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Life and social cognition: Interacting autonomous agents & participatory sense-making



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Overview

- social cognition:
 - individualist views
and some of their problems
 - enactive alternative:
 - participatory sense-making**
 - social cognition is not in the head, but in the interaction
- where does that leave responsibility?



social cognition: individualism

Some “definitions”:

- “The study of information processing in a social setting”, Frith, 2008, p 2033.
- “the cognitive processes used to decode and encode the social world”, Beer & Ochsner, 2006.
- “What makes social interactions so different from our perception of the inanimate world is that we witness the actions and emotions of others ... A crucial element of social cognition is the brain’s capacity to directly link the first- and third-person experiences of these phenomena”, Gallese, Keysers, Rizzolatti, 2004.
- Aims and scope of *Social Cognition* journal:
 - The processes underlying the perception, memory, and judgment of social stimuli
 - The effects of social, cultural, and affective factors on the processing of information
 - The behavioral and interpersonal consequences of cognitive processes.



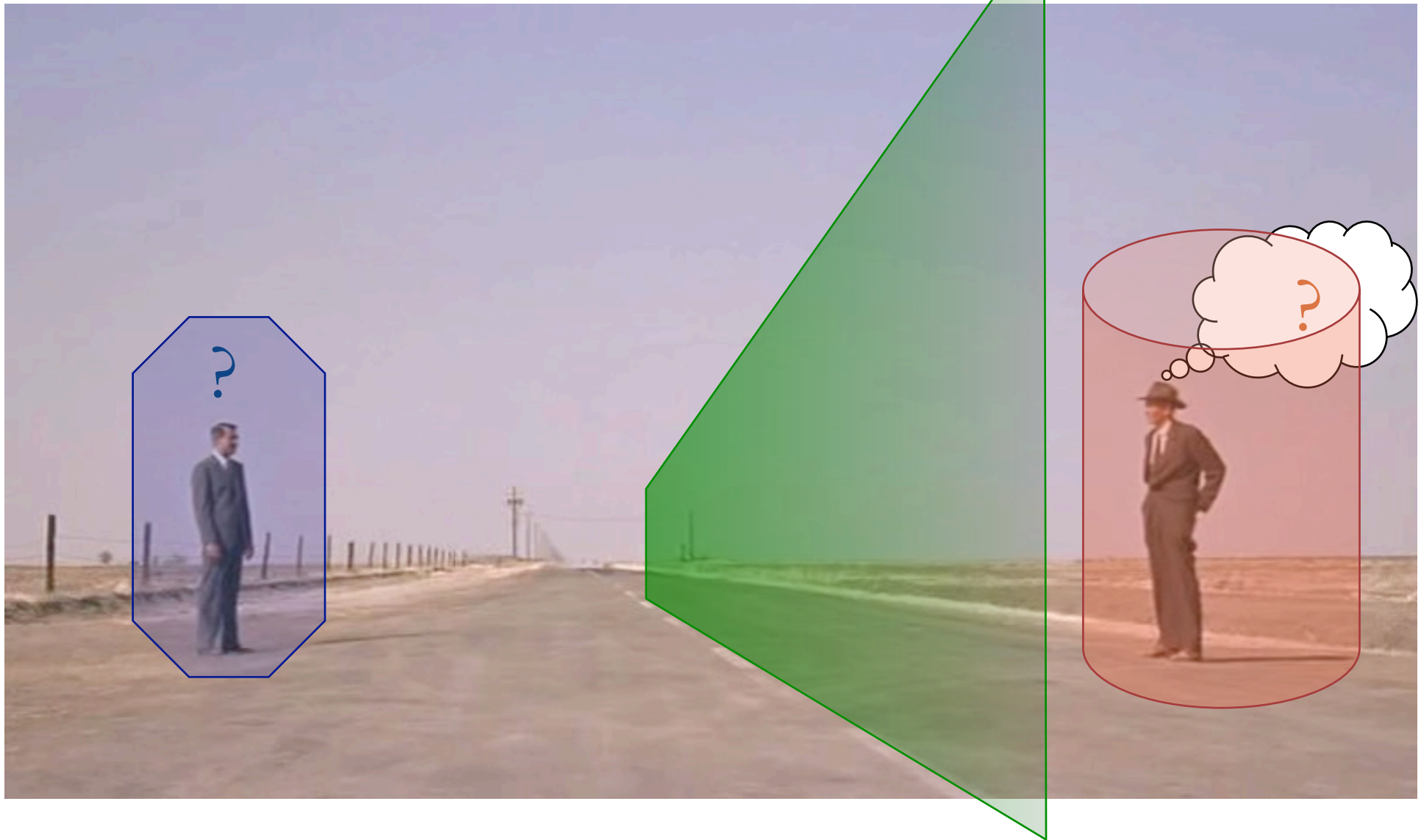
social cognition: individualism

Social cognition is typically a version of normal cognition in a social setting;

the “social” here is no more than a context.

an illustration of individualism







a Rear Window approach

- The social dimension is never defined (assumed uncontroversial)
- Social events are observed remotely.
- Social cognition happens in the individual.
- The individual is generally passive.
- Social cognition is simply a more complex case of individual cognition.
- The other is a problem to be figured out.
- The cognitive processes deployed are disengaged from the interaction itself.
- Interaction resembles a discrete exchange of gifts, rather than a dynamical process



a science of one problem

The problem of social cognition today:

*What are the brain mechanisms to figure out
another person's intentions?*

(That's it)



a multiplicity of problems

love tact making meaning together communities
joint action language
group dynamics storytelling politeness attachment
responsibility recovery from breakdowns discrimination of agency friendship
social norms humour sustaining an encounter
social scaffolding conflict negotiation changing relationships division of labour
macro-organizations face emotion manipulation
aggression trust regulation personal space



enaction

- Five central ideas:
 - *autonomy,*
 - *emergence,*
 - *embodiment,*
 - *experience,*
 - *sense-making*

(Varela, Thompson, Rosch, 1991, Thompson, 2007, Di Paolo, Rohde, De Jaegher, 2007).



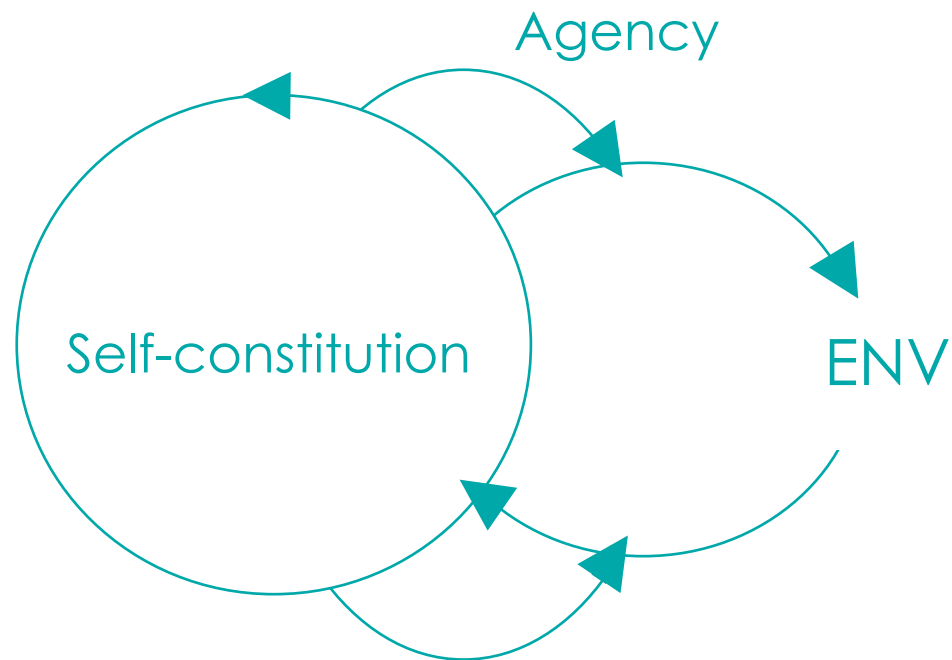
autonomy

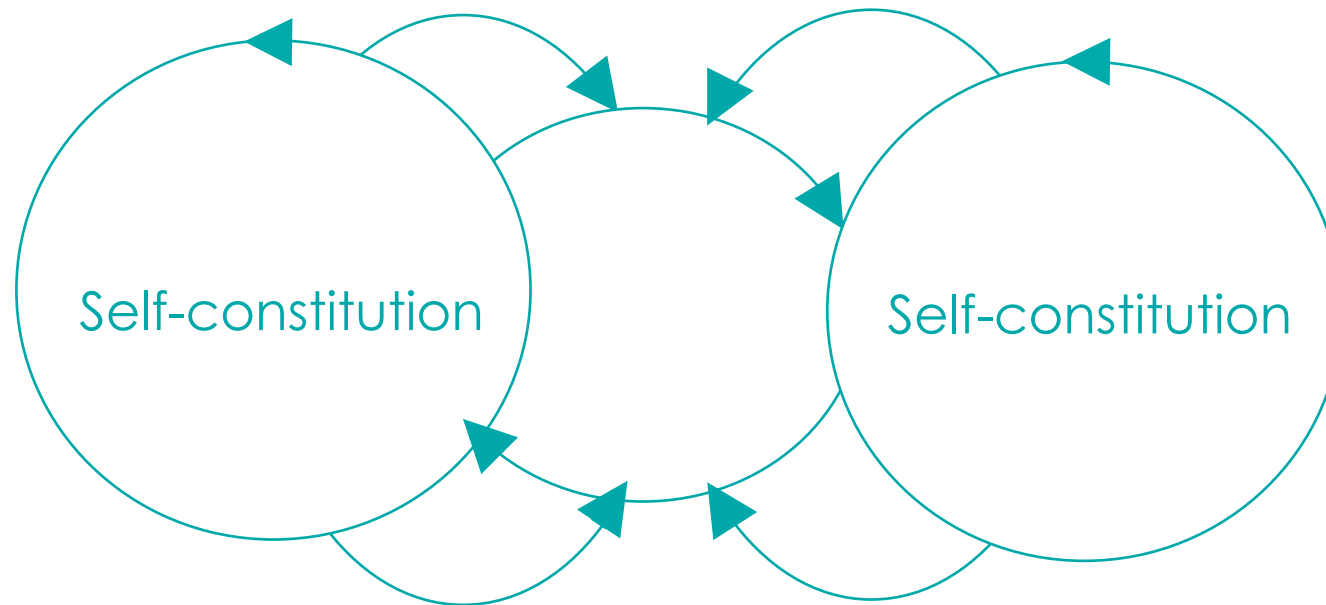
- An autonomous system is a network of processes that mutually enable each other (operational closure) under precarious conditions.
- Each process in the network is conditioned by other processes in the network and is itself the condition for other processes in the network. (The system may also affect and be affected by processes that are external to it.) (Varela 1979, 91, 97; Thompson 2007; Di Paolo 2005, 09; Di Paolo, Rohde & De Jaegher 2010)
- A autonomous system gives itself its own laws.
- Only a system able not just to modify itself, but to build itself as an entity.
- *Autonomy: a precarious, self-sustaining process of identity generation.*
- Classical example: autopoiesis, but others are possible.

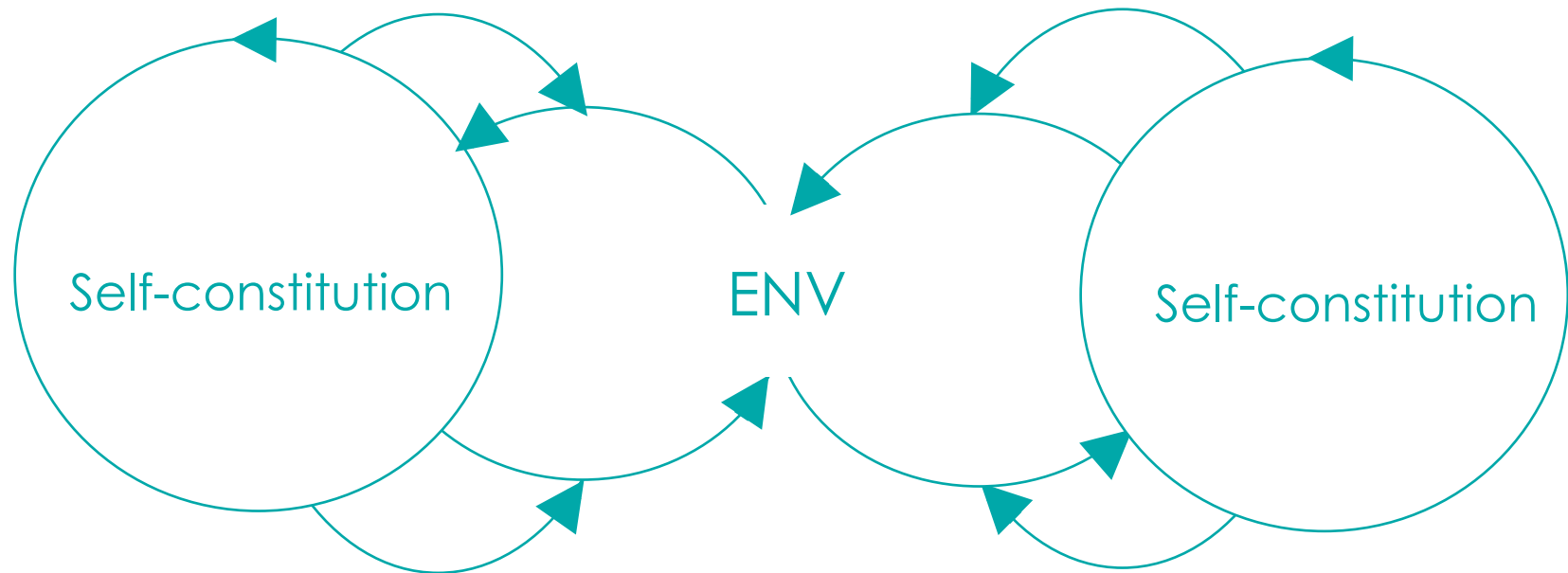


sense-making

- A self-generated identity implies a **normativity** with respect to interactions with the world.
- If the system can regulate its interactions with the environment on the basis of this normativity, the system is now capable of *Sense-making, the active engagement with the world in terms of meaning and value.*
- *Agency*: sense-making in the interactive domain: when the system adaptively regulates its coupling with its world.
- *Behaviour*: The control and selection of what physical exchanges to suffer. It has intentional structure, it may fail or succeed.

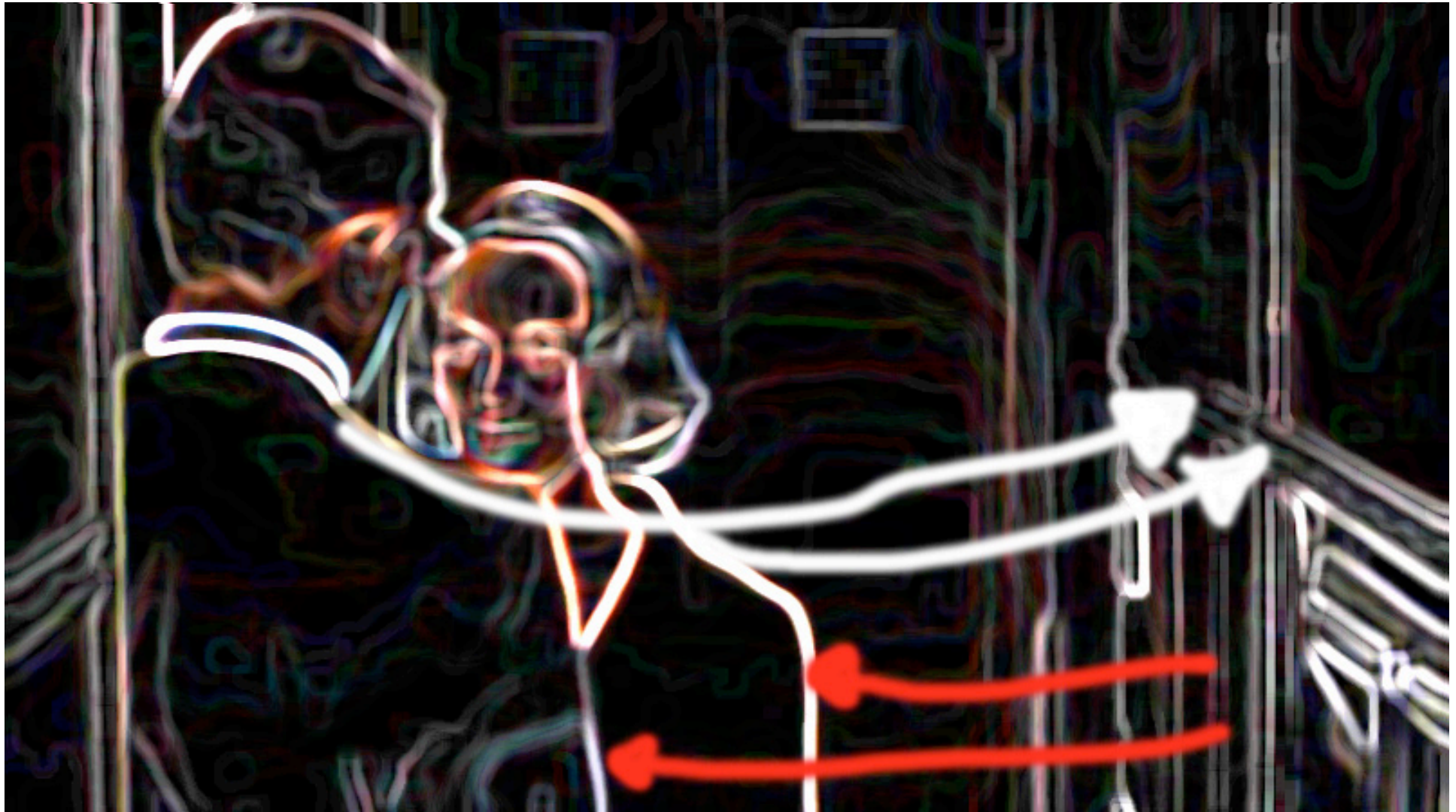






an alternative starting point







enactive take on social cognition

- Point of departure
 - Not the individual, but the interaction.
 - The dynamics and autonomy of the interaction process
 - The emergent identities of interactors through interaction.
- Moving towards
 - How sense-making is affected by interaction
 - How we develop as individuals in a social context



social interaction

- **Experience:** in social engagements, the other is never like an object (i.e. a totalizing relationship, Levinas), she is sometimes predictable and transparent, but other times opaque and actively escaping my understanding and also often prodding my own behaviour and sense-making (infinetizing, Levinas).
- A dynamical perspective on the interaction process suggests its transient **autonomy**.
- An interaction is therefore partially **responsible for its own outcome** (even, often, to the frustration of the interactors).
- Patterns of **coordination** and **breakdown** would act as the component processes of social interaction.



what makes it *social*?

- Two conditions:
 - Mutual coupling is co-regulated so as to achieve (temporary) operational closure (autonomy) of the process
 - The autonomy of the interactors is not destroyed in the process
- The “social” is not merely the context, but the constitution of social cognition.



coordination

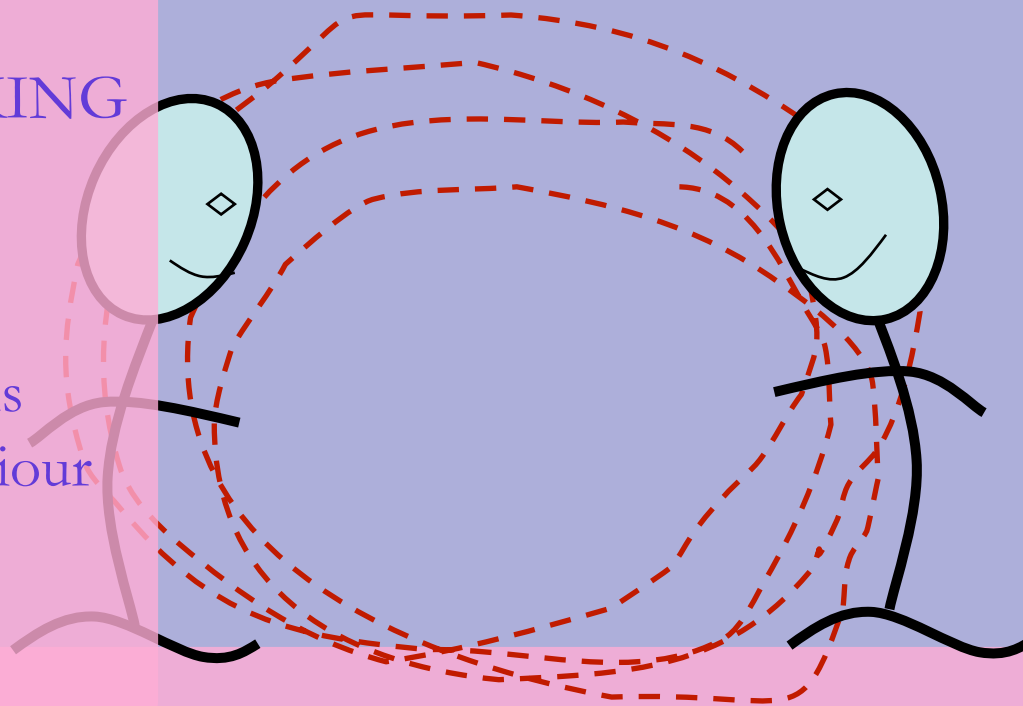
- It just happens, it is relational.
- It has its own dynamics (patterns of breakdown and recovery, absolute vs relative coordination, etc.).
- Kelso, Fogel, Schmidt & O'Brien, etc.
- Can be un-intended, for instance, the corridor situation.
- The concept of coordination is a dynamical systems tool for empirical research.

participatory sense-making

The individual:

SENSE-MAKING

The tools
&
expressions
of this behaviour
are
movements



The interaction:

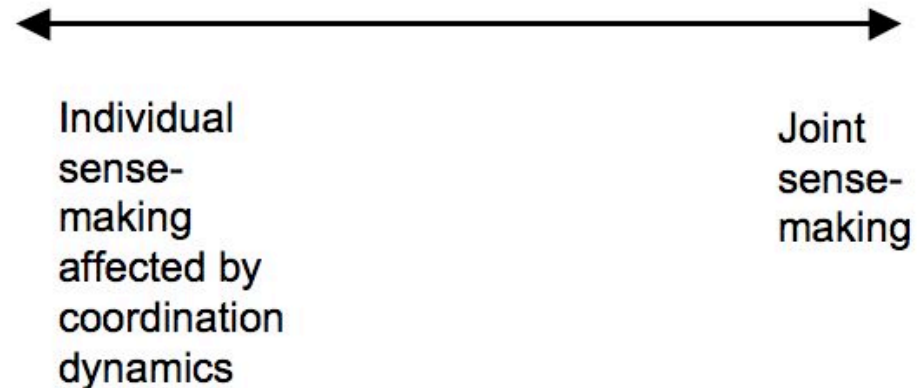
PARTICIPATORY SENSE-MAKING



participatory sense-making

- When coordination structures affect individual sense-making.
- Co-regulation of intentions, areas of concern, and joint sensorimotor contingencies.

Degrees of participation in sense-making



Orientation: mother-infant affect regulation (Stern, 1977)

Joint sense-making: act of giving (Fogel, 1993)



the dynamics of meaning creation

- From the enactive perspective, how can we understand the creation of novel meaning in social interaction?
- We need to understand it as a dynamical process of intermittent breakdowns and recoveries of coordination patterns.
- A process of interactional self-organization



habits of interaction

- During a history of plastic changes (in the interactors but also in the surrounding world) novel meanings get sedimented as (and if) breakdowns are recovered.
- Objects and patterns of activity acquire meaning in the interaction.



examples

- Music improvisation (building on what's shared) - temporally present
- Private meaning: sustained interactions develop their own language and shared perspectives. For instance, Levin and Kitty's dialogue using the first letters of words, written in chalk, in chapter 13, part 4 of Tolstoy's *Anna Karenina* - temporally extended
- “Birth of a gesture” - transition from pointing to grasping as building on social compensation of initial breakdowns of action.
- Implication: meaninglessness can sometimes be a failure to share a new meaning: Echolalia in autistic children (Stribling)
- Pervasive patterns in parent-adolescent interaction (I. Granic)



roles for social interaction

- Social interaction can be complex, and can be involved in social cognition to varying degrees.
- Interaction can be the **context** for an individual cognitive performance, but, we suggest, is likely to also be an **enabling** factor for the capacity underlying that performance (3rd person observation). Interaction can even be **constitutive** (perceptual crossing, giving, etc.).



where does that leave responsibility?

Shaun Gallagher on self-agency based on participatory sense-making

- agency is not complete self-agency
- agency is made in interaction
 - some interactions give you more free will than others
 - some interactions give you more responsibility than others
- Role of reasoning? Reasoning and reflection are themselves interactional.
- Conversable agents (Pettit)? not only “conversationally recognisable reasons,” but *conversationally established, negotiated* reasons
- Time. Just like responsibility is not individual, it is also not a point in time.
 - “give and take of reasons” Antonio



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Thank you!

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