SEEING THE FUTURE BY LOOKING AT THE PAST: COMMENT ON KIRSCH ET AL.

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ABSTRACT

It is argued that current understanding of the hypnotic induction, as a facilitator of hypersuggestibility, does not fully incorporate the original paradigm of Clark Hull and his associates. Differences in methodology may be leading contemporary scholars to underestimate the effect of hypnotic induction. Many of Hull's studies, using his methods, have not been replicated. Doing so may lead to some interesting findings that may aid the effort of defining hypnosis. Suggestions on how to replicate Hull's studies while overcoming their inherent limitations are provided.

Key words: hypnosis, Clark Hull, hypersuggestibility, induction

Kirsch et al. (2011) embark on a courageous attempt at solving a problem that has plagued hypnosis clinicians and researchers: coming to a common understanding of hypnosis. They propose that its essence will be better understood when a consensus is made about what hypnosis should be. A narrow definition, perhaps the 'classic version' as it was the position held by Hull (1933), views the hypnotic effect as a change in suggestibility as the result of being hypnotized (or the amount of *hypersuggestibility*). A broader definition merely focuses on the condition which follows after a hypnotic induction is administered. The unresolved issue centres on the purpose of the hypnotic induction: is it important because it is the beginning of hypnosis or because it produces a heightened state of responsiveness? However, to come to a consensus and answer this question, two other issues—what is a hypnotic induction and what is so special about it—need to be examined.

First: what exactly *is* a hypnotic induction and what does it do to suggestibility? Classically (and perhaps typically) it is the ritual of the hypnotist giving suggestions of sleepiness, relaxation, eye closure, and the like. Of course, inductions have consisted of procedures in which suggestions of heightened alertness were given (e.g. Ludwig & Lyle, 1964). Regardless of its content, the induction is considered by many as the commencement of a hypnotic experience. Kirsch et al. (2011) are inclined, as have been many other authors (e.g. Hilgard, 1965), to clump together numerous studies on hypnosis (Hull & Huse, 1930; Williams, 1930; Caster & Baker, 1932; Hull, 1933; Jenness, 1933; Weitzenhoffer & Sjoberg, 1961; Barber & Glass, 1962; Hilgard & Tart, 1966) in order to maintain that hypnotic inductions produce relatively small increases in suggestibility. A closer look at the earlier studies conducted by or in association with Clark Hull, however, shows that his understanding of hypersuggestibility is different from today's view of it. It is argued here that returning to Hull's approach may guide us to a better understanding of hypnosis.

A complete qualitative and quantitative review of the studies that made up Hull's seminal research programme (summarized in Hull, 1933) has been done previously (Mohl, 2008). Some of the more pertinent points will be discussed here. First, the studies to which Hull contributed or supervised directly (Hull & Huse, 1930; Williams, 1930; Caster & Baker, 1932; Patten et al., 1932; Hull et al., 1933; Jenness, 1933; Patten, 1933) assessed suggestibility by measuring the amount of time required to produce the suggested effect, and then compared the amount of time required to produce the effect, for example, when there was a hypnotic induction versus no induction. This is a piece of history that has not been forgotten (Hilgard, 1965; Barber & Calverley, 1966; Kirsch et al., 2007). However, this method subsumes a different understanding of hypersuggestibility: one needs to be able to respond eventually to the suggestion in both conditions (one cannot be *hyper*suggestible if one is not initially suggestible), and it is hypothesized that one responds faster following an induction.

The creation of hypnotic susceptibility scales abandoned the initial conceptualization of hypersuggestibility in favour of comparing the number of suggestions passed in the waking state relative to when hypnotized. In doing so, the post-Hullian approach viewed hypersuggestibility as responding to a suggestion following the induction but not in the waking state. While their strong psychometric properties have made them useful in empirical studies, such scales are far less sensitive, compared to Hull's method, in measuring changes in suggestibility. For example, suppose an arm levitation suggestion of some scale is presented to two participants, and the criterion for passing that item is that the arm lifts at least three inches off one's lap within 20 seconds after the start of the suggestion. Suppose also that no time limit is given, and Participant A produces that effect in 14 seconds in the waking state and 7 seconds while hypnotized; Participant B, on the other hand, produces the effect in 50 seconds without a hypnotic induction and in 25 seconds with one. The time measure showed that participants were twice as suggestible following the induction, but the scale would have simply scored a 'pass' for the first participant in both conditions and a 'fail' in both conditions for the second participant, implying that the hypnotic induction had no effect on both participants, when clearly there was.

The difference in approach plays an even more important role in our attempt to understand the effect of the hypnotic induction. In a meta-analysis of Hull's studies (Mohl, 2008), the hypnotic induction had a substantial effect size of 0.66, indicating that the hypnotic induction substantially sped up most participants' responses to suggestions. This may suggest that hypersuggestibility produced by the induction may be greater than currently believed. This method of measuring the timing of responsiveness led to another impressive finding. Krueger (1931) found that increased suggestibility, indicated by the reduced amount of time needed to produce the suggested effect relative to the waking state, did not end after hypnosis was terminated, but gradually declined over the course of several hours, indicating that if hypnosis is simply a state of increased suggestibility produced by a hypnotic induction (Hull, 1933), then it is something that we leave not immediately but rather slowly. Interestingly, this is a finding that has not since been re-examined.

Second, what is so magical about the hypnotic induction that makes this process occur? Hull tested a number of other possible manipulations that might affect hypersuggestibility, but failed to find anything that remotely equalled the effect of the hypnotic induction (which was composed of suggestions of sleepiness and eye closure). One idea was that a suggestion in the waking state ought to produce increased suggestibility to a second suggestion given in

the waking state (in effect, making the first suggestion a form of hypnotic induction), but Hull, Patten, and Switzer (1933) and Patten (1933) found that waking suggestions failed to facilitate hypnotic responsiveness.

While many authors will cite Hull (1933) as one of the earliest studies to support the existence of hypersuggestibility, it is important to note that he was dissatisfied with his conclusions, fearing that there may have been methodological flaws in these studies, and implored others to continue this line of work. Yet the literature shows, to the best of the author's knowledge, no attempts to replicate Hull's findings using his methods since he published his seminal work. A close look at those studies (see Mohl, 2008) shows that there were notable shortcomings. Studies that measured the effect of the induction (Hull & Huse, 1930; Williams, 1930; Caster & Baker, 1932; Jenness, 1933) employed samples that tended to be highly responsive compared to those used in waking studies (Hull et al., 1933, Patten, 1933). Furthermore, the actual mechanical apparatuses used in the waking studies to assess responsiveness time may have inadvertently prevented participants from producing a heightened response (see Barrios, 2001). This could explain the findings of Patten (1933), who used the same apparatus and found that an overt demand characteristic, designed to make participants believe that hypersuggestibility does occur following the response to a waking suggestion, *failed* to produce increased suggestibility even though implicit demands have produced the respective desired effects elsewhere (Orne, 1959).

The problem becomes even more puzzling when looking at Hull's other conclusions: Williams (1930) found that relatively unresponsive participants became more responsive to a suggestion after deliberately simulating (that is, faking) their responses to other suggestions. Thus, based on Hull's work we are left to conclude the following: increased suggestibility occurs following an induction and when following directions to simulate, but it does not when following a suggestion in the waking state, even when one's expectancies are manipulated into believing that such an effect does exist. It is doubtful that any theory can parsimoniously account for these findings, and it is no wonder that Hull claimed that 'the fundamental question of hypnotic hypersuggestibility still lies in an extremely unsettled condition' (1933: 332).

Replicating Hull's studies, and correcting for procedural pitfalls, would certainly vindicate Hull's attempts to understand hypnosis, especially since antagonistic attitudes of the time essentially forced him to cease his hypnosis research (Hull, 1962). However, the findings of such studies would also provide guidance as to accepting a narrow or broad definition of hypnosis. Let us posit some possible outcomes of hypothetical attempts to replicate and their implications for the question at hand. If it is found that not only a hypnotic induction, but also a waking suggestion of any kind, produces increased responsiveness to a second suggestion, then a broad definition of hypnosis would be appropriate; but if it is also found that simulating hypnotic responses (Williams, 1930) or even following instructions produces hypersuggestibility (see Hunt, 1979 and Elitzur, 2006 in relation to the concept of the agentic state proposed by Milgram, 1974), then the concept of hypnosis would be so broad that the actual challenge would be finding something that is *not* hypnosis. Suppose Krueger's (1931) conclusion, that hypersuggestibility gradually decreases following the termination of hypnosis, is supported upon replication, then this could serve as evidence of a distinct state that gradually dissipates over time, something that would better suit a narrow definition of hypnosis.

The problem is that Hull's methodologies have several inherent shortcomings. First, this approach limits investigations to the measurement of a single suggestion. Second, it can only

be used with samples of people capable of producing the hypnotic phenomenon in question. Third, only suggestions intended to produce a direct motor movement (that an imagined magnet is drawing one's hands together) could be assessed. After all, measuring the amount of time it takes to produce, for example, overt and observable anosmia to ammonia would be as comical to attempt as it would be impossible to do.

The first shortcoming, examining the effects of an induction (or whatever is of interest) on only one other suggestion, may be more of a needed method as opposed to a shortcoming. Examining the effect of an induction on a series of suggestions found in a hypnotic susceptibility scale will certainly be confounded by changing expectancies, motivation, and rapport throughout the procedure. While this has been examined previously (Benham et al., 2006), it can make for a difficult and somewhat subjective statistical analysis. More recent studies (Raz et al., 2006) have focused on just one response variable at a time. Thus, this is not really a pitfall, but a prerequisite to obtaining clear and easily interpretable results.

Brain imaging studies may be a way to reconcile the second and third problems. If the experience of some hypnotic phenomenon corresponds to a particular activation in the brain (Kosslyn et al., 2000), then suggestions could conceivably be timed to see how long it takes for such an activation to occur, or even to assess the magnitude of the activation (i.e. more blood flow to that area following a hypnotic induction relative to no induction). This could conceivably apply to participants who are unresponsive to a suggestion regardless of what preceded it; an area of the brain associated with a hypnotic phenomenon does not appear activated in some unresponsive participants but shows some activation (but not enough to trigger the experience) following the induction. This would enable one to measure hypnotic responsiveness with measures that are more sensitive to variability than classic hypnotic susceptibility scales, including responses to suggestions that Hull was unable to measure in his day with participants who represent diverse levels of responsiveness, as opposed to employing only those who are responsive to the suggestion which serves as the dependent variable. However, this approach also has its limitations. Raz (2011) notes that brain imaging procedures may provide complicated and sometimes ambiguous data that require a great deal of inference and subjective judgement. Ascertaining how well an induction or some other type of suggestion works as an agent of hypersuggestibility may be a matter of luck and not worth the required resources.

What such methods would yield, even if they are reliable, is really conjecture at this point, though an orthodox attempt to replicate Hull's studies—but now controlling for variables such as expectancy, fantasy proneness, and other variables associated with hypnotic responsiveness—ought to yield something useful. While hypnotic susceptibility scales have told us much about hypnosis and hypnotic responsiveness in the last 60 years, returning to a Hullian approach to hypnosis and hypersuggestibility may give us another clue in solving the riddle of defining hypnosis. Kirsch et al. (2011) are doing hypnosis a service by coming to a consensus of defining it. In order to do this, it would require one to answer the questions that Hull and his associates left behind for us. Doing so may solidify what we believe to be true, or it may show how much more there is to find out.

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