))*

*W2R: Oh! I can see like an oi:l pattern there ((tracing with finger))*

*W2L: Yeah. (.) This is oi.., ((pointing with finger)) this is some kind, this, isn't it*

*W2R: Mhm, mhm {54:09}*

In this excerpt from WC2, the participants were looking at the Jane Charles bottle (Figure 6), they had been handling and closely examining the bottle for 3 minutes when, with an expression of surprise, “Oh!”, W2R pointed out the “oi:l pattern.” This reveals how an iridescent feature of the object which was in the participants’ visual field was not initially attended to and was, abruptly, “seen.” Such instances support the notion that participants shifted their attention from one feature to another.

**Exploration and Communication: Shifting Processes**

The initial prompt to the conversations was open-ended and participants did not explicitly discuss what goal they thought they were achieving through each interaction (Clark & Henetz, 2014). Two important aspects of the interaction were: exploring each object and communicating their perceptions to the other participant and/or to the researcher. The notion of exploration is used here to indicate that participants are interacting with an object seemingly to enrich their understanding of it (Bietti, 2012; Struiksma, Noordzij, & Postma, 2009).

**Excerpt 2 - WC2 {17:37}**

*W2R: I don't know why, it looks more like a dish this way around ((Puts hand in depression)) {17:39}*

*W2L: Mm [((running finger over surface of a fold))*

*W2R: Although it shouldn't, in fact, ((gesturing)) because of this,]*

*W2L: () look, [look at this ((running finger over surface of a fold))*

*W2R: this ()] container there {17:45}*

*W2L: If you look in here, it's almost, (or is that) interrupted ((running finger over surface))*

*W2R: well that's glaze that's been painted on ((running finger over surface))*

*W2L: mm, yeah, but it's quite lumpy here ((running finger over surface))*

*W2R: Mm, mm ((running finger over surface)) {17:55}*

In Excerpt 2, the participants are looking at the underside of the Robert Cooper ceramic piece (see Figure 2b). W2L begins running her finger over a surface feature after she says “Mm” and continues to do so whilst W2R is speaking. The surface is decorated with thick streaks of glaze. The contrast between glazed and un-glazed regions is both tactile (smooth & rough) and visual (shiny & unreflective). It appears that W2L is exploring the object by feeling the glaze. There is a continuity in this feeling action before and after the moment where W2L interrupts W2R to say “look, look at this.” Although the physical nature of W2L’s action did not significantly change, its combination with the verbal invitation to look appeared to shift its purpose from exploratory to communicative. That is, it became a way of enabling W2R to see a relevant feature in the object by making it salient (Heath & vom Lehn, 2004).

### Exploration and Communication: Overlapping Processes

In some instances, the quality of an object seemed to be both explored and enacted in the same action.

#### Excerpt 3 - WC1 {36:53}

WIR: *It gives the impression that it's wood but I think (.) it's either a very hard, dense wood*

WIL: *which it could be*

((WIR taps surface with finger-nails and puts ear to vase, to listen)) {37:00}

((WIR looks at WIL, tiny nod?))

WIR: *Could well be (.) ((exploring vase)) It's difficult to tell isn't it.*

WIL: *Mm*

((WIR is feeling the inside of the top))

WIL: *I also think it's very light [but there are some woods which are very light too.*

((WIR changes the position of the vase in her hands and hefts it.))]

((WIR raps the vase with her knuckles))

WIR: *Difficult to tell ((Laughs))*

((WIL laughs))

WIR: *It's difficult to tell, isn't it?*

WIL: *Yeah {37:23}*

Following, WIL's description of the vase as "very light", WIR changes the position of the vase in her hands and hefts it, which suggests that she understood WIL to be referring to its weight. Weight is experienced primarily as muscular tension in the hands and arms (Renfrew, 2007 cited in Malafouris, 2013). However, *hefting* an object implies a more dynamic experience of the way that an object responds to a movement. Before this point, WIR has been holding the object, and therefore experiencing the weight of the object but she may not have been attending to that experience (see below). Therefore, the action of hefting could be seen as both a deliberate attempt to consider the weight of the object and an acting out of feeling the weight as a response to WIL's comments.

### Attention and Frameworks: A Quilt or Not

In the first topic, it was suggested that participants attended to features of an object rather than the object as a whole. Here we suggest that the features that are attended to are shaped by conceptual frameworks introduced through the conversation.

One object, the cable-tie quilt sample (Figures 1a & 1b) was used as a deliberate provocation. The following excerpt is one pair's response to the suggestion that it was actually a quilt.

#### Excerpt 4 - QC1 {06:07}

QIR: *Does it feel like a quilt to you?*

QIL: *No, no, it's uncomfortable, there's nothing, like you say, comfortable about it, its...*

QIR: *You wouldn't want to wrap that around yourself in winter, would you.*

QIL: *No, no, God no.*

Following this assertion, some of the participant pairs (QC1-3 & WC1) considered new qualities which had not previously been discussed (confirmed by word-searches of the transcripts). In each of these conversations, prior to the interjection from the researcher, the participants had attended to its tactile qualities (hard, spiky, smooth) and visual qualities (colour and pattern). As was seen in Excerpt 4, the participants started to talk about its comfortableness once its status as a quilt had been asserted. It is not clear what constitutes comfort; potentially, softness, flexibility, and warmth alongside more abstract associations (Williams, Huang, & Bargh, 2009). Participants had previously manipulated the piece and presumably had a sense of its flexibility and its feel in the hand, but they had no apparent measure of its warmth. Thus, participants demonstrated a shifting relationship between how they considered/talked about the object and what they attended to in the object, which emerges collaboratively (Harris, Barnier, Sutton, & Keil, 2014) through their interactions with each other, the object and the researcher. This excerpt also indicates that, to refute this object's status as a quilt, the participants had to consider it as a whole object even if they talked about it as a sequence of features.

The following sub-sections considers the interplay of perceptual language and action whilst participants explored and questioned the materials that the objects were made of. This was a common feature of participants' engagement with the objects. The *material* (what it is made of) is a complex quality and not always readily resolved. In these, we will consider both materiality as something anticipated and as something inferred from diverse perceptual qualities.

### Material Qualities: Anticipated

Participants drew on the appearance of objects to make a range of judgements about them, often inferring qualities which were not, in principle, visual.

#### Excerpt 5 - QC1 {31:41}

*((BD puts CC seed and pod piece on table))*

*Q1R: See, I do like that*

*Q1L: Wow.*

*Q1R: I like that a lot.*

*((Q1L reaches out and turns it round on the table without lifting it))*

*Q1L: It looks heavy. Is it heavy? ((Looks at BD))*

Q1L's statement, "*It looks heavy. Is it heavy?*" shows that Q1L has used a visual judgement to assess the object's weight, a muscular experience. Participants appeared to be drawing on visual information (Thill et al., 2013) and prior experience (Murray et al., 2016) to understand the material qualities. At another point in the same session, Q1R said, "*Is it heavy? Ooh! Lighter than I thought,*" indicating that she too made an initial visual judgement about weight but that this was then challenged by her physical experience. This is in line with Taylor and Zwaan's observation (2013) that such mental representations (of an object) can be updated by new experiences.

### Material Qualities: Composite Qualities

The materiality of an object is not a simple perceptual quality but one that appears to be made up of diverse perceptual and associational components.

**Excerpt 6 - QC3 {15:42}**

*BD: It's carved out of limewood {15:44}*

*[...]*

*Q3R: Well (.) you could have fooled me {16:42}*

*((Picks it up and raps it with her knuckles again))*

*Q3L: (It would,) I would never thought it was wood*

*((Q3R raps it again))*

*Q3R: We should have done that and then we would have known it wasn't (.) clay or whatever*

This is the only time someone discusses the idea of intentionally using sound as an indicator of material. However, other participant regularly tapped or scraped objects without commenting on their actions (see Figures 10 & 11).



Figure 10: Q2L tapping an object with her ring finger.



Figure 11: W1R tilting her head, seemingly listening to the sounds she is making as she taps the base.

Together these examples give confidence that these participants are drawing on sound as an indicator of material qualities, even if they do not refer to it. In preceding excerpts, participants were observed drawing on other perceptual qualities (colour, shininess, surface texture and weight) to reach judgements about the objects. In another instance, the warmth of an object in her hand convinced the participant that the object in question was not made of metal.

We suggest that, in order to understand the materials that the objects were made of, the participants draw on a range of perceptual qualities and that their idea of a given material is a composite of these modalities. However, we also suggest that their understanding of a material is open to change through new experiences.

## Discussion

### Comparison with Previous Research [Interactional and Cognitive]

The present study focused on pairs of people talking about and with contemporary craft objects. The objects were chosen for their ambiguous nature and with the anticipation that participants would not respond to the objects through reminiscence. The objects worked as anticipated—some of the participants did deploy autobiographical stories in response to the objects but these represented only a small amount of the total time spent talking. The study therefore builds on but contrasts with earlier studies which focus on group remembering.

In line with those studies, the data here presents meaning making as emerging collaboratively as people explore the objects and talk to each other about their responses. The fluid movement between exploration and communication highlighted above is coherent with

the “mutual inter-animation” of interactional resources observed during collaborative remembering by Cienki, Bietti, and Kok (2014). The use of touch/gesture in Excerpt 2 combined with the instruction, “*Look*” also fits with Streeck’s observations (2009, pp. 69-73) that tactile discovery by W2L can lead them to encourage visually-mediated discovery by W2R.

The ways that the participants explored the materiality of the objects showed the participants drawing on different sources of perceptual and propositional information (Morgan, 2012; Struiksma, Noordzij, & Postma, 2009) to reach some conclusions about the material the objects might be made of. It is reasonable to infer that they were exploring the object by comparing it with to their idiosyncratic material “categories” each of which had its own assemblage of predicates. The observation that these judgements are made before the object is held (see Excerpt 5) is in line with the experimental research on mirror and canonical neurons (Thill et al., 2013) and the work on the supramodality hypothesis (Ricciardi et al., 2014), which suggest that initial visual information will be used to rehearse the action of holding the object and to prepare the body for picking up the object. The muscles in participants’ arms will be tensed in preparation for a particular experience and Q1R’s “*Ooh! Lighter than I thought*” can be understood as emerging from the disparity between the way her arms are pre-tensed and the muscular tension needed to actually support the object.

In many of the conversations, the moment which evoked the strongest response was when the cable-tie quilt sample was asserted to be a quilt. As noted in the discussion of MCA, participants’ ways of thinking about an object can be changed if they are “refract[ed]” (Schegloff, 2007, p. 469) through a different category. It is possible that by asserting that the sample was a quilt, and because of his status as an ex-member of staff, the researcher introduced a new category for the object. As can be seen Excerpt 4, the Quilters rejected this assertion. Q1R did so quite emphatically. This rejection matches Schegloff’s comment about the priority of the category over an instance of it. Despite this, the assertion appears to have reframed the qualities that they attended to. Alternatively, it is possible that they worked together, and attended to those qualities, in order to reject my institutionally authorised assertion (Smith, 2015) and reinforced their shared understanding of what constitutes a quilt. The qualities such as “*comfort,*” “*warmth,*” “*used on a bed*” would seem to be the category-tied predicates (Stokoe, 2012) that the participants drew to tell the researcher that he was wrong. There is no data to help discern between these possibilities. Nonetheless, the complexity of the responses and the emotional intensity of some was unexpected.

### **Limitations and Possible Modifications**

It was not possible to remove my presence from the social situation and my contributions may have shaped the content of the conversation. Despite my intentions to contribute as little as possible to the conversations, the participants explicitly oriented themselves to me as the expert on the objects. However, most object handling sessions are facilitated by members of staff so, arguably, I occupied a dual role of researcher and facilitator. This is only problematic if it assumed that the behaviour of the participants would be more “real” if the researcher was somehow absent (Speer, 2002). Nonetheless, the impact of the researcher’s presence could be explored further. One way to explore this would be to introduce a second researcher who has no experience with the objects nor with contemporary craft objects in general. This would potentially inhibit participants from seeking answers from the researcher/facilitator and keep the process of meaning-making within the [dyad +object].

All the participants were women, and this may have affected the way that the conversations progressed, and it would be interesting to repeat the process with pairs of men. Most of the participants were drawn from craft groups. There is a focus in traditional and

contemporary craft on materiality, construction techniques and craft skill (Risatti, 2007) and the women may have brought existing craft practices to their exploration of the objects. It would therefore be interesting to host more conversations with people who are not engaged in craft activities such as quilting or weaving.

Interactions moved fluidly between exploration of the object and communication of object features. Interpretation of words and actions in terms of purpose and meaning are difficult. The recommended constraint of using data to interpret other data (Wooffitt, 2005) is helpful but not always sufficient. Certain actions were observed but nothing within the data could clarify the purpose or meaning of those actions. Some actions were “conventional” (such as when the participants “hefted” the objects). But providing an academically rigorous account of why conventional actions could be interpreted in a conventional way is difficult. Throughout the discussion, the researcher has explicitly stated the interpretive approach so that this is open to judgement (O’Reilly & Kiyimba, 2015). A future avenue of research would be to explore and develop a more transparent and rigorous approach to understanding action, interaction and gesture (Streeck, 2013).

### **Generalisability**

Earlier, we argued that this study utilised a quasi-naturalistic setting: the presence of the video cameras and the researcher were unfamiliar presences, but the practice of object handling is quite conventional within art museums. As such, we suggest that the behaviour of the participants is representative of their behaviour within normal (i.e., camera-less), facilitated object handling sessions and, notwithstanding the limitations noted earlier, we suggest that the finding from this study can be used to inform professional practices in museums with similar collections.

### **Implications for Pertinent Stakeholders**

From a research perspective, the authors have drawn on work from social and cognitive psychology which, arguably, tends to focus on the individual (Bavelas, Gerwing, & Healing, 2014). However, the data from this study strongly supports the value of taking the [dyad + object] as the unit of analysis. The conversations progressed through a rich interplay of actions, words and communicative gestures. The function of some of these may be unclear but they nonetheless needed to be accounted for in the interpretation of the conversation. Finally, approaches to interaction which see interactions as an outcome of both social and cognitive processes, and which see actions as bearing meaning, were helpful when trying to interpret this aspect of the observational data.

For museums professionals, the study supports the idea that object handling begins even before the object is seen. Furthermore, it implies that the encounter with the object is, initially, an encounter between the physical experience of the object and the participants’ rich assemblage of associations and perceptual expectations about the object. Finally, the findings suggest that ambiguous objects are useful in fostering different conversations from familiar, social history objects.

### **Conclusion**

The current study explored the ways that six pairs of women interacted with each other and a series of unfamiliar or ambiguous objects. Throughout the conversations, the object remained the focus of the interactions. The data were too rich to exhaustively analyse within

the constraints of a paper so the focus here was on the qualities of the objects that were talked about and how this related to the way that the objects were being manipulated.

Participants' attention shifted between considering the object as a whole and considering it as a series of aspects. The participants drew on multiple frameworks for thinking about the objects and these shaped the qualities of the objects that they attended to in their conversation. Most notably during the discussion of a contentious quilt sample: when informed that it was a quilt, most participants attended to quilt-like qualities that they had not previously discussed whilst rejecting the object's status as a quilt.

When grappling with the issue of the objects' materiality then the relationship between talk and action became more complex as the issue of material was accessed through diverse perceptual modalities. Participants were observed to use visual information to make judgements about non-visual qualities (e.g., weight or surface smoothness). This could be interpreted with reference to experimental, cognitive research on embodied cognition. Participants were also observed to explore an object through their actions without necessarily commenting on what information they gleaned through their exploration. Nonetheless the data indicated that they both drew on prior understandings (i.e., mental representations) of perceptual aspects of materials and enriched these understandings through the interaction.

The move between exploration of an object and communication around the object was fluid and involved recombining verbal and non-verbal resources for interaction. The focus on embodied interaction and the reliance on observational data in non-experimental and naturalistic settings means that the interpretation offered here is necessarily tentative. Nonetheless, the approach taken here—viewing interaction as the outcome of social and psychological processes and drawing on insights from experimental studies in action and perception—provided valuable in interpreting observed behaviour, particularly in understanding the ways participants appeared to anticipate the object. The approach is of value to both researchers interested in visitor behaviour and practitioners working with people in art museum settings.

### Ethics

The Faculty of Health and Life Sciences Research Ethics Committee at Northumbria University reviewed the study and granted approval to conduct the study. As a part of this, permission was obtained from the senior manager at the museums service with responsibility for the Swan Art Gallery. The study was self-funded.

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