Getting your snake straight, or how to turn space into time in timeline blends

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Readers adapt the mental image of an object mentioned in a figurative (spatial) time expression in order to build a timeline, so that temporal relations can be navigated in perceptual terms. In the case studied, a snake cut by a machete constitutes the second term of a simile (extracted from a poem by Octavio Paz), where the first term are the future and past selves separated by time: *Todo nos amenaza: // el tiempo, que en vivientes fragmentos divide // al que fui // del que seré, //como el machete a la culebra* (Everything threatens us: // time, which into living fragments divides // the one I was //from the one I will be,//like the machete the snake).

Without any explicit prompts from the text, readers show a significant statistical tendency to represent this snake as instantiating a timeline running from left to right, and to establish the mappings past-left, future-right (where the head is); they also show a very clear tendency to represent this snake as a straight line to a higher degree than usual (as measured in a separate control study). The study therefore shows how a physical, measurable variable (i.e. curvature) can be used as an index of the degree of blending of the information provided by the two different spatial domains involved: the curved spatial information of snakes and the rectilinear spatial information of timelines.

One interpretation of these data would suggest that conceptual projections in time-space mappings are not unidirectional. Instead, spatial configurations are selected and adjusted to yield the conceptualization more appropriate for the temporal relations to be represented. For such an adjustment to take place, it seems that some hybrid conceptualization or novel mental simulation, different from the source component, must necessarily be produced, in which emergent properties arise temporarily for their use in the task at hand. Theories postulating direct projections from spatial structure onto temporal structure do not seem suitable to explain our data. According to these theories, participants should be imposing any relevant spatial properties of the snake on time or the self, rather than creating novel spatial properties for the snake to suit temporal representation.

Keywords: conceptual integration and blending, space-to-time mappings, empirical approaches to cognitive linguistics/literature.