

STAGES IN TESTING IN THE WILD

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ABSTRACT

In design and innovation processes, a difficulty is often to envision how new products and prototypes might be received when they are first “encountered” in real contexts of use. This paper reports on a case of prototype testing of a new dining tool, where people are asked to use a modified fork without any explanation about how to use it or the rationale for its design. Through detailed sequential analysis of video recordings, we will describe how participants explore the prototype together; testing the prototype in use; exploring the prototype’s different possible uses, and assessing the prototype. These results show how participants systematically and collaboratively explore new objects, in relation to existing activities and other objects in context, often in speculative and possibly (from a designer’s perspective) “disrespectful” ways.

INTRODUCTION

Within participatory design and innovation discourse, the role of the “user” is central for the development of new products, services or business models (Buur & Matthews 2008), and several methods have been explored in order to integrate the voice of the user in different stages of the design process. In the case of testing of new products of ideas, different traditions of design research have come up with different ways of introducing users to the designed artifacts, either in terms of lab experiments, exhibitions, workshops, or observations and testing in the “field”, each contributing differently to knowledge about design and its artifacts (Koskinen et al. 2011). In most of these approaches, testing happens either in controlled environments (workshops and exhibitions), or in the presence of the designer and design team, who introduce their ideas and prototypes to the users for evaluation. This paper looks

at a case when the testing of a prototype is carried out without any instruction or facilitation by the designer or researcher. Particularly, it looks at how people in interaction treat and construct the situation they are in “as a test”, collaboratively exploring a product in its physical characteristics as well as in its relation to the natural context where the object might find its use, “in the wild” (Hutchins 1995, Crabtree 2004).

THE DATA

The data is collected as a part of an ongoing project undertaken by one of the authors, investigating how people “make sense” (Weick 1995) of unfamiliar objects, and how this sensemaking process is accomplished as a social activity. The project builds on considerations brought forward both by design researchers on how innovation might happen through use (Redström 2006), and from the field of interaction design and Human Computer Interaction on integrating more ethnomethodologically oriented approaches in the design process (Rogers 2011, Crabtree et al. 2013). Part of the project consists in the development and testing, in various settings and with different people, of objects whose properties have been modified in order to make them somewhat different, but still recognizable as a further developed version of the original object. The object at hand, in this case, is a fork whose handle has been substituted by a ring (fig. 1).



Figure 1: The objects provided to participants for eating.

With the intention to test these objects when they are first encountered, “users” receive them wrapped, as to not be seen in advance, and are asked to film themselves while opening the package and using the objects in a lunch setting. Participants are not in advance given any instructions on what to do with the object, apart from trying to “use it” at lunch or dinner in social occasions.

ANALYSIS

We analyzed the data using Conversation Analysis (CA) as an approach that would allow us to look at how the “testing” emerges in the details of participants talk, body movement, and in the unfolding of their interaction without preconceived theories about what

happens, but rather focusing on how people deal with the situation they are in. By means of transcription and sequential analysis of excerpts of data, CA focuses on exploring how participants collaboratively make sense of each other's actions and the situation at hand, and how they make their local understandings visible through their conduct (Heritage 1994, Sacks 1992).

TESTING AT LUNCHTIME

For the purpose of this paper we have analyzed a video recording of a lunch between three colleagues, here given the names ORA(nge), G(i)RL and BL(ac)K, referring to their appearance in the video/still photos. They work together in a small company owned by ORA. He has been given three wrapped packages each containing a "ring-fork", and the instructions to try these objects together with whoever he chooses. In all the extracts shown we see the three participants having lunch together in their office where they usually lunch.

ANALYSIS: PROTOTYPE TESTING

As a result of our initial analysis of the video, we chose to develop two of our observations into two separate papers. One of the observations is this: though not explicitly instructed to do so, participants visibly treated the lunch as a testing event where, with various means and in different stages, they collaborated on a common 'project' of evaluating the new object. We identified four stages of this interactionally accomplished testing process: 1) exploring the product; 2) testing the product in use; 3) exploring the product's different possible uses, and 4) assessing the product. In this paper we will explore these phases in their embodied sequential context.

EXPLORING THE PRODUCT

In a first phase of testing that we might call exploration, interestingly participants do not start eating immediately, even though the food is ready in front of them. Before starting to get on with what they are there to do (eating), they engage instead with the tool both by looking at it from different angles, testing the different fits on the fingers, 'playing' with the object on their fingers and using expressive movements, all of these have very little to do with eating itself, but instead are related to the "fitting" of the object to the body, wearing styles and general movements. For example, after a number of attempts to wear a too-big tool (for her hand), GRL settles on wearing it on the middle finger and closes her hand in a fist. When reaching this position she giggles (l. 3), looking at BLK while slightly raising her hand. While BLK does not seem to acknowledge her action. ORA instead comments (l. 4) on her physical movement with "it feels like you're trying to hurt me". GRL picks up on this, first by giggling and raising her fist in his direction, and then with a pretend "punch" to ORA. In this case the product is not explored for its supposed function (eating utensil) but for its form, relations to the body (stressed by GRL's giggles), use as an extended body part (GRL's "punch"), and for how its movements may be used to express aggressiveness (ORA's comment).



Fig 2: GRL holds up fist towards ORA and giggles

(1) Fist	
01	(3.8)
02	*ORA:((grabs oil bottle and turns the lid))
03	*GRL:((giggles and looks down on the object on her finger, then looks at BLK subsequently looks at ORA))
04	*ORA: It feels like you're ↓trying to -hurt -me with that
05	(5.8)
06	*GRL:((holds up fist towards ORA and giggles))
07	((pretends to "punch" ORA))

Transcript 1: Before eating, participants test ways of wearing the tool.

TESTING THE PRODUCT

After looking at the object as relating to their body, participants turn their attention to the object as a tool to "get eating done", that is, for its (supposed) actual use. When the participants are testing the product for actual use, another important factor comes in play apart from fit and wearing: the type of food one is approaching (Transcript 2). In this example, two participants, ORA and BLK, happen to have very similar kinds of food: salad and rice, while GRL has a plate of spaghetti. That means that two of the participants adapt a use style of piercing/scooping which does not seem to apply to GRL's food. When she uses the fork to bring the spaghetti to the mouth, they fall down due to the weight and their poor adherence to the object. So, while BLK and ORA have a conversation (not shown), GRL attempts to develop another 'technique' for eating spaghetti, where a regular fork comes in play as a support for rolling. In transcript 2 we can see when this technique is made relevant and visible by GRL, again by giggling, and how it prompts the reaction of her colleagues: BLK responds by proposing a better technique, which he demonstrates and verbalizes (l. 11). ORA, on the contrary, challenges the technique, thus prompting GRL to instead more strongly demonstrate its appropriateness (l. 10-14). The tool is here tested for the function it is supposed to accomplish, with more or less success. This test (l. 0 -15) brings in play other objects present in the scene, such as a normal fork, which is now reframed in its use from a piercing or scooping tool, as it is commonly used, to a "support" tool, like spoons are sometimes used when rolling spaghetti in other contexts. In this stage of the test situation, the new object is used (together with other objects) in order to maximize effective eating practices, exploring the tool's 'normal' use, the use that it is supposedly intended for by the designer.

1_4_RollingSpaghetti

01 ((ORA and BLK look at GRL))
 02 *GRL: Hh [hehe]
 03 *ORA: [wha↑t]
 04 (0.9)
 05 *ORA: what if (she needs to invent) [to:]
 06 *BLK: [HaHahA]
 07 (0.8)
 10 *GRL: no: tha[t worked out] perfectly:
 11 *BLK: [should do like this vzzz]
 12 *BLK: ((imitates rolling movement on one hand))
 13 *ORB: ((removes oil from camera's line of sight))
 14 *GRL: yeah- (.) see↑
 15 *GRL ((continues rolling))



Fig. 3: Rolling spaghetti. (l. 10)

EXPLORING USES OF THE PRODUCT

In the third phase, the tool is again explored, but this time not in relation to eating practices, but to a wider spectrum of activities that might be made possible by the use of this particular object, along with activities that might be impaired.

In the next extract GRL demonstrates a new idea she has got, “stealing”. She introduces a gesture which is repeated by her three times, and two times by BLK. This repetition seem to serve both as a demonstrative gesture, and affording “experiential reachability” (Nielsen and Caglio 2015). She initiates the sequence with a first act of verbalized embodied stealing (l. 2-4), which is accomplished so that she can actually eat one of BLK’s potatoes (l. 6). When he responds with an embodied protest (l. 7), and creates an explanation slot (l. 8), she produces a laugh token (l. 9). After that is no uptake, nobody co-laughing in more than 1 sec. (cf. Jefferson 1983 on one second as a “standard maximum” silence before participants begin treating it as problematic). Then she produces an account for her action repeating the gesture in coordination with “just go”, acting as demonstrative of the ease of movement, enacting this point by speed of movement. She sticks to the testing agenda, does not produce a follow-up to BLK’s focus on the appropriateness of stealing his food. This gesture does not reach – and is not directed anymore – to BLK’s dish, but is rather a stretch and retraction of the arm in the centre of the table. Now BLK is laughing (l. 16) and she continues her account.

1_10_StealFood

01 *GRL: ((looks at black's dish))
 02 *GRL: and it makes it easier to [steal food]
 03 *GRL: [((takes a potato from BLK’s dish))]
 04 (2.3)
 05 *GRL: ((eats the potato))
 06 *BLK: ((looks at GRL, makes a "what" gesture with the left hand: palm rotating upwards))
 07 *BLK: wh[y
 08 *GRL: [mhe
 09 (1.1)
 10 *GRL: because you can [just go]
 11 *GRL: [imitates stealing movement, stretching arm and quickly retracting it]
 12 (0.3)
 13 *BLK: ((laughing))
 14 *GRL: with the [fork you would]=
 15 *BLK: [((BLK rapidly makes stealing movement towards GRL's plate))]
 16 *GRL: I would see the fork but this is like:
 17 [(. hidden tshoonhh Hm ((Smiling))]
 18 *GRL: [((hides fork behind her hand, then imitates stealing movement faster))]
 19 (0.3)
 20 *BLK: ((laughing))]
 21 *BLK: ((quickly imitates "stealing" movement of GRL towards her plate))
 22 *GRL: hm.. ((smiles and nods while looking a BLK))

Then BLK copies her action of “stealing”, aiming it at her plate (l. 18-19), but does it in a subdued way, almost limited to his wrist and the finger wearing the fork. She responds to his action (l. 20) and explores further advantages of this particular use of the tool (l. 20-23). She embodies her account with another repetition of the movement, continuing to show how the tool can be “hidden” (covering the hand turning the wrist) and then quickly moving it towards the food. This movement is done very fast, and supported by a “Tsoon” describing its character. BLK acknowledges her actions by laughing (l. 25) and again copies her movements (l. 26). His action is then assessed by GRL with a smile and a nod.

In this stage, other lines of use of the object are also explored (e.g. typing on computer while wearing fork, scratching head, eating with two forks at the same time).



Fig 4: the stealing gesture

ASSESSING THE PRODUCT

In the final part of the lunch, participants engage again with the object as an eating tool, but now with their attention to evaluate it as an eating utensil.

1_9_wristAngle	
01	*BLK:and (then) you can get like uhh: (.) it's difficult to get an angle
02	*BLK:((repeatedly inclines his hand showing "angle"))
03	*ORA:uuhh: >yeah<
04	(0.4)
05	*ORA:like if you have to: cut
06	(0.5)
07	*ORB: ((brings the object to the far edge of dish))
08	*ORA:if you are eating from- kind of from the outside-
09	*BLK:((laughing))
10	*ORA:you have to grab from (somewhere-) (.) something from the middle it's
11	more difficult
12	(0.5)
13	*ORA:if it was a spoon (.) it would not work- you would get your
14	[hand on all time] on the=
15	*ORA [[[twists wrist]]]
16	*BLK:=mmMM
17	(0.6)
18	*ORA:on the soup

In this phase, they produce assessments: "difficult" or "more difficult" (l. 1, 11), exposed or embedded if-then constructions (l. 1, 5, 8-10, 13), they explore hypotheticals (l. 1, 13-18) and they produce uptakes to show agreement or acknowledgement (l. 3, 9, 16). Parts of their evaluation focus on the experienced body position for the specific activity of eating, and they discuss possible implications of the extension of a similar design to other dining tools such as spoons. Their talk is now not just about *this* tool as used at *this* particular occasion, but hypothesizing and generalizing to patterns of eating, and with application to different kinds of food.

DISRESPECTFUL TESTING

Observing the participants' behaviour in this setting, it is clear how their project is to test something new together, and everybody is aware of that purpose and collaborating on pursuing it. Even though this is a real situation of use, it is treated as a test setup, (perhaps visible in GRL's "overriding" practices of proper manners, such as not stealing food, for the purpose of testing). Participants are ready and anticipating the test situation



Fig 5: ORA and BLK test the wrist angle.

before they begin unwrapping the objects and their will to collaborate extends even to after they stop finding it interesting (not shown in this paper is how BLK returns to using a normal fork and then begins using the new fork again). Applying the tool to an authentic eating session where participants in fact empty their plates while not having members of the design team present might create a situation where the participants feel more free to use the object in a teasing and somewhat critical way, even if they have a videorecorder in front of them, and if they might infer that the designer will study the recordings afterwards. They do not seem to consider issues of saving face for the designer, they are on-and-off collaborating on testing as the main activity to collaborate on, and they take the testing seriously while not being occupied with limitations to what could be tested. They take the initiative to use a normal fork instead of the ring fork, or as a tool to enable certain new uses of the ring fork. Such actions show their 'disrespectful' use of the tool, thus imitating an authentic end user's actual use situation. It is our conviction that exactly *due to* this disrespectful, and even critical, look at the prototype, designers can learn something more about the products they develop, by testing them "in the wild".

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