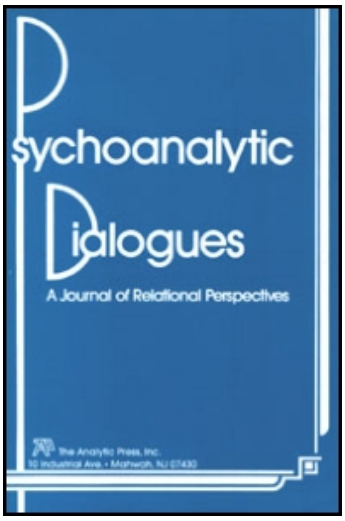

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We-ness, Embodied Simulation, and Psychoanalysis: Reply to Commentaries

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Neuroscience is progressively revealing the intimate relationship between embodied simulation and the understanding of verbal communication, including its affective quality. The neuroscientific investigation of linguistic aspects of interpersonal relations and the functional mechanism of embodied simulation are discussed in relation to the understanding of therapeutic action in psychoanalysis.

First of all I would like to thank Robert Emde and Bruce Reis for their insightful reading of my paper and the kind appreciation they both showed for some of the ideas I put forward in it. More generally, I particularly appreciated their open-minded critical evaluation of the potential relevance of developmental psychology and neuroscience for the progress of psychoanalytic thought.

For sake of concision I confine my reply on selected topics the two commentaries raised in relation to my article. Both Emde and Reis emphasize the potentialities for psychoanalytic thought of the discovery of mirror neurons and of the new model of basic aspects of social cognition—embodied simulation—inspired by such discovery. The paper of Emde mainly addresses the potential implications of embodied simulation for therapeutic action in psychoanalysis, while that of Reis mostly deals with the philosophical consequences of the "revolution" produced by the current trend of "embodied cognition" in neuroscience, philosophy, linguistics and developmental psychology, stressing its importance in many aspects of interpersonal relations.

Robert Emde raises important questions about the potential impact of the recent discoveries of developmental psychology and cognitive neuroscience on therapeutic action in psychoanalysis. I focus here on his first question, concerning to what extent and under what circumstances does therapeutic change depend upon implicit and nonconscious interactive empathic exchanges between patient and psychoanalyst. In our paper appeared in the *JAPA* (Gallese, Eagle, & Migone, 2007) we proposed that beside the traditional role assigned to "insight," models of therapeutic action in psychoanalysis should incorporate the role of corrective emotional experience enabled by the intentional and affective attunement established within the analytic setting. In particular, we focused on the analyst's attunement to the patient's intentions and posited that embodied simulation could play an important role in it.

In a recent special issue of *The Psychoanalytic Review* titled "The Psychonalyst's Intentions," the editor Alan Barnett (2008a) in the introductory paper emphasized the role of the analyst's *sen-*

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sibility (Aron, 1999; McWilliams, 2004; Mitchell, 1997), that is, "the analyst's *affective involvement* and *disciplined imaginative participation*, which permits following different levels of the patient's meaning simultaneously" (p. 703). According to Barnett

> the empathic sensibility through which the analyst uniquely participates in each analytic dyad forms the matrix from which ongoing clinical choices are made, including those conceptualized as holding, containing, insulating, and witnessing, which promote emotional communication through protecting and fostering patients' affect-regulating developmental functions. (p. 703)

In the concluding discussion Barnett (2008b) stressed

> a rounding out of Gallese, Eagle, and Migone's model (2007) to include the patient's attunement to the analyst's intention therefore does appear to encompass the role of 'insight' in therapeutic action, since … effective implementation of the analyst's intention includes progressive patient-analyst communication, expanded capacities for self-reflection, and mutual conviction on a co-created understanding of the patient's inner life. (p. 882)

According to Barnett the notion of "insight" would be compatible with the embodied simulation model once the latter is applied not only to the analyst's attunement to the patient's intention, but also to the patient's attunement to the analyst's intention.

Intention, following Modell (2003), can be defined as the affective interest directed toward some future or expected goal, thus as a mostly implicit, nonconscious action-oriented process. This makes the analyst's intention fully compatible with the account of intention understanding through embodied simulation I proposed in my article and elsewhere (Gallese, 2006, 2009; Gallese, Rochat, Cossu, & Sinigaglia, 2009).

A second point worth being addressed concerns the role of embodied simulation in recovering the communicative intentions and significance of the speech-acts occurring between patient and analyst. Ana-Maria Rizzuto (2002, 2003, 2008) capitalizes upon Freud's (1937, pp. 265–266) late emphasis on the relational component of patient and analyst shared belief in the psychical truth of the *conviction* they co-constructed on the basis of what they have said in the course of the analysis. Rizzuto (2008) argued that with such a move "the emphasis had shifted from the exclusively intrapsychic process of remembering" (p. 733) to the relational interpsychic outcome of the prolonged speech acts of the analytic dyad (see also Gabbard & Westen, 2003). As prophetically envisaged by Freud (1915) in his monograph on Aphasia, a word "acquires its meaning by being linked to an 'object-presentation.' … The object-presentation itself is … a complex of associations made up of the great variety of visual, acoustic, tactile, kinesthetic and other presentations" (p. 213).

It is hard for me not to perceive remarkable similarities between such an account of speech and the intimate link between language and embodiment as unveiled by current neuroscientific research (see Gallese, 2007, 2008, 2009). Rizzuto (2008), in particular, stresses the crucial role of the analyst's intention to fully listen to the patient as a "total self" (p. 746) by relying, among other things, on the patient's prosody and the emotional history of the employed words.

A similar attention to the affective quality of communication within the analytic relation can be found in the work of Mancia (2006), where he underlined the importance of the infraverbal components of communication between patient and analyst to fully grasp the total dimension of transfert. These components, according to Mancia, "include the rhythm, tone, timbre and musi-

cality of a sentence, as well as the syntax and tempi of speech. All this constitutes, in the analytic encounter, the 'musical dimension' of the transference" (p. 91).

As I argued in my article, neuroscience is progressively showing the intimate relationship between embodied simulation and the understanding of verbal communication, including its affective quality. These concise examples in my opinion show how concrete is nowadays the possibility for psychoanalysis and neuroscience to converge upon selected issues that are relevant for our understanding of the therapeutic action in psychoanalysis.

I now turn to the commentary by Reis. While acknowledging that my embodied simulation model of intersubjectivity challenges the post-Cartesian solipsistic attitude of classic cognitivism, "moving past a purely mentalistic view of intersubjectivity," echoing Gallagher (2007), Reis argues that "the phenomena that occur during the resonance of mirror neurons should not be understood as a simulation for multiple reasons." These reasons include the "as-if" quality of resonance mechanism, reportedly at odds with the fact that mirror neurons map intentional relations in a fashion that is neutral about the identity of the agentive/subjective parameter.

This point deserves further clarifications. First, while it is certainly true that mirror neurons fire no matter whether the action is executed or perceived, it is also true that *the intensity of their response* is not the same in these two different situations. As I pointed out in my paper, on average the motor discharge exhibited by mirror neurons during action execution is significantly higher than that evoked by the observation of a similar action performed by others. More generally, it must be stressed that embodied simulation doesn't imply that we experience others the way we experience ourselves. The I–Thou identity relation constitutes only one side of the intersubjectivity coin. As posited by Edmund Husserl (1969, 1989), and recently re-emphasized by Dan Zahavi (2001), it is the alterity of the other to guarantee the objectivity we normally attribute to reality.

The alterity character of others as we experience them also maps at the subpersonal neural level, because the cortical circuits at work when *we* act neither completely overlap nor show the same activation intensity as when *others* are the agents and we are the witnesses of their actions. The same logic also applies to sensations (see Blakemore et al., 2005) and emotions (see Jabbi et al., 2008). The study by Jabbi et al. is particularly informative in this respect, because it shows that experiences as different as being subjectively disgusted, imagining oneself being disgusted and seeing disgust portrayed in the facial expression of others not only encompass the activation of the same network of brain areas (the anterior insula and the anterior cingulate cortex), but also the activation of different brain areas according to the specific modality in which disgust is experienced (my real disgust, my imagined disgust, your disgust).

It must also be added that the functional mechanism of embodied simulation is not to be conceived as a rigid, reflex-like input output coupling. Several brain-imaging studies have shown that the intensity of the Mirror Neuron System activation during action observation depends on the similarity between the observed actions and the participants' action repertoire.

Second, I do not share Gallagher's view that embodied simulation must necessarily be characterized as simulation based upon the *resemblance* between target and simulator. As argued by the late Susan Hurley (2007, 2008), simulation can be more plausibly characterized in terms of *reuse*. According to the reuse notion of simulation, what distinguishes simulation from theorizing is the reuse of a process for generating information about that process. Indeed the neuroscientific evidence reviewed in my article shows that humans do reuse motor processes in order to directly understand the actions of others and, similarly, reuse emotion-related processes to directly understand others' emotions. What qualifies simulation as embodied is specifically this notion of reuse,

describable as an isomorphic type of mapping between target and simulator. What makes the activation of mirror neurons during the observation of the actions of others an "as-if" process is not its resemblance aspect, but the fact that in spite of an activation of the motor system in the observer's brain the action is not executed but only simulated. This is why I disagree with Gallagher when he claims that in order to invoke simulation, mirror neurons "must generate an extra copy of the actions as they would be if they were the perceiver's own actions" (2001, p. 102).

That said, I think that Gallagher's and mine perspectives share a lot more than what transpires from Gallagher's critique of embodied simulation. Both Gallagher and I think that the role traditionally assigned by classic cognitivism to Folk Psychology is exceedingly large and unjustified. Both Gallagher and I think that mind reading should not be identified with a mostly theoretical enterprise usually defined as "Theory of Mind." This is the main reason why I entitled my 2007 paper "Before and Below Theory of Mind," where I wrote, "Social cognition is not only 'social metacognition,' that is, explicitly thinking about the contents of someone else's mind by means of symbols or other representations in propositional format" (Gallese, 2007, p. 659). Finally, both Gallagher and I think that the primary way of understanding others is *direct in nature*. However, I do believe, *pace* Gallagher, that such directedness is completely compatible with the reuse notion of simulation I am advocating. Claiming that the understanding of others is mediated by mirror-based embodied simulation is not tantamount to saying that a sort of pretence mediates the perception of others' behavior. All of these considerations make it difficult to account for mirroring phenomena as forms of "direct perception."

In conclusion, I think it is fair to say that my Embodied Simulation model cannot be viewed as a version of Theory of Mind, because embodied simulation *is not* a metarepresentational theory of mind reading, but a way of characterizing our direct understanding of others.

REFERENCES

Aron, L. (1999). Clinical choices and the relational matrix. *Psychoanalytic Dialogues, 9,* 1–29.

Barnett, A. J. (2008a). Introduction: Focusing on the psychoanalyst's intentions in theory of technique. *The Psychoanalytic Review, 95,* 701–710.

Barnett, A.J. (2008b). Discussion: What is the theoretical yield in studying the psychoanalyst's intention? *The Psychoanalytic Review, 95,* 873–884.

Blakemore, S. -J., Bristow, D., Bird, G., Frith, C., & Ward, J. (2005). Somatosensory activations during the observation of touch and a case of vision-touch synaesthesia. *Brain, 128,* 1571–1583.

Freud, S. (1915). Appendix C to *The Unconscious*. *Standard Edition, 14,* 159–215.

Freud, S. (1937). Constructions in analysis. *Standard Edition, 23,* 255–276.

Gabbard, G. O., & Westen, D. (2003). Rethinking therapeutic action. *International Journal of Psychoanalysis, 84,* 823–841.

Gallagher, S. (2001). The practice of mind. *Journal of Consciousness Studies, 8,* 83–108.

Gallagher, S. (2007). Simulation trouble. *Social Neuroscience, 2,* 353–365.

Gallese, V. (2006). Intentional attunement: A neurophysiological perspective on social cognition and its disruption in autism. *Experimental Brain Research / Cognitive Brain Research, 1079,* 15–24.

Gallese, V. (2007). Before and below "theory of mind": Embodied simulation and the neural correlates of social cognition. *Philosophical Transactions of the Royal Society B: Biological Sciences, 362,* 659–669.

Gallese, V. (2008). Mirror neurons and the social nature of language: The neural exploitation hypothesis. *Social Neuroscience, 3,* 317–333.

Gallese V. (2009). Motor abstraction: A neuroscientific account of how action goals and intentions are mapped and understood. *Psychological Research, 76,* 486–498.

Gallese, V., Eagle, M. E., & Migone, P. (2007). Intentional attunement: Mirror neurons and the neural underpinnings of interpersonal relations. *Journal of the American Psychoanalytic Association, 55*, 131–176.

Gallese, V., Rochat, M., Cossu, G., & Sinigaglia, C. (2009). Motor cognition and its role in the phylogeny and ontogeny of intentional understanding. *Developmental Psychology, 45*, 103–113.

Hurley, S. (2007). *Simulating minds. Commentary on Alvin Goldman's Simulating Minds*. Paper presented at "Author Meets Critic," The Pacific APA Meeting, April, San Francisco, CA.

Hurley, S. (2008). The shared circuits model (SCM): How control, mirroring, and simulation can enable imitation, deliberation, and mindreading. *Behavioral Brain Science, 31,* 1–22.

Husserl, E. (1969). *Cartesian meditations*. The Hague, the Netherlands: Martinus Nijhoff.

Husserl, E. (1989). *Ideas pertaining to a pure phenomenology and to a phenomenological philosophy, second book: Studies in the phenomenology of constitution*. Dordrecht, the Netherlands: Kluwer Academic.

Jabbi, M., Bastiaansen, J., & Keysers, C. (2008). A common anterior insula representation of disgust observation, experience and imagination shows divergent functional connectivity pathways. *PLoS ONE, 13,* 3(8):e2939.

Mancia, M. (2006). Implicit memory and early unrepressed unconscious: Their role in the therapeutic process (how the neurosciences can contribute to psychoanalysis). *International Journal of Psychoanalysis, 87,* 83–103.

McWilliams, N. (2004). *Psychoanalytic psychotherapy: A practitioner's guide.* New York: Guilford.

Mitchell, S. (1997). *Influence and autonomy in psychoanalysis* (pp. 169–201). Hillsdale, NJ: The Analytic Press.

Modell, A. H. (2003). *Imagination and the meaningful brain*. Cambridge, MA: MIT Press.

Rizzuto, A. M. (2002). Speech events, language development and the clinical situation. *International Journal of Psychoanalysis, 83,* 1325–1343.

Rizzuto, A. M. (2003). Psychoanalysis: The transformation of the subject by the spoken word. *Psychoanalytic Quarterly, 72,* 287–323.

Rizzuto, A. M. (2008). The talking cure and the analyst's intentions. *Psychoanalytic Review, 95,* 729–749.

Zahavi, D. (2001). Beyond empathy. Phenomenological approaches to intersubjectivity. *Journal of Consciousness Studies, 8,* 151–167.

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