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Rethinking priming in social psychology: Insight from James' notions of habits and instincts

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ABSTRACT

Research on priming is commonly taken to establish that much of human behavior is automatic and caused by largely subconscious processes. This research has recently come under increased scrutiny as some classic studies have proved difficult to replicate. In this essay, we bring the views of William James to bear on priming. Though James leaves room for instinct and habit, he rejects the view that human psychology is ultimately mechanistic on the grounds that it is naïvely simplistic. James is also able to explain why priming studies are bound to face replicability issues: human behavior unfolds in a dynamic multifarious constellation of interrelationships among people, consciousness, and the world. To offer researchers a productive direction for studying cognition, we conclude by briefly introducing an approach known as enactivism – an approach that resonates with the ideas James puts forth.

1. Introduction

Psychologists are all familiar with the phenomenon known as "priming." A prime is a stimulus that unconsciously activates certain mental pathways which, in turn, can influence a person's performance on a variety of cognitive tasks. Priming studies have been used extensively in psycholinguistics, where they have been instrumental in adding to our knowledge about how we process and produce language, and in social psychology, where it is thought that the mental pathways activated by primes influence not only cognition but also behavior (e.g. Bargh & Chartrand, 1999). Although the priming research in psycholinguistics remains highly regarded, the priming research of social psychologists has recently come under attack. An underlying assumption of this research is that stimuli are causally related to specific thoughts and actions in a mechanistic and determinate way, making it possible to reliably trigger a behavioral response with the stimulus. The problem is that many of the priming studies have proved difficult to replicate (Stroebe & Strack, 2014) and psychologists have been challenged to produce better research in the area (see Yong, 2012a). Many of the distinctive priming effects appear not to be as robust as social psychologists have hoped.

William James (1890/1950) offers an alternative approach to priming. Writing 125 years ago, he was already speculating on the kind of seemingly automatic responsive engagement that is described in the priming literature. He took a very different approach, however. James looks to discuss such phenomena in terms of *habitual associations* that do not draw upon a presupposition of mechanistic determinate causality. Instead of relying on background presuppositions of self-contained processing mechanisms, he argued for an understanding of such phenomena in terms of a person's interdependent entwinement with physical space and with other people. He made room for a generic kind of habitual association that is much more dynamic in quality, which accounts for the indeterminacy seen in the priming research of social psychologists. As such, James offered a powerful alternative.

2. Priming: A brief survey

Perhaps Lashley (1951) was the first to use the term "priming" to refer to a psychological phenomenon. He speculated that "prior to the internal or overt enunciation of [a] sentence, an aggregate of word units is partially activated or readied" (p. 119). He thought that this prior activation, or "priming," was evidenced by "contaminations" of speech such as Spoonerisms and Freudian slips. Lashley's interests extended beyond language, but the idea that a

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word, shown to an experimental subject as a stimulus, could subconsciously excite or partially activate associated words became the focus of many psychlinguists. Storms (1958), for example, found that it was easier to learn a pairing of a nonsense syllable and word (e.g. lag-priest) when the nonsense syllable was first associated with a related word (e.g. lag-church). Storms' work was referenced in a conference-paper abstract by Segal and Cofer (1960) and they dubbed the phenomenon studied by Storms "priming." But perhaps most of the credit for making "priming" part of the psychologist's lexicon is due to the important work of Schvaneveldt and his colleagues in the 1970s and early 80s. They found that people are quicker to identify a string of letters as a word (the "lexical-decision task") if they are first shown a related word. For example, "butter" is recognized more quickly as a word than "doctor" when people are first shown the word "bread" (Meyer & Schvaneveldt, 1971). Another study showed that one meaning of an ambiguous word can be activated over another depending on which word is shown to a person beforehand (Schvaneveldt, Meyer, & Becker, 1976). Finally, people are quicker to make judgments about whether or not a pair of stimulus terms belong to the same category when they are semantically related. For example, "hand" and "foot" are more quickly determined to belong to the same category (i.e. natural object) than "hand" and "river" are (Schvaneveldt, Durso, & Mukherji, 1982).

Drawing inspiration from the work of psycholinguists, social psychologists began to examine whether priming could have broader effects. In an important study, Higgins, Rholes, and Jones (1977) showed that exposure to personality-trait terms in one experimental task could influence how a subject subsequently viewed another person's behavior in a putatively unrelated task. Subjects were first shown slides with words on them and asked to identify the background color of the slides as quickly as possible. Before each slide they heard a memory word they had to repeat immediately after identifying the background color. Some of these terms were for character traits like "adventurous," "reckless," "independent," "aloof," etc. Then the same subjects were asked to read a paragraph about a person named Donald that described some of his activities in a deliberately neutral way and complete a questionnaire, part of which prompted them to characterize Donald's activities. Higgins et al. found that the subjects characterized Donald using the trait terms they had been primed with. Those who had been primed with "adventurous" described Donald's wish to do some skydiving in this positive way while those who had been primed with "reckless" characterized it negatively.

The study by Higgins et al. (1977) suggested that priming could influence a person's thought and social judgments. Subsequent priming studies began to reveal that semantic primes could even influence a person's overt behavior. In a classic study by Bargh, Chen, and Burrows (1996), participants were asked to complete a scrambled-sentence task. For some, the scrambled sentence contained words consistent with our stereotype of the elderly, e.g., "Florida," "retired," "wrinkle," and "forgetful." For others, the scrambled-sentence task used non-age-specific terms. After finishing the task, subjects were secretly timed as they left the room. Those who had been primed with the stereotypes of old people walked more slowly than those who had received sentences with non-age-specific terms. In another important study, Dijksterhuis and Van Knippenberg (1998) asked a number of people to imagine a typical professor for 5 min and then write down some of a typical professor's attributes. Another group was primed in the same way but with a secretary stereotype, a third group was not primed at all. All subjects then completed a multiple-choice test based on Trivial Pursuit questions. The study found that subjects primed with the professor stereotype scored significantly better than the others.

Numerous additional priming effects have been documented. Here we will only mention a few of them. Bargh, Lee-Chai, Barndollar, Gollwitzer, and Trötschel (2001) found that priming could influence goal-directed behavior: subjects primed with words like "succeed," "strive," and "attain" performed better on tests and subjects primed with words like "helpful," "support," and "share" were more cooperative. Aarts, Gollwitzer, and Hassin (2004) found that observing goal-directed behavior can cause goal-directed behavior. Hassin, Ferguson, Shidlovski, and Gross (2007) showed that exposure to national or political symbols, such as flags, can influence political thought and behavior. Zhong and Liljenquist (2006) showed that being primed with unethical actions increases the desire for self-cleansing, evidenced, for instance, by an increased preference for products like soap or antiseptic wipes. Keizer, Lindenberg, and Steg (2008) found that when people observe violations of rules and social norms they are more likely to violate the rules themselves. Finally, Papies, Potjes, Keesman, Schwinghammer, and van Koningsbruggen (2014) found that being primed with literature about healthy food options decreases the amount of junk food one purchases. (For some additional discussion of the history of priming research and, specifically, its development in social psychology see Molden (2014), Klatzky and Creswell (2014), and Bargh (2014).)

3. The priming conundrum

The stimulus terms in priming studies – hereafter, reference to priming studies should be interpreted narrowly as reference to priming studies in social psychology and not as including priming studies in psycholinguistics – are usually words or images with socially significant meanings, and the behavioral effects of these stimuli seem to be caused subconsciously. The current thinking is that the stimulus activates a concept or mental representation in the subject which, in turn, causes the activation of a secondary representation that is semantically related to the primary representation. The activated secondary representation then influences behavior. All of this seems to occur below the level of conscious awareness: participants are consciously aware of the priming stimulus, but they are not aware of the way in which it influences them. These findings challenge the way we think about ourselves as agents. Most of us believe that we are ultimately the cause of our actions, that our actions are the result of conscious deliberation or, if not deliberation, at least the result of conscious intent. Priming studies fundamentally undermine this view. What they suggest is that many aspects of human behavior commonly thought to fall within the domain of conscious control may have unconscious causes. As some researchers have unabashedly suggested in the titles to their articles (Bargh et al., 1996; Bargh & Chartrand, 1999; Bargh et al., 2001), much of human social behavior may be "automatic." If this is true and we do not have as much control over our actions as we believe ourselves to have, our conception of what it is to be human will need revising.

But these kinds of priming studies, and the field of experimental social psychology more generally, have recently become the objects of increased scrutiny (Bartlett, 2013; Bower, 2012; Yong, 2012b). One of the main reasons for this is that many priming studies have been difficult to replicate, including some of the most historically significant results. Doyen, Klein, Pichon, and Cleeremans (2012), for instance, were unable to replicate Bargh, Chen, and Burrows' (1996) study and Shanks et al. (2013) were unable to reproduce the results of Dijksterhuis and Van Knippenberg (1998). This apparent inability to replicate experimental results would be worrisome in any science, but additional developments have accentuated the problem for priming studies and social psychology. First, in the last decade and a half, the field has been shaken by several high-profile cases of

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