LETTER

Who's fooling whom in the science of magic?

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In PNAS, Pailhès and Kuhn (1) show that subtle verbal suggestions and hand gestures can influence an observer's choice of playing card. Apart from the fields of awareness and priming, the context of this experiment was the science of magic, a movement that has seen enormous growth in the past decade. The central argument is that magicians possess a wealth of knowledge that can be harnessed by psychologists, particularly in the field of visual cognition. Use of such knowledge to aid experimental psychology is, however, problematic.

As Pailhès and Kuhn state, their procedure was suggested by the British magician Derren Brown (2). Brown is well known for routines in which he informs the audience that he uses psychological principles including "subliminal suggestions," as tested by Pailhès and Kuhn. Brown does not, however, use any of the subtle psychological techniques he claims to use. He is an entertainer, a magician. He performs tricks.

The paradoxical aspect of the priming method suggested by Brown is that it proved to be a real effect, as shown by Pailhès and Kuhn. It is also a very welcome development in the field of priming. It therefore appears to vindicate the testing of the procedure and the science of magic more broadly. However, as real as this particular effect is, it is a lucky positive result among the many dozens of psychological principles that Brown and other magicians say they use.

Consider some of the ways in which Brown supposedly employs psychological principles. He can use hand gestures to make a person repeatedly avoid an envelope containing money (3). He can prime a person to draw a harp by having them pass such an instrument (in a taxi) placed in a shop window on a busy London high street (4). He is also adept at reading body language to determine a profession and life ambitions (5). These effects are based on magic principles, none of which use subtle psychology. In a science of magic review article, Thomas et al. (6) appear to have been persuaded by Brown's ability as a psychologist.

Stating that psychology will be used in a magic performance has become common among magicians. In one routine, the audience is informed about the principles of visual attention, particularly "misdirection," and then told that this will be employed in a following trick. In all of the demonstrations I have seen, none uses attention/misdirection in any meaningful way. Instead, they invariably employ some classic magic principle (e.g., duplicate person or card; see refs. 7 and 8). When misdirection is employed (e.g., ref. 8), the effect is often aided by occlusion. In other words, vision drives the effect, not attention. This is all detrimental to the public understanding of science and psychology in particular.

Magic is about entertainment and above all secrecy. One therefore never knows whether a suggested method is the result of psychological insight or just a trick. Bridging this ancient art form with experimental science makes for an awkward combination.

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6 C. Thomas, A. Didierjean, F. Maquestiaux, P. Gygax, Does magic offer a cryptozoology ground for psychology? *Rev. Gen. Psychol.* **19**, 117–128 (2015).

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8. Penn and Teller, Penn and Teller Give a Lesson in Misdirection Using a Vanishing Chicken (2018). https://www.youtube.com/watch?v=Lo5BRAKvJoA&t=135s. Accessed 14 December 2020.