

## THE HIDDEN OBSERVER: A STRAW HORSE, UNDESERVEDLY FLOGGED

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### Abstract

The ‘hidden observer’ experiment by Green, Page, Handley and Rasekhy is criticized on methodological grounds, especially the inadequate screening of subjects and departure from the canonical principles of both Hilgard’s ‘hidden observer’ technique and Orne’s real-simulator design. We also highlight some results of the experiment which appear to undercut the investigators’ conclusions – especially the fact that reals and simulators differed markedly in their response to the critical Less Aware instruction. Our principal criticism, however, is conceptual: it is the very nature of hypnosis that the hypnotic subject’s behaviours and experiences will be influenced by the wording of suggestions and subjects’ interpretations of them. Accordingly, evidence that covert reports are influenced by the wording of suggestions is not evidence that the hidden observer is a methodological artifact, or that it is not a reflection of divided consciousness. Copyright © 2005 British Society of Experimental & Clinical Hypnosis. Published by John Wiley & Sons, Ltd.

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**Key words:** hypnosis, hidden observer paradigm, real-simulator design, ideomotor suggestion, dissociation, experienced involuntariness

### Introduction

Hypnotized subjects, responding to appropriate suggestions, have experiences that depart radically from what Sutcliffe (Sutcliffe, 1960, 1961) characterized as ‘the actual stimulus state of affairs’. Hypnotized subjects see things that aren’t there and fail to see things that are there; they do not feel pain when they should and they feel pain when they shouldn’t; after the termination of hypnosis, they don’t remember the things that they did or experienced while they were hypnotized; and they respond to cues without knowing what they are doing, or why. At the same time, hypnotized subjects seem to process the actual stimulus state of affairs, resulting in various paradoxes and contradictions in their behaviour. Hypnotically color-blind subjects nevertheless display Stroop interference; subjects experiencing analgesia show cardiac acceleration to pain stimuli; and subjects experiencing amnesia show retroactive interference and savings in relearning.

The ‘hidden observer’ was Hilgard’s metaphor for the hypnotic subject’s continuous subconscious registration of the actual stimulus state of affairs and descriptive label for the means by which this information can be accessed (Hilgard, 1973, 1977, 1992a, 1992b). For example, after analgesia has been established, the experimenter attempts to communicate with a ‘hidden part’ of the subject – the ‘hidden observer’ – that may have recorded the true, painful, state of affairs. In response, many – about 50% – of hypnоти-

zable subjects give 'covert' pain reports comparable to those collected under normal waking conditions (Knox, Morgan and Hilgard, 1974; Hilgard, Morgan and Macdonald, 1975; Hilgard, Hilgard, Macdonald, Morgan and Johnson, 1978). For Hilgard, the hidden observer was only one example of dissociation in hypnosis: the stimulus is represented in the cognitive system, but in a manner not normally accessible to phenomenal awareness (Kihlstrom, 1984, 1992, 1998, 2005a).

Although Hilgard's observations of covert pain reports in analgesia have been repeated by other investigators and have been extended to deafness, dreams, anosmia and negative hallucination (Spanos and Hewitt, 1980; Laurence and Perry, 1981; Nogrady, McConkey, Laurence and Perry, 1983; Spanos, Gwynn and Stam, 1983; Zamansky and Bartis, 1985; Mare, Lynn, Kvaal, Segal and Sivec, 1994), interpretation of the phenomenon has been more controversial. Coe and Sarbin (1977) argued that hidden observer instructions merely gave subjects permission to report pain that they actually felt all along. Spanos and his associates reported that the direction of covert pain reports could be influenced by the wording of instructions, leading them to conclude that the hidden observer is a product of social influence rather than a reflection of dissociation – an 'experimental creation' rather than an 'experimental discovery' (Spanos and Hewitt, 1980; Spanos, 1983; Spanos et al., 1983; Spanos, DeGroot, Tiller, Weekes and Bertrand, 1985). Based in large part on these studies of the 'flexible observer', Kirsch and Lynn (Kirsch and Lynn, 1998: 106) concluded that, far from reflecting a division in consciousness, the hidden observer was 'just one more suggested response'.

In their paper (this issue), Green and his colleagues deploy Spanos's 'flexible observer' methodology once again, this time in the context of ideomotor suggestions. Green et al.'s extension of the hidden observer to an ideomotor suggestion and experienced effort is potentially important given the current interest among cognitive psychologists, social psychologists, philosophers and neuroscientists in behavioural control, awareness and volition (e.g. Bargh and Chartrand, 1999; Damasio, 1999; Dennett, 2003; Gollwitzer, 2003; Wegner, 2003). As a controllable manipulation of voluntary experience, hypnosis has much to offer this discussion, both in terms of concepts and methods (e.g. Barnier, 1999; Haggard, Cartledge, Dafydd and Oakley, 2003; Woody and Szechtman, 2003).

In Green et al.'s experiment, subjects received a suggestion that it would be 'easy and effortless' to extend their arms for a period of time and at the end of a 30-second interval were asked to rate the amount of effort involved in responding. Then the subjects received instructions about a hidden observer and made their ratings again. Subjects who were told that their hidden observer would be More Aware of the effort involved in responding produced higher effort ratings – exactly what we would expect of Hilgard's hidden observer. But based on the overall pattern of results from a complicated design involving Less Aware and No Information conditions, as well as a comparison of reals and simulators, Green et al. concluded that 'so-called hidden observers' (page 135) are not 'objective and accurate descriptions of experiences that are genuinely concealed during hypnosis' (p. 125), but rather are products of 'the social, interpersonal and instructional context' (p. 135) of hypnosis.

There is no question that the hidden observer phenomenon is influenced by suggestion. Everything in hypnosis occurs in the context of suggestion, which is what makes hypnosis such interesting grist for both the cognitive- and social-psychological mill. But due to limitations in their method and overlooked details in their results, the conclusions of Green et al. are simply stronger than their data can bear. We pointed out

most of these problems in our pre-publication reviews of their paper and we appreciate the invitation from the Editor to share our perspective with the wider readership.

## Problems of method

Green et al. 'recognize that our design had some limitations and that we took some liberty with some procedures' (p. 134), but they do not seem to realize that these limitations and liberties were far from trivial and call into serious question the adequacy of their experiment to begin with. Hypnosis research can be both time and resource consuming; detailed hypnotizability screening, appropriate implementation of procedures such as the real-simulator design and useful post experimental inquiries demand significant investments of time, staff and patience. But there are good reasons to follow the fairly strict and standard procedures of many hypnotic designs. These procedures and designs represent thoughtful theoretical, methodological and practical choices on the part of their developers (Sheehan and Perry, 1976; Barnier and McConkey, 2004) and departing from them limits the inferences that can be drawn from the data.

In Green et al.'s experiment, the assessment of hypnotizability was minimal, involving only the group-administered Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A). The HGSHS:A is a useful screening device, but it was never intended to be used as the sole instrument for assessing hypnotizability. Many of us do so, at least on occasion, for reasons of economy, but we do so at our own risk. HGSHS:A simply does not contain enough difficult 'cognitive' suggestions, such as the age-regression and positive and negative hallucinations included on the Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C), to adequately represent the domain of hypnosis (Woody, Barnier and McConkey, 2005). Subjects can score in the high range of HGSHS:A without responding positively to the suggestions for fly hallucination, posthypnotic amnesia and posthypnotic suggestion. Furthermore, the group-testing environment effectively precludes any detailed inquiry into subjects' actual experiences of hypnosis. Hilgard (1992a, 1992b: 77) noted that 'the phenomenon of the hidden observer [is found] among only a small fraction of very highly hypnotic subjects'. Thus, in any study of the hidden observer, it is important to determine whether the subjects actually have the dissociative experiences that are necessary for the hidden observer technique to make any sense.

The experiment was conducted in a group setting. Again, we all do group experiments from time to time for reasons of economy, but this is a particularly bad idea when it comes to the real-simulator design. The essence of Orne's real-simulating methodology is that insusceptible subjects are individually instructed and motivated by one experimenter to try to fool a second experimenter into believing that they are, in fact, highly hypnotizable; this second experimenter is blind to their actual status and the simulators are threatened with being unmasked if they do not do a good job (Orne, 1971). And at the conclusion of the formal experiment, both reals and simulators are interviewed post experimentally by the first experimenter to assess their subjective experiences (Sheehan and McConkey, 1982). If simulators are set up and tested in a group setting, much of this motivation and all of the opportunity for post experimental inquiry is lost. Can we really be certain that simulators were responding in a way that they thought highs would respond, or were they just doing whatever the hypnotist told them to do? There is a big difference between these two propositions.

Green et al. also departed crucially from the canonical features of Hilgard's hidden observer method, which is to *suggest* that there *might* be a hidden observer, but not to insist on it. Under such circumstances, subjects are allowed to respond in the negative –

just as they may to any other hypnotic suggestion. In fact, only about 40% of carefully screened, highly hypnotizable subjects actually evince a hidden observer (Hilgard et al., 1975). By contrast, Green et al. bluntly informed subjects that they had a hidden observer and required it to make an effort rating, and they did so by uttering the ‘special sound’ of ‘Ohm’ in ‘a slow, deep, mantra-like voice’ (p.127). Such a gratuitous methodological choice, contrasting starkly with Hilgard’s more prosaic touch on the shoulder, casts a shadow over the entire enterprise.

So not only did Green et al. fail to inquire whether any of their subjects actually had a hidden observer, their method renders the question moot: just as their subjects were told that extending their arms in hypnosis would be easy and effortless, so they were forced to make covert reports whether they had a hidden observer or not. Under similar high-demand circumstances, the incidence of hidden observers may increase a little, to 50%, compared to 75% of simulators (Hilgard et al., 1978). By contrast, using the original low-demand instructions, Nogrady et al. (1983) obtained hidden observers in 42% of their reals, a figure comparable to Hilgard’s original finding in 1975, but in *none* of their simulators. So much for the claim that ‘hidden observer reports... are exquisitely sensitive to situational demands’ (Kirsch and Lynn, 1998: 105). This may be true for simulators – after all, that is part of their job; but it does not appear to be true for real hypnotic subjects.

Even the suggestion employed by Green et al. departed from conventional practice in hypnosis, which is to suggest an *experience* and to assess the subject’s behavioural and experiential response to the suggestion. On HGSHS:A and SHSS:C, for example, it is suggested that subjects will feel a heavy object in their outstretched hands, pushing their hands and arms down. In response, the hands of hypnotizable subjects will fall a certain amount within a specified interval of time; and the subjects themselves will tend to experience this response as an involuntary behaviour, rather than as a voluntary act (Bowers, 1982; Bowers, Laurence and Hart, 1988). In much the same way, the subjects in the Green et al. experiment might have received a suggestion that their arms were being held up by a helium-filled balloon (such a suggestion occurs in Form B of the Stanford and Harvard scales, as well as the Hypnotic Induction Profile). Then it would make sense to determine both the subjects’ behavioural response and their experience of involuntariness. Instead, Green et al. simply told their subjects to hold their arms out – and, for good measure, told them that it would be ‘easy and effortless’ to do so. To be blunt, this is not very hypnotic – it is more like an instruction than a suggestion (Weitzenhoffer, 1974).

The essence of hypnosis, at least for ideomotor movements, is that it leads to an unexpected and surprising (i.e. discrepant) sense of motor ease. This was not the case for Green et al.’s subjects. They were merely expected to be more or less aware of the normal degree of difficulty anyone would experience in holding their arm up for some length of time. And does the question even make sense? Research on posthypnotic suggestion, for instance, indicates that hypnotized individuals have some difficulty noticing, let alone rating, the involuntariness of simple motor movements (Barnier and McConkey, 1996; Barnier, 1999; Barnier and McConkey, 1999).

## **Anomalous results**

Evidence that Green et al.’s simulators were just doing whatever they were told to do, instead of trying to figure out what a highly hypnotizable subject would actually do, comes from their stark overplaying. For the real subjects, Green et al. report that effort ratings on the pre-hypnosis baseline test averaged 41.60 across the three conditions, see Table 1, p.130), compared to 21.73 for the hypnosis trial. The comparable figures for the simulators are 38.38

and 12.35, respectively – a classic example of the ‘overplay’ that is often observed when simulators are compared to reals. In Green et al.’s experiment, Hilgard’s traditional hidden observer instructions are most closely represented by the More Aware condition – albeit with much stronger experimental demands. Here, the real subjects’ hidden observers are, in fact, more aware of the effort involved in responding to the suggestion: average ratings of 34.67 vs. 20.61, just as would be predicted from Hilgard’s neodissociation theory. Again, however, the simulators overlaid their roles, giving average ratings of 43.45 vs. 13.85. In fact, the simulators’ hidden observers were aware of even more effort than they were in the pretest baseline! Given these findings, as well as the inherent ambiguities in commenting on such a motor action (or non-action) it is not at all clear what the simulators thought they were doing; but we will never know – because Green et al. unfortunately failed to ask them.

Green et al. argue that the performance of simulators is ‘statistically indistinguishable’ (p. 134) from that of reals, but in fact their preferred mode of statistical analysis obscures differences that are readily apparent when the Traumatic Interocular Test is applied to Table 1. Assuming sufficient statistical power to overcome the markedly high standard deviations (themselves indicative of interesting but unanalysed variability, perhaps consistent with Hilgard’s observation that only a fraction of highs experience a hidden observer) and the noise injected into the experiment by the anomalous No Information condition, an omnibus 2x4x2 ANOVA, including just the More Aware and Less Aware conditions, would likely have yielded a significant three-way interaction, indicating that the real-simulator differences differed across the two conditions. Similarly, a simple 4x2 analysis of variance of the effort ratings in the Less Aware condition would likely yield a significant two-way interaction indicating that the reals and simulators in fact behaved differently.

Although simulator overplay is interesting when it occurs, the critical data in the paper comes from the Less Aware condition. After all, the primary goal of Green et al.’s experiment was to demonstrate that the covert reports of the hidden observer are influenced by the wording of the instructions used to elicit the hidden observer. In this respect, the experiment seems to have failed utterly. As Green et al.’s Table 1 again makes clear, the hidden observer reports of real subjects in the Less Aware condition were if anything *more* aware than in the standard hypnosis condition, with mean ratings of 27.78 and 24.28, respectively. Meanwhile, the simulators in the Less Aware condition did exactly what was asked of them, with the hidden observer reporting even less effort than in the standard hypnosis condition (means = 9.71 vs. 10.65). This may be another example of simulator overplay. But the critical point is that the covert reports of real hypnotic subjects did not, in fact, vary with the wording of the hidden observer instruction. In the face of this outcome, it really doesn’t matter what the simulators do.

To be blunt: if the purpose of the experiment was to show that the hidden observer can be less aware as well as more aware, depending on the wording of instructions, then the experiment simply did not work. The conclusion from the overall pattern of results is inescapable. Contrary to the claims of Green et al., the hidden observer displayed by real, hypnotizable subjects is not simply a product of demands and cues, for the simple reason that reported effort did not decrease further for the reals in the Less Aware condition. This cannot be because the demands and cues were not clear, because the simulators did precisely as they were instructed to do. Put another way: the hidden observer is not an artifact of demands and cues, because manipulating demands and cues does not have much effect on what *real* hidden observers do. The behaviour of simulators, however, does seem to be almost entirely the product of demand characteristics and cues. The sociocognitive and social-psychological analysis appears to provide an excellent account of what simulators do; but with respect to real hypnotic subjects, it seems to be beside the

point. Similar points were made more than 20 years ago, in a comment on some of the original 'flexible observer' studies (Laurence, Perry and Kihlstrom, 1983); although they were disputed (and misunderstood) then (Spanos, 1983), they remain valid today.

## Conceptual problems

Setting aside questions of method and results, the principal problem with this experiment is that it needed subtlety. The experimental analysis of the hidden observer is couched in a dichotomous framework of competitive hypothesis-testing in which any evidence for A is taken as evidence against B. In this experiment, evidence that covert reports are influenced by the wording of suggestions is taken as evidence that the hidden observer is not a reflection of divided consciousness. Never mind that the experiment did not, actually, come out that way: we are now talking about how the experiment was conceptualized in principle.

This is not usually the best way to approach problems of human mind and behaviour: nobody would conclude, from the results of Sherif's or Asch's experiments on social influence (Sherif, 1935; Asch, 1956), that the autokinetic phenomenon is not genuine or that subjects do not really perceive the length of lines. And it is certainly not the best way to approach hypnosis. The reason is that hypnosis is an altered state of consciousness that takes place in the context of a social interaction in which one person – the hypnotist – makes suggestions of a particular sort to another person – the subject. Accordingly, it should surprise no one if hypnotic subjects' behaviours and experiences are influenced by their attitudes, motivations and expectancies, by the wording of suggestions and by their interpretations of the hypnotist's communications (Barnier and McConkey, 1999; Kihlstrom, 2002).

Such findings, when they appear, do not impeach the view that the experience of hypnosis entails compelling alterations of subjective awareness, including the experience of involuntariness. They only mean that hypnosis must be approached from the vantage point of both cognitive psychology, which has the methodological and conceptual tools to analyse divisions of consciousness, and social psychology, which has the methodological and conceptual tools to analyse individual experience, thought and action in its interpersonal context. Individual researchers, with their own areas of interest and expertise, will naturally emphasize one or the other aspect of hypnosis in their work. But when all is said and done, a proper understanding of hypnosis will only come from taking the hypnotic subject's experience seriously and seeking to understand how that experience emerges from the interaction of cognitive and social processes (Sheehan and McConkey, 1982; McConkey, 1991).

Hilgard's choice of the 'hidden observer' metaphor was perhaps unfortunate, raising the spectre of a homunculus within a homunculus. And, arguably, it gave intellectual aid and comfort to those who fomented the 'multiple personality epidemic' of the 1980s and 1990s (Kihlstrom, 2005b). But the idea behind the hidden observer was simple and direct. The induction of hypnosis does not rip out the subject's nervous system. Despite the compelling subjective experience of analgesia, the pain stimulus must be registered at some level in the perceptual-cognitive system – just as the reversibility of posthypnotic amnesia indicates that the critical memories have been encoded and remain available in storage. The hidden observer is nothing more than a technique for revealing that, despite the subject's phenomenal experience, the 'actual stimulus state of affairs' is processed by the subject – albeit subconsciously. There is no more to it than that.

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