

Déjà Vu All Over Again: Re-Revisiting the Conceptual Status of Early Word Learning: Comment on Smith and Samuelson (2006)

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The authors assert that L. B. Smith and L. Samuelson's (2006) most recent critique of A. E. Booth, S. R. Waxman, and Y. T. Huang's (2005) work missed its mark, deflecting attention from the important theoretical difference between the two sets of authors' positions and focusing instead on imagined differences and minor expositional complaints. The authors' goal in this response is twofold. First, they aim to redirect attention to the 1 clear difference between the 2 theoretical positions regarding word learning, a difference that is focused on the role of conceptual (in conjunction with perceptual) information in word learning. Second, they place L. B. Smith and L. Samuelson's (2006) current critique in the context of previous exchanges.

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We begin our article with a strong sense of déjà vu. After having responded to a critique of our work on the “shape bias” in an exchange published recently in *Cognition* (Booth & Waxman, 2002b, 2003a; Smith, Jones, Yoshida, & Colunga, 2003), we now find ourselves responding again. We confess to finding this state of affairs curious, especially because our work on the shape bias, which has attracted so much attention from Smith and colleagues, represents only a small component of our broader research program. Rather than focusing narrowly on the shape bias, our overarching goal has been to discover the relation between word learning and conceptual organization in infancy and to trace the trajectory of this relation across development and across languages.

In this commentary, we address Smith and Samuelson (2006) by briefly reviewing the evidence in question and then moving on to situate this discussion in the context of broader theoretical debates. Along the way, we hope to correct mischaracterizations of our position and to redirect attention to the one clear divide between Smith and Samuelson's (2006) position and our own—a divide regarding the role of conceptual information in supporting early word learning. Given the brief format of this commentary, we hope that those interested in fuller discussions of these issues will consult our empirical work and the other exchanges of commentary that it has engendered (Booth & Waxman, 2002b, 2003a; Booth & Waxman, 2005; Booth, Waxman, & Huang, 2005; Smith et al., 2003; Smith & Samuelson, 2006).

In our first foray into the nature of the shape bias, our goal was to consider the role of conceptual information in early word learning (Booth & Waxman, 2002b). We presented 3-year-old children with novel target objects, labeled with novel count nouns

(e.g., *dax*). We varied the conceptual status of these objects by using a brief vignette to describe them either as animate objects (e.g., “. . . has a mommy and daddy who love it very much”) or as artifacts (e.g., “. . . was made by an astronaut to do a special job on her spaceship”). We then examined children's extension of the new words. When the objects were described as artifacts, children extended on the basis of shape alone. But when the very same objects were described as animate objects, children extended on the basis of both shape and texture. Moreover, when we placed eyes (a strong perceptual cue to animacy) on the objects but described them as artifacts, children's extension patterns were consistent with the artifact classification (i.e., they extended on the basis of shape alone). We concluded that the conceptual status of a labeled object influences early word learning and does so even in the face of conflicting perceptual cues.

This finding served as the impetus for Smith et al.'s (2003) first critique, the main point of which was to attempt to recharacterize our vignettes as “linguistic information” and to deny their conceptual import. This attempted recharacterization, which carries over into the current critique, is wrong. As we explained in Booth and Waxman (2003b), there is no doubt that we presented the vignettes linguistically: The experimenter talked, and the children listened. But the information contained in these vignettes was much more than a series of perceptually accessible words. The vignettes were replete with conceptual content that could not be reduced to simple grist for an associative mill (see also Booth and Waxman, 2005, and this conceptual content had a significant influence on children's interpretations of novel words. Importantly, these data do not stand alone: Evidence from several different lab groups using several different methods have converged to suggest that conceptual information has a systematic influence in word learning (e.g., Bloom & Markson, 1998; Booth & Waxman, 2002a; Gelman & Coley, 1991; Gelman & Diesendruck, 1999; Keil, 1994; Kemler Nelson, Russell, Duke, & Jones, 2000; Lavin & Hall, 2001; Soja, Carey, & Spelke, 1991; Ward, Becker, Hass, & Vela, 1991; Welder & Graham, 2001). Therefore, we assert that any current and comprehensive theory of early word learning, including the

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Attentional Learning Account (ALA), must account for this phenomenon.

Our second contribution pertaining to the “shape bias” appeared in *Developmental Psychology* (Booth et al., 2005) and is the focus of Smith and Samuelson’s (2006) current commentary. Having demonstrated the influence of conceptual information in early word learning in preschoolers (Booth & Waxman, 2002b), our interest was to move forward to identify the antecedents of that phenomenon in a younger population of word learners. We slightly modified the animate and artifact descriptions to accommodate infants at 18 months of age. As in the previous study, we found that infants’ interpretation of novel nouns was mediated by the conceptual status of the individuals being named. We interpreted this clear finding as evidence that conceptual information permeates early word learning, even in infancy. This result challenged several of ALA’s developmental claims. For example, because we documented this effect in 18-month-olds, our findings challenged the claim that expectations in word learning (e.g., the shape bias) emerge late in the process. In addition, because our participants had such small productive vocabularies, our findings challenged the claim that the shape bias is built on the bedrock of correlations that children detect in their own productive lexicons.

Our hope was that this new evidence with infants would spark interest in the wide developmental window in which word learning unfolds and the broad range of capacities that infants bring to bear in their efforts to map words to meaning. Unfortunately, however, for Smith and Samuelson (2006), it sparked nothing of the sort. In their critique, they bring no new substance to the table. They do not engage seriously the new evidence, the outstanding issues raised in earlier and ongoing exchanges (Booth & Waxman, 2002b, 2003a; Booth & Waxman, 2005; Booth et al., 2005; Smith et al., 2003; Smith & Samuelson, 2006), or the broader implications for theories of word learning.

Instead, Smith and Samuelson (2006) continue to misrepresent our theoretical position, ignoring the core theoretical division between their position and ours while highlighting other divisions that do not exist. From our perspective, there is but one clear difference between our positions regarding the “foundational nature of cognition itself” (Smith & Samuelson, 2006, p. 1342), and this difference concerns the fundamental role of conceptual information in acquisition (see Booth & Waxman, 2005, for further discussion). This division reflects a deep and abiding controversy in the field as a whole regarding the relative contributions of perceptual and conceptual information to cognition and its development (Baillargeon, 2004; Carey & Markman, 1999; Gelman & Medin, 1993; Leslie, 1988; Mandler, 1988; Spelke, 1988, 1991).

We find it curious that Smith and Samuelson (2006) divert attention away from this fundamental issue, focusing instead on three imagined differences between our positions. First, they imply that we take knowledge to be represented in a unitary and fixed manner. We never made this claim. Second, they suggest that we see “cognition as sequestered from processes of perceiving and acting (Smith & Samuelson, 2006, p. 1339).” We have never taken this perspective. Third, they claim that we believe that the “mechanisms that underlie [the shape bias] are conceptual knowledge and not attentional learning” (Smith & Samuelson, 2006, p. 1339). This, too, is a misrepresentation. Certainly, we have argued that conceptual information plays an important role in word learning, in general, and in the expression of the shape bias, in particular. But

we have also consistently embraced a role for attentional learning (Booth & Waxman, 2003b; Booth & Waxman, 2005; Waxman, 2002; Waxman & Lidz, 2006).

Smith and Samuelson (2006) raise two new concerns in their critique, both at the level of expository style. First, they devote considerable attention to our use of a quote from the lead sentence of the general discussion in one of their group’s most influential articles (Landau, Smith, & Jones, 1998). We chose this quote because we felt that it reflected fairly, succinctly, and compellingly the ALA position. Yet Smith and Samuelson (2006) protest, arguing that this sentence was written as “a strong benchmark against which to discuss experimental results” (p. 1341). We agree entirely, and it is for this reason that we selected it. This type of protest is reminiscent of our first exchange. In Booth and Waxman (2002b), we appealed to another influential article titled “Naming in Young Children: A Dumb Attentional Mechanism?” (Smith, Jones, & Landau, 1996). Smith et al. (2003) protested, arguing that our use of their terminology (i.e., “DAM” for “dumb attentional mechanism”) constituted a misrepresentation of their position. But their protest is disingenuous, particularly so because they themselves have continued to use this terminology (see Colunga and Smith, 2004). Quibbles about quotes cloud the larger issues and intimate that we have been less than judicious in our writing. This is false. We have consistently reviewed the literature thoroughly and have engaged the evidence with honesty.

Second, Smith and Samuelson (2006) devote considerable attention to a parenthetical comment. In our 2005 article (Booth et al.), we mentioned a finding from Smith and colleagues and wrote that it had “. . . yet to be replicated in other labs (see Diesendruck & Bloom, 2003, and Graham & Poulin-Dubois, 1999, for failures to replicate)” (p. 493). To be honest, the parenthetical reference to “failures to replicate” should have been deleted, leaving the more accurate description in the preceding sentence. We stand by the body of our text, and we regret the editorial oversight in the subsequent parentheses.

We close this response with a strong sense of déjà vu, emphasizing (again) the evidence indicating that young learners seamlessly integrate perceptual, linguistic, and conceptual information as they acquire new concepts and the words to express them. It is time to develop theories that take into account young word learners’ sensitivity to these various sources of information and to the evolving interactions among them.

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