

Suggestibility and Hypnotizability: Mind the Gap

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Abstract

Suggestion, both within and outside of hypnosis, can influence many psychological processes, including cognition and emotion. Moreover, suggestion may account for many individual differences and promote the investigation of such mainstream fields as attention and memory. To be sure, exploring the power of suggestion will likely pave the road to a more scientific understanding of such psychological phenomena as motivation, expectation, and the placebo effect.

Keywords: hypnosis, hypnotizability, suggestion, suggestibility, placebo.

Introduction

Suggestion is rapidly becoming a topic of central importance in contemporary psychological science (Raz & Buhle, 2006). Multiple studies over many years have shown that at least in certain individuals, suggestion can dramatically influence behavior. However, it has been difficult to precisely qualify – let alone quantify – those special individuals; agree on appropriate research methodology and paradigms; identify the underlying mechanisms and neural correlates; and provide a unifying scientific theory that can account for these unusual phenomena. In line

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with a tradition of published accounts, recent research findings show that suggestion can have a substantive effect outside of (Raz, Kirsch, Pollard, & Nitkin-Kaner, 2006) as well as under hypnosis (Raz, Fan, & Posner, 2005). However, investigation of suggestion is hardly the full purview of only researchers and practitioners of hypnosis; investigators from multiple disciplines increasingly target suggestion in their studies. Indeed, cumulative findings outside the hypnosis literature propose that nonhypnotic suggestion can vastly influence behavior. For example, it is common knowledge that research on memory distortion has shown that suggestions for post-hoc ascriptions can contaminate what a person actually remembers from an event. Moreover, suggestion can lead to false memories being injected directly into individuals' recall. These findings have implications for police investigation, clinical practice, and other settings relying on memory reports (Loftus, 2003).

Beyond memory, suggestion can alter belief and subsequent related behavior. For example, a recent report in the Proceedings of the National Academy of Science (PNAS), describes the influence of suggestion on memories, beliefs, and behaviors (Bernstein, Laney, Morris, & Loftus, 2005). The findings show that by suggesting specific negative experiences in childhood it is possible to create beliefs that result in the avoidance of certain foods in adulthood. More generally, these results may be extended to propose that through suggestion it may be possible to manipulate dietary intake and consequently bolster health.

Researchers have demonstrated that suggested recall ranges the gamut from mundane episodes such as getting lost in a supermarket as a child, all the way to more extraordinary tales such as spilling punch on the bride's parents at a wedding and even witnessing demonic possession in a childhood friend (Mazzoni, Loftus, & Kirsch, 2001). Experimenters often need to employ ingenious ways to use suggestion. For example, in the false memory study of witnessing demonic possession, participants read "articles" about the frequency of possession in children and heard details from "witnesses" of such events. The participants also received false feedback on a questionnaire they filled out determining that, based on their results, they likely witnessed demonic possession before the age of three. After these suggestions, participants claimed demonic possession was more plausible with almost 20% of the participants coming to believe that they witnessed demonic possession as a child. Thus, even without understanding the mechanisms subserving such responses, the effects of nonhypnotic suggestion on memory and belief can be marked (Mazzoni, Loftus, & Kirsch, 2001).

Another circumlocutory example of nonhypnotic suggestion comes from one more recent report in PNAS. Using real-time functional MRI (fMRI), this study showed a novel way to alleviate the symptoms of marked pain and discomfort (deCharms, et al., 2005). By following instructions for raising and lowering pain level while watching an online computer-generated image of their brain activity in the pain region, participants learned to monitor pain as a function of suggestion and imagination. With training participants gained voluntary control over activation in a specific brain region. In other words, voluntary control over activation in a specific brain location led to control over pain perception and these effects were powerful enough to mediate severe pain. Thus, suggestion may be a conduit to instigating sensory and physiological regulation.

Finally, in an unpublished study from Yale University, research psychologists, including Frank Keil and Deena Skolnick, asked participants to judge different explanations of a psychological phenomenon. The findings show that for both novices and expert observers the presence of "hard science" terminology turned bad explanations into satisfactory ones. Suggestion works in subtle ways.

Suggestion and Hypnosis

It is difficult to reliably classify individuals using vague descriptors. Today, hypnotizability is shorthand for hypnotic susceptibility. Hilgard used “hypnotic susceptibility” and “hypnotizability” interchangeably (Hilgard, 1981). Other experts exclusively use the term “hypnotizability,” but are typically not averse to referring to “insusceptible” subjects in contrast to “hypnotizable” individuals. Yet other scholars provide compelling, albeit imperfect, arguments for appellations such as “suggestibility” (Braffman & Kirsch, 1999; Kirsch, 1997; Kirsch, Burgess, & Braffman, 1999; Kirsch, Wickless, & Moffitt, 1999).

The term “Susceptibility” also hit a few snags. Whereas Hilgard and Weitzenhoffer—although the latter seems to have subsequently recanted—probably chose “susceptibility” partly as a reaction to Hull’s implicit association of hypnosis with suggestibility, the resistance to “susceptibility” stems partly from its usage in other contexts (e.g., people can be susceptible to a disease). Indeed, hypnosis is probably thought of as different from “suggestibility” because there are forms of suggestion to which hypnosis is unrelated. However, semantic disputes notwithstanding, hypnosis is a phenomenon of suggestibility, at least in the sense that hypnotic phenomena take place as the subject responds to suggestions of the “hypnotic” type.

Other practitioners construe “suggestibility” to imply a specific and testable phenomenon independent of hypnosis (e.g., measurable with a specific suggestibility scale). According to this view, hypnotic susceptibility relates specifically to the subject’s ability to respond to various hypnotic phenomena of which suggestibility is but one. To some researchers “susceptibility” sounds more passive than “suggestibility” and they prefer the terms “hypnotic responsiveness” or “responsiveness to hypnotic suggestions” instead. Whatever the nuance may be, the concepts (and names of concepts) involved in measuring hypnosis have been thoroughly explored and are largely interchangeable (Weitzenhoffer, 1997). However, placebo is one possible exception.

Hypnosis can be likened to a form of placebo (Kirsch, 1994). Whether inert pills or another form of sham treatment, placebo effects have a documented history going back several centuries. However, only in the 1950s was it recognized that placebo treatments instigate important therapeutic changes. The use of placebo-controlled research, be it drugs and even some surgical procedures, often involves deception. Whereas hypnosis produces therapeutic effects, it does not require deception in order to be effective. Thus, hypnosis can be construed as a nondeceptive placebo manipulation (Kirsch, 1994; Kirsch, 1999). Placebo research is an excellent vehicle to study the influence of suggestion and expectation on behavior.

Vantage Points

One of the top investigators of the placebo effect, Irving Kirsch is a distinguished scientist, a hypnosis scholar, and a respected leader of a group of researchers who claim, based on data, that hypnosis doesn’t seem to do much more than suggestion. This hypothesis calls for a fair-and-square experimental design, which compares response to suggestions given both in and out of hypnosis. Despite criticisms of this approach, at least some findings propose that hypnosis isn’t the critical variable; in other words, that hypnosis doesn’t make a significant impact on response to suggestion. This is a substantive contribution by Kirsch.

It is difficult, however, to find a perfect universal experimental design in the same way that it is inconceivable to find an all-purpose ideal control condition. Such experimental parameters are a function of the specific research question, not the general field. Irving Kirsch has been asking a consistent research question for many years. Consequently, the

paradigms he employs to test his hypothesis gravitate toward a certain experimental scheme. That's how good science works.

As often is the case, the devil is in the details. Investigators repeatedly use different screening tools to select and label their participants. For example, while some use the Carleton University Responsiveness to Suggestion Scale (CURSS), others consider it a substandard instrument for assessing hypnotizability. The CURSS is designed to permit speedy measurement of nonhypnotic suggestibility by the simple expedient of eliminating the induction of hypnosis. In general, we would do well as a scientific community to adopt a given standard and use canonical tools such as, say, the Harvard and Stanford scales of hypnotic susceptibility, even though time and clinical constraints often make such aspirations impractical. Otherwise, without putting too fine a point on it, we may blur the difference between hypnotizability and other forms of suggestibility. Indeed, this problem frequently crops up rhetorically as we refer to participants interchangeably as 'suggestible' and 'hypnotizable.' Fortunately, most researchers agree that hypnotizability and waking suggestibility are strongly correlated and that hypnotic-suggestion rather than nonhypnotic-suggestion typically yields stronger effects.

Given that in the mid 60s Hilgard and Tart used the Stanford scale with and without hypnotic induction and that Hilgard largely agreed with Hull that hypnosis was a plane of heightened suggestibility, Kirsch's research direction poses not just scientifically testable hypotheses, but provides an interesting historic perspective. However, some researchers squabble with Kirsch's premise. A few of them raise multiple concerns, including reservations about the psychometric properties of the CURSS and caveats concerning apparent increases in suggestibility that may be attributable to experimental demand effects rather than veridical change in hypnotic responding. While many of these scholars agree that suggestion and expectation bring about tangible effects, they feel strongly that these effects represent but a small part of the puzzle and are reluctant to embrace the role of suggestion as a central determinant of hypnosis. Measurement scale of choice notwithstanding, it is important that more rigorous research examine what happens when suggestion is delivered without hypnotic induction.

Conclusion

While exploring the science of suggestion, we must be mindful of the emerging big picture, overarching psychological theme without getting bogged down by parochial hypnosis issues. The hypnosis community is relatively small and most of the nuanced information we discuss herein is of interest only to the even tighter circle of hypnosis researchers who persistently cavil whether hypnosis is an "altered state of consciousness." Personally, I think that rather than being helpful at least some of the tentative accounts and putative positions on this debate have sown unnecessary asperity. I believe that these questions can be marginalized as they are largely irrelevant to doing good research and advancing the field.

Our theories should be grounded in experimental data – the data, not one's preconceived theoretical conceptualization of hypnosis, should guide the theory. It is our responsibility as research and clinical scientists to report the data and try to come up with a plausible interpretation of the results. But we must humbly remember that publishing our findings does not mean that they are correct.

A survey examining recent publications in a single specialty journal reported that the term hypnotizability was over four times more common a descriptor of hypnotic talent than

susceptibility and that hypnosis as an identifiable state was over four times more frequent than the socio-cognitive version (Christensen, 2005). However, it is tricky to infer much from such data. I am happy to currently concur with either the concept of suggestibility or hypnotizability but either of these terms are, in my view, roughly equivalent when used in a common hypnotic context. Without embroiling myself in strife and academic wars waged over largely irrelevant historic issues, I feel that this terminology is interchangeable and immaterial to the issues discussed in most papers.

Regardless of the appellation, scientific arguments should be measured and logical, not emotional, and never personal. Good research is a demanding pursuit. For many of us, keeping up with the literature poses a never-ending challenge. We rely on word of mouth, “news and views,” journal clubs, or electronic alerts to stay abreast of our field. But the media are also potent arbiters of scientific advances. And, in a field so easily lending itself to public fascination and sensationalism, both practitioners and researchers of hypnosis must make every effort to rely on good data, craft careful accounts of their experimental results, and communicate using dispassionate, judicious language.

There is a search for absolute truth in scientific research. We never get there, but there are criteria by which we can judge how close we are. As part of our shared scientific responsibility, I am always criticizing myself and my colleagues, and they are criticizing me. And there is often a test that one can perform to determine who is likely right. The test requires convergence of evidence over multiple methods, labs, and periods. I suggest we apply the same time-honored scientific principle to the study of suggestion.

As we try to come up with a good theory to explain our collective results, we should remember Karl Popper, one of the greatest philosophers of science in the 20th century, who taught us that a proposition or theory is scientific if it permits the possibility of being shown false – the falsifiability criterion. The history of science shows that many theories were not initially falsifiable, not because they were not sufficiently well operationalized in terms of measurable variables – as was the case in Freudian theories – but because they were not fully developed. Such theories, however, have often served a valuable heuristic purpose. The current situation may well be similar. Controversy surrounding the role of suggestion has generated a large body of useful research from which new theories and empirical findings have evolved. It is likely that a theory will be extended and revised to permit more testable predictions as additional research is conducted using new methodologies such as imaging of the living brain (Raz, Fan, & Posner, 2005) and correlating genotype with phenotype in line with a brain theory (Raz, Fan, & Posner, 2006). Such experiments are currently underway and although the epistemological status of suggestibility, relative to hypnotizability, requires further edification, future data will doubtlessly pave the road to a more scientific understanding of these concepts.

References

- Bernstein, D.M., Laney, C., Morris, E.K., & Loftus, E.F. (2005). False beliefs about fattening foods can have healthy consequences. *Proceeding of the National Academy of Science U S A*, 102(39), 13724-31.
- Braffman, W., & Kirsch, I. (1999). Imaginative suggestibility and hypnotizability: an empirical analysis. *Journal of Personality and Social Psychology*, 77(3), 578-87.
- Christensen, C.C. (2005). Preferences for descriptors of hypnosis: a brief communication. *International Journal of Clinical and Experimental Hypnosis*, 53(3), 281-9.

Suggestibility and Hypnotizability

- deCharms, R.C., Maeda, F., Glover, G.H., Ludlow, D., Pauly, J.M., Soneji, D., Gabrieli, J.D., & Mackey, S.C. (2005). Control over brain activation and pain learned by using real-time functional MRI. *Proceeding of the National Academy of Science U S A*, 102(51), 18626-31.
- Hilgard, E.R. (1981). Hypnotic susceptibility scales under attack: an examination of Weitzenhoffer's criticisms. *International Journal of Clinical and Experimental Hypnosis*, 29(1), 24-41.
- Kirsch, I. (1994). Clinical hypnosis as a nondeceptive placebo: Empirically derived techniques. *American Journal of Clinical Hypnosis*, 37(2), 95-106.
- Kirsch, I. (1997). Hypnotic suggestion: A musical metaphor. *American Journal of Clinical Hypnosis*, 39(4), 271-7; discussion 277-81.
- Kirsch, I. (1999). Clinical hypnosis as a nondeceptive placebo. In I. Kirsch, A. Capafons, E. Cardena-Buelna, & S. Amigo (Eds.), *Clinical hypnosis and self-regulation* (pp. 211-225). Washington DC: American Psychological Association.
- Kirsch, I., Burgess, C.A., & Braffman, W. (1999). Attentional resources in hypnotic responding. *International Journal of Clinical and Experimental Hypnosis*, 47(3), 175-91.
- Kirsch, I., Wickless, C., & Moffitt, K.H. (1999). Expectancy and suggestibility: Are the effects of environmental enhancement due to detection? *International Journal of Clinical and Experimental Hypnosis*, 47(1), 40-5.
- Loftus, E.F. (2003). Make-believe memories. *American Psychologist*, 58(11), 867-73.
- Mazzoni, G.A., Loftus, E.F., & Kirsch, I. (2001). Changing beliefs about implausible autobiographical events: a little plausibility goes a long way. *Journal of Experimental Psychology Applied*, 7(1), 51-9.
- Raz, A., & Buhle, J. (2006). Typologies of attentional networks. *National Review of Neuroscience*, 7(5), 367-79.
- Raz, A., Fan, J., & Posner, M.I. (2005). Hypnotic suggestion reduces conflict in the human brain. *Proc National Academy of Science U S A*, 102(28), 9978-83.
- Raz, A., Fan, J., & Posner, M.I. (2006). Neuroimaging and genetic associations of attentional and hypnotic processes. *Journal of Physiology Paris*, 99(4-6), 483-91.
- Raz, A., Kirsch, I., Pollard, J., & Nitkin-Kaner, Y. (2006). Suggestion reduces the stroop effect. *Psychological Science*, 17(2), 91-5.
- Weitzenhoffer, A.M. (1997). Hypnotic susceptibility: a personal and historical note regarding the development and naming of the Stanford Scales. *International Journal of Clinical and Experimental Hypnosis*, 45(2), 126-43.