PANTOLANG: A SYNTHETIC COGNITIVE-SEMIOTIC APPROACH TO LANGUAGE ORIGINS

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1. Introduction

We present an ongoing international project, *From Pantomime to Language* (PANTOLANG), aiming to develop a comprehensive, empirically grounded theory of the evolution of human language and the human mind, relying on the new paradigm of *cognitive semiotics*, which combines methods and concepts from the humanities and the sciences (Zlatev, 2015; Zlatev, et al. 2016).

2. Main concepts

The key concept of the project is that of *pantomime*, a communication system based on whole-body re-enactment of events, relying predominantly on iconicity/resemblance (Zywiczynski et al., 2016; Zlatev et al., 2017). As the foremost communicative manifestation of the uniquely human capacity for *bodily mimesis* (Donald, 2001; Zlatev, 2014), pantomime arguably introduced a new level of semiotic complexity: an open system of *signs*, rather than a closed system of association-based *signals*. While other theories have appealed to "gesture" or even "pantomime" as a precursor to language (e.g. Arbib, 2005; Tomasello, 2008), our approach is unique in defining the notion consistently and making it the cornerstone of a theory of language origins.

Further, to explain the transition from pantomime to language, we focus on three central cognitive-semiotic factors. The first is *intersubjectivity*, which implies human-specific levels of (mind) sharing and trust. We distinguish

between primary forms such as *emotional empathy* which were prerequisites for the emergence of pantomime, and secondary forms of intersubjectivity which evolved along with it, such as the following four features of human *interactivity*: alternation of turns, synchrony, conditional relevance and role-reversal (Sacks & Schegloff, 1973; Wacewicz & Zywiczynski, in press)

The second factor is that of *narrativity*, implying temporal and causal coherence between events, on the one hand, and their representations (narrations) on the other. As with intersubjectivity, we hold that there were pre-communicative aspects of narrativity, allowing ancient hominins to perceive, understand and remember event-sequences or episodes, and assist them in navigation (Ferretti et al., 2016, 2017). But it is only pantomime that made externalization possible, so that hominins were first able to re-enact, and thus embody narrative structures in a publicly accessible manner. Present-day elaborated versions of such embodied narratives may be seen in the performances of traditional societies (e.g. Green, 2014).

The third factor is *cross-modality*, understood as the interaction between different sensory channels (rather than "communicative modes"). While pantomime was primarily perceived visually, it was also "felt" via the cross-modal mapping between vision and proprioception (Zlatev, 2014). While vocalizations are unlikely as the initial channel for referential meaning (Zlatev et al. 2017), they would have become increasingly important over a prolonged period of time – but without ever fully displacing pantomime, which appears in reduced form as iconic gestures in spontaneous language use. This distinguishes our approach from those who assume that language was "multimodal" from the onset (e.g. McNeill, 2012).

3. Methods

Following the principle of methodological triangulation of cognitive semiotics, combining philosophy, (participant) observation and experiments, we (a) use phenomenology and conceptual analysis to propose clear definitions of central concepts (e.g. Zlatev, 2015), (b) study polysemiotic narratives in traditional societies, such as Paamese "sand drawings" in Vanuatu, where pantomime, speech and other semiotic systems such as depiction combine (Devylder, 2014), and (c) adapt experimental semiotics paradigms (Galantucci & Garrod, 2011) to study the communicative effectiveness of pantomime across different cultures, and its conventionalization and communicative "streamlining" through horizontal (Fay et al 2010) and vertical (Kirby et al., 2014) transmission.

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