



Making individual perception available in interaction

A video and eye-tracking based study of visitor interaction in the Science Centre

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Motivation/Background

Making individual perception available for each other is a pervasive feature of visitors' interaction in the science centre. During the use of exhibits, it dominates substantial parts of the interaction.

State of the art

Previous (video-based) research in a conversation analytical (CA) tradition on the question as to how interactants share individual sensory perceptions in interaction:

- focus mostly on visual perception (Goodwin 1994, Hindmarsh & Heath 2000, Koschmann et al. 2011)
- few exceptions (Streeck 2012; Brandenberger & Hottiger 2018)

In the museum context (Lehn & Heath 2007; Heath & vom Lehn 2001; vom Lehn et al. 2001)

- visitors assimilate their perspectives through social interaction in art galleries (vom Lehn and Heath, 2007)
- visitors configure (using verbal and embodied means) their ways of seeing an exhibit for themselves and for each other (cf. vom Lehn & Heath 2007: 160)

For the science centre, Heath & vom Lehn (2001) showed how visitors manufacture experience for each other.

Characteristics of the science centre

- the perception in question is often not an object but a phenomenon to be produced through manipulation of exhibits.
- the phenomenon has to be constructed through visitors' interaction and is thus a product of interactively sharing and negotiating individual perception.
- collaborations at the hands-on exhibits frequently involve the exchange of sensory perceptions beyond the visual, such as touch, proprioception, or hearing.

This project takes into account how visitors use verbal and bodily resources, as well as the exhibits at hand, to make their multisensory perceptions available to each other. In doing so, it takes a step towards a domain in which there have been only a few pioneering studies (Streeck 2012, Pink 2009).

Data and methods

The data consists of video and eye-tracking recordings of naturally occurring interactions of pairs and small groups of visitors to the Swiss Science Center Technorama in Winterthur, Switzerland. Current corpus size: more than 35 hours. 111 video recordings, 43 of them additionally with eye-tracking.

Analysis draws on the methods developed in CA and multimodal interaction analysis. Analyses in this tradition stick strictly to the sequentiality of the unfolding events and adhere to resources which are available to the interactants themselves. This approach with an emphasis on multimodality provides a useful framework for a detailed qualitative investigation of visitors' actual use of – and interactions at – exhibits, as has been demonstrated in previous research (cf. e.g. Heath & vom Lehn 2001; Heath & vom Lehn 2008; Heath, vom Lehn & Osborne 2005, Kesselheim 2005).

Research question

Which are the concrete verbal and embodied techniques which visitors to the science centre use to make their individual perceptions available to their partners?

Preliminary findings

To share their individual perception, interactants fulfil a number of interactive tasks:

to display one's state of perception (P) with respect to ...	to display one's state of perception (P) with respect to ...
p1 (that sth. is perceived)	p1
p2 (how it is perceived)	p2
p3 (how it is assessed)	p3

to convey one's perception (p1) (can also be achieved through display p1)	to adopt the perception of the other (p1)
to convey K about P (p2) (can also be achieved through display p2)	to collect K about P (p2)
to check/evaluate the partners assessment of P (p3)	to assess P (p3)

conveyor (P+) of perception	addressee (P-) of perception
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The roles of conveyor (P+) of perception and addressee (P-) of perception are constituted through these tasks.

P = the store of joint perception (of something/a phenomenon) which is interactively constructed and constantly modified in the course of interaction.

K = knowledge about P (cf. Heritage 1984).

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165 (10.0)
166 JUA: $A da isch WITZig
           ah, this is funny
           $walks towards exhibit--->
167 BEA: WAS?E
           What
           $gaze@text----->
           jua
           jua
168 JUA: hi HI,
           jua
169 (1.5)
170 $BEA (-) $ # [1] JU: , $
           --> $
           $movement1-$
           bea
           bea
171 (3.0)
172 $JU: , $
           $movement1$
           bea -> $gaze@jua----->
           ((lachen))
           musch mal DOT luegeE (--)$A:$#[2]:$,
           you have to look there
           $movement1$movement2$
           bea
           bea
173 (5.0)
174 JUA: $hi HI JA: (-)
           Yes
           bea.. $in position behind jua----->
           $M: $, $
           $movement2$
           bea
           bea
175 BEA: $((lachen))E
           bea
176 (3.0)
177 JUA: etz musch au MA:L,
           now you have to (do it) too
178 (2)E (1.5)
           bea
           bea
179 $movement2 repeatedly----->
           ((lachen)) hahaha (-)E
           --->E
180 BEA: ((lachen))
181 (3.0)

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If somebody is considered by himself and/or the partner(s) as "having" a perception which is more complete than the others have, he or she can be said to be P+, if his or her perception is considered as more incomplete, P-.

Interactants' actual states of perception (P+ and P-) are not only relative, but also dynamic and constantly modified in and through interaction.

To share perception, in order to construct a joint P, is an important motor of interaction in the science centre.

A joint P can either be the predominant "goal" of an interaction at an exhibit or build a joint perceptual store as a basis for further steps, such as knowledge construction or experiments with the exhibit at hand.

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