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Review of Angelo D. Delliponti's doctoral dissertation *The Role of Pragmatic Competence and Ostensive Communication in Language*

General

Angelo Delliponti's PhD dissertation deals with so-called *ostensive communication*, one of the fundamental concepts of *Relevance Theory* (henceforth RT), proposed and developed by Dan Sperber and Deidre Wilson (1995, 2012 and subsequent works) and further developed by Robyn Carston (2002), François Recanati (2010), Maria Jodłowiec (2021) and others. Delliponti's dissertation consists of four original papers, three of which, "Motor simulation and ostensive-inferential communication," "Motor simulation and ostensive-inferential communication: insights and clarifications" and "Experimental semiotics: A systematic categorization of experimental studies on the bootstrapping of communication systems" (co-authored) have already been published. The fourth paper: "Which mind-reading for ostensive communication? An event-related potentials study of how the brain processes communicative and informative intentions," also co-authored, has been submitted for publication in *Cognitive Science* and is currently under review.

Delliponti's thesis merits our attention for several reasons.

1. It offers an event-related potential (ERP) study-based analysis of how the brain processes communicative and informative intentions, thereby providing an empirical justification for placing ostensive communication (OC) in an evolutionary perspective, the perspective which challenges the (classical) view that ostensive communication is a distinctive feature of adult humans only. According to Delliponti (et al.; the paper under review; henceforth Delliponti-1), "basic forms of OC can be observed in both human infants and nonhuman primates." Based on the analysis of ERPs relating to the time of processing of communicative and informative intentions as reflected in the combination of eye contact and gestures, Delliponti comes to the conclusion that his findings should be seen to support the view that the mind-reading process, associated with OC, is linked to low-level rather than high-level cognitive processes. The basic form of low-level-related cognitive process is eye-contact, "the primary modality through which individuals address one another" (Delliponti-1, p. 6) .

2. By claiming that (basic) ostention "can be recognized *without metarepresenting* the communicator's intention," Delliponti et al. (2023; henceforth Delliponti-2) addresses the ostention issue from a broader, more comprehensive perspective – from the point of view of the evolution of language and human as well as animal communication. Defined by Delliponti-2 as "the study of novel forms of communication that communicators develop in laboratory tasks whose designs prevent them from using language," Experimental Semiotics (ES) is a study of the process of "creating the relation between signs and their interpreters as biological, psychological and social agents" (p. 1). This type of study, Delliponti-2 notes (p. 1), "is of central importance to language evolution research." This type of research, let us add, should also be theoretically interesting to the adherents of Jordan Zlatev's bodily-based *mimesis theory of meaning*, carried out in the general program of Cognitive Semiotics. Zlatev's general mimetic theory of meaning development, might, for example, address some of the issues raised by ES, including the results of the study of the different factors underlying communication systems such as the *biases for alignment between interlocutors* and the *constraints on learning* that, in Delliponti's parlance, "contribute to the [kind of–HK] structures that emerge under different circumstances and shape patterns of variation in languages […]" (p. 2). The paper "Experimental semiotics…" evaluates recent developments in the emergent communication systems research, including the analysis of the coding dimensions of communication games (see Table 1, p. 10), the presence of vertical transmission or the properties of the signaling and meaning spaces. The analysis has practical applications in that, as Delliponti argues (Delliponti-2, p. 17), "it allows us to measure *which dimension cluster* to provide more information about which experimental design is best suited for investigating particular research questions." (italics HK)

3. Finally, Delliponti's study not only empirically corroborates the validity of the ostension-based foundations of the latest version of Sperber and Wilson's Relevance Theory (henceforth RT-2024), but also, as I see it, it *may* be an important voice in the discussion of *paradigm change* issue in linguistic studies. I purposefully use the modal "may" because – and now I turn to the critical evaluation of the dissertation – Delliponti has, in my view, overlooked the possibility of linking his empirical findings about ostension with a more general issue of scientific development, the development either through the *revolution-powered paradigm change* à la Kuhn or via the theory-belt modification of the *scientific research program* à la Lakatoš.

Critical evaluation

The issue of scientific development is important in this case, especially for a philosopher of science, because it is owing, *inter alia*, to studies like Angelo Delliponti's that Sperber and Wilson have decided to "change the course," so to speak, of future Relevance Theory research, saying in RT-2024 (*Abstract*): "[*C*]*orrecting* earlier pragmatic theories inspired by Grice (1989) (including our own), we argue that typical verbal communication makes use of both basic and mentalistic ostension" (italics-HK). The critical word here, is "correcting," as it implies, in my view, the change of the entire paradigm, with all theoretical consequences following from this move.

In essence, I would like to treat Delliponti's dissertation as a clear indication that Sperber and Wilson really *had no choice but to abandon* (or at least somehow dramatically modify) the logic-based (Neo)Gricean paradigm of RT (cf. Sperber and Wilson 1986, 2012) if they really wished to join a *scientific discourse* in whose framework questions pertaining to *socio-cognitive* aspects of language*, language evolution* and the semiotics of *communication system* could be asked. Although this kind of broader reflection can perhaps be arrived at by a discerning reader of all the four papers included in the dissertation, an explicit statement of this kind would be in order. A remark of this kind could appear in Section 1 "Introduction and aims of the project." Such a remark would not be unmotivated in the light of the statement made by the author in this section that "recognizing communicative and informative intentions in the framework of basic ostensive communication is related to fast, automatic processes that rely on low-level mechanisms rather than high–level, inferential reasoning" and that "these findings […] are important for the debate around relevance theory" (p. 16). Yet, one cannot appreciate the importance of these findings for Relevance Theory research until one finds in the *Appendix*, the final part of the dissertation, the quotation from Sperber and Wilson (RT-2024) that

> [i]n non-verbal communication, whether among human or other apes, there are several ways of indicating to the addressee that he is being addressed: in particularly establishing eye contact, which is prototypical signal of a communicative intent […] So ostension is a type of action that can be recognized without metarepresenting the communicator's intention, as the study of ostension addressed to infants has shown […] (Sperber and Wilson, 2024, p. 9)

Strangely enough, being crucial for the RT debate, and indeed for any theory of communication, the paper "Which mind reading for ostensive communication…. " appears in the dissertation in the form of a mere *Appendix*! For a linguist, the findings and observations made in Delliponti-2 (and in Delliponti-1) are the most important parts of the of the thesis; they constitute the author's real contribution to RT research, the contribution, which in my

view, has not been sufficiently emphasized by Delliponti himself. The point I wish to make is that, as already mentioned, the findings of Delliponti and researchers like him are likely to impact the further avenue(s) of Relevance Theory research, including the "fate" of concepts such as *explicature* and *implicature*, *explicature enrichment*, *ad hock concept*s, *epistemic vigilance*, etc., introduced by Sperber and Wilson in the earlier versions of RT. The introduction of these concepts was initially sanctioned by the claim about the modularity of mind and logic-based nature of grammar and discourse. With the adoption by Delliponti of the *deflationist perspective* on OC, of his ES-related research and the mind reading concerns, the nature of these theoretical constructs will in all likelihood be reconsidered by RT theorists. I realise, of course, that the "fate" of the mentalistic level of RT-2024 need not concern Delliponti (as he is interested in the *empirical support* for RT-2024), still, a remark of this kind in the introductory section of the dissertation would be greatly appreciated by a "theoretically-minded" Relevance researcher.

I also think the depth and clarity of Delliponti's argumentation would increase if the author addressed, in the introductory part of his dissertation, two issues: (1) the present state of the art in the mirror-neurons debate and (2) the "shared mind" approach to human interaction as an alternative to the theory of mind model (ToM).

With reference to (1), in Section 1.3 of Delliponti-1, "Which mind reading for a deflationary model of OC" (p. 7), two models of ToM are briefly discussed: the TT model (Theory-Theory model) and ST model (Simulation Theory model). Ultimately, based on the results of the ERP-based experiment presented in Delliponti-1, the author says this (p. 23):

> If confirmed by future studies, such a finding might support the direct perception model of mind-reading proposed by Gallagher (2008), a model that differs from both the TT and ST models discussed in the introduction. The first characteristic of perceptual mindreading concerns the way perception is understood. According to Gallagher, the perception one needs is "smart enough on its own, without the addition of inference mechanisms" (Gallagher, 2008, p. 536). In other words, the direct perception one needs must be simple enough to exclude extra-perceptual inference processes, but complex enough to capture the intentions and feelings of individuals. […] Social perception, the perception of interactions that characterize the social relations of individuals, is no exception to the direct nature of perception: again, in "the usual circumstances of social interaction it does most of the work without the need of extra-cognitive (theoretical or simulationist) processes (Gallagher 2008, p. 537).

It is a pity that when addressing the issue of social interaction and social perception, Delliponti makes no reference to a "third type" of the mind reading model, namely the so-called *two-brain model*. For, according to Bonini et al.

(Mirror neurons 30 years later: implications and applications. *Trends in Cognitive Sciences*, 2022, Vol. 26, 775):

Although non-invasive human studies have convincingly demonstrated that the mirror mechanism plays a role in action perception, prediction, and social coordination, they generally do not enable researchers to directly investigate the neural dynamics between the agent-based and agent shared codes underlying adaptive social behavior. However, recent hyperscanning techniques are making it possible to go beyond the traditional 'one-brain' approach, in which a single subject's brain is studied in situations of social observation. These techniques will enable a truly social 'two-brain' paradigm […] in which the real-time reciprocal interactions of a pair or even a group of subjects can be investigated as a single system […]. From this perspective, it may be that interbrain synchronies guide social interaction by means of underlying neural machinery in which self-related neurons in the brain of Subject 1 control behavior and thereby cause the activity of other-selective neurons in the brain of Subject 2, which finally lead to an adaptive behavioral response of Subject 2 by activating self-related neurons. […]

Importantly, the two-brain model takes into account

the relevance of the context in which others' emotional displays are observed because it can afford very different visceromotor and neurobehavioral reactions. (Bonini et al. , p. 776)

The lack of reference to the two-brain paradigm is particularly noticeable, given the discussion in Delliponti-1 of the coding dimensions, listed in Table 1 on page 10, which, I presume, have been established and formulated by Delliponti in "situations of social observation" during "the real time reciprocal interactions." Certainly, the relevance of the context "in which others' emotional displays are observed" could hardly have escaped Delliponti's attention.

With reference to point (2), it seems that the argument for the choice of the *direct perception model of mind reading* rather than the TT and ST models of ToM would gain in strength if Delliponti had digressed briefly, in the Introductory part of the dissertation, on the *intersubjectivity-based* (*shared*) *mind*, advocated, *inter alia*, in Zlatev and al. (2008). In contrast to the ToM approach, which holds that "[c]ognition develops essentially "from the inside out", with innate or acquired cognitive skills being eventually transferred or projected onto others for the purpose of explaining and predicting their behaviour," (Zlatev et al. 2008: 2), the *shared mind* researchers claim that (Zlatev et al., p. 3)

– Human beings are primordially connected in their subjectivity, rather than functioning as monads who need to "infer" that others are also endowed with experiences and mentalities that are similar to their own.

– The sharing of experiences is not only, not even primarily, on a cognitive level, but also (and more basically) on the level of affect, perceptual processes and conative (action-oriented) engagements.
– Such sharing and understanding is based on embodied interaction (e.g. empathetic perception, imitation, gesture and practical collaboration).
– Crucial cognitive capacities are initially social and interactional and are only later understood in private or representational terms.

A brief discussion on the shared mind theory, an alternative to ToM, would provide a further justification for the purposefulness of introduction in Delliponti-1 of Gallagher's *direct perception model*, which is *also* discussed in Zlatev et al. (2008) by Gallagher himself in his and Hutto's joint paper "Understanding others through primary interaction and narrative practice."

Conclusion

The above remarks do not belittle the importance of Angelo Delliponti's dissertation for RT- as well as for ES-research. I believe the above remarks may be useful should the author decide to prepare the manuscript for publication. I have no doubt that the dissertation **is ready for the next phase** of the dissertation process leading to the conferment of a doctoral degree on Angelo Delliponti.

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