

# Chapter 3

## Priming

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### ABSTRACT

*This chapter is about the wide variety of priming encountered in cognitive and social psychology. In cognitive psychology, the priming paradigm is mainly used to study memory phenomena or the pre-activation of concepts and motor reactions by related stimuli. In social psychology, the term priming is used for a broader range of phenomena in which an event triggers a subsequent behavior. In this chapter, some definitions of priming and the origin of the term's use in psychology are presented. Then, the chapter examines different types and variants of priming as well as their features and principal elements, using seven organizing principles. After this methodical and empirical classification, some important theories of response priming, semantic priming, affective/evaluative priming, negative priming, and macro-level priming are summarized. Last but not least, some general questions and problems in priming research are outlined and a brief outlook is given.*

### INTRODUCTION

What is a prime? This question was (a substantial) part of an action letter for a priming paper written by me and some co-authors a few years ago in which we investigated priming at a micro level using EEG measures. Of course, we thought that we already had sufficiently explained the core concepts of priming and what a prime is. The feedback showed that this was apparently not the case. In this specific case, some of the confusion arose because the action editor was a medical scientist. However, even in psychology it is not clear to everybody what priming is and what a prime is. This is not surprising, however, given the broad spectrum of phenomena and methods that are subsumed under the header of “priming”. “Priming sessions” at scientific conferences can thus often be rather confusing – such sessions can contain presentations reporting the effects of a “half-empty” versus a “half-full” tumbler on participants’ mood or the time they require to solve a crossword puzzle, as well as presentations reporting the effects of subliminal arrows on the speed (measured on a millisecond scale) of responses to congruent trials (arrow pointing left/right and word “left”/“right”) or incongruent trials (arrow pointing left/right and word “right”/“left”). The authors of both studies called their approach “priming” (I was one of the

DOI: 10.4018/978-1-5225-0159-6.ch003

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presenters of the second example). In fact, most of my work has been related to the second example, and so when I listened to talks of the first variant, I wondered—why are such experiments in “my” priming session? Likewise, I can imagine that researchers interested in the first priming variant were similarly confused by the second type of priming experiment.

This example demonstrates that there is a broad range of different interpretations of the term priming, and the question “Actually, what is a prime?” seems perfectly justified. The term priming is used in cognitive psychology, in emotion research, in social and media psychology, and increasingly also in developmental, clinical, or motivational psychology. Thus, I now endeavor to form an integrative view of these diverse interpretations. Here, one could firstly ask: What are the common aspects of these different interpretations of priming? To anticipate: In all cases of priming, there is “something” that has an influence on (the processing of) the “following”. In the “normal” case, priming is reflected in the fact that the prime (whatever the prime may be) makes one of at least two options (word choices, reactions, actions, etc.) a little bit more likely to occur than the other(s). Whether this influence lasts a few milliseconds, a couple of minutes, some hours or even days, weeks or years, depends on different factors.

The following text is about a wide variety of priming as used in different domains in psychology. First, I will present some definitions of priming and the origin of the term’s use in psychology. Then, I will examine different types and variants of priming as well as their features and principal elements using seven organizing principles. These seven organizing principles are neither exhaustive nor orthogonal to each other. However, they help clarify important differences between different priming types and illustrate the wide variety of priming research. After this methodical and empirical classification, I will summarize some important theories of different priming types. Last but not least, I will address some general questions and problems in priming research, and give a brief outlook.

## DEFINITIONS AND ORIGIN

In psychology, the term priming is generally used for pre-activations or facilitations. Priming is defined, for example, as “the improvement of the processing of a stimulus as a function of a previous presentation.” (Anderson, 2001, p. 471, translation by CB) Stroebe, Jonas, and Hewstone (2003, p. 138, translation by CB) defined priming in a result-oriented fashion as well: Priming is “the finding that a pattern will be activated with higher probability if it was presented recently or if it was used in the past.” In the same vein, Major (2008, p. ii) wrote: „Priming is the benefit that an event receives when its processing has been preceded by the processing of a related or identical event.” A more extended definition, which differentiates between the phenomenon of “priming” and the method or technique of “priming” (i.e., the priming paradigm) was given by Chartrand und Jefferis (2004, p. 854):

*An individual’s experiences in the environment temporarily activate concepts that are mentally represented. The activation of these concepts, which can include traits, schemata, attitudes, stereotypes, goals, moods, emotions, and behaviors, heightens their accessibility. These concepts are said to be primed; that is, they become more likely to influence one’s subsequent thoughts, feelings, judgments, and behaviors. Priming also refers to an experimental technique that is used to simulate the activation of concepts that usually occurs through real-world experiences.*

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