Spatial Demonstratives in English and Japanese: Universal or Variation?

HARMEN B. GUDDE
University of East Anglia
Email: h.gudde@uea.ac.uk

KENNY R. COVENTRY
University of East Anglia

Spatial language is crucial to almost every aspect of our lives, yet languages vary considerably in how they carve up space (Kemmerer & Tranel, 2000; Levinson, 2004). We used demonstratives as a vehicle to explore the relation between languages and spatial cognition. Although spatial demonstratives (this, that) are a small class of referential expressions, a growing body of research shows the important role they play in language. Demonstratives are present in every language and are among the most frequent words in languages (Diessel, 1999, 2006, 2014; Heine & Kutteva, 2002). Hitherto, little empirical research has been done to experimentally determine the function of spatial demonstratives. Early research found empirical evidence for a proximal/distal contrasting function of demonstratives (Coventry, Valdés, Castillo, & Guijarro-Fuentes, 2008), suggesting that this is used for referents in peri-personal (near) space and that for referents in extra-personal (far) space (cf. Clark & Sengul, 1978; Diessel, 2006; Talmy, 1983), in contrast to Peeters, Hagoort, and Ozyürek (2014). Building on this body of work, current research at the University of East Anglia is exploring how people use demonstratives, and whether they affect spatial memory. Specifically, using a memory game procedure, participants are asked to name objects, placed at various distances from them, using a demonstrative, for example “this/that black cross.” This allows us to test whether parameters that are encoded by demonstratives in other languages (e.g., distance, ownership (encoded in Supyire), visibility (West Greenlandic, Sinhala), familiarity (Yoruba), affect English demonstrative use (cf. Chandralal, 2010; Coventry, Griffiths, & Hamilton, 2014; Diessel, 1999). An adaptation of this procedure, can test the influence of object knowledge on memory for object location by analysing the memory error (the difference between the actual and memorized location).

Results showed that object knowledge affects demonstrative use and similarly influences memory for object location—even though the contrasts are not explicitly encoded in English. When participants owned, saw (during encoding), or knew an object, they were more likely to refer to the object with this than if they did not. Objects were also remembered to be closer by when they were owned, seen (during encoding), or known by the participant. In other words, referents that were preferentially referred to with this were remembered to be closer to the participant, relative to that. As such, Coventry et al. posited that memory for object location is a concatenation of the actual and the expected location of an object (the Expectation model), consistent with theories of predictive coding (Bar, 2009; Friston, 2003).

More recently, we have extended the limits of the Expectation model by investigating whether the mere use of demonstratives affects spatial memory (Gudde, Coventry, & Engelhard, 2016). In this study, participants read out instructions for object placement (e.g., “Place
this/that/the [object] on the [location]), followed by a spatial memory trial. By analysing the memory error, this study was able to tease apart different models predicting an influence of language on memory for object location. The Expectation model suggests that language elicits a prediction about the object location. The model therefore predicts a main effect of language on spatial memory, in which objects placed with that are misremembered to be further away than this, irrespective of the distance from the participant. In contrast, the Congruence model, based on the embodied cognition framework (Barsalou, 2008), assumes that an effect would be driven by an (in)congruence of language and space. A plethora of studies showed that when language is congruent with a spatial situation, participants’ responses are for example faster or more accurate (cf. Bonfiglioli, Finocchiaro, Gesierich, Rositani, & Vescovi, 2009; Stevens & Zhang, 2013). The congruence model predicts a similar interaction between language and distance in memory (Hommel, Musseler, Aschersleben, & Prinz, 2001). That is, congruent trials in which objects are placed close by with this or out of reach with that, should be remembered more accurately than incongruent trials (this for objects out of reach, that for objects within reach). In three experiments, results showed a main effect of language, but no interaction, supporting the Expectation model, and we found evidence that the effects were not driven by a difference in attention allocation.

However, in order to test whether there is a universal demonstrative system, other languages than English need to be tested. The most recent study tested Japanese vs. English (Gudde & Coventry, in preparation). Results showed that Japanese demonstratives encode distance from a speaker and the position of a hearer, and an effect of position was found in English as well. Furthermore, gender seemed to influence the weight of the parameters; men (both in Japanese and English) were more strongly influenced by an interlocutors’ position, women by distance. The fact that English demonstrative use is affected by position supports the notion that demonstrative systems are reliant on a universal set of underlying non-linguistic parameters, even though these parameters are not explicitly coded in all languages. However, explicit encoding, for example of position of an interlocutor, could lead to a slightly different weighting across languages as a function of the parameters that are explicit.


