



Anu **Vastenius**, anu.vastenius@semiotik.lu.se
Jordan **Zlatev**, jordan.zlatev@semiotik.lu.se
Joost **Van de Weijer**, joost.van_de_weijer@ling.lu.se
Lund University, Sweden

Constituent order in pictorial representations of events is influenced by language

The origin of word order in human language has been addressed in recent years in empirical research, and in some studies SOV has been found to be the most basic or default order. Goldin-Meadow et al. (2008) conducted a study to test how speakers of languages with different word orders represent events with pictures and gestures. The results showed that the participants predominantly used the order Actor-Patient-Act (ArPA) in their nonverbal representations, irrespective of their native language. Based on this, Goldin-Meadow et al. (2008: 9167) concluded: “there appears to be a natural order that humans, regardless of the language they speak, use when asked to represent events non-verbally”.

Later on, other studies have thrown doubt on the universality of such a “natural order” (e.g. Schouwstra & de Swart, 2014). To investigate this issue, we replicated the experiment by Goldin-Meadow et al. using a slightly modified design. In the replication, no gestures were used, as they are intrinsically more related to language than pictures (Kendon, 2004), and therefore possibly more easily influenced by the native-language word order. Furthermore, contrary to the original study, the pictures were printed on separate, non-transparent cards, which needed to be placed in a particular order so as to produce a representation of the event. In the original study, the pictures were printed on transparencies, which always resulted in the same final product regardless of the order in which they were placed. Consequently, no consistent strategy of ordering was required. In our study, participants performed the task on a transversal plane with a sagittal directionality (from furthest to closest to them). More specifically, the participants had to place the picture cards below one another on a 13 x 52 cm board, with the narrow side facing them. The intention was that, in this way, they would be minimally influenced by the direction of motion shown in the pictures.

Twenty-six native speakers of Kurdish (SOV) in the Kurdish region of Iraq and twenty-seven speakers of Swedish (SVO) were presented with 36 video clips showing the events. Half of each language group were asked to describe the event prior to ordering the pictures, and the other half only to order the pictures after each video.

The results showed that, unlike in the original study, the constituent order of the native-language did have an impact on the order of the pictorial representations when using this experimental design. The speakers of Swedish were less consistent in using the ArPA order than the speakers of Kurdish, and this tendency was stronger for the participants who described the events verbally before representing them pictorially. This can be interpreted as a moderate version of linguistic relativity, such as Slobin’s (1996) thinking-for-speaking, stating that language modulates the cognitive representations that are recruited during the process of language use. It is likely that the explicit linear order in which the pictures had to be placed was more analogous to word order, and hence was more easily influenced by it, than in previous designs.

References

- Goldin-Meadow, Susan, Mylander, Carolyn, So, Wing Chee, and Özyürek, Asli (2008) The natural order of events: How speakers of different languages represent events nonverbally. *PNAS*, 105: 9163-9168.
- Kendon, Adam (2004) *Gesture: Visible action as utterance*. Cambridge: Cambridge University Press



The International Association for Cognitive Semantics



- Schouwstra, Marieke., de Swart, Henriëtte (2014) The semantic origins of word order. *Cognition* 131: 431–436.
- Slobin, Dan I. (1996) From “thought and language” to “thinking for speaking”. In J.J.Gumperz & S.C Levinson (Eds.) *Rethinking linguistic relativity* (p.70-96). Cambridge: Cambridge University Press.