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## Commentary

### The influence of suggestibility on memory <sup>☆</sup>

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#### ABSTRACT

We provide a translation of Binet and Henri's pioneering 1894 paper on the influence of suggestibility on memory. Alfred Binet (1857–1911) is famous as the author who created the IQ test that bears his name, but he is almost unknown as the psychological investigator who generated numerous original experiments and fascinating results in the study of memory. His experiments published in 1894 manipulated suggestibility in several ways to determine effects on remembering. Three particular modes of suggestion were employed to induce false recognitions: (1) indirect suggestion by a preconceived idea; (2) direct suggestion; and (3) collective suggestion. In the commentary we suggest that Binet and Henri's (1894) paper written over 115 years ago is still highly relevant even today. In particular, Binet's legacy lives on in modern research on misinformation effects in memory, in studies of conformity, and in experiments on the social contagion of memory.

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Alfred Binet (1857–1911) is famous as the creator (with Theodore Simon) of the first successful intelligence test (Fancher, 1985). But the work of this French psychologist is remarkable in many other ways (see Wolf (1973) for a biography of Binet). In particular, he conducted research on many different aspects of remembering (cf., Nicolas, 1994a; Wolf, 1976) and was among the first investigators to study the influence of suggestibility on memory and the whole issue of false memory or memory illusions (Roediger, 1996). At the time he focused his studies on two major research topics: mnemonic techniques for memory improvement (cf., Binet, 1894) and with his collaborator Victor Henri (1872–1940; for a biography, see Nicolas, 1994b) the development of verbal and visual memory in children. It is in the course of the latter studies he showed that children could be highly suggestible and he devised several techniques to measure the effects of suggestive influence on their memory. This work culminated in his major book *La Suggestibilité* published in 1900 (and still untranslated today).

Binet and Henri's 1894 paper, although written over 115 years ago, is still highly relevant today. The authors estimated the effect of natural suggestion on visual memory as a function of children's age. In the various experiments described in this paper, suggestion was manipulated in various ways under conditions of uncertainty for the children. Three particular modes of suggestion were employed to induce false recognitions: (1) indirect suggestion by a preconceived idea; (2) direct suggestion; and (3) collective suggestion. Binet's legacy lives on in modern research on misinformation effects in memory, in studies of conformity, and in experiments on the social contagion of memory.

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Just like later researchers, Binet sought to study suggestibility as a normal social and cognitive process rather than as an indication of psychological aberrance or weakness. Within this framework, he conducted other experiments (Binet, 1900) that established the role of prior attitudes (autosuggestion) and of comments or orders (suggestions of the experimenter) on acts of remembering in subjects studied both individually or in groups. The results of these experiments broadened and confirmed those published in Binet's earlier 1894 article. By studying the suggestibility of normal subjects, he helped to establish a scientific foundation for the psychology of testimony. Indeed, Binet's research on suggestibility in visual memory is similar to much later research. For example, the influential line of work begun by Elizabeth Loftus and her colleagues (e.g., Loftus & Palmer, 1974; Loftus, Miller, & Burns, 1978) on the effects of suggestion on visual memory are similar in spirit to Binet's. In the Loftus misinformation experiments, subjects study a scene and then later certain items are suggested as being in the scene that were not actually present. Relative to appropriate control conditions, subjects incorporate the misleading suggestions into memory and later recall or recognize them as part of their memory reports. Thus this method essentially uses the direct suggestion method that Binet used in 1894.

An even more direct influence of Binet's work can be seen in the famous series of experiments by Solomon Asch on conformity in social psychology (Asch, 1951, 1952, 1956). Asch used not only Binet's techniques but his actual experimental task from the 1894 paper. He showed a group of people a single line among comparison lines with one matching comparison line. Judgments were perceptual, with the stimuli still before the subject. Under conditions of no suggestibility (when subjects reported privately or were tested alone) few errors were made. However, when Asch had confederate subjects deliberately report a consistent error before the actual subject reported his or her response, that subject would often conform to the group judgment rather than report what he or she (presumably) accurately saw. The conformity research begun by Asch has been quite influential (see Gilovich, Keltner, & Nisbett, 2010, pp. 281–293 for a recent review). Asch's experiments use Binet's method of collective suggestion although, unlike Binet, he asked his confederate subjects to deliberately make errors. Despite what seems to be a direct adaptation of Binet's task and to some extent his method, Asch never cited Binet's work in his three major publications on this topic (1951, 1952, 1956). This is to take nothing away from Asch's clever adaptation of the task and the ensuing interest in his work, but when a researcher is studying social influence and suggestibility, one might be generous enough to reveal the sources of suggestion for one's own ideas and methods. Irony abounds in Asch's oversight.

Later research has combined the Loftus and Binet/Asch techniques to study conformity in memory reports. Roediger, Meade, and Bergman (2001) developed a task to explicitly blend the conformity situation (two subjects take turns recalling a scene so their memory reports can influence one another) with the misinformation paradigm (some of the information suggested by a confederate subject is wrong). Roediger et al. (2001; Meade & Roediger, 2002) had subjects witness scenes (e.g., a kitchen) that contained many objects. Later, subjects took turns recalling items from the scene. On some occasions, a confederate would recall two items that had not been in the scene, one that was quite typical for the scene (e.g., a toaster for the kitchen scene) or another object (oven mitts) that could occur there but with a lower probability. After the confederate and subjects had taken turns recalling the items, they were separated and then asked to recall the items separately after being instructed to be sure to recall only items from the original scenes. Nonetheless, the subjects often incorporated items suggested by the confederate into their recollections of the scenes. The confederate's erroneous memories seemed to infect the subject's memory, a process that Roediger et al. (2001) labeled the social contagion of memory. Others have studied similar phenomena (e.g., Wright, Mathews, & Skagerberg, 2005), and all these studies indirectly owe a debt to the pioneering work of Binet.

Because the issue of suggestibility has played such a large role in psychology in the English-speaking world (in research on social conformity, errors in memory, and hypnosis), it is unfortunate that Binet's pioneering work has been inaccessible to psychologists whose native language is English. The publication of the Binet and Henri (1894) translation helps to belatedly correct this oversight.

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