COPYING AND LEARNING IN TESTING

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ABSTRACT
In this paper we unfold the local achievement of co-created affordances of an object in a natural test situation. Based on video recordings of people testing together (in the wild) the functions and properties of a new object, we show how the participants use embodied strategies in copying the handling of the object and familiarizing themselves with it; how they negotiate the use of the object by means of repeating or modifying each other’s movements; how they treat a given use of the object as something to ‘learn’, how they strive to be considered first movers in a certain use of the object, treat each other as experts and novices in use of the object, take turns in taking the roles, and attribute status to the role of expert/first mover.

INTRODUCTION
We will study how participants testing in the wild treat each other as experts (first movers in a new use of the tool) and novices (copyist in a certain use of the tool); how they signal a will to learn and cooperate by copying; how they familiarize themselves with an action by means of copying it, their embodied strategies of selecting an action as noteworthy by copying it, thereby giving it attention and acknowledging it; and finally, how they negotiate use of the tool by means of copying and redrafting (using in a similar way but slightly differently). The case is three participants’ first use of a modified piece of cutlery.

From a designer’s point of view, one of the main points of reference when designing new artifacts is the concept of affordances. The term, coined by Gibson (1977) to describe the qualities of an object or environment that allows an individual to perform an action, was later introduced in the design discourse by Norman (1988), who reinterpreted it as guiding concept for user centered design. In Nor-

man’s sense, affordances referred to what people could perceive as possible spaces of action with an artifact.

However, it is now acknowledged that affordances alone cannot explain, let alone constrain, how people understand a product and its use. As Norman himself has later recognized (2008), this process does not happen in a void. On the contrary, it is related to the specific circumstances and contexts in which we encounter products, and in the way other people might understand and use those products too. The definition of what objects and their ‘functions’ are, is not a one-off process stopping in the design studio, nor is it a simple linear relationship between an actor and an environment. People continuously make sense of ‘things’ as part of the social environment they belong to and the activities they are accomplishing, recruiting them as resources in and for interaction, using them in different ways, talking about them or referring to them. Through use, they display their understanding of what an object is, and what it is supposed to do.

This paper explores how people make sense of a new object together, how they make their understandings of it visible to each other, and how they collaborate in reaching an agreement on what an object can be used for. We use data from an ongoing project exploring how people make sense, in interaction, of unfamiliar things, carried out by one of the authors. The project consists in the redesign of common objects such as cutlery, so that they become somewhat estranged, and asking participants to test these objects in the context of their everyday activities while video recording themselves. Participants are not given any instructions as to why the objects are designed in a certain way, or how they are supposed to be used. We focus on the role that copying or mirroring actions have when people use the new object and explore it in terms of its general use (such as handling) and its functions and, so to say, make the “emergence” of new affordances possible.

STUDIES OF COPYING AND MIRRORING
Studying prototype testing as an embodied practice entailing copying of other participants’ actions is a new endeavour. However, studies have been made of the use of echoing, mirroring and repeating in a range of other social situations. In order to copy, or repeat, there must be some prior action (Johnstone et al. 1994). Repeating something puts it in brackets and selects it for further treatment (Jefferson 1972; Johnstone et al. 1994), establishes something as ‘new’ or challenges the
first mover to elaborate on an aspect (Bean & Patthey-Chavez 1994). Therapists may repeat (mirror) the client to elicit further talk on the theme (Ferrera 1994). Patients in therapeutic conversations may repeat (echo) the therapist at key points, thereby marking the prior as noteworthy and concise (Ferrera 1994). Novices echo and redraft expert versions in order to accept expert versions; and experts do it in order to confirm a novice action as correct (Bean & Patthey-Chavez 1994).

Learning something new entails repetition (Bean & Patthey-Chavez 1994). Repeating something gives it a sense of familiarity, cognitive accessibility and experiential reachability (Merritt 1994: 33). Shadowing colleagues as an apprentice/novice is a key learning strategy (McDonald 2005). Copying/echoing demonstrates a will to cooperate, makes actions assessable by the more experienced, and makes it possible for novices to coordinate input and process information (Bean & Patthey-Chavez 1994). Other-repetition offers participants a resource for not only interpreting but also for engaging with some learnable, analyzing it, and putting it to use in ways that enable players to display and develop their competence (Marsh and Tainio 2009).

Repetitions may be identical (allo-repetitions or copying) or redrafts/paraphrasing (Bean & Patthey-Chavez 1994). Participants make use of reduction and expansion as well as identical repetitions when acquiring new knowledge (Bean & Patthey-Chavez 1994): Novices echo with reduction; expansions are used by experts to give the novice models for better versions, and redrafting (especially of own actions) is used by them to signal a will to collaborate; whereas self-repetition and -redrafting appear in competitive situations.

DATA AND RESULTS

This paper focuses on a case of a first encounter and use of a modified piece of cutlery, consisting of a fork whose end consists of a ring rather than a handle (fig.1).

The participants in the extract are three colleagues, ORA (left in the picture, fig. 2), GRL (centre) and BLK (right), working together in a small company owned by ORA, and having lunch together in their work break.

DEMONSTRATING AND COPYING

In the first extract, participants are getting ready to eat, with ORA dressing his salad and the other two participants studying the object (l. 02-05). BLK shifts his fork to the middle finger, raising the hand and the middle finger towards ORA (l.06). This gesture does not receive any response by his interlocutors, still engaged with their current activities. At this point BLK makes another attempt by bringing the hand down (l. 07), repositioning the object on the finger and redrafting the gesture. This time he is verbalizing it as a thing for them to do: "we're doing like this" and holding it up for mutual inspection (l. 09-10).

GRL giggles and copies his behavior by switching her own fork from index to middle finger (l. 09-11). ORA has been observing (l. 10) and is ready to evaluate (l. 12). By these actions BLK constructs himself as a first mover, and GRL confirms that local identity by copying, following, his action.

NEGOTIATING VERSIONS BY COPYING

In the next example all the participants come up with an idea about how to use the object or wear it. First ORA introduces a use by asking "is this to grab like this" and demonstrates his suggestion (l. 02-04). GRL copies (l. 05-10), while BLK acknowledges (l.06).
01 *ORB: ((looks at his object holding it in hand))
02 *ORA: I think it's- is this to grab like this?
03 (0.5)
04 *ORB: ((picks up salad from dish))
05 *GRL: ((removes object from finger))
06 *BLK: mmM
09 (1.4)
10 *GRL: ((grabs object like ORA))
12 *BLK: nna: I think it's like this (raises his object)
13 (1.6)
14 *GRB: ((looking at BLK, changes object position to
index finger))
16 *ORA: heh
17 (0.5)
18 *GRL: oh yeah
19 *GRB: ((picks up spaghetti with the tool on her
finger))

Then BLK, who has not changed his wearing position
intervenes by proposing another version as a counter
proposal “nna: I think it’s like this”, with the “nna” serv-
ing as a boundary marker and marking a mild protest.
GRL again copies, from BLK this time, producing a
change-of-state token (Heritage 1984), marking the new
version as surprising to her and agreeing with him. She
then continues to approach her food using the new me-

1_8_Type
01 all keep eating
02 *GRL: I like it
03 (0.3)
04 *ORB: ((slightly shakes fingers))
05 *GRL: it's kind of nice because you have
[your fans- hands free]
06 ((gesturing with her
07 hands in front of herself))
08 (.) if you wanna type on the
09 comp[uter at the same time] you [can do th↑at
10 *GRB: [[(imitates typing on the table)]]
11 *BLK: [hhehehe ]
12 *ORA: [oh ri↑ght]
13 (0.5)
14 *ORA: true
15 (all "type" with their fingers on the table))
16 *BLK: no I- (0.4) I can't do it
17 (1.5)
18 *BLB: ((repeatedly hits the tip of the fork on the table))
19 *ORA: yeah but [you use the other fingers]
20 *ORA: ["types" on table without
21 using index finger])

CONCLUSION
In this paper we have shown how participants use
embodied strategies of selecting physical and verbal
actions by copying them, thereby bracketing, giving
attention to and acknowledging them as noteworthy.
The participants treat each other as experts (achieving being copied) or learners (copying) in using the fork, not as equal participants proposing different or parallel uses. They do so by demonstrating and copying particular uses of the tool and/or by acknowledging or assessing demonstrated versions. However, they also negotiate use of the tool by means of copying and redrafting, and by redrafting redrafts.

They together explore new ways of using the tool, in expected as well as unexpected ways, and they take turns in the roles of expert user and first mover, and of second mover copying a proposed action.

They not only propose using the tool in a similar but slightly different way, but they also verbalize the suggestion as such. They collaborate to reach an understanding of what the object can be used for.

Finally, participants signal a willingness to learn and cooperate by copying each other, repeating and verbalizing their efforts. In this respect, they familiarize themselves with proposed new actions by means of copying them. They are 'learning' to eat in new ways by means of the new eating tool they are testing, and they make visible to each other their growing understandings.

DISCUSSION

Participants testing not only make use of affordances in the test situation; they co-create affordances as they go through testing and making sense of the new object together. Affordances are thus not fixed, and not restricted to the relation between product and individual, but may be co-created as a group.

The expert/learner roles are used to test a suggested type of use, and they are performed by actions of repeating or redrafting the actions of a first mover. The moves are not just tried out by means of copying; the participants acknowledge first mover actions, and strive to achieve a local identities of a first mover, thereby giving status to the role of being first mover.

Studies of video recordings of testing in the wild of an object gives designers an opportunity to see how future users make sense of it while using it to co-create attractive local identities for each other. It invites designers to step away from a pre-allocated identity as author/first mover (by designing) and explore the co-created affordances of object use made available by users in interaction with other users while using the object.

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REFERENCING