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Discussion

On the insufficiency of evidence for a domain-general account of word learning ☆

Sandra R. Waxman*, Amy E. Booth

Department of Psychology, Northwestern University, 2029 Sheridan Road, Evanston, IL 60208-2710, USA

One question lies at the heart of our interchange with Bloom and Markson: is word learning the result of domain-specific or domain-general abilities? Undoubtedly, we cover a good deal of common ground. We agree (a) that discovering which aspects of language acquisition are specific to language, and which are shared more generally with other cognitive tasks, requires careful attention, (b) that the answer to this question may depend upon which aspect of language is under consideration, and (c) that the acquisition of novel words and facts share some important components, including establishing a mapping to a designated individual, and retaining this mapping over time.

Yet there is also a clear difference between our positions. Markson and Bloom (1997) argued forcefully for a domain-general account of word learning. We countered, highlighting some crucial distinctions between what it takes to learn a word as compared to a fact. We concluded that there is, as yet, insufficient logical or empirical support for a domain-general account of word learning.

To recap, Markson and Bloom (1997) demonstrated that children were resoundingly successful at fast-mapping either a novel word (e.g. 'This is a koba') or fact (e.g. 'My uncle gave this to me'), and retaining these mappings over time. They therefore concluded that fast-mapping is not specific to word learning. We agree entirely. However, Markson and Bloom went beyond this evidence, claiming to have uncovered "…evidence against a dedicated system for word-learning…". It is this latter claim – the claim that became the title of their original paper – to which we take strong exception.

The real problem is that although Bloom and Markson's data pertain to one

☆ Discussion by Bloom and Markson (2000): Are there principles that apply only to the acquisition of words? A reply to Waxman and Booth. *Cognition, 78,* 89–90.

* Corresponding author. Fax: +1-847-491-7859.
E-mail address: s-waxman@northwestern.edu (S.R. Waxman).

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component of word learning (fast-mapping), they use it to support a broader claim. This 'slippage' between the scope of their evidence (that fast-mapping is not specific to word learning) and their more sweeping claim (that word learning is the product of domain-general abilities) leads to a position that is logically unwarranted. Evidence for fast-mapping in both the acquisition of words and facts does not constitute evidence that these two domains rest upon the same set of underlying principles. By analogy, discovering that one ingredient (say, beaten egg-whites) is involved in preparing both lemon meringue and spinach soufflé does not warrant the assumption that these two recipes share any other ingredients.

At issue is whether, independent of any shared components, there are also distinct principles invoked in word- and fact-learning. We highlighted one such distinction, related to the crucial difference between the extensions of novel words as compared to facts (Waxman & Booth, 2000). We demonstrated that children spontaneously extend both words and facts beyond the designated individual, but that their patterns of extension in these two domains differ dramatically. Children systematically extend the novel word to include all and only members of the same object category as the designated individual; they extended the novel fact randomly (see Behrend, Kleinknecht, Scofield, & Wilcox, 2000). This sharp contrast between the systematic extension of the word, and the random extension of the fact suggests that there may indeed be principles guiding the acquisition of words that are not invoked in acquiring facts.

Children's extension of facts, however random, also bears on another point. Bloom and Markson (2000) asserted that to compare the extension of a fact, like 'my uncle gave this to me', with the extension of a word, it would be more appropriate to use a proper noun (as opposed to a count noun). This is a curious challenge, first because we selected count nouns to replicate and extend Markson and Bloom's original data, and second because there is strong evidence that word-learners systematically restrict the extension of proper names to include the designated individual only (Hall, 1999). This finding, coupled with children's random extension of facts, suggests that children's extension of proper names does indeed differ from their extension of facts.

This brings us to our central point. Acquiring the appropriate extension for novel words is a very different matter than doing so for novel facts. The extension of *any* novel content word can be determined (roughly) by its grammatical form. This principled pattern of extension does not rely upon previous knowledge about the particular word or particular object to which it has been applied. It is very much an open question whether these mappings between grammatical form and meaning are acquired via language-specific or domain-general principles (Waxman, 1999). In contrast, determining the extension of a novel fact presents a very different picture. This task depends crucially on previous knowledge about the kind of fact (e.g. enduring, generalizable) and the kind of object to which it is applied (e.g. animate or inanimate). This knowledge is likely acquired as part of a domain-general cognitive mechanism.

In closing, our recent paper constitutes a challenge to Bloom and Markson's account. We have argued, on both logical and empirical grounds, that it is premature

to accept an argument for a domain-general account of word learning. What we find most surprising, then, is that Bloom and Markson find our position 'unsurprising'.

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