

## The "Hidden Observer" Phenomenon in Hypnosis: Some Additional Findings

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Twenty-three highly hypnotizable subjects underwent two specially constructed 7-item hypnotic inductions. Over the 14 items, the main finding was of a relationship between Hilgard's "hidden observer" effect and two aspects of hypnotic age regression. Subjects reporting a hidden observer experienced duality during regression to age 5, in which they were aware of being both adult and child. When asked to write a complex sentence, most did so, usually without spelling errors. The subjects not reporting this effect experienced quasi-literal age regression in which they had the exclusive feeling of being 5 years old, with no sense of an adult identity. Most of these subjects were unable to write the same complex sentence when requested to during age regression. The study replicated Hilgard's finding of the hidden observer phenomenon in terms of its incidence and obtained similar verbal reports from subjects experiencing it. At the same time, the results suggest that a neodissociation account of hypnosis may need some modifications to accommodate these additional empirical findings.

In a number of recent articles, Hilgard (1973a, 1973b, 1977a, 1977b, 1979) has proposed a neodissociation theory that seeks to account at once for the phenomena of hypnosis and for a variety of cognitive processings beyond the hypnotic context. The theory has close affiliations with the dissociation literature of the 19th century (Hilgard, 1973a), which was obtained primarily but not exclusively from clinically diagnosed hysterical patients (Binet, 1896, 1889-90/1905; Janet, 1889/1973). In his theorizing, Hilgard (1977a) seeks to avoid some of the excesses of classical dissociation theory while at the same time moving beyond the main difficulties associated with "state" theorizing in hypnosis (see Hilgard, Note 1, Note 2, for the critiques of the limitations of state theorizing). To do this, he has deliberately chosen to align himself with the metaphor of neodissociation.

The main tenet of the theory is that mental functioning may be regulated by multiple cognitive control systems rather than by a single mental apparatus such as consciousness. While Hilgard (1977a) proposes numerous applications of the theory to mental functioning outside of the hypnotic context, the scope of the present article is confined to neodissociation theory as it pertains to hypnosis.

Hilgard has sought to demonstrate multiple cognitive controls in hypnosis by use of what he calls a reference experiment (Hilgard, 1973b), using highly susceptible subjects who receive analgesia instructions while being exposed either to cold pressor (Hilgard, Hilgard, MacDonald, Morgan, & Johnson, 1978; Hilgard, Morgan, & MacDonald, 1975) or to ischemic pain (Knox, Morgan, & Hilgard, 1974).

From both the theoretical writing and the empirical studies, the metaphor of the hidden observer has emerged as signifying the part of the person that experiences pain during hypnotic analgesia while the part of the person who is hypnotized denies the same pain. The phenomenon itself consists of four components: (a) The experimenter first establishes a baseline for pain experience for either ischemic or cold pressor pain; (b) at a subsequent time, he or she administers in-

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The support of the Natural Sciences and Engineering Research Council of Canada, Grant A6361 ("Cognitive Patterns in Hypnosis"), to the second author is acknowledged gratefully. We also wish to thank Elizabeth Chau for her careful typing of the manuscript during the phases of its preparation.

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structions for hypnotic analgesia, and the subject is again requested to rate the level of pain intensity on an open-ended pain rating scale from 1 to 10 (where 1 = painless, and 10 = severe pain), which the subject has already learned to use during the initial baseline recording period; (c) hidden observer instructions are administered and a third set of pain ratings is obtained on the same scale of subjective intensity; and (d) following the removal of amnesia after hypnosis, subjects are questioned to determine whether the hidden observer instructions led to qualitative changes in their subjective experience.

The hidden observer instructions have been presented elsewhere (Hilgard, 1977a, Note 3). They state, in essence, that just as there are bodily processes such as heart rate, blood pressure, and temperature control that are not fully represented in awareness, there may also be a "hidden part" of the person of which the hypnotized person is unaware. It is suggested further that this part may be registering the pain of ischemia or cold pressor that is not accessible to the hypnotized part in analgesia. Instructions are then administered to establish contact with this hidden part. The instructions are always worded in such a manner as to convey to the subject that the experimenter expects that such a hidden part will emerge.

Typically, when this procedure is used, the pain reports furnished during the hidden observer item are more similar to the baseline reports than to the pain reports given during the hypnotic analgesia item. Thus the phenomenon can be characterized first in terms of a discrepancy in pain reports between the hidden observer and the analgesia condition, and the implication is that pain that is not felt to any marked intensity during hypnotic analgesia is nevertheless registering at another level and can be tapped by hidden observer instructions. In addition, subjects who report experiencing a hidden observer effect describe it as being an objective, matter-of-fact observation of what was actually occurring during hypnotic analgesia.

A third point which needs to be emphasized about the phenomenon is that not all highly susceptible subjects experience it when the hidden observer instructions are

administered, even though the initial study of the effect (Knox et al., 1974) may have given the impression that all highly susceptible subjects experience the hidden observer effect if appropriately selected. Of the eight highly hypnotizable subjects in that study, one subject did not appear to manifest the hidden observer effect; indeed Knox et al. (1974) were puzzled by this and attempted to interpret this subject's behavior in terms of a different sort of hidden observer experience.

Two subsequent studies (Hilgard et al., 1975, 1978) reported a much lower incidence of the phenomenon's occurrence. The former study found that 40% of 20 highly hypnotizable subjects had a hidden observer, and the latter found comparable results for 50% of 12 highly hypnotically susceptible subjects.

In a recent study, Perry and Laurence (1980) tested 10 highly susceptible subjects on seven hypnotic items of high item difficulty. On only two of the seven hypnotic items was any consistency of response found. Five subjects who manifested Hilgard's hidden observer phenomenon reported during a postexperimental inquiry that during age regression to 5 years old, they had experienced duality (Perry & Walsh, 1978), in which they felt that they were both adult and child, either simultaneously or in alternation. All five of the subjects who reported that they did not experience the hidden observer effect denied all awareness of their adult identity and, despite being pressed, insisted that they really felt that they were 5 years old.

This finding suggested that among highly hypnotizable individuals, there might be two distinct reactions to a hypnotic item that seeks to tap dissociation. Accordingly, the present study sought to pursue this initial finding further.

## Method<sup>1</sup>

### *Subjects*

Fifty-three undergraduate students who had undergone the Harvard Group Scale of Hypnotic Suscepti-

<sup>1</sup> The investigation was carried out over 2 separate years of testing. In the first year, 10 highly susceptible subjects were tested on the seven-item hypnotic induc-

bility, Form A (HGSHS:A) of Shor and Orne (1962) as part of a requirement for a laboratory course volunteered for a second session using the Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C) of Weitzenhoffer and Hilgard (1962). They were asked to volunteer only if they had passed most of the HGSHS:A items and had passed the amnesia and/or the posthypnotic suggestion item of that scale, or thought that they might be highly responsive to hypnosis for other reasons. Of these, 23 subjects proved to be highly susceptible to hypnosis on SHSS:C. The final sample of 23 subjects consisted of 9 men and 14 women. They ranged in age from 18 to 47 years ( $M = 26.47$ ). For this sample, HGSHS:A scores ranged from 7 to 12 ( $M = 10.57$ ), and SHSS:C scores ranged from 9 to 12 ( $M = 10.74$ ). For screening purposes, SHSS:C was modified by omitting the anosmia-to-ammonia item and replacing it with the posthypnotic suggestion item of the Stanford Hypnotic Susceptibility Scale, Form B (SHSS:B) of Weitzenhoffer and Hilgard (1959). All 23 subjects in the sample passed the posthypnotic amnesia item of the modified SHSS:C, and 17 of them also passed the posthypnotic suggestion item. The 30 subjects who did not score sufficiently highly on SHSS:C were reassured that they had considerable hypnotic ability, but that for the purposes of the present study, the experimenter was looking for individuals who were slightly more hypnotically responsive. All 53 subjects were paid \$5 for the SHSS:C screening session, and the 23 subjects who underwent Experimental Testing Session 1 were paid \$10 for their participation. The 22 subjects who underwent Experimental Testing Session 2 were paid an additional \$10 for their participation.

### *Experimental Testing Sessions*

The two experimental sessions each lasted approximately 1 hour and were videotaped with the subject's prior consent. This videotaped record constituted the basis for a postexperimental inquiry performed by the second experimenter (C.P.) immediately following the hypnotic induction. At Experimental Testing Session 1, after a relaxation and eye closure procedure, the following items were administered: arm rigidity (Weitzenhoffer & Hilgard, 1962), delusion of a missing number (Evans, 1965), regression to age 5 (Perry & Walsh, 1978), glove analgesia (Perry, 1977), the hidden observer (adapted from Hilgard, Note 3) uncanceled suggestion (Perry, 1977), and posthypnotic amnesia (Weitzenhoffer & Hilgard, 1962).

tion described in the text as Experimental Testing Session 1. The data for these subjects have been reported elsewhere (Perry & Laurence, 1980; Laurence, Note 4). In the second year, 13 additional highly susceptible subjects were recruited and tested on Experimental Testing Session 1 and on a second seven-item hypnotic induction, referred to in the text as experimental Testing Session 2. In addition, all but one subject (who had left the province) from the first year of testing underwent this second experimental testing. For this report, the data for the two samples have been pooled, since they do not differ significantly on any variable.

At Experimental Testing Session 2, subjects were administered the further seven following items, again after an initial induction utilizing relaxation and eye closure: hypnotic dream (Weitzenhoffer & Hilgard, 1962), compulsive response (Sheehan, 1971), dichotic listening (constructed especially for the experiment), source amnesia (Evans & Thorn, 1966), rapid reinduction of hypnosis (Weitzenhoffer, 1957), posthypnotic amnesia (Weitzenhoffer & Hilgard, 1962), and posthypnotic suggestion (Weitzenhoffer & Hilgard, 1959).

Immediately following each of the two hypnosis sessions, a short postexperimental inquiry was conducted (and recorded on cassette tape) to test for and remove posthypnotic amnesia on both sessions, to test for and remove if necessary the uncanceled analgesia of Experimental Testing Session 1, and to test the posthypnotic suggestion item of Experimental Testing Session 2. Subjects were then introduced to the second experimenter, who interviewed them using a modification of the Experiential Analysis Technique (EAT) described by Sheehan, McConkey, and Cross (1978).

### *The Hidden Observer Item*

There were a number of differences in the manner in which the hidden observer item was administered in the present study, as compared to how it is described by Hilgard (1977a, Note 3). These were as follows: (a) Hilgard typically used either cold pressor or ischemic pain to test for this phenomenon. The pain stimulus in the present study was a Take-Me-Along electrical stimulator, powered by three 1.5-V batteries, and manufactured by the Farrall Company. It was designed originally for patients undergoing behavior modification who are required to shock themselves in the absence of their therapist. (b) Hilgard typically placed his hand on the subject's shoulder throughout the whole duration of this hidden observer item. By contrast, in the present study the experimenter's hand was placed briefly on the subject's shoulder at the beginning of the hidden observer item and again, briefly, at the end of this item to terminate it. (c) Hilgard suggests that subjects will be amnesic for the hidden observer experience until posthypnotic amnesia is removed; this was not done in the present study. (d) Hilgard told the subjects that there is another part of them that knows what is really going on; in the present instructions subjects were given an opportunity to deny the hidden observer instruction, since they were told that there *could* be another part of them, and if there were one, it could report what it felt upon receiving an electric shock. The rationale for these variations from Hilgard's procedure is presented elsewhere (Laurence, Note 5).

### *Experiential Analysis Technique (EAT)*

The EAT is an adaptation of Kagan's (1975) Interpersonal Process Recall method and has been described elsewhere (Sheehan et al., 1978). The present study followed the EAT procedure in that the videotape of the hypnotic induction sessions was played back to the subjects immediately following their termination, and an independent experimenter questioned the subjects about their hypnotic experience at various points in the inter-

view. The present study diverged from the procedures described by Sheehan et al. (1978) in having the experimenter, rather than the subject, control the video recorder. The video recorder was stopped and the subject questioned at certain predetermined points throughout the two hypnotic inductions.

In this way it was possible to obtain standardized interview data at each of a number of designated points during the inductions. The relevant sections of each interview were then transcribed and used to evaluate the subjective components of subjects' responses to the different hypnotic items. Further details are presented elsewhere (Laurence, Note 4, Note 5).

## Results

### *Incidence of the Hidden Observer Effect*

For the total sample of 23 subjects, 9 of them (39.13%) reported a hidden observer effect. As compared to the first year of testing, when 50% of 10 subjects manifested the effect, the second group of 13 subjects showed a reduced incidence (30.77%). The overall rates for the 2 years of testing, however, did not differ significantly,  $\chi^2(1) = .75$ ,  $p > .05$ . It can be seen that the incidence found in the present study is comparable to those reported by Hilgard et al. (1975, 1978). Further, the two groups did not differ significantly on either HGSHS:A or SHSS:C. On HGSHS:A, the mean for the hidden observer group was 10.60, as compared to 10.56 for the no hidden observer group; on SHSS:C, the respective means were 10.56 and 10.86. These data on incidence of the phenomenon add support to the impression that the hidden observer effect is a differential one for highly susceptible subjects.

### *Duality in Age Regression and the Hidden Observer Effect*

During the EAT inquiry following Experimental Testing Session 1, all subjects were asked the question, "Did you really feel that you were 5 years old?" All nine subjects manifesting the hidden observer effect gave a duality report (Perry & Walsh, 1978). All described the experience of age regression as being that of feeling that they were both adult and child, either simultaneously or in alternation. A few of them described it as a division between feelings of being 5 years old and of being adult observers vividly reexperiencing their childhood. The remaining 14 subjects stated that they really felt that

they were 5 years old, and even when pressed they maintained that they had no awareness of their adult identity during this phase of the induction. The result was statistically significant,  $\chi^2(1) = 18.99$ ,  $p < .001$ .<sup>2</sup>

### *Other Data From the Hypnotic Age Regression Item*

During hypnotic age regression, the subjects were asked to perform three tasks: (a) to write their name, the date of their birthday, and "what year it is;" (b) to write the sentence, "I am participating in a psychological experiment;" and (c) to verbally respond to the question, "Who is the Prime Minister of Canada?" This latter question did not discriminate between the two groups. The majority of subjects reported not knowing; of the six who replied, three had the hidden observer effect, and three did not.

By contrast, for the first two items, results were identical: 7 of the 9 subjects who reported a hidden observer effect attempted to write on both occasions; 10 of the 14 remaining subjects did not write. The relationship was statistically significant,  $\chi^2(1) = 5.32$ ,  $p < .02$ .

The data for both Items a and b were broken down in terms of whether the subjects did or did not write with correct spelling. The result in each case was identical. It was found that of the 7 subjects (out of 9) manifesting a hidden observer effect, 4 had no spelling errors. By contrast, of the 4 subjects

<sup>2</sup> The second experimenter who conducted the EAT was unaware of the subject's response to the hidden observer item during hypnosis. The age regression item was administered prior to the hidden observer item, so his initial task was to determine whether the did or did not report duality during age regression. This was done by asking a number of questions; standardly subjects were asked, "Did you really feel that you were five years old?" followed by the question, "Did you have any sense of an adult identity?" For all 23 subjects, responses were unequivocal, and the judgment of duality and nonduality was made primarily on this basis; although as illustrated by the questioning of Subject 14, reported later in the text, the interviewer asked these questions more than once. For the hidden observer item, subjects were asked if they had experienced another "part." With the exception of two subjects, who preferred the metaphor of a different "process" rather than of a "part," results were as equally unequivocal.

(out of 14) who did not report a hidden observer effect and attempted to write, only 1 of them spelled correctly on the two occasions.

These differences between the two groups are highly consistent with their verbal reports of hypnotic age regression. Those subjects who had a hidden observer effect expressed a strong feeling of dualistic functioning during the age regression item. Their behavior during the two items where they were required to write is consistent with their verbal reports; they wrote, at times with correct spelling, the things they were asked to. Those who spelled correctly saw no contradiction between doing so and the fact that most of the words they spelled are beyond the capacity of most 5- and even most 7-year-old children (Obstoj & Sheehan, 1977).

By contrast, nearly all of the subjects who had no experience of a hidden observer effect refused to even attempt to write when asked to. Most of them said that they did not understand the sentence or that it was too difficult for them. Their behavior is highly consistent with their verbal reports of a quasilateral age regression in which the sense of adult identity appears to have become temporarily unavailable.

### *Verbal Reports of Duality in Hypnotic Age Regression<sup>3</sup>*

The verbal reports obtained during the EAT inquiry convey the flavor of the differences between those subjects reporting a hidden observer effect and duality in age regression and the remaining subjects who had no hidden observer effect and whose regression experience was quasi-literal. The experience of age regression is variable across subjects, and their reports reflect several themes.

Some of the reports were not unlike hidden observer reports; the subjects described age regression as an experience of detached self-observation. At the same time, for some of them the feeling of self-observation took the form of alternation between adult and childlike functioning, as the following two reports indicate:

*Subject 3.* The thing is . . . I was there, you know. It was as if I was there . . . but I wasn't very long; it came

and went and it didn't stay. . . . I felt like I was . . . it sort of felt like "what am I doing there?" and then the next thing I'm back there, and then "what am I doing here?" It felt like that. It felt like that I was looking at myself in a sense . . . something like you would do in a dream.

*Subject 22.* As soon as I began to write, I was there, and I was not there. . . . It was like a merry-go-round; I was in and out of it so fast. . . . I had something like a kind of observer who was watching the class.

For other subjects, the duality was more of a simultaneous nature; the feeling of being adult and child coexisted, as the next two reports indicate.

*Subject 21.* I became small again; small, small. Physically . . . I saw myself again with my curls at school. . . . I felt 5, and I felt 23 also. . . . I knew I was 5 years old at school, but I knew I was 23 years old, also, that I was an adult. . . . I really felt 5 years old. I would not be able to say that I was solely 23 years old.

*Subject 17.* (Did you really feel you were 5 years old?) It was the same . . . it was . . . especially when it came to writing my name again. I felt . . . you know, I was two people, one standing off looking at the other, and the other that was standing was saying, you idiot, you can write your name, why are you taking so long? Yet the one that's writing it is struggling away, to form these letters . . . can't. I'm trying the best I can.

These responses are qualitatively very different from those given by subjects who experienced no duality during hypnotic age regression and who subsequently did not manifest a hidden observer effect. The reports of Subjects 14 and 19 were typical of this group.

*Subject 14.* (Did you really feel you were 5 years old?) I had the feeling I was going with my mother. This is strange. I wasn't going to school yet so I felt 5½ on the verge of going for enrollment to school. (Did you have any sense of being adult at all?) I didn't have any sense of being an adult, no. (None at all?) None at all. (Not the slightest?) Not a fraction. No, nothing. (So you really felt you were 5 years old?) Yes.

*Subject 19.* Yes, I was there, and I saw myself with the body of a little girl. When he asked me who the Prime Minister was, I thought you are really stupid to ask that of a 5-year-old child, as if I know that. (So you were still sufficiently adult to find that question dumb.) No. I was 5 years old, and I found it dumb to ask that of a 5-year-old child.

As can be seen, there is no overlap between the duality reports of age regression

<sup>3</sup> For reasons of space, only a sampling of subjects' verbal responses is reported. They are documented more extensively in Laurence (Note 5).

to 5 years old in subjects reporting a hidden observer effect and the sense of literally being 5 years old to the exclusion of any awareness of an adult identity for the duration of the age regression item.

### *Verbal Reports of the Hidden Observer Item*

Subjective differences found on the age regression item were found in the verbal reports of subjects who did and did not report a hidden observer effect. Those subjects manifesting the effect shared two qualities found in Hilgard's studies. First, the phenomenon was reported by them as occurring involuntarily. Further, the hidden observer manifestations were reported as objective, matter-of-fact, accurate, and reality-bound observations of what was going on during the analgesia: All of the subjects equated the hidden observer with reality testing and a few of them equated it with an observing ego.

The verbal reports of the subjects convey the nature of the experience. First, on the involuntariness of the experience: (Subject 2) "I didn't have to work on it. This second part is like when I'm talking to you right now. This is what is happening." (Subject 3) "It was a sudden type of thing that just melted away and then I felt like I was two types of thing." Further, on reality testing: (Subject 7) "It is just an observing part. I was watching J.R. [the hypnotist] and watching myself." (Subject 17) "All I feel is this dual thing that I have mentioned before." (Subject 21) "I felt it . . . that I was hypnotized but that there really was a clear side of me." (Subject 22) "I was feeling strange, but I didn't know why . . . it felt like a division, a division in myself."

These reports are strikingly similar to those reported by Hilgard (1977a), although the verbal instructions for the hidden observer item are different in several respects. They are in contrast with those who did not experience a hidden observer effect. For these subjects, the prominent sentiment was one of confusion created by the hidden observer instructions and, occasionally, regret that the subjects might be disappointing the experimenter for being unable to experience

the item suggested. Some subjects also conveyed a sense of annoyance at the instruction that there might be another part that was registering the pain of electric shock. The following examples sample the range of reactions to this item.

*Subject 1.* (Did you feel there was some other part of you?) No, I don't think I felt that. I don't know. In that sense I opened my eyes and looked at him. I didn't feel the same as I felt when my eyes were closed. . . . But in terms of who was doing all this, it was always me. He was asking me to say things, I did not like that. Didn't enjoy it too much. (You think he was asking you to do something that you didn't like doing?) I thought he was asking me to do something that had to come from me. (And it wasn't in there?) No, I guess not.

*Subject 5.* (Did you feel in any way different when he said there was going to be another part?) Well, I was waiting for that other, but nothing, nothing, nothing came up, no. (How did you feel about that?) It didn't bother me, I don't know. I felt maybe that I had to disappoint J.R. [the hypnotist], but there was nothing else coming out of it.

*Subject 8.* (Did you feel any different when he touched your shoulder?) No, not really. (Did you find that you were confused?) Actually, it was kind of confusing. Like I didn't know exactly what he wanted, I didn't understand him very well. Looking at it now, my shoulder was supposed to know what was going on in my hand, and so when he gave me the second shock, I was probably supposed to feel it and report it; but I didn't.

*Subject 20.* When he started to say there is something in you which will happen, perhaps another part of me, I found that extremely complicated. If he expected something of me; well, he could expect. There isn't anybody there. It just was not like that.

*Subject 23.* I didn't understand a thing. Was he asking me if a part of my body could experience something different? I can't remember anything. During that period I did not feel any different from the time when I'm profoundly in hypnosis.

Overall, most of these subjects found the hidden observer instructions mystifying and/or confusing, and they were quite definite in stating that they did not experience the effect, even though they waited for it to happen. Such data suggest that the hidden observer item taps differential reactions when dissociation is suggested in hypnosis through the hidden observer item.

### *Reports of Hypnotic Analgesia*

The subjects in this study received three electric shocks, twice to the right hand (dur-

Table 1  
Raw Scores, Means, and Standard Deviations  
for Three Pain Reports for Subjects Who  
Reported and Did Not Report the "Hidden  
Observer" Effect

Subject	Condition		
	Right hand analgesia	Right hand hidden observer	Left hand control
Hidden observer			
2	2	7	7
3	2	10	10
6	5	10	9
7	3	4	8
11	2	3	9
17	2	4	8
18 <sup>a</sup>	7	10	
21	3	9	10
22	1	1	10
<i>M</i>	2.50	6.00	8.88
<i>SD</i>	1.19	3.46	1.12
No hidden observer			
1	5	4	9
4	8	3	10
5	3	4	10
8	1	1	10
9	2	2	10
10	3	2	8
12	7	5	10
13	2	2	9
14	2	2	9
15	5	2	8
16	2	1	7
19	1	1	7
20 <sup>a</sup>	1		5
23	2	2	10
<i>M</i>	3.31	2.38	9.00
<i>SD</i>	2.25	1.26	1.15

<sup>a</sup> Subjects 18 and 20 each refused one of the shocks for reasons cited in Footnote 4.

out in Table 1.<sup>4</sup> A  $2 \times 3$  split-plot analysis of variance (ANOVA) with one between-subjects variable (hidden observer/no hidden observer) and one within-subjects variable (three conditions of analgesia reports) was performed on these data. A significant main effect of treatment was found,  $F(2, 38) = 97.48, p < .01$ , as well as a significant interaction between treatments and groups,  $F(2, 38) = 12.35, p < .01$ . Tests of simple main effects were performed. A simple main effect for the groups was found between their retrospective reports of analgesia during the hidden observer item,  $F(1, 57) = 18.98, p < .01$ . There were no significant differences in the other two analgesia reports. Scheffé's posthoc comparisons were then performed for treatments within groups and were found also to be significant.

In the hidden observer groups, all three comparisons were found to differ significantly. The right hand during analgesia was found to be significantly more analgesic than both the right hand during the hidden observer item and the left (control) hand. Furthermore, the right hand during the hidden observer item was also significantly different from the left (control) hand. In the group not reporting a hidden observer effect, the right hand during analgesia was more analgesic than the left (control) hand but did not differ from the right hand during the hidden observer item. These differences suggest that the two groups used different methods of minimizing pain during hypnotic analgesia. The hidden observer group, though manifesting little pain during analgesia, indicated during the hidden observer item that the pain nevertheless registered to some extent at some other level. By contrast, the group that did not have the hidden observer

ing the analgesia and the hidden observer items) and once to the left hand during the analgesia item (which served as a control). On all three occasions, the subjects were asked to rate their pain on a 1-10 scale, where 1 was described as painless, 10 as extremely painful, and intermediate numbers represented moderate levels of pain.

The three pain reports of the 23 subjects, subdivided in terms of whether or not they experienced a hidden observer effect, are set

<sup>4</sup> It should be noted that one subject in each group did not furnish complete pain data. Subject 18 in the hidden observer group rated the pain on the right hand during analgesia as 7 but refused to permit the experimenter to apply the two subsequent shocks, on the grounds that the first shock "fucking hurt." He rated pain retrospectively during the hidden observer item as 10. Another subject (Subject 20) had no hidden observer effect. She became so anxious following the administration of the first two shocks that the experimenter was unable to administer the third. The data for these two subjects are not included in the calculations of means in Table 1.

effect actually showed a slight increase in analgesia during the hidden observer item and denied the existence of another part, or level, registering the pain.

### *Convergence of Analgesia and Hidden Observer Reports*

The data from Hilgard's studies imply a strong convergence of analgesia and hidden observer reports (Hilgard et al., 1975; Knox et al., 1974). In both of these studies, subjects who reported a hidden observer effect gave analgesia reports during the hidden observer item that were very similar to those furnished in a nonanalgesic control condition. Those subjects not reporting a hidden observer effect reported analgesia as being similar in both analgesia conditions—with and without hidden observer instructions.

Table 1 indicates that a small number of subjects did not show this one-to-one congruence of verbal reports of pain as opposed to altered experience. Specifically, four subjects reporting a hidden observer effect, and one who did not, showed some degree of discrepancy. For one of them (Subject 7), the pain reported during the hidden observer item was only slightly greater than in the analgesia condition. No reason could be found for this departure from the general trend of findings, and the subject was classified as having experienced the hidden observer effect solely on the basis of her unequivocal verbal report of the experience.

Two other subjects (Subjects 11 and 17) rejected the notion of the hidden observer as constituting another part of themselves but reported that the instructions made them feel subjectively different. As can be seen from Table 1, their hidden observer reports of pain indicated that the shock was slightly more painful during this item than during analgesia without hidden observer instructions. Their comments during the EAT inquiry indicated that they equated the hidden observer effect more with altered experience than with a separate part of themselves that registered the pain. The report of a fourth subject (Subject 22) suggests that she used her hypnotic abilities to prevent her from experiencing the pain as strongly as it had been felt on the left (control) hand.

A final subject (Subject 5) had no hidden observer effect and was the only subject in this group to rate the pain during this phase of the induction as more painful than in the analgesic condition. Her report indicated an altered perception of the electrical stimulus; she described the shock as "not a real shock, just a certain feeling" and said she thought she had overrated it on both occasions.

It is possible that these divergences from Hilgard's data are the result of differences in the pain stimulus employed in the present study, as compared to Hilgard's studies. Electric shock is a momentary stimulus, and is qualitatively different from the gradually mounting pain of cold pressor and ischemia. Alternatively, the divergences may reflect differences in the instructions for eliciting the phenomenon. Nevertheless, a subsequent stepwise discriminant analysis correctly classified 90.48% of the subjects into either the hidden observer or the no hidden observer group, solely on the basis of the three pain reports obtained during the administration of the hidden observer item.

The stepwise solution used involved maximizing Rao's  $V$  in order to identify the best linear set of discriminating variables. All 13 subjects in the no hidden observer group were correctly classified by this procedure, as were all but 2 (Subjects 6 and 7) of the subjects who had a hidden observer effect.<sup>5</sup>

### Discussion

Despite differences in administration of the hidden observer item and in the pain stimulus used, the findings of the present study replicated Hilgard's findings in two major respects. As has been found in earlier studies (Hilgard et al., 1975, 1978; Perry & Laurence, 1980), the hidden observer effect is differential. The finding of approximately 40% of subjects manifesting the hidden observer in the present study is consistent with the percentages reported in the two most recent studies by Hilgard and his associates. In addition, the verbal reports of the subjects having the hidden observer ef-

<sup>5</sup> The two subjects furnishing incomplete pain data in Table 1 were automatically eliminated by the stepwise discriminant analysis.

fect in the present study showed strong similarities to those furnished by Hilgard's subjects. Further, since the findings for the first 10 subjects in the present study were reported earlier by Perry and Laurence (1980), it can be said that the effect has been replicated both within and between laboratories.

The differences between subjects who do and do not have a hidden observer effect serve to extend Hilgard's earlier findings and suggest that some adjustments to neodissociation theory (Hilgard, 1977a) may need to be made in order to accommodate the additional empirical data that have accrued. Specifically, there appear to be two distinct reactions to the hidden observer item among highly hypnotizable subjects. One group of subjects reported that the pain that was not experienced during analgesia nevertheless registered at another level when hidden observer instructions were administered. These same subjects reported duality in age regression, and most of them wrote and correctly spelled a complex sentence when requested. Overall then, this group appears to have experienced the pain at one level but not at another, and in age regression they maintained their adult identities, while vividly reexperiencing childhood either simultaneously or in alternation.

By contrast, the second group of subjects denied that the pain was registering at another level during the hidden observer item and, indeed, denied that there was another part of them. In age regression, they appeared oblivious to their adult identities; and most of them did not write the sentence, "I am participating in a psychological experiment."

Overall, these findings suggest different methods of cognitive processing and different analgesia mechanisms among highly hypnotizable subjects. The subjects who manifested the hidden observer effect appeared more reality bound in that their dualistic experience of age regression reflected the fact that they were adults vividly reexperiencing childhood. By contrast, the reality constraints of the group that did not have a hidden observer effect appeared to be significantly less operative, to the extent that they denied an adult identity. In this respect,

their imaginings appeared to be more "believed-in" (Sarbin & Coe, 1972) and they seemed more "deluded" (Sutcliffe, 1961) in the sense that their awareness of reality was considerably diminished.

In hypnotic analgesia, the no hidden observer group appeared to be more immersed in the analgesia suggestion and denied that the pain was registering at any other level. By contrast, the hidden observer group could again be considered as more reality bound during analgesia, since they had a sense that the pain must be registering at some level, even if it was not represented in conscious awareness. It is possible that the groups may have differed in terms of selective attention as opposed to imagery/absorption; the hidden observer group may have been better on the first skill, and the no hidden observer group may have been better on the second. Subsequent research will need to examine this issue in finer detail.

It should be emphasized that some of the findings reported in the present study were anticipated by Binet (1896). The issue of differential response in age regression was a major one in the late 19th century. At that time, however, the debate was in terms of what happened when the hypnotist suggested a personality alteration. In discussing two rival viewpoints of differential responses to suggestions of personality alteration, Binet wrote:

Some authors . . . hold that in experiments of transformation of personality the subject is really playing a part, a sort of comedy, and that he may be compared to an actor who expressed sentiments which he himself does not feel. Authors who adopt this interpretation, and among them I may cite M. Delboeuf, are by no means of the opinion that the subject tries to simulate and deceive the experimenter—the old idea of simulation is no longer held. But they think that the subject obeys from a different motive. When he receives an order, like that of representing a soldier or a peasant, he performs it to the best of his ability, with no other desire than that of pleasing the person from whom he has received the suggestion. He plays a comedy part, but with good intentions. The condition is then certainly a very complex psychological state, but yet it is easy to explain on this theory.

This position has been violently combated by other authors, notably by M. Bernheim, who hold that in every case the subject is sincere and really accepts the suggestion which he receives. A new personality is communicated to him and he accepts it, because the sug-

gestion is for him reality itself, and because for the time being he entirely forgets his former personality.

It does not seem necessary to pass judgment upon these two diametrically opposed opinions, because they appear to me to be equally correct, only they apply to different cases. There are persons who are by no means the dupes of the suggestions given to them, but who still carry them out because they are unable to resist the influence of the operator. This class of patients never forget who they are—their identity. If they are told to represent a priest, a general, or a nun, they will be capable of doing it as any of us might do it when requested, but they know that they are playing a part. They try to assume the characters desired, but they always retain the memory of their proper personality. Others, on the contrary, are completely the victims of the suggested illusion, because the memory of their former ego is for the moment entirely obliterated.

The differences of effect result from the psychic nature of the subjects respectively, and also, perhaps, from the method employed by the suggester. It is useless, therefore, to enter into the discussion concerning the facts. Two facts, we should remember, may be different without contradicting each other. (pp. 258–260)

Binet's observations in 1896 of personality alterations in hypnosis show a striking similarity to the differential verbal reports of age regression made by college students in a laboratory setting more than 80 years later.

Finally, the differential responses made by subjects to age regression and to the hidden observer item do not appear to be readily dismissed in terms of an alternative hypothesis of "demand characteristics" (Orne, 1959). The implicit cues in the hidden observer item are to report a hidden observer effect; by contrast, for age regression, they are to report reexperiencing being 5 years old with no sense of an adult identity. It is difficult to see why the hidden observer group responds to the demand characteristics of the hidden observer item but not to the demand characteristics of age regression. By contrast, the no hidden observer group does completely the opposite. Clearly, if responses to these items are influenced by situational demands in whole or in part, it is not in terms of any simple demand characteristics hypothesis.

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Received December 3, 1980

Revision received March 30, 1981 ■