BACKGROUND

**ISPR**: sense of presence as “sense of being there”, “we are together”, “it is there”, in a “real time experience”

But delays remind the mediated aspect, and can impact the experience of a remote presence: how do they affect the sense of presence?

**Phenomenological issues**

What does the Husserlian distinction between presentation and representation mean in the light of technical mediations?

What is the role of temporality, and how Husserl’s retention-protention can help to think the dynamic dimension of presence?

Hypothesis: The sense of presence (the experience of the other as being there “in person”) emerges through the kind of perceptual activity deployed when we are confronted to another intentional subject, a constitutive reciprocity.

Delays will impact the sense of presence when they modify/prevent this type of interaction by disturbing the ability to perceive the other’s intentional activity.

METHODS

**Perceptual Crossing paradigm in minimalist conditions**

- Situated and embodied cognition: organism-environment coupling through sensorimotor contingencies (Varela et al., 1993; O’Regan & Noë, 2001; Lenay, 2006)
- Association of a perceptive field with a body-object
- Perceptual Crossing (Auvray et al., 2009): mutual perception of perceptual activities during an interaction and reciprocal awareness of being present for the other
- Synchronization and coordination of actions as “proto-conversation” (Tansella et al., 2005) through highly dynamical processes (Lenay et al., 2003; Murray & Trevarthen, 1985)

**TASK**

Discriminate and click on the other’s avatar (A), avoiding the mobile lure (ML) and the fixed object (FO)

Participants: 28 students in pairs (13 girls and 15 boys) from 21 to 25 years-old

RESULTS

- **No delay**: More stimulated by the other’s avatar and more clicks on it
- **300 ms**: Less stimulated by the avatar and more by the mobile lure, but still more clicks on the avatar
- **600 ms**: No differences in stimulations between the 3 objects, but difference between clicks on moving objects and fixed objects

CONCLUSIONS

- **Invariants in sensory-motor cycles**, and not in the sensorial information, that enable to make sense of the sensations:
  - temporality of actions in the physical world must be related to temporality of avatars in the virtual environment in order to create a dynamic turn-taking strategy constitutive of the intersubjective experience (Kojima et al., 2017)
  - The retention-protention process is useful to think temporality of perceived sensations as constitutive of the object’s properties (its phenomenality)
  - time delays have an impact on the phenomenization of the other as another intentional subject, a body acted by a subjectivity
- **Delays = no more co-functioning** (Merleau-Ponty, 1942); but **rivalry** (Sartre, 1943)

Sense of presence through the perception of a phenomenon as the trace of the other’s presence, and not only the presence of its trace.

Future work

Effects of the time delays’ nature (delay on stimulation, action or transmission of information) depending on the nature of the presence (static, mobile or intentional).

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