



Discussion

More than words: A reply to Malt and Sloman ☆

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Abstract

In four experiments, Malt and Sloman [Malt, B. C., & Sloman, S. A. (2007). Category essence or essentially pragmatic? Creator's intention in naming and what's really what. *Cognition*, 105, 615–648] show that the naming of artifacts is affected by discourse context. They see this phenomenon as posing a problem for the intentional-history theory of artifact categorization (e.g., [Bloom, P. (1996). Intention, history, and artifact concepts. *Cognition*, 60, 1–29]), and as supporting instead their alternative theory that naming is determined by communicative goals. This response begins by distinguishing the problem of artifact categorization (determining the categories that artifacts belong to) from the problem of artifact naming (deciding how to talk about members of these categories). In light of this distinction, it turns out that Malt and Sloman's findings are fully consistent with all theories of artifact categorization, including the intentional-historical one. Moreover, contrary to what they argue, there are actually many cases where the relative contributions of categorization and pragmatics can be clearly distinguished. Finally, it is argued that Malt and Sloman's own account of artifact naming presupposes a capacity for artifact categorization; it cannot work without one.
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1. Introduction

In their intriguing and thoughtful article, Barbara Malt and Steven Sloman (2007) report four experiments that explore how the naming of artifacts can be altered by the discourse context, and conclude that their findings show that artifact naming can be entirely explained in terms of communicative factors. Although they frame their theory as a critique of the intentional-historical theory developed in Bloom (1996, 1998, 2000, 2004) and elsewhere, their theory is actually an alternative to *all* current theories of artifact categorization – including non-essentialist ones such as the proposal that artifacts are categorized by shape. Theirs is a radically new approach to explaining how we think about artifacts.

In this brief reply, I will make four points. First, artifact categorization is distinct from artifact naming. Second, M&S's findings about discourse factors, although potentially interesting in their own right, are fully compatible with all theories of artifact categorization. Third, contrary to what they argue, it is possible to distinguish the relative contributions of categorization and pragmatics in artifact naming. Finally, M&S's own account *presupposes* an independent capacity for categorization; without one, it cannot explain how people name artifacts.

2. Categorization without naming

Someone packing for a camping trip might go into her basement looking for a flashlight. There are several theories as to how she could succeed at this. One proposal is that shape is very important – when one is looking for a flashlight, one is looking for an object of a certain shape. Another proposal characterizes artifacts in terms of what they can do; to look for a flashlight is to look for an object that can fulfill a certain function. A different sort of proposal, the one that M&S critique, is that people assume that members of an artifact category are created with a certain common intention. Object properties such as shape and function are relevant only insofar as they are cues to the creator's intent – to look for a flashlight is to look for something that has been created with a certain specific purpose. This theory is more complicated than the alternatives, but arguably has the advantage of explaining our ability to categorize artifacts that do not resemble typical members of their category.

In this example, the person in the basement is looking for a flashlight because it is good to have one on a camping trip – she is not planning to talk about it. This is a problem of artifact categorization, not artifact naming. Even if M&S are right, then, that it is “remarkably tricky” to study non-linguistic categorization, plainly it exists. People do go into their basements to look for flashlights, they look around their kitchens for corkscrews; they search for taxis in the rain, and sometimes they might even seek out a needle in a haystack. M&S's discourse

theory has nothing to say about these non-communicative acts of artifact categorization.¹

3. Naming can reflect categorization

We can use words to refer to categories. If someone asked our camper what she is doing, she might reasonably reply, “I’m looking for a flashlight”. She might phone her friend to ask if he has an object that belongs to the category she has in mind, and can express her question clearly by saying, “Do you have a flashlight I can borrow?”. Because of this function of words, psychologists interested in categorization often use naming as a dependent measure. If one is interested in what children think of as flashlights, for instance, one way to do so is to show them various objects and ask of each: “Is this a flashlight?”

Of course, words serve other purposes as well. If a waitress calls a customer “the ham sandwich”, she is intending to refer to him by talking about what he ordered. She is not saying that he actually is a ham sandwich. If he does something stupid, she might say, “Check out the genius over there”, and here she is using the word sarcastically, to describe someone who is not a genius. Often we choose our words based on assumptions about the knowledge of the listener. In M&S’s Experiment 1, they describe a situation where a father keeps a picture in his office that was drawn by his child to be a lollipop, but actually looks more like a balloon. If a repairman walks in and the father is worried that he might spill coffee on the picture, subjects agree that it makes sense for the father to say “Hand me the picture of the balloon”. – even though, as M&S find in Experiment 4, subjects themselves believe that it is really a picture of a lollipop.

These phenomena can be interesting, but, contrary to what M&S assume, their existence does not pose a problem for an intention-based theory of artifact categorization – or for any other theory of artifact categorization. No categorization researcher has ever proposed that people are *forced* to refer to an artifact by its category label. Nobody would predict that the poor camper is compelled to blurt out “flashlight” whenever she sees a flashlight. A theory of artifact categorization is an attempt to explain why someone would *think* a given object is a flashlight, not to predict how she will choose to *talk* about it.

¹ The problem of categorization is often described, here and elsewhere, as the problem of determining *the* category that an artifact belongs to, but this is an over-simplification. First, there are cases where people are uncertain as to how to categorize a given artifact, as in the “box” examples that M&S provide (see also Malt, Sloman, Gennari, Shi, & Wang, 1999). Second, any given object will fall into many categories. The most-discussed examples of this involve different levels of abstraction, but there are also cases where a single object can belong to more than one artifact category, or even to both an artifact category and a natural kind category (Malt, 1991; Bloom, 1996, 2007).

4. Distinguishing categorization and pragmatics

M&S correctly point out that there is no purely “neutral” context for naming, and so it can be difficult to pull apart the relative contributions of categorization and pragmatics. One interesting example is that of young children’s odd usages of words. When my son Max was 20 months old, he put a piece of yellow pepper on his head and said “hat” (see Bloom, 2000, p. 36). Was he describing it as a hat, or was he telling us that it was similar to a hat, or being used as a hat? Was he just trying to amuse an adult audience? It is difficult to answer such questions with young children because they lack the language to clarify what they are talking about, and so there is a lot of debate as to what is going on in such cases.

But there are also cases where the relative contributions of categorization and pragmatics can be clearly distinguished. The waitress does not believe that the customer actually is a ham sandwich; this would be madness, and would manifest itself in unusual behavior and reactions (the waitress would be shocked, for instance, if he spoke to her, since ham sandwiches cannot talk). In contrast, the camper who is asking her friend for “a flashlight” is using the word with the communicative goal of referring to members of that category. She wants to borrow a flashlight.

A more interesting case concerns the naming of visual representations, as when a child draws a picture and calls it “Mom”. Children will name their pictures based on what they intended them to depict, not on what they look like (Bloom, 2000; Bloom & Markson, 1998). They will provide an intention-based name both when spontaneously describing their pictures to adults (“I drew a picture of Mom”), and when answering questions about their pictures. Children don’t merely agree that their pictures can be given an intention-based name – they will insist that these are the right names, and become upset if the adult does not agree (“It’s *not* a picture of Dad – it’s a picture of Mom”). Older children and adults can explicitly comment on the distinction between what a picture is and what it looks like (“This is a picture of Mom, though it doesn’t look much like her”). And even 2-year-olds favor intention over appearance when naming pictures drawn by other people (see Preissler & Bloom, *in press*), a finding nicely replicated with adults by M&S in their Experiment 4.² The most parsimonious explanation here is that children and adults really do think that the intention of the artist is relevant to what a picture represents – they call it “a picture of Mom” because they believe that it *is* a picture of Mom, not merely to satisfy some felt communicative need.

Also, there are many ways to study categories without using a naming paradigm (Murphy, 2002). To choose just a few recent examples from developmental studies,

² The other conditions of Experiment 4 are informative for other purposes, but do not actually test predictions of the intentional account. For instance, the intentional theory predicts that children who hear about a newspaper being deliberately folded into a hat shape are more likely to think of it as a hat than those who hear about it accidentally acquiring that shape (Gelman & Bloom, 2000). It does *not* predict that people should believe that folding a newspaper into a hat makes it cease to be a newspaper.

researchers have explored how children sort unnamed artifacts (Diesendruck & Bloom, 2003; Preissler & Bloom, 2007), how they comprehend generic sentences (Gelman & Bloom, 2007), and what questions they ask about unfamiliar objects (Greif, Kemler-Nelson, Keil, & Guitierrez, 2006). To the extent that findings from these different types of studies mesh with studies that using naming as a dependent measure, it suggests that the naming studies are telling us about category knowledge, not discourse factors.

5. No naming without categorization

M&S suggest that artifact naming is best explained in terms of “how the goals of a particular communication are best realized”. This has an appealing simplicity. Under any account, people need to choose the words that they use. The simplest possible theory of naming is that this is *all* that they do.

To illustrate this, M&S give the example of someone who wants to sit down, approaches an object (presumably something similar to that depicted in Fig. 1), and says that she is “heading for a chair”.

According to M&S, she uses the word “chair” because

“... this is the name that both she and other members of her linguistic community associate with the object properties she has in mind. As such, it is the name best suited to causing her addressee to identify objects of the type she has in mind and to highlighting properties relevant to the discourse” (pp. 9–10 in ms).

It might seem implausible that every choice of a common noun requires an inference about the mental capacities of the person that one is talking to. After all, even young children use common nouns, despite their serious problems in understanding the minds of others. But, in defense of M&S, such reasoning may be unconscious and



Fig. 1. A chair.

automatic. Also, and particularly for young children, the relevant inference might take the form of a simple default assumption that other people have the same mental states that they do (see Birch & Bloom, 2004).

According to M&S, then, the speaker chooses the word “chair” because, for her and for every other speaker of English, this word is associated with certain “object properties”. Of course, “chair” is not her only option; she might use the vague phrase “that thing over there” or name the precise type of chair; she might joke, lie, use a metaphor, speak in a different language, or remain silent. But, still, the reason why “chair” is such a good word for the object in Fig. 1 – “the name best suited” – is because both the speaker and the listener would agree that the referent object possesses the right sort of properties.

What’s missing, however, is an account of precisely what these properties are. Such an account would have to answer familiar questions: Do these properties have to do with shape? The function that the object appears to be designed for? The inferred intention of the designer? Do people use different sorts of properties for naming simple artifacts versus complex artifacts, or for naming artifacts versus natural kinds? Do young children use different properties than older children and adults?.

For M&S’s theory to be complete, then, they need a theory of what goes on when people think that some things are chairs, others are flashlights, and others are pictures of lollipops. They need a theory of artifact categorization. The good news is that there are several candidates out there, including the intentional-historical account first outlined in Bloom (1996).

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