An Attentional Constraint on Spatial Meaning

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Broad commonalities in human perception may constrain cross-linguistic variation in semantic systems (Berlin & Kay, 1969; Kay & Regier, in press). Regier's (1996) model of spatial term learning assumes such a constraint: preferential attention to the *endpoints* of spatial events, rather than their beginnings (see Arnold, 2001 for evidence of a similar constraint). Given this assumption, the model predicts that languages will make finer semantic distinctions at event endpoints than at their comparatively under-attended beginnings. We tested both the perceptual assumption of preferential attention to endpoints, and the linguistic prediction of greater semantic specificity at endpoints.

Attention to endpoints

Materials and procedure: We showed participants pairs of videoclips portraying simple spatial actions, and asked whether they were the same or different. Each pair of clips showed the same two objects being either joined or separated. When two "joining" clips differed, they differed at the endpoint of the action (e.g. putting a lid either on or in a container); when two analogous "separating" clips differed, they differed at the starting-point of the action (e.g. taking a lid either off or out of a container). Thus, discriminating "joining" events required attention to endpoints, while discriminating "separating" events required attention to event starting-points. The spatial configuration that allowed clips to be discriminated (e.g. lid on vs. in the container) was present for the same amount of time in all clips. To make the task challenging, clips were shown at six times the normal speed, and simultaneously. Results: Participants made significantly more discrimination errors for events of separation than for events of joining, suggesting an attentional preference for event endpoints over event beginnings.

Semantic specificity

Materials and procedure: We created a set of video clips of spatial actions involving the manipulation of a variety of simple objects. For each clip portraying an event of joining (e.g. putting a key in a lock), there was a clip portraying the analogous event of separation (taking a key out of a lock). We showed these clips to native speakers of English, Mandarin, and Japanese, and asked them to describe each event in their native language. We examined the semantic breadth of each spatial term used (i.e. the range of events to which it was applied). Results: We found that in all three languages, participants used terms of joining for a significantly narrower range of events than they did terms of separation – supporting the prediction of greater semantic specificity at endpoints.

In similar vein, Bowerman (1996) has observed that children learning different languages overgeneralize words for separation more than they do words for joining. The current results, together with Bowerman's finding, are consistent with the idea that there may be an attentional preference for endpoints in event perception, and that this perceptual force may ultimately leave its mark on language.

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