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THE CONSTRUCTION OF HYPNOTIC EXPERIENCE: THE RELEVANCE OF BELIEF

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A distinguishing feature of hypnotic phenomena is that hypnotised individuals appear to develop a belief in the virtual reality of the effects suggested by the hypnotist. The relevance of this belief to the construction of subjects' hypnotic experience can be seen in phenomena such as post-hypnotic amnesia and hypnotic blindness. This article summarises selected findings from research on these phenomena and illustrates the ways in which hypnotised subjects construct false beliefs about suggested events and the resistance of these beliefs to breakdown. It is argued that understanding the subjective conviction of hypnotised subjects is a central issue in a theoretical understanding of hypnosis.

Understanding the nature of hypnosis from the perspective of laboratory research has a formal research history of about 35 years in Australia. The independent work of A. G. Hammer and J. P. Sutcliffe and their graduate students at the University of Sydney from the mid-1950s to the mid-1960s shaped the way in which research in hypnosis has been, and continues to be, conducted in this country to a major extent (see Sheehan, 1988, 1989). This article returns in part to a theoretical issue that was first raised by Sutcliffe in two influential articles in the field of hypnosis in 1960 and 1961.

In these papers Sutcliffe (1960, 1961) focused on the observation that hypnotised subjects develop a belief in the genuineness of the subjective effects they experience. This observation reflects the fact that the phenomena of hypnosis typically involve hypnotised subjects reporting compelling subjective experiences that do not correspond to objective reality. Thus hypnotised subjects may, in response to a specific suggestion, report seeing objects that are not present in their field of vision. Or they may, again in response to a specific suggestion, report not remembering information they learned just previously but remembering it following the cancellation of the suggestion for amnesia.

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It is because of this quality of hypnotic phenomena that Sutcliffe argued that: "the main feature of [hypnosis] is the hypnotised subject's emotional conviction that the world is as suggested by the hypnotist" (1961, p. 200). Moreover, Sutcliffe (1960, 1961) argued that attempts to explain hypnosis should consider this feature of the hypnotised subject's experience to be the central one of the phenomenon. This article explores the notion that the subjective conviction of hypnotised subjects is at least *a* central issue in a theoretical understanding of hypnosis (see also McConkey, in press).

Sutcliffe (1960, 1961) considered that the development of this false belief, or "delusory conviction" as he called it, occurred because of both the cognitive changes and the social factors that were associated with hypnosis. Specifically, Sutcliffe considered that the emotional conviction of hypnotised subjects in the genuineness of suggested events occurred because of their use of cognitive strategies that focused attention on some but not other information, and because of the social features of their dyadic interaction with the hypnotist. In essence, the interaction of these cognitive and social processes can be said to encourage the establishment of what McConkey (in press) has called a context of credibility in which hypnotised subjects accept the genuineness of the events suggested by the hypnotist and experienced by themselves. In other words, and to borrow a phrase from computer science, hypnotised subjects ascribe a status of "virtual reality" to these subjective experiences. Of course there is variation in the degree to which this occurs both within and between subjects, and one of the challenges for researchers is the specification of the factors that determine the existence of such variation (see McConkey, Glisky, & Kihlstrom, 1989).

Despite the emphasis by Sutcliffe (1960, 1961) on the role of belief in the experience of hypnotised subjects, researchers since then have focused only indirectly on the issue. Rather, researchers have focused either on cognitive features (such as dissociation) or on social features (such as compliance) in their investigations of hypnosis. One reason for this situation is that researchers have tended to adopt theoretical positions that view hypnosis as a function of either cognitive or social processes almost exclusively. It is when one moves, however, from seeing hypnosis exclusively as a function of *either* cognitive *or* social processes, to a position of seeing the phenomenon as a function of an interplay between those processes, that the need to understand the role of belief in the experience of hypnotised subjects becomes apparent. Such a position has been developed by Sheehan and McConkey (1982), and various aspects of that position have been elaborated and extended (see McConkey, in press; Sheehan, 1989).

The original position viewed hypnotised subjects as cognitively active participants who processed the information that they received (from both the communications of the hypnotist and from objective reality) in a way that allowed them to enact their desired role in the hypnotic setting. That is, the position highlighted that hypnotised subjects are most appropriately viewed as individuals who are striving to respond to diverse messages in a social

setting of considerable complexity. The position underscored the positive motivation of hypnotised subjects to cooperate with the hypnotist and to work in an active way to solve the problems that are posed by the hypnotic suggestions that are administered. Moreover, the position gave particular attention to the different cognitive strategies or styles that hypnotised subjects appear to employ to experience the events that are suggested by the hypnotist. The original position pointed to the subjective conviction of hypnotised subjects but did not focus in detail on that conviction. This article considers the nature of that conviction in somewhat more detail (see also McConkey, in press).

Illustrating Subjective Conviction

To illustrate the subjective conviction of hypnotised subjects, this article examines two particular hypnotic phenomena: post-hypnotic amnesia and hypnotic blindness.

Posthypnotic amnesia occurs when individuals respond positively to a suggestion that, following hypnosis, they will not remember the events of the hypnosis session itself. One way of investigating the nature of this particular phenomenon and the belief that subjects hold in the genuineness of the amnesia they are experiencing is by attempting to challenge, break down, or breach that amnesia. From this perspective, McConkey and Sheehan (1981) played a videotape of their hypnosis session to subjects who reported that they could not remember the events of the session following a suggestion for post-hypnotic amnesia.

When confronted with this videotape material, some hypnotised subjects but no non-hypnotised, role-playing, subjects made a distinction between now remembering their behaviour during hypnosis (as that behaviour was depicted on the videotape) but still not remembering the experiences that were associated with their behaviour, as opposed to their experiences, during hypnosis. This may relate either to features of post-hypnotic amnesia itself or to aspects of being confronted with a videotape of material for which they were experiencing amnesia. In the context of this article, however, the relevant point is that even though some hypnotised subjects acknowledged the occurrence of their behaviour as they observed it on the videotape, they nevertheless reported they were amnesic for the experiences associated with that behaviour.

One example of the phenomenon involved here can be seen in the following comment made spontaneously by an amnesic subject while watching the videotape: "I can sort of remember this, but I can't remember the experience. I can remember [the hypnotist] doing it, but I can't remember how it felt" (McConkey & Sheehan, 1981, p. 51). In a sense, hypnotised subjects can be said to have moved to a resolution of the dilemma with which they were confronted in a way that allowed them to maintain a belief in the genuineness of their experience of amnesia, while at the same time meeting the conflicting demands of the setting to acknowledge the occurrence of the behaviour during hypnosis. This finding suggests that, just as hypnotised subjects work to actively

construct the experiences that are suggested by the hypnotist, they may also work to develop and to maintain a personal commitment to the genuineness of those experiences.

Hypnotic blindness occurs when hypnotised subjects respond positively to a suggestion that they will not be able to see material that is within their field of vision. However, the behaviour of hypnotically blind subjects may be influenced by visual material that is within their field of vision even though they report that they cannot see that material (see Bryant & McConkey, 1989a). A striking aspect of the reports of hypnotically blind subjects is the degree of conviction that they display in the genuineness of their experience of blindness, despite the existence of evidence to the contrary.

This aspect, together with the degree to which subjects appear to work to protect the integrity of their hypnotic experience, can be seen in a study in which hypnotised subjects were visually presented with the uncommon spellings of a number of homophones, such as "SALE" and "STAKE," before and during a suggestion for hypnotic blindness (Bryant & McConkey, 1989b). Later in the session, when they were no longer experiencing hypnotic blindness, these subjects were asked to spell a number of words including the previously presented homophones. It was found that hypnotised subjects' spelling was influenced by the words presented during hypnotic blindness. That is, at one and the same time, hypnotised subjects both reported blindness and were influenced by the presence of visual information.

More relevant to the present article, however, were the data obtained when the subjects watched a videotape of their hypnosis session and made attributions about their spelling performance. Notably, the majority of hypnotised subjects made attributions about their spelling performance that did not involve awareness of the words that were presented during hypnotic blindness. Rather, they typically explained their spelling in terms of idiosyncratic, personal reasons, rather than in terms of an awareness of seeing the words. In essence, the subjects made attributions that can be said to have confirmed for them the genuineness of their experience of blindness. One example of this can be seen in the following interaction between the experimenter and subject while viewing the videotape.

E: You can see you spelt "stake" the uncommon way. That's the way it was spelt when you said you couldn't see it. You must have seen the way it was spelt.

S: No. I think you spell words the way you've experienced them. Like with the word "stake." I was brought up in a poverty-stricken family, and we didn't eat meat because we couldn't afford it. I didn't spell it the meat way.

E: Here's another example. You spelt "fare" the uncommon way. Just the way it was spelt when you said you couldn't see it.

S: My father worked on the railway, so I'm used to thinking about train fares.

E: You also spelt "sale" the uncommon way.

S: I know why I did that. I grew up in a country town and I never saw the sea until I was fifteen. So I didn't know anything about sails or boats.

This suggests that hypnotised subjects may support the beliefs they hold in the genuineness of their experiences through the attributions that they make about their behavioural performance. Moreover, the development of a belief during hypnosis may, at least in part, be a result of an active cognitive construction within a context of credibility that encourages and reinforces such attributions.

UNDERSTANDING SUBJECTIVE CONVICTION

Given that hypnotised subjects appear to develop and maintain a belief that the events suggested by the hypnotist and experienced by themselves have a status of virtual reality (McConkey, in press), how do we explain this phenomenon of subjective conviction? The two, albeit overlapping, notions that can be found in the literature generally are "delusion" and "self-deception." Both of these concepts have been used in the explanation of a number of normal and abnormal psychological phenomena, including hypnosis (see Kihlstrom & Hoyt, 1988; Sarbin, 1988).

Sutcliffe (1960, 1961) originally argued for the concept of delusion as an explanation of the subjective conviction of hypnotised subjects. Some difficulties in using this concept, however, are the lack of a detailed specification of the nature of delusion itself and the pathological connotations that typically surround it (see Oltmanns & Maher, 1988). Moreover, the subjective conviction of hypnotised subjects appears to be an act of construction in a way that the delusions typically associated with psychopathology are not. Nevertheless, at the general level of defining delusion as a "false belief about oneself" (Kihlstrom & Hoyt, 1988), it is useful to view hypnotised subjects as displaying delusions, although they are ones that are relatively transient and reversible.

From within his dramaturgical framework of theorising about psychological phenomena generally, Sarbin (1988) has argued that self-deception is a useful way of describing the verbal reports of hypnotised subjects. By self-deception, Sarbin (1988) means that hypnotised subjects come to hold a belief that is unwarranted from the perspective of a critical observer. Sarbin (1988) has argued specifically that hypnotised subjects "literalise the metaphor." In other words, hypnotised subjects move from behaving "as-if" they are, say, amnesic or blind, to accepting that they are actually amnesic or blind. It should be noted, however, that there is no agreed-upon definition of self-deception in the literature (see Lockard & Paulhus, 1988) and other uses of the term do not always fit easily with that of Sarbin (1988). Moreover, although the notions of delusion and self-deception come from distinct origins in psychopathology and philosophy, they are used almost interchangeably by some researchers and as quite distinct concepts by others. Thus although delusion and self-

deception are useful at a general level of describing the experiences and self-reports of hypnotised subjects, they do not allow us to understand fully the subjective conviction that such subjects display.

What is needed, then, is an explanation of how hypnotised subjects manage diverse information in a way that allows them to initiate and maintain a subjective experience that takes on a status of virtual reality. It appears that hypnotised subjects work to achieve this by using whatever cognitive strategies are appropriate to experience the suggested effects in a subjectively compelling way and to develop a belief in the objective value of their experience. That is, just as hypnotised subjects work to construct the experiences that are suggested by the hypnotist, they also appear to work to develop and to maintain a personal involvement in the genuineness of those experiences.

The development of subjective conviction can be seen then as the outcome of a cognitively active process that involves hypnotised subjects' bringing certain expectations, constructing particular experiences, and making specific attributions about those experiences. These expectations, experiences, and attributions occur in a way that leads hypnotised individuals to become convinced about the genuineness of their suggested experiences.

This position is an extension of the view of hypnotised subjects as active participants, who employ appropriate cognitive strategies to manage the multiple communications they receive within the hypnotic setting. The extension places emphasis on the belief subjects develop in the reality of their subjective experience during hypnosis. Finally, the extension emphasises the relevance of the attributions subjects make about their experiences during hypnosis, especially the way in which these attributions appear to protect for them the construction of those hypnotic experiences.

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BASELINE TESTING AND TEMPORAL ORGANISATION DURING POST-HYPNOTIC AMNESIA

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The hypothesis was investigated that the inclusion of a baseline recall trial may preclude the observation of a recall disorganisation effect during hypnotic amnesia. One group of research participants was tested in the standard paradigm in which no baseline trial is administered prior to the amnesia suggestion, while a second group received a baseline recall trial prior to amnesia testing. A third group also did not receive a baseline trial; however, these participants experienced a delay prior to amnesia equivalent in length to the time required to administer a baseline trial. Finally, a fourth group served as a control and simply received three recall trials without an amnesia suggestion. Results indicated that an amnesia specific disorganisation effect was not obtained in any group. Implications of these findings for theories of hypnotic amnesia are discussed.

Posthypnotic amnesia refers to a temporary, suggestion-induced lapse in memory for the events of an hypnotic session and is reversed easily by a prearranged verbal cue. This reversibility distinguishes suggested amnesia from normal forgetting and organic memory impairments. Following administration of an amnesia suggestion, three possible response patterns may be observed: (a) research participants can recall all of the critical material covered by the suggestion, in which case they are classified as non-amnesic; (b) none of the material covered by the suggestion may be recalled, resulting in a classification as complete amnesic; or (c) a portion of the critical material may be recalled, in which case participants are classified as partial amnesic.

Considerable research in recent years has assessed the organisational patterns of research participants' recall during amnesia. These investigations have been premised on the hypothesis that recall deficits during hypnotic amnesia are associated with decreases in recall organisation (e.g., Evans & Kihlstrom, 1973; Spanos & Bodorik, 1977). In order to examine organisation during amnesia,

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some material must be recalled; thus the research has been conducted within two experimental paradigms. In the one case, participants are administered a series of hypnotic test suggestions followed by an amnesia suggestion informing them that they will be unable to remember any of the preceding experiences until the suggestion is cancelled (susceptibility scale paradigm). In the other case, participants learn a list of words, typically to a stringent criterion, and then receive a suggestion informing them that they will forget the words (word list paradigm).

With respect to the organisation of recall, the results obtained with these two paradigms have not been consistent. Using the susceptibility scale paradigm, a number of researchers have reported that the recall of high susceptibles was less organised according to temporal sequence (i.e., seriation: the correspondence between recall order and the order in which the suggestions were presented initially) than the recall of low susceptibles (Evans, 1980; Evans & Kihlstrom, 1973; Geiselman et al., 1983; Kihlstrom & Evans, 1979). In these studies it has been assumed that differences between high and low susceptibles accurately reflect differences between amnesic and nonamnesic participants, a perspective that has proved problematic (cf. Radtke & Spanos, 1981, and Spanos, Bertrand, & Perlini, 1988, for discussions of this issue). In fact, two recent studies found differences in temporal organisation between high and low susceptibles, but no corresponding differences between amnesics and nonamnesics (Radtke, Spanos, Della Malva, & Stam, 1986; Spanos, de Groh, & Bertrand, 1986), while other research has failed to replicate the differences between high and low susceptibles (Radtke & Spanos, 1981; Radtke, Bertrand, & Spanos, 1988; St. Jean & Coe, 1981). In sum, the relationship between seriation and amnesia using the susceptibility scale paradigm has proved tenuous.

Research conducted using the word list paradigm has yielded more consistent findings. These studies have typically used words drawn from various taxonomic categories as the stimulus material, and research participants' tendency to organise these words within their categories (i.e., clustering) has been examined. A large number of studies have found that partial amnesics exhibit less clustering during the amnesia period than either before the suggestion or after its cancellation, whereas nonamnesics show no changes in organisation across recall trials (Bertrand & Spanos, 1985; Perlini, Bertrand, & Spanos, 1987; Radtke-Bodorik, Planas, & Spanos, 1980; Radtke-Bodorik, Spanos, & Haddad, 1979; Spanos & Bodorik, 1977; Spanos & D'Eon, 1980; Spanos, Radtke-Bodorik, & Stam, 1980; Spanos, Stam, D'Eon, Pawlak, & Radtke-Bodorik, 1980).

The discrepant results obtained with these paradigms have precluded the development of a cohesive theoretical formulation to account for amnesia and the organisation of recall. One possible explanation is that different types of organisation may reflect different underlying cognitive processes, in which case comparable results with temporal organisation and category clustering might not be expected (Kihlstrom, 1985; Wilson & Kihlstrom, 1986). Recent

research on seriation using the word list paradigm, however, yielded results consistent with those obtained in clustering studies, thus rendering this hypothesis untenable (Kihlstrom & Wilson, 1984; Spanos, McLean, & Bertrand, 1987). Another potential explanation is that methodological differences between the susceptibility scale and word list paradigms have resulted in the discrepant findings.

In a series of studies, Radtke et al. (1988) addressed this issue by manipulating the methodological differences inherent in the two paradigms. These investigators examined learning set (i.e., incidental vs. intentional learning conditions), stimulus type (i.e. test suggestions vs. word lists), and number of presentations of the critical material during the learning phase (i.e., single vs. multiple presentations) as potential variables responsible for the different patterns of findings. None of these manipulations resulted in an amnesia-specific decrease in seriation, a pattern of results still at odds with those obtained with the word-list paradigm. Interestingly, these studies also did not replicate the previously observed relationship between hypnotic susceptibility and temporal organisation (Evans, 1980; Evans & Kihlstrom, 1973; Geiselman et al., 1983; Kihlstrom & Evans, 1979; Radtke et al., 1986).

One modification to the susceptibility scale paradigm in the Radtke et al. (1988) investigation was the inclusion of a baseline recall trial prior to administration of the amnesia suggestion. In the commonly employed paradigm no baseline recall trial is administered (Evans & Kihlstrom, 1973; Kihlstrom & Evans, 1979; Shor & Orne, 1962; Weitzenhoffer & Hilgard, 1962). Radtke et al. (1988) reasoned that a pre-amnesia assessment of recall organisation was necessary to test for an amnesia-specific disorganisation effect. Previous research has indicated, however, that temporal organisation occurs most strongly on an initial free recall trial (Mandler & Dean, 1969) and therefore it is possible that the baseline recall trial disrupted temporal organisation for all research participants, resulting in no difference between amnesics and nonamnesics. As seriation is typically fairly low following a single presentation of susceptibility scale items (Radtke et al., 1988), floor effects might have prevented the partial amnesics from showing a further decrease in organisation during amnesia.

In order to investigate this hypothesis, the present study compared the effect of including a baseline recall trial on temporal organisation during amnesia. One group of research participants was given the testing paradigm used by Radtke et al. (1988) and received recall trials before the amnesia suggestion, during it, and after it was cancelled. A second group (the immediate condition) replicated the standard paradigm and received two recall trials: during and after the suggestion. A third group (the delay condition) also received the standard paradigm; however, these participants experienced a delay between the last test suggestion and presentation of the amnesia suggestion, equivalent in length to the time required to administer the baseline trial. This condition provided a control for the effects of the passage of time on organisation.

A fourth group served as a control and received three recall trials without an intervening amnesia suggestion. Temporal organisation was compared for all four groups on the trial during and after the suggestion. In addition, for the modified paradigm and control groups, organisation was compared across the three recall trials.

Recall organisation was assessed by two indexes. The Spearman rank order correlation coefficient (ρ) was calculated by correlating the order in which the items were presented initially with the order in which they were recalled on each trial, as has been the standard practice in research using the susceptibility scale paradigm (e.g., Evans & Kihlstrom 1973). The ρ index, however, is confounded with number of items recalled (Radtke & Spanos, 1981). Therefore organisation was also assessed using the adjusted ratio of clustering (ARC), which does not share this confounding (Pellegrino, 1971, Roenker, Thompson, & Brown, 1974).

METHOD

Research Participants

One hundred and thirty University of Calgary undergraduates (71 females, 59 males; ages 17 to 52) volunteered to participate in a two-session experiment on hypnotic responding. They received \$3.00 per session for their participation. None had participated previously in any experiment involving hypnosis.

Stimulus Materials. The 12 test suggestions employed in Radtke et al. (1988; Exp. 1) were used in the present study. These suggestions were selected from the Barber Suggestibility Scale (BSS; Barber, 1969), the Stanford Hypnotic Susceptibility Scale, Form B (SHSS:B; Weitzenhoffer & Hilgard, 1959), and the Carleton University Responsiveness to Suggestion Scale (CURSS; Spanos, Radtke, Hodgins, Stam, & Bertrand, 1983).

Procedure

In Session 1 participants were assigned randomly to a treatment group (30 participants in each of the three experimental groups and 40 participants in the control group) and received a 10-min hypnotic induction procedure (Spanos & Bodorik, 1977). They were informed that they would be presented with a series of test suggestions, but no mention was made of the recall trial to follow. After administration of the 12th suggestion, participants in the modified and control groups were asked to open their eyes and to write down all of the preceding suggestions that they could remember (baseline recall trial). They were given 3 min for recall. Participants in the delay condition received instructions to deepen their level of relaxation during this 3-min period.

Following the baseline trial (modified group), the 3-min delay (delay group), or the administration of the 12th test suggestion (immediate group), a post-hypnotic amnesia suggestion and waking instructions taken from the HGSHS:A

(Shor & Orne, 1962) were administered. These instructions were omitted for participants in the control group. During the amnesia period, participants were given 3 min to write down any items they could recall from the previous test suggestions (amnesia recall trial). Control participants were asked to write down the suggestions a second time. The amnesia suggestion then was cancelled via the prearranged cue and all participants received a further 3 min to write down all of the suggestions they could remember (post-amnesia recall trial).

Research participants within the three suggestion groups were classified as partial amnesic if they recalled three or more suggestions on the amnesia trial and one or more additional items on the post-amnesia trial. Those who recalled fewer than three items on the amnesia trial and one or more additional items on the post-amnesia trial were classified as complete amnesic,¹ and participants who did not recall any additional items after cancellation were classified as nonamnesic.

In Session 2, participants were administered the HGSHS:A (Shor & Orne, 1962) in small groups of 2 to 5. This testing occurred within two weeks of Session 1. Based on their responses to the suggestions contained within this scale, participants scoring 0-4, 5-8, and 9-12 were classified as low, medium, and high susceptible, respectively.

RESULTS

Amnesia and Hypnotic Susceptibility

The frequency of amnesia by experimental condition and hypnotic susceptibility group is presented in Table 1. In line with previous research (e.g., Cooper, 1979), the incidence of amnesia increased with higher levels of susceptibility for each experimental group.

A one-way between-subjects analysis of variance (ANOVA) with three levels was conducted on amnesia scores for participants in the three suggestion groups and was nonsignificant, $F(2,87) < 1$, indicating that the presence of a baseline recall trial or a delay period did not affect degree of amnesia. Similarly, a

Table 1 Frequency of Amnesic and Nonamnesic Subjects by Susceptibility Level and Experimental Group

Group	Susceptibility					
	Low		Medium		High	
	Amn	No Amn	Amn	No Amn	Amn	No Amn
Modified	2	6	7	9	5	1
Delay	6	8	5	3	8	0
Immediate	3	6	7	5	7	2
Control	-	12	-	23	-	5

Note. No frequencies are presented in the Amnesia column for the Control Group because amnesia was not possible for participants in this group.

one-way between-subjects ANOVA with 4 levels (3 experimental groups and 1 control group) conducted on HGSHS:A scores indicated that hypnotic susceptibility scores did not differ across groups, $F(3,126) < 1$.

A 3 x 2 between-subjects ANOVA (3 experimental groups x presence/absence of amnesia) was also conducted on HGSHS:A scores. This analysis yielded a significant main effect for the amnesia variable, $F(1,84) = 12.36, p < .001$, and indicated that hypnotic susceptibility scores were higher for amnesics ($M = 6.98, SD = 2.84$) than for nonamnesics ($M = 4.95, SD = 2.54$). Neither the group main effect nor the interaction approached significance.

Organisation and Amnesia

Rho and ARC seriation scores were computed for each research participant on each trial where three or more items had been recalled. Because amnesia was not possible for participants in the control group, this group was excluded from analyses that utilised the presence versus absence of amnesia as an independent variable.

In order to examine levels of organisation on the first recall trial for each group, we compared organisation scores on the baseline trial for the modified and control groups with organisation scores on the amnesia trial for the delay and immediate groups with two one-way ANOVAs. These analyses were nonsignificant for both the rho scores, $F(3,118) < 1$ (overall $M = .094, SD = .487$), and ARC scores, $F(3,118) = 1.17$ (overall $M = .176, SD = .265$), indicating that all four groups organised their recall at the same level on the initial recall trial.

A further 3 x 2 x 2 mixed design ANOVA with two between-subjects variables (groups: modified/delay/immediate x partial amnesia/no amnesia) and one within-subjects variable (trials: during/after suggestion) on rho scores revealed no statistically significant effects. Thus, neither the treatment manipulation nor the presence or absence of amnesia affected rho seriation scores either during or after the suggestion period. The same analysis conducted on ARC scores, however, did yield a significant amnesia x trials interaction, $F(1,72) = 10.10, p < .005$. A follow-up simple main effects analysis indicated that partial amnesics obtained higher ARC scores during the suggestion ($M = .227, SD = .289$), than after cancellation ($M = .103, SD = .237$), $F(1,72) = 10.82, p < .005$. In addition, they obtained higher ARC scores during the suggestion than did nonamnesics ($M = .103, SD = .246$), $F(1,140) = 8.81, p < .005$. The mean ARC score for nonamnesics after cancellation ($M = .176, SD = .233$) did not differ significantly from any other mean. In short, this pattern of results was in opposition to that predicted by the disorganisation hypothesis.

Organisation and Hypnotic Susceptibility

In order to examine the relationship between hypnotic susceptibility and potential changes in organisation across trials, as well as to enable a comparison

between the control and experimental groups, the amnesia variables in the previous analyses were replaced with level of hypnotic susceptibility. A 4 x 3 x 2 mixed ANOVA with two between-subjects variables (groups x susceptibility: low/medium/high) and one within-subjects variable (trials: during/after suggestion) was conducted on rho scores. This analysis resulted in a significant three-way interaction, $F(6,106) = 3.14, p < .01$ (see Table 2 for *Ms* and *SDs*). Subsequent analysis of the simple interactions of susceptibility x trials for each group indicated that this effect attained significance only for the delay group, $F(2,106) = 8.41, p < .01$. Within-groups simple main effects conducted on each susceptibility level indicated that medium susceptibles organised more during the suggestion period than after the suggestion was cancelled, $F(1,106) = 5.93, p < .05$. In addition, high susceptibles organised less during amnesia than after cancellation, $F(1,106) = 8.88, p < .01$. None of the other simple effects approached significance.

Table 2 Mean Rho Scores for Group x Susceptibility x Trials Interaction

Susceptibility	During Suggestion	After Suggestion
		Modified Group
Low	.224 (.570)	.306 (.453)
Medium	.254 (.544)	.199 (.378)
High	.445 (.219)	.510 (.156)
		Delay Group
Low	-.014 (.472)	.217 (.456)
Medium	.379 (.533)	-.041 (.512)
High	-.108 (.652)	.485 (.377)
		Immediate Group
Low	.183 (.516)	.197 (.555)
Medium	-.127 (.367)	.182 (.400)
High	-.108 (.652)	.485 (.377)
		Control Group
Low	.219 (.463)	.188 (.348)
Medium	.243 (.358)	.221 (.355)
High	-.018 (.229)	-.236 (.340)

Note. Standard deviations are in parentheses.

Analysis of the simple interactions of groups x trials for each susceptibility level revealed that this effect attained significance only for the medium susceptibles, $F(3,106) = 3.63$, $p < .01$. Within-groups simple main effects indicated that participants in the immediate group obtained lower rho scores during the suggestion than after its cancellation, $F(1,106) = 4.79$, $p < .05$. The between-groups simple main effect for groups during the suggestion was also significant, $F(3,182) = 2.67$, $p < .05$, and a follow-up Newman-Keuls analysis indicated that, during the suggestion, rho scores were lower for participants in the immediate group than for each of the other groups. No other pairwise comparisons were significant. Neither of the simple interactions of group x susceptibility at each trial attained significance.

A parallel $4 \times 3 \times 2$ ANOVA conducted on ARC scores did not yield significant main effects or interactions.

In order to examine any changes in organisation from a base-line trial to subsequent recall challenges, the modified and control groups were included in a $2 \times 3 \times 3$ mixed ANOVA with two between-subjects factors (groups x susceptibility: low/medium/high) and one within-subjects variable (trials: before/during/after suggestion period) conducted on rho and ARC scores. Neither of these analyses yielded significant main effects or interactions, indicating that neither the amnesia suggestion nor hypnotic susceptibility affected organisation scores across trials.

DISCUSSION

Overall the results of the present investigation offered no support for the hypothesis that the inclusion of a pre-amnesia recall trial in the Radtke et al. (1988) study masked an amnesia-specific disorganisation effect. Regardless of whether participants received a baseline recall trial, there were no differences in organisation across trials in the direction predicted by the disorganisation hypothesis. In fact, partial amnesics exhibited higher ARC scores than nonamnesics during the suggestion period and showed a decrease in ARC following cancellation.

Our attempt to replicate the previously observed relationship between hypnotic susceptibility and organisation provided some limited support for the earlier findings (Evans, 1980; Evans & Kihlstrom, 1973; Radtke et al., 1986; Spanos et al., 1986). High susceptibles obtained lower rho scores during the suggestion period than after amnesia cancellation, while medium susceptibles showed the opposite pattern of results and low susceptibles did not differ across trials. No differences across susceptibility levels emerged, however, which did not support the earlier findings. In addition, this pattern was observed only for participants in the delay group, suggesting that these results should be interpreted with caution.

The failure to find an amnesia-specific disorganisation effect in the present experiment and the Radtke et al. (1988) studies is puzzling in light of the

consistently obtained disorganisation effect when categorised words are employed as the stimulus material. Clearly methodological differences between the susceptibility scale and word list paradigms cannot be used to explain the discrepancy. One hypothesis that remains to be investigated systematically is that the salience of a particular organisational strategy prior to amnesia may influence the disorganisation effect.

The inattention hypothesis (Spanos et al. 1988; Spanos, Radtke-Bodorik, & Stam, 1980) holds that research participants will exhibit amnesia and disorganisation to the extent that they disattend, during amnesia recall, to the cues that were present during initial encoding of the material. Organisational strategies, of course, are strong retrieval cues and disattending to these cues during amnesia may lead to both reduced and less organised recall. This explanation, however, presupposes that participants are aware of their organisational patterns prior to amnesia. When the critical material is a highly overlearned categorised word list, this is clearly the case: Almost all participants organise their recall perfectly prior to amnesia, and the category labels work as particularly salient retrieval cues. Thus disattending to these cues as a means of producing amnesia may be an obvious strategy (e.g., Bertrand & Spanos, 1985). With the susceptibility scale paradigm, however, in which the critical material is presented only once and typically under an incidental learning set, participants' organisational strategies may be less salient and hence not subject to inattention. Some support for this notion was obtained in the present study and in Radtke et al. (1988), where levels of seriation on the initial recall trial were quite low. In fact the only two studies that have obtained a reliable amnesia-specific breakdown in seriation employed a word list learned to a stringent criterion (Kihlstrom & Wilson, 1984; Spanos, McLean, & Bertrand, 1987). In both of these studies, baseline levels of seriation were quite high, suggesting that the organisational strategy was salient to participants. Because both of these studies employed words as the stimulus material, however, these results cannot be generalised to the situation in which hypnotic test suggestions are used as the critical items. Future research with the susceptibility scale paradigm employing a procedure that will ensure high baseline levels of seriation would provide a direct test of this hypothesis.

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¹ The cut-off point of less than three items on the amnesia trial for classification as complete amnesic was necessary because scores cannot be obtained reliably for recall protocols of this length.

HYPNOSIS AND PAIN CONTROL

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Private Practice

This paper examines the use of hypnotherapy for pain reduction. The influences of hypnosis on acute and chronic pain are compared. Hypnosis may have an effect similar to the placebo effect: In some cases of individuals with low hypnotic ability, their belief that hypnotic suggestions can reduce their pain may result in pain relief.

The modern history of hypnosis is generally considered to have begun in the late eighteenth century with Franz Anton Mesmer, from whose name we have the word "mesmerise." However, it was the Scottish physician, James Esdaile, who most dramatically documented the early use of hypnosis in the control of pain (Esdaile, 1957). In the late nineteenth century, just prior to the development of chemical anaesthesia, Esdaile used hypnosis widely in India as the only form of anaesthesia for amputations, tumour removals, and other complex surgical procedures. Overlooked in Esdaile's reports was the fact that most of his patients survived surgery – a rare event in those days because of haemorrhage, shock, and post-surgical infection. Hypnosis may have had effects on the autonomic nervous system, the immune system, or both, that minimised the usual complications of the surgical techniques of the time.

Clinical reports document that hypnosis has been used as an effective technique to control chronic pain (Sacerdote, 1970), and to assist in the management of pain in the terminally ill patient. (Domangue, Margolis, Leiberman, & Kaji, 1985). There are relatively few well-controlled empirical studies of the clinical efficacy of hypnosis in pain management (Turner & Chapman, 1982). The available evidence suggests that about 50% of terminal cancer patients (Hilgard & Hilgard, 1975), and 95% of dental patients (Barber, 1977), can be helped with some pain control by the adjunctive use of hypnotic techniques – that is, by the use of hypnosis in addition to other techniques.

HYPNOTIC STRATEGIES

There is controversy concerning the nature of hypnosis, and one's theoretical stance may influence research design as well as strategies used in hypnotic treatment programmes. There is no consensus definition of hypnosis, but most investigators emphasise the importance of one of four aspects: the expectations of the subject (and the hypnotist-subject interaction); hypnotisability; attention distraction and/or cognitive distortion; and dissociation.

The Hypnotic Relationship

Some researchers and clinicians emphasise the interaction between the hypnotist and the subject as the main component of hypnotic behaviour. In this view, hypnosis is considered to have an effect similar to the placebo effect (see below) and the experience of hypnosis would be operationally defined as *a response to the induction process* (Barber, 1969; Chaves & Brown, 1984; Sarbin, 1972; Spanos, 1986; Wagstaff, 1981). Pain reduction involves such strategies as shifting the subject's attention away from the pain and toward other activities, having the subject distracted, imagery, forgetting the pain, verbal relabelling (e.g., instead of "pain," call it "discomfort"), anxiety reduction, and denial. These strategies are presumably facilitated by the hypnotic relationship and have been statistically shown to be successful in research studies. Results are usually not related to individual differences in hypnotisability, which are often not even measured.

Hypnotisability and Dissociation

Another view of hypnosis is that it reflects a stable capacity of the individual. The hypnotic experience may involve an ability to readily change states of awareness or levels of consciousness. These changes may be either interpersonally induced or self-induced (Evans, 1987; Hilgard, 1965, 1977). Ernest Hilgard formulates this approach in terms of neodissociation or multiple cognitive pathways. Hilgard uses the term "neodissociation" to avoid the confusion in early twentieth-century usage of "dissociation," which has the implication that there are impenetrable boundaries between levels of consciousness. In other words, the patient simultaneously knows, but is unaware of, pain severity at different levels of awareness. Pain awareness and analgesia are co-conscious. Hypnosis may involve a more general ability of cognitive flexibility or a switching mechanism that allows one to change psychological, cognitive, or physiological processes, or to readily access different levels of consciousness (Evans, 1987). Hypnotisability correlates with several measures that appear to be related to dissociative processes. This involves doing or being aware of several things at once, possibly at different levels of consciousness. Such measures include the ability to utilise imagery effectively; napping and the ease of falling asleep; the ability to become absorbed in engaging experiences, such as becoming "lost" in a movie or novel; occasional lateness for

appointments; and the ease with which patients will give up psychiatric (and possibly medical) symptoms even with nonhypnotic treatment (Evans, 1986).

The existing data highlight the paradox of hypnotic pain control: clinicians claim that most of their patients can benefit from hypnotic intervention techniques, while empirical data suggest that relatively few people have the sufficient capacity and the profound sensory and cognitive skills required to significantly reduce severe pain via hypnosis (Hilgard, 1977).

Attention Distraction and Cognitive Distortion

In part as an expansion of the social/cognitive view of hypnosis, several strategies have been studied as potentially effective in controlling pain. Focusing one's attention elsewhere (as in listening to an interesting story); choosing not to think about the pain; relabelling the pain as discomfort, tingling, or warmth, often using imagery, provide typical examples of procedures often used, experimentally or clinically, with or without hypnosis. These procedures tend to modify the pain experience (although it is usually difficult to tell if a change is actually taking place or whether the subject is merely reporting a change to be compliant) especially as the procedures often place considerable pressure on the subject to respond to the hypothesis of the experiment. In studies of the use of these techniques, results are rarely related to individual differences in hypnotisability and often produce no differences between hypnosis groups and other techniques (e.g., motivation, relaxation, controls). Clinically, such procedures are most likely to be helpful with acute rather than chronic pain.

ACUTE AND CHRONIC PAIN: RELEVANCE OF HYPNOSIS

Significant contributions to understanding the nature of acute pain have been made in the hypnosis literature. The meticulous psychophysical studies of experimental pain conducted by Ernest R. Hilgard (1969, 1977) have shown that there is a lawful relationship between the intensity of the noxious stimulation causing pain and the subjective experience of transient acute pain. This relationship has been shown to be lawful for normal conditions and for the reduction of pain following hypnotic analgesia in subjects differing in hypnotic susceptibility. Most experimental studies of acute pain have been conducted in situations where the significance of the stimulation is not psychologically meaningful beyond the confines of the transient noxious stimulation. Anxiety about the meaning of the painful stimulations is minimised or eliminated. However, for such studies aimed at understanding pain mechanisms are probably not helpful for the clinician confronted with patients in pain. Hilgard's later elaboration of pain control within the context of neodissociation theory, particularly using the method of the "hidden observer," helped document that pain perception may take place at different levels of awareness (Hilgard, 1977); the "hidden observer" is a technique in which the

experimenter “talks to” a different part of the subject that is in a better position to know what is happening. Multiple cognitive pathways may be accessible to the hypnotised subject, enabling an experience of minimal pain at a conscious level, even though at another cognitive level (or to an observing ego) it is possible to make reasonably accurate reports of the actual intensity of the painful stimulation. The multiple cognitive controls implicit in the “hidden observer” procedure are not especially different from our own subjective experience under dental analgesia, for example, when we experience that the drill does not hurt, even though we maintain awareness of the level of painful stimulation that we would be experiencing without the chemical intervention.

The laboratory finding of a one-to-one correlation between the intensity of short-lasting, noxious stimulation and reported pain does not hold true for chronic pain. For most chronic pain patients, the intensity of the pain is not as significant as its psychological meaning, especially when a specific organic basis to the pain cannot be documented.

Even acute pain is not a simple matter of stimulus intensity in the clinical situation. Henry Beecher observed during World War II on the Anzio beachhead that wounded soldiers did not typically report pain as they waited to be removed from the battlefield, in spite of gunshot and shrapnel wounds that eventually required major surgery, amputation, and long-term convalescence (Beecher, 1946). He contrasted the wounded soldiers’ mild euphoria with the response of similarly injured civilians in a hospital emergency area, who typically expressed considerable pain and suffering. The soldiers knew they were going home, and that they no longer had to fear being killed, whereas for the civilians the pain had socioeconomic implications, fear of job loss, and so forth. Beecher’s emphasis on the manner in which the psychological significance of the pain experience modulates wound severity (1959), has led to the delineation of learning factors and early experience in the development of long-term pain behaviour (Sternbach, 1968). We are all familiar with the young child who, after falling, surveys the environs to establish whether a parent is nearby to provide tender loving care before deciding whether to cry or continue playing with his or her friends. Early learning patterns in the management of transient and acute pain may lead to enduring developmental patterns in which pain and suffering can become instrumental in manipulating the environment, for example, avoiding school, getting attention from parents, etc. Such factors are prevalent in the early developmental history of chronic pain patients.

Transition from Acute to Chronic Pain: Anxiety to Depression

The management of acute pain, including terminal cancer pain, primarily involves the management of anxiety. The growing anxiety about the short-term and long-term consequences of an injury or illness, which accompanies the increasing intensity of the noxious stimulation, is usually relieved by adequate treatment (such as pain medication, hypnosis, or other intervention that reduces anxiety, facilitates relaxation, and refocuses attention).

When the pain is not relieved satisfactorily, a different set of dynamics arises as another pattern becomes established. Although pain intensity may have increased initially, it tends to abate gradually, but the fear of continued suffering remains. The anticipatory anxiety about future suffering gives way to the frightening awareness that a painful injury or condition may actually have a permanent effect. Despair and despondency gradually develop as the suffering continues to be partially unrelieved and the patient's activities remain restricted. The seductiveness of seeking, demanding, and receiving help from significant others; the mildly pleasant and/or euphoric effects of medication; or the sedation and induced sleep that helps the individual to avoid pain can produce a reinforcement contingency for which the pain is a sufficient – and eventually a necessary – precursor. Feelings of helplessness lead to depression, guilt, and internalised anger concerning perceived loss of bodily parts or functions and diminished self-control. Gradually, a pattern is established involving helplessness and depression that reinforces pain behaviour (Shor, 1962). Pain is sometimes negatively reinforced by its pleasant consequences – for example, “My low back pain allows me to watch the Sunday football game instead of mowing the lawn.” In the same way, negative consequences are sometimes avoided by continued pain – for example, “When I have my migraines, I can avoid my spouse's advances”; “My unmanageable children go outside and play when I hurt”; or “My spouse will stay close to me while I am still suffering.” In such cases, hypnotic intervention based on anxiety reduction will usually be unsuccessful and will only frustrate the patient and the therapist. The use of hypnosis with these patients may be helpful, but different strategies are also needed. While using hypnosis for pain control, it is necessary to address simultaneously the depression and secondary gain as psychotherapeutic issues.

Hypnotisability Versus the Placebo Effect: Studies of Hypnotic Analgesia

There are distinct differences between clinical pain (pain that is experienced by people who may be ill or injured) and experimental pain (pain that is caused by giving painful stimuli, such as electric shock, to subjects in laboratory experiments). The effects of hypnosis on experimental pain have been shown only over the last two decades. Unfortunately, most earlier studies (Elton, Burrows, & Stanley, 1980; Fordyce, 1976; Hilgard, 1977; Spanos, 1986) used transient painful stimulation such as electric shock and radiant heat – procedures that share neither the enduring qualities of chronic pain nor the debilitating anxiety of acute pain. Indeed, early studies deliberately minimised anxiety and stress. The careful attempt to minimise anxiety in early experiments obscured the problem that many of the experimental procedures used to stimulate pain are not affected by standard analgesic drugs such as morphine and therefore may not be useful analogues of clinical pain.

Partly out of concern for the welfare of subjects, many of these early studies were restricted to measuring pain threshold or the point at which pain first

becomes noticeable. Patients do not generally report this experience of pain in terms of having a problem with their pain threshold! Meaningful studies are restricted to those that measure pain tolerance and endurance levels. For the most part, the only viable methods of experimental pain induction satisfying this requirement are the cold pressor and ischemic pain tasks. Both tasks measure severe, protracted pain and are sensitive to analgesic medications. Therefore, they both reflect some of the qualities of chronic pain. The adequacy of other current methods, including electrical stimulation, pressure-induced pain, and dental stimulation remains open to future investigations.

Screening for hypnotisability must be done carefully in studies of hypnotic pain control. Many studies do not carefully select extreme high and low hypnotisable subjects. If hypnosis involves a unique set of skills, then subjects who have been selected for high hypnotisability will have the best opportunity to experience hypnotic analgesia. It is difficult to get stable measures of hypnotisability without using two or three scales because the initial session tends to be contaminated by preconceptions, curiosities, and anxieties about the meaning of hypnosis. This is even more complicated in the clinic because a hypnotised patient may respond well to hypnosis during a screening session, but because of an unreadiness to give up the pain for psychological reasons, the patient may refuse to experience hypnosis in a therapeutic context. Therefore, it is critically important to evaluate hypnosis in the clinic independently of the treatment session so that hypnotic ability will not be confounded by the desire to be helped or any lack of readiness to get better.

Instead of reviewing the experimental literature on hypnosis and pain (Hilgard, 1977; Hilgard & Hilgard, 1975; Spanos, 1986), a few studies that illustrate the methodological and conceptual issues raised above will be reviewed briefly. In a marked deviation from the methods used in prior hypnotic analgesia studies, Thomas McGlashan, Martin Orne, and I tested 12 extreme high and 12 extreme low hypnotisable subjects, using an ischemic pain task, during three sessions: (a) during highly motivated baseline conditions; (b) following the induction of hypnotic analgesia; and (c) after ingesting a placebo capsule (Evans & McGlashan, 1987; McGlashan, Evans, & Orne, 1969; Orne, 1974; Turner, 1982; Wagstaff, 1987). The capsule was presented as an experimental pain-killing drug serving as a control procedure against which to evaluate the effects of hypnosis. The experimenter believed subjects were randomly given placebo or Darvon compound in double-blind fashion, although all subjects received placebo.

It is difficult to motivate low hypnotisable subjects to participate in any hypnotic procedure, such as analgesia, because they are convinced it will not work with them. A simple but compelling deception was used with the low hypnotisable subjects to legitimise an expectancy of analgesia. Prior to the experimental hypnosis session, an independent experimenter induced a glove analgesia (a feeling of numbness or lack of sensation in the hand) using a hypnotic relaxation technique that was geared to each subject's description

of his previous minimal hypnotic experiences. This was tested by administering a brief electric shock to the fingers. These low hypnotisable subjects were able to experience the analgesia – because the experimenter surreptitiously turned down the shock intensity from the analgesic test level!

The aim of this study was to maximise rather than minimise variables, such as expectations and anxieties, that might influence the placebo effect. The improved ability to tolerate excruciating ischemic muscle pain for these extremely hypnotisable and unhypnotisable subjects after suggestions of hypnotic analgesia, and subsequently after ingesting a placebo, was evaluated. The results have been described in detail elsewhere in this journal (see Vol. 1, No. 3). Three aspects of the results were especially important:

1. There was a dramatic increase in pain tolerance for deeply hypnotisable subjects during hypnotically induced analgesia. This is likely to be a result of the dissociative aspects of the hypnotic condition when it occurs in highly responsive hypnotic subjects.

2. The much smaller but significant placebo-induced change in ischemic pain tolerance was equal in magnitude for both high hypnotisable and low hypnotisable subjects.

3. The hypnotic analgesia suggestions significantly improved tolerance of ischemic pain even for low hypnotisable subjects who do not have the ability to enter a hypnotic trance. For these hypnotically unresponsive subjects, the pain relief produced by the placebo component of the hypnotic context and the placebo component of ingesting a pill are about equal and are highly correlated. This can be labelled as the “placebo” component of the hypnotic induction procedure. The *expectation* that hypnosis can be helpful in reducing pain produces significant reductions in pain, which are similar to those produced by taking a pain-killing pill, particularly in those individuals who otherwise have no special hypnotic skills.

This somewhat manipulative and deceptive study indicated that hypnosis has specific hypnotic effects as well as nonspecific placebo effects, just as the administration of medication has specific drug effects and nonspecific placebo effects. Significant pain relief was achieved under both the placebo analgesia and placebo hypnosis conditions, even though this relief was not nearly as great as that obtained with hypnotic analgesia in hypnotisable subjects.

The magnitude of this nonspecific response can be considerable. In drug research, for example, it has been shown that about 95% of patients who respond to a placebo injection will also respond to a standard dose of morphine to reduce pain. However, only about 50% of those patients who do not respond to the placebo trial respond to morphine (Lasagna, Mosteller, von Felsinger, & Beecher, 1954). The expectation of relief that presumably mediates the placebo response is a powerful therapeutic effect. I reviewed double-blind studies of pain reduction using medication and found that the relative effectiveness of placebo compared with a standard dose of morphine is about 56% (Evans, 1984, 1985). The placebo is also 50% to 60% as effective as aspirin, codeine,

propoxyphene hydrochloride (Darvon), and zomepirac sodium (Zomax), as well as with non-pain treatments, including the pharmacological and behavioural treatment of insomnia and the use of lithium in psychiatric patients. This is a remarkable finding, because it implies that the nonspecific factors arising from the treatment milieu are important clinical variables, presumably operating because the therapist communicates his or her enthusiasm and expectations of success to the suffering patient.

The studies by McGlashan and his colleagues (Evans, 1984, 1986; McGlashan et al., 1969) documented that the mechanisms by which a placebo pill and hypnosis produced analgesia were different in subjects with high hypnotic capacity. Jane Knox and her colleagues (Knox, Gekoski, Shum, & McLaughlin, 1981) compared acupuncture with hypnosis and found results similar to those reported above comparing placebo with hypnosis. The pain reduction with acupuncture was similar in high and low hypnotisable subjects, but the pain response of highly hypnotisable subjects was significantly greater with hypnosis than with acupuncture. The independence of the mechanisms of acupuncture and hypnosis has been confirmed in studies reporting that the opiate and endogenous endorphin antagonist, naloxone, reverses the pain alleviation of acupuncture, but does not affect the pain reduction produced by hypnosis (Goldstein & Hilgard, 1975; Spiegel & Albert, 1983).

The independence of hypnotic analgesia from nonspecific pain reduction methods was also demonstrated in a recent study by Mary Miller and Kenneth Bowers (1986) that involved cold pressor pain in three groups, each preselected for high and low hypnotisability: (a) D. H. Meichenbaum's stress inoculation procedure; (b) the same procedure that was labelled as a form of hypnotic intervention (even though no hypnotic induction was used); and (c) hypnotic analgesia. The results were directly comparable to the hypnotic versus placebo (McGlashan et al., 1969) and acupuncture (Knox et al., 1981) studies. High and low hypnotisable subjects gained significant and equal pain relief from the stress inoculation procedures. However, the pain reduction of highly hypnotisable subjects with hypnotic analgesia surpassed the degree of relief from all subjects when hypnosis was not involved.

In summary, then, these studies and others show that hypnosis can facilitate a number of cognitive strategies that can be helpful in alleviating pain. Specific interventions such as acupuncture, attention/distraction, placebo, relaxation, stress inoculation, all have a significant effect on pain, but this effect is independent of individual differences in hypnotic ability. The use of the label "hypnosis" produces a strong, almost magical, connotation that *change* is expected. The expectation of therapeutic success may be strong in the therapist as well as in the patient. The communication of confidence and the message to the patient that help is on its way is a powerful therapeutic intervention that cannot be overlooked in treating chronic pain. The magical connotations and ritual of the hypnotic induction process help reduce pain even in many patients with limited hypnotic capacity. Hypnosis may "work" for everybody,

except the treatment-resistant patient, even though the clinical effects may be produced by the context of hypnosis rather than by the hypnotic condition itself.

On the other hand, these studies show that, at least for some carefully selected individuals, hypnosis offers a means of controlling and mastering pain that is different from procedures such as placebo, acupuncture, stress inoculation, and drug-induced biochemical changes. The critical point in clinical management is that, as in the studies on the interaction between placebo response and morphine response, the interpersonal aspects of hypnosis (that is, hypnotisability) cannot be separated easily. The fact that two interacting mechanisms are involved helps to explain why clinicians often see compelling pain relief in patients who otherwise seem un hypnotisable (Hilgard, 1969). If hypnosis is useful with chronic pain cases in which depression and secondary gain are the key therapeutic issues, it is most likely to involve these nonspecific aspects of the hypnotic context rather than hypnotic capacity.

HYPNOSIS AND CHRONIC PAIN MANAGEMENT

The typical chronic pain patient will have unsuccessfully attempted several treatment approaches before coming to a hypnotherapist. These will often have included various neurological procedures, manipulative procedures by orthopaedists and chiropractors, psychotherapy, and medication. The typical chronic pain patient will simultaneously take many different medications. For many of these patients, the demand, "Hypnotise me, and get rid of my pain" is often an invitation to failure. When the burden of cure is abrogated to the implicit magic of the technique – rather than the patient's taking an active role in his or her treatment – any initial attempt to use hypnosis would at best be unsuccessful, and at worst would precipitate an early termination of the therapeutic encounter. Treatment cannot be passive, nor can it be solely the responsibility of the therapist. The patient must learn the self-control that is needed for the mastery experience of pain control.

The importance of the initial therapeutic contact must be emphasised when hypnosis is to be used with the chronic pain patient. Many of these patients will require a confrontational style to evaluate secondary gain and masked depression. It will be these issues that will determine the focus of the treatment plan. The manner in which the patient is asked to describe his or her pain may be very useful for the selection of appropriate imagery and cognitive strategies when it is time to use hypnosis. Many patients find it difficult to describe their pain verbally but can write about it. Techniques such as asking about the "colour" and "shape" of the pain, drawing the pain, and exploring conditions under which it is more or less intense (heat, cold, sitting, etc.), may be relevant to later hypnotic strategies. Normally medication withdrawal will be handled slowly, if at all, in the early sessions.

While it is assumed that the chronic pain patient is depressed until proven otherwise, the masked depression is usually not dealt with initially. Consider

the extreme clinical examples of low back pain or injury that are involved in litigation. The patient involved in compensation or litigation may have difficulty giving up the pain until the legal proceedings are resolved. Initially, hypnosis may not be very successful with a patient in this situation. However, when gradually introduced with supportive psychotherapy, hypnosis may be the adjunctive treatment of choice. Similarly, the low back pain patient who is masking depression will not easily relinquish his symptom with hypnotic (or any other) intervention. Where there is the possibility of unmasking depression due to too rapid removal of the pain, possible complications, including suicide risk, must be carefully considered.

Several techniques are useful to help the patient "discover" that he or she is capable of controlling bodily sensations (Hilgard, 1969). Suggested glove analgesia can be induced in all except a few resistant patients. For example, glove analgesia can be produced with a variety of suggestions directed at localised physical sensations. The patient gradually begins to believe that he or she can control a physiological experience in a part of his or her body. Repeated experience with this kind of analgesia can eventually be transferred to the pain-afflicted area, but this should be done cautiously. Imagery, relaxation, and self-hypnosis are usually introduced.

In the subsequent hypnosis sessions a delicate balance is required between the initial, authoritarian, and manipulative approach by the hypnotist and the mastery of the patient. The patient gradually learns to control bodily sensation – and eventually pain – in various parts of the body. At the same time, this progress must be sufficiently slow so that the patient can be drawn into the therapeutic alliance to handle the relevant psychological issues that impact on the pain experience (such as, "What if I don't win the compensation case?", "How do I handle my spouse's sexual advances and the children's behaviour?").

Thus, the emphasis of these hypnotic techniques is on the learning of mastery and self-control. For example, the hypnotist can establish a contract with the patient that allows the patient to *avoid* these mastery techniques in certain situations. The tactic of allowing the patient complete choice as to when to control pain is an important way to handle the psychological problems associated with the removal of the pain. The thrust of the hypnotic intervention is simply to teach the patient that he or she is capable of controlling pain, but not to become involved in the ethical and moral issues as to when the patient should use these techniques. Such contracts allow the patient to manipulate pain when it is psychologically necessary to do so, and to progress at his or her own pace. The contracts also provide time to develop a therapeutic alliance and to treat the patient's depression either with antidepressant medication or psychotherapy.

SUMMARY

The specific applications of hypnosis in pain management will be different depending on the nature and history of the patient's pain.

Acute pain is best managed by anxiety-reducing strategies, particularly those that emphasise interpersonal interactions and minimise the importance of the pain. Relaxation techniques that alleviate anxiety will also reduce the pain.

Chronic pain often becomes a weapon in the sufferer's interaction with the external world. It requires strategies that deal not only with the pain but also with one's psychological environment. In such cases the pain may have no clear organic basis, even though from the patient's viewpoint "it hurts." Several powerful hypnotic strategies – relaxation, imagery, dissociation, self-hypnosis – are available to teach self-control and cognitive mastery (Evans, 1986).

Further research and controlled clinical trials will be necessary to evaluate which of these approaches will be most helpful to individual patients with both acute and chronic pain. However, as each patient suffers in his or her own unique way, clinical sensitivity must always take priority over general guidelines and prescriptions for these misunderstood and frequently difficult to treat patients.

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