Names for artifacts and natural kinds

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A key conceptual semantic distinction in the domain of things is that between artifacts and natural kinds, a distinction that goes back at least to Aristotle. This talk explores the import of this distinction to morphology since research over the last twenty years, primarily in the areas of anthropological linguistics, psycholinguistics, and language acquisition, reveals significant differences in the naming strategies employed for artifacts and natural kinds. Since this work clearly bears on the interface between morphology and semantics, I first present and synthesize studies from this broader literature that show that the conceptual distinction between artifacts and natural kinds plays a role in the names given to things, whether they are morphologically simple or complex. As a further case study in support of this point, I then present a new investigation of noun-noun and adjective-noun compounds naming foodstuffs in American English.

Studies from varying perspectives demonstrate that artifacts and natural kinds are named in different ways. Brown (1995, 1999) identifies a range of differences between naming patterns for artifacts and natural kinds introduced into the Americas by Europeans, including the morphological make-up of these names. Building on this work, Nichols (2008) explores different borrowing patterns for artifact and natural kind names in Zuni. She proposes that artifacts, due to their function, have an associated event (e.g. writing for a pen), a notion that is reminiscent of the telic role in Pustejovsky's (1996) qualia structures, which influences the names available to them. Turning to things with morphologically complex names, Wisniewski & Love (1998) compare English noun-noun compounds naming natural kinds and artifacts and find that the attested relations between the head and the modifier depend on whether the compound names an artifact or a natural kind. Interestingly, the relations for artifacts often make reference, though sometimes indirectly, to an associated event. Further, even many of the naming patterns Brown identifies can be understood as reflecting the associated event found with artifacts.

As further confirmation, I present a study conducted with Dan Jurafsky (Stanford University) of American English noun-noun and adjective-noun compounds naming cakes and cookies---

manufactured entities and, hence, artifacts---and greens and legumes---natural kinds. We hypothesized that even though these compounds were all drawn from the food domain, the head-modifier relations found in cake and cookie names should not be entirely the same as those for greens and legumes; further, the former should show relations of the type that Wisniewski & Love identified for artifacts and the latter those for natural kinds. Using a set of head-modifier relations extended from those used by Wisniewski & Love, we found that these predictions held. 54% of the compounds naming greens and legumes involved modifiers that described properties of the head noun, like its color, shape, texture, or general appearance (e.g. red cabbage, curly endive, kidney bean), while only 19% of the compounds naming cakes and cookies were of this type. This observation reflects the idea found in the philosophical literature that natural kinds have "essences" which reflect their biological nature (Bird & Tobin 2009, Keil 1989, Kripke 1972, Putnam 1975). These essences may be reflected in appearance. Further, the modifiers in 23% of the compounds naming greens and legumes described the geographical origin of the head (e.g. Chinese cabbage), while this was true of less than 5% of the cake and cookie compounds. Again, this reflects the influence that origin can exert on the essence of a natural kind: for instance, California live oaks are distinguished by their evergreen nature. In contrast, the head-modifier relations for cakes and cookies often made reference to an associated event. Thus, the most prevalent relation among cakes and cookies was the principal-ingredient-of relation (e.g. oatmeal cookie, applesauce cake), which unsurprisingly was unattested among green and legume names, followed by the mode-of-creation relation (e.g. refrigerator cookie, skillet cake).

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