

One step forward, two steps back – not the Tango: comment on Gallotti and Frith

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Does it take two to tango? According to Gallotti and Frith [1], one thing required for joint action is the right psychological attitude, namely ‘mental representations’ in a ‘we-mode’, which they paradoxically describe as both irreducibly collective and belonging to the individual. However, by eschewing the explanatory power of interaction dynamics in favour of individual mental attitudes, the authors are unable to account for how the we-mode functions, gets coordinated, or is even possible.

The authors take a step forward by noting that social encounters often find us adopting an attitude in which we move in a ‘we-space’ of action, attention, affect, language, and concerns. This is welcome in the context of a move away from individualism in social cognition research [2–5].

Stepping back from this idea, however, Gallotti and Frith miss some of the subtleties of a genuinely plural psychological attitude by focusing on the we-mode in relation to joint, goal-directed action. A sense of being together, and interacting together, can be sustained despite the absence of joint action goals, as Murray and Trevarthen’s double TV-monitor experiment shows [6]. The intentions of mother and infant need not be shared, but are nonetheless coordinated in a give-and-take that keeps the parties together, giving rise to a subjective we-experience. The infant loses interest or becomes distressed if shown a delayed video of her mother, suggesting that sustaining a we-mode requires real interaction but not necessarily a joint-action goal.

Our second worry concerns the coherence of Gallotti and Frith’s proposal. How is a psychological mode irreducibly collective, if all its manifestations and functionality are reduced to individual ‘representations’? They contend that mental activity in the we-mode is possible in the absence of engagement with others. Consequently, the we-mode is definitely not collective (much less irreducibly so), but strictly individual (carrying trans-individual content, like most intentional attitudes, social or non-social). More than just possessing such a mental attitude is required for joint action, we are told. But not what more – except the engagement of two agents in the we-mode. Lacking a definition of what they mean by engagement, this can be taken, in circular fashion, to mean joint action itself.

The situation is at best unclear. Does a person adopt a we-perspective, which happens to be appropriate to situations of interactions with others? Or does the interaction shape individual attitudes, thus making the we-mode an interactive achievement? In the first case, it remains unclear how the necessary coordination is achieved such that group members adopt we-attitudes that produce joint performance. In the second interpretation, interaction has a formative role for individual attitudes beyond that of ‘content’ and affects not only what an individual intends in a social context but also how she intends. Gallotti and Frith accept the first possibility and reject the second, without further explanation. We think granting interactive dynamics their proper role can ease tensions the authors must otherwise confront.

Why the resistance to acknowledging truly collective factors? The reason cannot be the lack of a precise definition of social interaction [2,4] or of supporting empirical evidence [2,3], which goes undisputed by the authors. Is it a suspicion that the idea of a collective factor playing enabling or constitutive roles is theoretically unsound? Here, too, arguments have been presented, clarified, discussed, and improved [2,7]. No firm grounds have yet been found to discard them nor do the authors offer any.

It may be uncomfortable to consider a truly extra-individual constitutive element in social cognition, even if it is measurable, increasingly studied, and already enriching social cognition research. Contrast these features of social interaction with the difficulties of studying empirically a putative internal psychological mode that may or may not coincide with situations of joint action. We do not understand the discomfort, because granting some autonomy to interactive dynamics does not divest individuals of their autonomy (by the definition of social interaction). Is it an ideological issue?

Participatory sense-making [2], far from describing how interactions ‘define and constrain the contents of individual minds’, refers to the mutual shaping of psychological attitudes through a history of coordination, breakdown, and recovery during social encounters. It does not need the prior adoption of a we-mode to occur or even an intention to engage. It can just happen. And yet, this process can easily account for the spontaneous emergence of plural psychological attitudes, as mutual co-regulation of the interaction develops into mutual recognition [8] and

finally into a sense of shared, mutually shaped intentions towards the world. This we-mode-in-interaction is irreducibly collective.

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References

- 1 Gallotti, M. and Frith, C.D. (2013) Social cognition in the we-mode. *Trends Cogn. Sci.* 17, 160–165
- 2 De Jaegher, H. *et al.* (2010) Can social interaction constitute social cognition? *Trends Cogn. Sci.* 14, 441–447
- 3 Di Paolo, E.A. and De Jaegher, H. (2012) The interactive brain hypothesis. *Front. Hum. Neurosci.* 6, 163
- 4 De Jaegher, H. and Di Paolo, E. (2007) Participatory sense-making: an enactive approach to social cognition. *Phenomenol. Cogn. Sci.* 6, 485–507
- 5 Schilbach, L., *et al.* Towards a second-person neuroscience. *Behav. Brain Sci.* (in press).
- 6 Murray, L. and Trevarthen, C. (1985) Emotional regulation of interactions between 2-month-olds and their mothers. In *Social Perception in Infants* (Field, T.M. and Fox, N.A., eds), pp. 177–197, Ablex
- 7 De Jaegher, H. and Di Paolo, E.A. (2013) Enactivism is not interactionism. *Front. Hum. Neurosci.* 6, 345
- 8 Froese, T. and Di Paolo, E.A. (2011) The enactive approach: theoretical sketches from cell to society. *Pragmatics Cogn.* 19, 1–36

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Response to Di Paolo *et al.*: How, exactly, does it ‘just happen’? Interaction by magic

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Can attributes of individual minds, like representations in the *we*-mode, be irreducibly collective? To claim that a positive answer is paradoxical suggests an approach involving a false dilemma. According to Di Paolo and colleagues [1], if there really are attitudes in the *we*-mode, they must be group-level psychological features of interactive units. Those who start with individuals and their brains – here is the second horn of the dilemma – can only concede that individual-level representations in the *we*-mode are at most ordinary representations with ‘trans-individual’ content, but no truly collective component.

Groups are more than collections of individuals, so it is uncontroversial that there should be causally efficacious traits emerging at the level of interaction dynamics [2]. But there is no reason to suppose that we need to posit anything of the sort when we ask what agents individually bring to social understanding and action. After all, it takes two *individuals* to tango, so whatever is involved in group behaviour must include, among other things, individuals with mental states that are causally connected with their actions in ways that enable them to act together – as a group. One might object that, even on the view that interaction shapes cognition constitutively, individual cognitive mechanisms are here to stay [3]. Yet, at times, attempts to inject some genuine interaction into accounts of sociality end up yielding a picture of social cognition that is so interactive that the individual gets lost in it.

We are sympathetic to the point that the *we*-mode should not be thought of as underlying only forms of intentional *qua* instrumental behaviour, where interaction

boils down to having shared goals. For example, in our illustration of how the *we*-mode works through processes of corepresentation [4], we leave it open whether Mr Red (the ‘potential collaborator’) is to engage in joint action or other forms of interaction. What is more, there is no question that a theory of the *we*-mode ought to capture the distinctive sense of ‘*we*-ness’ experienced by interacting partners – a sense of what they do *together* as mutually present to all. But this is not to say that the *we*-mode must resist a characterization in intentional *qua* representational terms. Isn’t this really the point at stake? If so, the question remains of how individual attitudes can be irreducibly collective.

Although there are plenty of arguments in the collective intentionality literature for the idea that shared (individual-level) mental representations resist conceptual reductions in individualistic terms [5], we are interested in the brain mechanisms that make the sharing possible. Consider the claim that engagement in group-level dynamics enables individuals to see things differently from a perspective other than the third person. We do not claim that this is enabled by deliberate and voluntary adoption of a *we*-perspective as a precondition of interaction, or participatory sense-making. The *we*-mode comprises no more than a set of psychological propensities and dispositions, described in terms of one’s taking into account the perspective of others, which remain latent until individuals engage in interaction. These processes are responsible for bringing about the different sort of understanding attained by agents in interaction, where the relevant difference is definitely not a matter of content (i.e., what individuals take to be the case when they act