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**SUGGESTED VISUAL HALLUCINATIONS, REPORTING BIAS AND THE
USE OF CONSCIOUS DECEPTION BY HYPNOTIC SUBJECTS**

by

CHERYL A. BURGESS, M.A.

**A thesis submitted to
the Faculty of Graduate Studies and Research
in partial fulfilment of
the requirements for the degree of**

Doctor of Philosophy

Department of Psychology

Carleton University

Ottawa, Ontario

September 8, 1995

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**SUGGESTED VISUAL HALLUCINATIONS, REPORTING BIAS AND THE
USE OF CONSCIOUS DECEPTION BY HYPNOTIC SUBJECTS**

submitted by
CHERYL A. BURGESS, M.A.

in partial fulfilment of the requirements
for the degree of Doctor of Philosophy

Chair, Department of Psychology

Thesis Supervisor

External Examiner

Carleton University

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Abstract

Two studies examined the tendency of hypnotic subjects to misrepresent knowingly their perceptual reports in response to instructional demands. Study 1 consisted of two sessions which assessed hypnotic visual hallucinations. In the first session, medium and high hypnotizables were administered a procedure designed to elicit a reporting bias that is independent of any perceptual change. In session 2, these subjects were given the hypnotic suggestion that they would be unable to see a target stimulus held before them. Subjects who repeatedly claimed blindness for the session 2 stimulus were administered one of two interviews. One interview subtly pressured subjects to admit that they had actually seen the target stimulus, while the other interview encouraged subjects to maintain their reports of blindness. Seven of the 8 completely blind subject administered the first interview contradicted their earlier reports of complete blindness by admitting they had seen the target stimulus. In contrast, 7 of 8 completely blind subjects maintained in the second interview that they could not see the target stimulus. A comparison of responding in the first session revealed that these subjects biased their perceptual reports to a greater extent than did subjects who had failed to report complete blindness in the second session. In addition, more completely blind subjects had biased their session 1 reports than did non-blind subjects.

In study 2, 30 high hypnotizables were administered the procedures for eliciting reporting biases that were used in session 1 of the first study. In this session, 22 subjects biased their reports in

the absence of any perceptual change. In a post-test interview, these subjects were questioned in a context in which 9 subjects admitted that they had knowingly biased their reports because of the perceived social pressures exerted by an instructional demand. Thirteen subjects maintained their earlier reports of perceptual alterations throughout the interview. However, 8 of these 13 subjects made comments which revealed that they knew they had not experienced any perceptual changes in the previous session. Taken together, the findings of these two studies provide support for the hypothesis that when subjects are unable to generate the subjective effects called for by hypnotic suggestions, they may engage in conscious deception in order to meet situational demands.

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Introduction

Contemporary hypnosis research is organized around two competing frameworks or paradigms (Kuhn, 1962) called the state, or special-process, perspective, and the non-state, or social psychological perspective (Baker, 1990; Barber, 1979; Coe & Sarbin, 1991; Fellows, 1986; Sarbin, 1989; Spanos, 1986a, 1989a, 1991; Spanos & Barber, 1974; Spanos & Chaves, 1989, 1991; Wagstaff, 1981, 1991a). According to the special-process view (Bowers, 1976, 1992; Erickson, 1952; Hilgard, 1977, 1979, 1994; Kihlstrom, 1984; Weitzenhoffer, 1953), hypnosis involves an altered state of consciousness where the behaviour of the hypnotized individual differs qualitatively from that of the nonhypnotized individual. This perspective is based on the assumption that hypnotic responses are involuntary occurrences rather than deliberate actions. In order to account for the dramatic perceptual alterations and loss of voluntary control over behaviour that are often reported by highly hypnotizable hypnotic subjects, special-process researchers have posited unusual cognitive mechanisms such as "dissociations among cognitive subsystems" (e.g., Bowers, 1966, 1976, 1992; Hilgard, 1977, 1979; Kihlstrom, 1992). In contrast to the state view, non-state researchers argue that hypnotic responding involves neither an altered state of consciousness nor a loss of voluntary control over behaviour. Instead, hypnotic reports of perceptual change and involuntariness can more parsimoniously be viewed as arising from the goal-directed strivings of subjects who are motivated to meet experimental demands (Barber, 1969, 1979; Barber, Spanos &

Chaves, 1974; Coe & Sarbin, 1977; Sarbin, 1950; Sarbin & Coe, 1972; Spanos, 1982a, 1982b 1986a; Spanos & Chaves, 1989).

The two predominant paradigms in hypnosis research are outlined briefly in this paper, followed by a discussion of one methodological problem that is common to both. This problem concerns the reliance on subjects' uncorroborated verbal testimony as the only available index of the experiential changes that accompany hypnotic responding. The possibility that this testimony may be biased by experimental demands has led investigators from within both the state and the non-state traditions to devise numerous strategies for assessing biased reporting in the hypnotic context. Three strategies that have generated a great deal of experimentation are discussed. The final strategy is a reporting bias paradigm developed by Spanos and his associates (Spanos, Perlini, Patrick, Bell & Gwynn, 1990) that can assess biased reporting independently of actual experiential change. With this paradigm, a number of studies have demonstrated that reporting bias constitutes much of the hypnotic phenomena that have traditionally been considered hallmarks of hypnotic responding. However, it had yet to be assessed whether the bias effect obtained in these studies reflects the use of conscious deception or whether it reflects the honest description of subjective experiences that have been distorted by retrospective influences.

The State or Special-Process Perspective

One state investigator who has had a substantial impact on contemporary hypnosis theories is E. Hilgard, who reintroduced

Janet's (1919) idea of dissociation into modern theories of hypnosis. Janet proposed a dissociation hypothesis to account for both the simple "automatisms" and complex behaviours that can occur during hypnosis. For example, the concept of dissociation appeared to account for "automatic writing", the hypnotized subject's ability to write thoughts and ideas of which he or she seemed totally unaware. Janet further proposed that highly hypnotizable subjects could be induced to dissociate simply through the suggestions of the hypnotist.

Hilgard (1977, 1994) modified Janet's (1919) dissociation theory to account for his observation that dissociations among cognitive subsystems appeared to be partial, rather than complete. For example, when subjects are given hypnotic suggestions for amnesia, they commonly remember some, but not all, of the "to-be-forgotten" material. Hilgard based his "neodissociation" theory on the assumption that several subordinate cognitive subsystems exist that are monitored by an overarching structure which controls the interaction or competition between them. According to the neodissociation hypothesis, hypnosis acts as a constraint on the controlling structure such that it can no longer access information arising from the subordinate structures.

Hilgard argued further that dissociations are not necessarily the result of the hypnotist's suggestions, but are present even when they are not suggested and when neither the subject nor the hypnotist has awareness of their existence. For example, the reduced pain reported by subjects given hypnotic suggestions for analgesia does not reflect the accurate perception of pain that continues to be

processed by one or more of the cognitive subsystems. This accurate information, according to Hilgard, remains blocked from the subject's awareness unless the "hidden observer" is explicitly called forth to report accurately on perceptual experience. He argued that

"a hypnotized subject who is unaware of sensory information...may nevertheless be registering and processing it in some manner. Under appropriate circumstances (i.e., contacting the "hidden observer"), information that is unknown to the subject while hypnotized can be uncovered and talked about (p. 36)."

Hilgard applied his neodissociation theory not only to hypnotic phenomena involving perceptual alterations such as analgesia, deafness and blindness, but also to the experience of involuntariness often reported by subjects in descriptions of their hypnotic responding (Hilgard, 1991).

The neodissociation theory has generated a great deal of research within the hypnosis community. Much of this research has been undertaken to support the theory by demonstrating the hidden observer effect in response to pain and other perceptual experiences (e.g., Knox, Morgan & Hilgard, 1974; Nogrady, McConkey, Laurence & Perry, 1983; Zamansky & Bartis, 1985). Some special-process researchers have attempted to integrate neodissociation theory with modern cognitive psychology (Kihlstrom, 1984) or have made minor modifications to Hilgard's (1977, 1979, 1994) neodissociation model (Bowers, 1992; Miller & Bowers, 1993; Woody & Bowers, 1994). All of these research efforts and theoretical elaborations are based on the assumption that dissociation among cognitive subsystems

accounts for the seemingly unusual behaviours and perceptual alterations of hypnotic subjects.

The Non-state or Social Psychological Perspective

In contrast to the state view, non-state or social psychological researchers argue that theories involving unusual cognitive mechanisms such as dissociation or altered states of consciousness are unnecessary in accounting for the hypnotic responding and reported involuntariness of highly hypnotizable subjects. Instead, hypnotic reports of perceptual alterations and the loss of voluntary control over behaviour can more parsimoniously be viewed as arising from the goal-directed strivings of subjects who are motivated to meet the demands of the hypnotic context (Barber, 1969, 1979; Barber et al., 1974; Coe & Sarbin, 1977; Sarbin, 1950; Sarbin & Coe, 1972; Spanos, 1982a, 1982b, 1986a; Spanos & Chaves, 1989). This perspective is based on the assumption that hypnotic responses are self-initiated actions which remain under the complete voluntary control of the hypnotic subject.

The social psychological perspective has its roots in the early work of White (1941). White was the first modern hypnosis researcher to reject dissociation as a concomitant of hypnotic responding because of "the biologically implausible, arbitrary, changeable nature of the systems to be dissociated (p. 487)" and also because items that are supposedly dissociated continue to exert influence in the total pattern of behaviour. For example, he argued that accounts of hypnotic blindness involving "dissociation of the visual field" did not

explain how hypnotic subjects could be made blind to just one part, but not all, of a visual stimulus.

White (1941) also rejected mechanistic approaches to hypnotic responding because of their assumption that hypnotic subjects are passive instruments whose behaviour results directly from the suggestions of the hypnotist. He observed that hypnotic subjects often creatively improvise details and elaborate on their suggestion-related imaginings in a manner that far exceeds the information contained in the initial suggestions. This observation indicated to White that subjects actively engage themselves in the behaviours and cognitions that will successfully produce the suggested effects. White defined his conceptualization of hypnotic behaviour as follows:

"hypnotic behavior is meaningful, goal-directed striving, its most general goal being to behave like a hypnotized person as this is continuously defined by the operator and understood by the subject (p. 483)"

While he emphasized the goal-directed nature of hypnotic responding, White (1941) nevertheless retained the notion that the seemingly transcendent capabilities of hypnotic subjects could only reflect the induction of an altered state of consciousness. He argued that, "It is impossible to dispense with the idea of a hypnotic state which permits certain types of striving to achieve unusual success (p. 489)." White argued further that the relaxation associated with typical hypnotic suggestions limits conscious functioning, enabling subjects to experience their suggested responses as occurring involuntarily.

The first proponent of the modern social psychological perspective was Sarbin who, while strongly influenced by White's (1941) conceptualization of the goal-directed nature of hypnotic responding, rejected the idea that hypnosis produces cognitive alterations in predisposed subjects. Applying a dramaturgical perspective to hypnotic behaviour, Sarbin (1950) viewed hypnotic subjects as actors assuming the role of "hypnotic subject." Role enactment involves the mutually negotiated self-presentations of all participants and the reciprocal validation of one another's roles. In other words, it is a rule-governed process involving the tacit understanding between actors about how the social situation is defined and which behaviours are appropriate to that situation. Sarbin (1950, 1993) argued that successful hypnotic role enactments are determined by subjects' understanding of what the hypnotic role entails and by their willingness to adopt that role. Validation of appropriate responses is subsequently provided both by the experimenter and by the responding of the hypnotic subjects themselves. In turn, the communications that develop between the experimenter and the subject in the hypnotic context leads the subject to define goal-directed actions as involuntary happenings.

While Sarbin's theorizing was highly influential in modern conceptualizations of hypnosis, he conducted very little empirical research. However, his ideas, along with those of White, had a powerful impact on the work of T.X. Barber (1969, 1979). Barber also rejected altered-state conceptualizations of hypnotic behaviour and was interested in identifying the social psychological factors that account for hypnotic responding. Several of Barber's studies (e.g.,

Barber & Calverly, 1962, 1963, 1965, 1966; Barber & Glass, 1962) involved comparisons of the responding of subjects administered one of three treatments; a hypnotic induction procedure, task-motivational instructions encouraging subjects to try their best to respond to suggestions, and control procedures asking subjects to simply imagine whatever was suggested to them.

Using this basic design, Barber and his associates examined a wide range of hypnotic phenomena including hallucinations, age regression and analgesia (for reviews see Barber, 1969; Barber et al., 1974). The results of his research indicated that responses to even "difficult" suggestions, such as amnesia and hallucination, occurred at much higher rates than had originally been thought, and that the addition of a prior hypnotic induction produced only a small increment in responsiveness above base rates. Interestingly, control subjects frequently enacted suggested responses even though they had received no instructions. Barber (1979) concluded that suggested responses traditionally considered unique to a hypnotic state could be explained by invoking such mediating social psychological variables as subjects' attitudes, motivations and expectations toward the test situation.

Building upon the work of Sarbin and Barber, numerous researchers from several different laboratories have produced a large body of work which supports the hypothesis that hypnotic responding can most usefully be understood from a social psychological perspective (for reviews see Coe & Sarbin, 1991; Sarbin & Coe, 1972; Spanos, 1986a, 1991; Spanos & Chaves, 1989; Wagstaff, 1981, 1991a). Much of this research has concerned itself with

assessing the relative contributions of numerous social psychological variables to hypnotic responding. However, interpretations of the findings of this research has resulted in controversy among investigators who favour state approaches to hypnotic behaviour.

The Validity of Verbal Reports

The basis of the theoretical differences between state and non-state investigators is clearly the relative emphasis that is placed on contextual factors and their effects on hypnotic responding. These differences are reflected in the variables chosen for study and the kinds of research questions that are pursued. For example, researchers who believe the hypnotic "state" is qualitatively different from the waking state may conduct studies aimed at isolating the physiological basis of "hypnotically altered" consciousness. In contrast, non-state researchers attempt to explain the perceptual alterations and involuntariness reports of hypnotic subjects by attributing them to social psychological factors such as motivations, expectations, self-deception and compliance.

A critical problem that has plagued hypnosis research since its inception is the index used to assess the perceptual and experiential alterations that are associated with hypnotic behaviour. In typical hypnosis experiments, the only available index of these alterations is subjects' verbal testimony. Some researchers (e.g., Hilgard, 1977; Zamansky, 1989) argue that this testimony can be taken as an accurate and valid reflection of subjective experience. Sutcliffe (1961) would call these researchers "credulous" because of their

uncritical acceptance of the veridicality of verbal reports that are uncorroborated by objective evidence. Kinnunen, Zamansky and Block (1994) attempted to obtain corroboration for the reported experiential changes of their subjects by measuring skin conductance response (SCR) during the administration of standard hypnotic suggestions. Arguing that the SCR is "generally considered the single most reliable and effective indicator of deception in the laboratory (p. 185)", these researchers concluded that the majority of their subjects were truthful when they reported experiencing the subjective effects that corresponded to their overt responding. However, interpretation of these results is problematic in that physiological indicators do not assess deception per se, but were designed to index the physiological changes that accompany fear and anxiety (Bashore & Rapp, 1993; Davis, 1961). As such, a critical component of polygraph procedures is a pre-test interview which instills in subjects the belief that these procedures can accurately identify deception (Saxe, Dougherty & Cross, 1985). The subjects in Kinnunen et al.'s study were informed only that the electrodes would assess heart rate during hypnosis. Since no mention was made of lie detection, the proper "psychological set" had failed to be established among their subjects, which calls into question the validity of the results that were obtained.

Sutcliffe would call other researchers "skeptical" (e.g., Barber, 1969, 1979; Spanos, 1982a, 1982b, 1986a, 1991; Spanos & Chaves, 1989; Wagstaff, 1981, 1986, 1991a) for contending that the reported perceptual and experiential alterations of hypnotic subjects may largely reflect reporting biases that are induced by experimental

demands. This latter contention has received support from empirical work conducted mainly from within the social psychological framework (for reviews see Barber, 1969, 1979; Barber et al., 1974; Coe & Sarbin, 1972; Spanos, 1982a, 1982b, 1991; Spanos & Chaves, 1989, 1991; Wagstaff, 1981).

While non-state researchers generally agree that biased reporting is an integral and pervasive aspect of the hypnotic context, they often disagree on its social psychological determinants. Adopting Kiesler and Kiesler's (1970) conceptualization of compliance as a change in overt behaviour in the absence of a corresponding change in private beliefs, Wagstaff (1981, 1986, 1991a) has attributed much of the reported perceptual and experiential alterations of hypnotic subjects to reporting that is purposely biased by experimental demands. Other investigators (Spanos & Radtke, 1981; Sarbin, 1981; Spanos, 1986a, Spanos, Salas, Bertrand & Johnston, 1989) have argued that hypnotic subjects often use contextual cues to redefine themselves as having experienced the subjective effects that accompany their hypnotic responding. Spanos, Burgess, Cocco and Pinch (1993) suggested that the experiential reports of hypnotic subjects may sometimes involve a combination of compliance and redefinition. According to this hypothesis, subjects who initially comply to experimental demands by knowingly misrepresenting their experiences may later reinterpret their hypnotic reports as reflecting actual occurrences.

The empirical studies that have assessed the deception and reinterpretation accounts of hypnotic responding have produced conflicting results. For example, in a study to be described in more

detail later, Spanos, Flynn and Gabora (1989a) found that highly hypnotizable subjects sometimes engage in the use of conscious deception by reporting perceptual alterations that they know they had not experienced. On the other hand, other studies have produced results that are difficult to account for by deception alone (Kirsch, Silva, Carone, Johnston & Simon, 1989; Spanos, Perlini & Robertson, 1989).

Assessing Reporting Bias in the Hypnotic Context

Before explanations for biased reporting could be made, however, it had to be unequivocally demonstrated that hypnotic subjects will bias their perceptual reports in the absence of experiential change. Acknowledgement that verbal testimony may be biased to an unknown extent by situational demands has led both state and non-state researchers to search for a strategy that can assess biased perceptual reporting independently of experiential change. Four research strategies that have generated a great deal of empirical work have involved examinations of the correspondence between verbal reports and performance on objective indices, post-experimental questioning, the "real-simulator" paradigm developed by Orne (1959), and a reporting bias paradigm developed by Spanos and his associates (Spanos et al., 1990).

The Correspondence Between Verbal and Objective Indices

A great deal of research has assessed the correspondence between reported hypnotic perceptual alterations and performance on "objective" indices that are not under subjects' voluntary control. This line of research has generally indicated that while verbal reports are greatly affected by hypnotic suggestions, objective indices remain unaffected (for reviews see Jones & Flynn, 1989; Sutcliffe, 1961; Spanos, 1986a, 1989b). Studies utilizing this approach have examined a wide variety of hypnotic phenomena involving different sensory modalities. The aim of most of this research has been to legitimize hypnotic perceptual alterations by seeking strong correspondences between verbal reports and objective indices.

Hypnotic Analgesia. In the last sixty years, a great deal of research has attempted to assess the relationships between hypnotic analgesia and a number of autonomic indices of pain (e.g., galvanic skin response, heart rate and blood pressure) that are not under subjects' voluntary control (for reviews see Barber, 1959, 1970; Hilgard & Hilgard, 1983; Shor, 1967). Early studies often reported strong correspondences between hypnotic analgesia and objective measurements, but as Shor (1967) pointed out, the ability to draw reliable conclusions from these studies is impossible given the numerous methodological flaws they contain. More recent and carefully controlled empirical work has generally indicated that reports of hypnotic analgesia fail to be corroborated by

corresponding changes in autonomic indices (Barber & Hahn, 1962; Evans & Paul, 1970; Hilgard, 1967; Hilgard, MacDonald, Marshall & Morgan, 1974; Kroger, 1988; Shor, 1967; Sutcliffe, 1961).

The discrepancies between verbal reports and objective measurements have been interpreted by Wagstaff (1981, 1991b) as indicating that suggestions for analgesia pressure subjects into falsifying their pain reports. However, other researchers (e.g., Hilgard, 1969) have suggested that galvanic skin response, heart rate, blood pressure and other autonomic indices are not valid indices of perceived pain. Spanos (1989b), for example, has argued that subjects sometimes exhibit equivalent levels of autonomic pain in response to intense, but *nonpainful*, stimulation. Furthermore, subjects who are asked to imagine pain without actual application of a painful stimulus, as well as subjects who are expecting to experience pain before noxious stimulation, often exhibit autonomic changes that are equivalent to those accompanying a painful stimulus (Barber & Hahn, 1964; Hilgard et al., 1974; Shor, 1967). These findings, along with the low correlations between the autonomic variables themselves (Hilgard, 1969; Pennebaker, 1982), make questionable the use of autonomic measures as valid indices of experienced pain.

Hypnotic Visual Alterations. Suggestions for visual alterations have traditionally been used in hypnosis research and are often administered to hypnotic subjects as one test of hypnotizability (Spanos & Radtke, 1981). These suggestions typically are of three types: (i) hypnotic subjects may be asked to perceive an object that

is not actually present (visual hallucination); (ii) they may be asked *not* to see an object that *is* actually present (negative visual hallucination); or (iii) they may be asked to perceive a stimulus as altered in form (e.g., presenting subjects with the number "18" and the suggestion that they will see it as the number "81"). When hypnotic subjects are given these types of suggestions, they often report dramatic changes in their visual perception (Barber, 1969; 1979; Bowers, 1976; Hilgard, 1977; Spanos & Radtke, 1981; Sutcliffe, 1960; Weitzenhoffer & Hilgard, 1963). Most research in this context has focused on suggested colour-blindness and negative visual hallucinations.

When highly hypnotizable subjects are given the suggestion that they are unable to distinguish certain colours (for e.g., red-green colour-blindness), they often report experiencing this effect (Blum & Porter, 1973; Harvey & Siprelle, 1978). Some researchers have assessed the validity of these reports by administering standard tests initially designed to identify the types of colour-blindness that occur in the normal population (Harriman, 1942; Harvey & Siprelle, 1978). The results of these studies have unequivocally demonstrated that hypnotic subjects show no evidence of colour-blindness despite their reports to the contrary (Barber, 1969; Jones & Flynn, 1989; Sutcliffe, 1960).

A great deal of experimentation has also concerned itself with testing the negative visual hallucination reports of hypnotic subjects. In an early study, Pattie (1935) administered a suggestion for uniocular blindness to his subjects and gave a series of tests to those who reported blindness in one eye. These tests were originally

designed to identify malingering among individuals claiming unocular blindness. Pattie found that all of his subjects could actually see from the eye they claimed was blind. More recently, Miller, Hennessy and Liebowitz (1973) devised a test to assess changes in perception independently of verbal reports. Miller et al. instructed their hypnotic subjects to "visually ablate" the radiating background lines that give rise to the Ponzo illusion. The results of this study unambiguously demonstrated that responses to the Ponzo illusion remained unchanged despite subjects' claims that they could not see the background lines in the figure.

Another line of research has tested the reported positive visual hallucinations of hypnotic subjects. Highly hypnotizable subjects who are administered the hypnotic suggestion to "see" a hallucinated object often behave as if the object really exists and may even report a strong belief in the reality of their hallucinations (Orne, 1962; Spanos & Radtke, 1981). As with most hypnotic phenomena, the reported visual hallucinations of hypnotic subjects have been open to alternative interpretations. According to one view, suggested visual hallucinations and actual perceptions involve the same physiological processes (Erickson, 1952; Halpern 1961; Schneck, 1953). Consequently, the credibility that subjects assign to their hallucinations reflects experiences that are identical to those associated with actual perceptions. Several studies have tested this idea by utilizing objective concomitants of perception and applying them to hallucination (e.g., measuring pupil contraction in response to a hallucinated light). In his review of these studies, Barber (1970) concluded that the ambiguous or decidedly negative results indicated

that, overall, no physiological concomitants of hallucinating had been found.

Positive visual hallucination responding has also been examined by testing for the existence of negative after-images that correspond to hallucinated colours. It is well known among those who study perception that when individuals stare fixedly at a colour and then look at a neutral surface, they see an after-image of the complementary colour. For example, individuals who stare at a red surface will see a green after-image when they look at a white or grey surface. The results of studies examining this effect in hypnotic subjects who were asked to hallucinate colours have been mixed. Some researchers have reported that the hypnotic colour hallucinations of their subjects successfully produced the corresponding negative after-images (Erickson & Erickson, 1938; Rosenthal & Mele, 1952). Other research, however, has failed to replicate this effect (e.g., Dorcus, 1937). In an interesting experiment, Hibler (1940) found that the after-images reported by his hypnotic subjects were greatly influenced by their expectations; when these subjects incorrectly believed that the negative after-image of blue was orange or blue, instead of yellow, then that is what they reported. Sutcliffe (1972) found wide variability in the negative after-images of hallucinated colours, but that most of these did not resemble the after-images of real stimuli. In the few cases where the after-images corresponded to those of real stimuli, Sutcliffe found that prior knowledge of after-image phenomena was necessary before correct identifications could be made.

In summary, no clear-cut evidence exists that the reported visual distortions of hypnotic subjects are accompanied by corresponding physiological changes. These findings have led several non-state researchers (e.g., Jones & Flynn, 1989; Spanos, Flynn & Gwynn, 1988; Sutcliffe, 1961) to conclude that hypnotic subjects consciously perceive and accurately recognize external stimuli despite their hypnotic reports to the contrary. Some state investigators (e.g., Zamansky & Bartis, 1985) have adopted Hilgard's (1979) notion of the "hidden observer" to argue that a "hidden part" of subjects correctly perceives stimuli during the hypnotic session but that subjects cannot consciously access this information. However, Spanos et al. (1988) tested this idea and found that the "hidden parts" of their subjects could be induced by varying instructions to report the stimuli a) veridically, b) in reverse, or c) not at all. The controversial findings of this line of research resulted in the continued search for a paradigm that clearly separates biased reporting from hypnotically-altered visual perceptions.

Hypnotic Deafness. Hypnotic subjects who are administered suggestions for deafness often report an inability to hear an auditory stimulus. Some early researchers (Erickson, 1938; Weitzenhoffer, 1953) hypothesized that hypnotic deafness is a condition indistinguishable from true deafness, but this notion has been questioned by more recent investigators (e.g., Barber et al., 1974; Jones & Flynn, 1989) because of its lack of supporting empirical evidence. Barber et al. (1974) pointed out the obvious, yet frequently overlooked, observation that some "hypnotically deaf"

subjects are able to hear when they answer "No, I can't hear you" in response to the experimenter's question, "Can you hear me?". For the remaining subjects who do not reply and to all appearances are deaf, the typical method of cancelling the deafness suggestion is for the experimenter to state, "Now you can hear again". In response, these subjects now respond normally, which suggests that they could hear all along (Barber, 1979).

One indirect test that has been used to assess hypnotic deafness reports is the delayed auditory feedback technique (DAF). The DAF technique involves the slightly delayed replay of the subject's own voice back to him or her, resulting in an interruption of speech patterns among normal individuals. Several studies using DAF procedures (Barber & Calverly, 1964; Kline, Guze & Haggerty, 1954; Kramer & Tucker, 1967; Scheibe, Gray & Keim, 1968; Sutcliffe, 1961) have generally indicated that subjects who report hypnotic deafness respond the same as normal, hearing individuals.

The DAF technique has been criticized because of its crude dichotomization of subjects as either "deaf" or "not deaf" (Jones & Spanos, 1982; Spanos, Jones & Malfara, 1982). In other words, subjects who report decreased auditory sensitivity short of total deafness are classified as not deaf. This criticism has led several researchers to use the threshold-estimation technique, a physiological procedure involving decibel measurement of the auditory thresholds which correspond to hypnotic deafness. Numerous studies using this technique have reported great reductions in auditory sensitivity following hypnotic suggestions for deafness (e.g., Black & Wigan, 1961; Crawford, MacDonald & Hilgard,

1979; Erickson, 1938; Korotkin, Pleshkova & Suslova, 1969).

However, the interpretation of these findings has been controversial in that the threshold-estimation technique can confound genuine changes in auditory sensitivity with changes in response bias (Jones & Spanos, 1982). For example, Jones and Flynn (1989) have pointed out that it is impossible to know whether a higher threshold for detection of a tone reflects an actual change in auditory sensitivity, a change in criterion placement, or both.

Signal detection procedures (Green & Swets, 1966) have also been adopted in order to obtain estimates of auditory sensitivity that are independent of response bias. In this procedure, subjects are presented with numerous trials of "white noise" over headphones. On some trials, a pure tone is superimposed over the white noise. Subjects are asked to report on each trial whether they heard the white noise only, or whether it also contained the pure tone. Signal detection procedures allow the simultaneous consideration of the number of hits and the number of false alarms, yielding an independent estimate of sensitivity and response bias (the likelihood of reporting "signal" across trials). Overall, studies using signal detection procedures have failed to provide evidence that hypnotic procedures are effective in producing reductions in either sensitivity or response bias (Jones & Spanos, 1982; Jones & Flynn, 1989).

In summary, the available evidence indicates that the reported perceptual alterations of hypnotic subjects are not corroborated by performance on objective indices. State investigators (e.g., Bowers, 1967; Cunningham & Blum, 1982; Hilgard, 1965, 1977, 1979, 1994;

Orne, 1962; Sheehan, 1973; Pattie, 1935; Zamansky & Bartis, 1985) have argued that discrepancies between verbal reports and objective measurements indicate that the accurate perception of external stimuli continues to be processed among cognitive subsystems, but that this information is dissociated from conscious awareness. Wagstaff (1981, 1986, 1991a, 1991b) has interpreted these discrepancies as indicating that hypnotic suggestions often pressure subjects into complying with situational demands by purposely misdescribing their perceptual experiences. Other non-state investigators (e.g., Barber, 1969, 1979; Spanos, Burgess, Cross & McLeod, 1992; Spanos et al., 1988; Spanos & Radtke, 1981) have suggested that subjects engage in the use of suggestion-related imagery and other cognitive strategies to produce the subjective experience of perceptual distortions. Spanos et al. (1989a, 1989b) argued that hypnotic subjects use strategies to generate the subjective effects corresponding to hypnotic suggestions, but when these efforts are unsuccessful, they sometimes engage in the use of conscious deception in order to meet experimental demands.

It is clear from these varying interpretations that assessing the correspondence between verbal reports and performance on objective indices has been unsuccessful in unequivocally demonstrating the occurrence of biased reporting in the hypnotic context. While it has shown that true perceptual alterations do not accompany hypnotic suggestions, it cannot assess the subjective alterations that are frequently reported by hypnotic subjects. For this reason, it has remained unclear whether or not these subjective

reports are biased and, if so, what the determinants of these biases are.

Post-Experimental Questioning

A second research strategy for assessing reporting bias involves questioning subjects post-experimentally about their subjective experiences during the hypnotic session. Subjects in some of these studies (e.g., Bowers, Laurence & Hart, 1988) reported strong correspondences between their overt responses to suggestions and their subjective experiences. However, these findings are obviously problematic in that both overt behaviours and subjective reports are under subjects' voluntary control. Therefore, a strong correspondence between these indices may reflect responding on both that is biased by the same situational demands.

In their discussion of typical post-experimental inquiry techniques, Sheehan and McConkey (1982) acknowledged the possible biasing influence of demands such as the unintentional cues that are conveyed to subjects by the form and structure of the questions themselves. These researchers designed a method of post-experimental inquiry that they believed minimized the influence of demand characteristics on the overt responding and subjective reports of hypnotic subjects. Known as the "Experiential Analysis Technique (EAT)", this procedure involves videotaping the subject's hypnotic responding and then replaying the videotaped responses to enhance recall during the post-experimental inquiry session. Subjects are allowed to stop the videotape at will in order to

comment on their hypnotic experiences. A post-experimental inquirer, who is someone other than the hypnotist, is trained to adopt a noninterpretive attitude and to engage in the use of "open-ended, brief and tentative" probing in order to aid recall in a nonleading manner. With this technique, Sheehan and McConkey examined a wide range of hypnotic phenomena including amnesia, visual hallucinations and age regression. Based on the EAT testimony of their hypnotic subjects, they identified several cognitive styles that "illustrate dramatically the fluid operation of multiple streams of awareness in hypnotic subjects (p. 93)."

The EAT has been used a great deal in contemporary hypnosis research, and while it may successfully eliminate contamination of verbal testimony by leading questioning, it cannot guard against the potential biasing effects of situational factors that are more subtle in nature. One of these factors is the culturally-bound beliefs about hypnosis that subjects bring with them into the hypnotic context. Spanos (1991) has argued that people in our culture hold a fairly well-developed schema concerning the nature of hypnosis and that a core component of this schema is the shared belief that hypnotic suggestions can produce actual perceptual alterations which occur involuntarily in predisposed subjects. These pre-existing beliefs may lead subjects to actively produce the suggested responses and to spontaneously describe their self-initiated actions as involving a loss of voluntary control over their hypnotic responding.

A second subtle factor which exerts a profound effect on the verbal reports of hypnotic subjects is the wording of the suggestions themselves (Spanos, 1986a). Typical hypnotic suggestions are

worded in the passive voice (i.e., your arm is light and is rising in the air) which tacitly informs subjects that they are to define their hypnotic responses as involuntary occurrences. This idea has received empirical support from several studies (Miller & Bowers, 1986; Spanos & de Groh, 1983; Weitzenhoffer, 1974) which have demonstrated that the passive wording of suggestions is an important determinant of reported involuntariness. Other studies (Spanos, Burgess & Gardin, 1994; Spanos & Katsanis, 1989) varied the wording of suggestions and found that subjects could be induced to describe their responses as voluntary or involuntary depending on the type of suggestion administered.

In summary, strong correspondences between overt responding and post-test subjective reports are difficult to interpret because these reports may be biased to an unknown degree by situational demands. More carefully conducted post-experimental inquiry techniques that have controlled for the biasing effects of leading questions have nevertheless been unable to control for the potential biasing influences of more subtle variables such as pre-existing beliefs about hypnosis and the cues that are conveyed by the suggestions themselves. In short, post-experimental questioning techniques have been unable to clearly demonstrate the existence of perceptual and experiential changes that are free from the effects of biased reporting.

Orne's Real-Simulator Paradigm

Orne (1959, 1979) has argued that a great deal of hypnotic behaviour results from the subject's understanding of the hypnotic role and from cues provided by the experimenter and the context. Furthermore, enhanced responding during the hypnotic test session may reflect an increase in motivation to conform to the wishes of the experimenter. Orne hypothesized that if these two factors, role-playing and increased motivation, could be controlled, then the third aspect of an altered state of consciousness could be investigated. This residual aspect he regarded as the "essence" of hypnosis, or what remains after the "artifacts" of role-playing and increased motivation have been accounted for.

In order to test his hypothesis, Orne (1959, 1979) included a control group of low hypnotizables who, by definition, could not "share the experiences of real hypnosis (Orne, 1979; p. 527)." Orne motivated these subjects to adopt the hypnotic role by devising instructions requesting them to "fool the experimenter" into believing that they were deeply hypnotizable. These "simulating" subjects, as he called them, were advised to use available contextual cues to guide their responding in order to accomplish this task. Orne argued that since both the "simulators" and the real highly hypnotizable subjects were motivated to respond to hypnotic suggestions, any differences in behaviour displayed by the reals could be attributed to the essence of the hypnotic state.

Orne's (1959, 1979) real-simulator paradigm has been widely used in hypnosis studies, many of which have reported differences

between reals and simulators in their hypnotic responding. The findings of these studies and the alternative interpretations they have generated have received extensive review elsewhere (de Groot & Gwynn, 1989; Spanos, 1986a; Spanos & Radtke, 1981). For the purposes of this paper, it is important to point out that Orne's real-simulator paradigm has been criticized by some (e.g., Barber, 1962; Sheehan & Perry, 1976) for its inadequacy in detecting compliant responding. More specifically, when differences between reals and simulators have been found, it is impossible to determine whether they reflect subject variables or treatment variables. Because simulators are selected on the basis of having attained low hypnotizability, they may interpret hypnotic suggestions differently from subjects who attained high hypnotizability (Wagstaff, 1986). Consequently, this potential difference in interpretation may not allow for meaningful comparisons of real and simulated hypnotic responses.

Criticisms such as these have led a number of investigators to adopt modifications of the real-simulator design. Some researchers (Austin, Perry, Sutcliffe & Yeomans, 1963; Spanos, de Groot & Gwynn, 1987) included a group of highly hypnotizable simulators to observe the effects of treatment variables that were unconfounded by subject variables. These investigators found that both high and low hypnotizable simulators performed similarly to one another, but differently from the hypnotic reals. Other researchers (Obstoj & Sheehan, 1977; Spanos, Bridgeman, Stam, Gwynn & Saad, 1982) included a group of nonhypnotic subjects and found that their responding was similar to hypnotic reals, but different from

simulators. Wagstaff and Benson (1987) included a group of "cognitive-simulators" who were instructed to use imaginal involvement while simulating their hypnotic behaviour. Using samples that were unselected for hypnotizability, these researchers found that the overt responding and reported involuntariness of the cognitive-simulators were similar to those of the hypnotic reals.

Studies using these types of modifications to the real-simulator design have generally indicated that hypnotic responding is neither all compliance nor unique to hypnosis. However, the findings of these studies do not indicate that hypnotic behaviour is never biased by situational demands. Instead, they indicate that the real-simulator design is inadequate in assessing the *extent* to which hypnotic behaviour and subjective reports may be faked or distorted in order to meet these demands.

The Reporting Bias Paradigm

In 1990, Spanos and his associates devised a strategy for assessing demand-induced reporting bias by exposing a group of highly hypnotizable subjects and second group of low hypnotizables to three 60 sec trials of a painful stimulus (a finger-press device) (Spanos et al., 1990, Experiment 2). Fifteen sec after termination of each trial, subjects were asked to rate the intensity of the pain they felt. The first trial was a baseline and the second was preceded by either a hypnotic or nonhypnotic suggestion which requested subjects to use whatever cognitive strategies they could devise to reduce the intensity of their experienced pain on the forthcoming

trial. After their trial 2 pain ratings, the analgesia suggestion was cancelled and subjects were administered a wake-up procedure. Next, subjects were administered the third trial, which they were informed would be "just like trial 1". *After* termination of the trial 3 stimulus, but *before* giving their pain ratings, the experimental subjects were administered a demand instruction designed to induce a reporting bias that was independent of perceptual experience. This instruction informed hypnotic subjects that they had probably "drifted into hypnosis" during the third trial and therefore "felt very little pain". Similarly, nonhypnotic subjects were told that they had probably "continued to use cognitive strategies" on the third trial to reduce their experienced pain. Control subjects, in contrast, simply waited the 15 sec before giving their trial 3 reports.

The logic behind this procedure is as follows. Up until the termination of the trial 3 stimulus, subjects in both the control and the demand instruction conditions were exposed to identical testing procedures and painful stimuli. Consequently, any reductions in trial 3 pain reported by the demand instruction subjects, relative to the controls, could not reflect actual changes in perceptual experience. These reductions would, however, constitute a reporting bias that was induced by the instructional demand.

Spanos et al. (1990) found that their subjects reported substantial pain reductions in response to the analgesia suggestion on the second trial. On the third trial, the pain ratings of the control subjects returned to baseline levels. In contrast, the trial 3 pain ratings of the demand subjects were substantially lower than those given on the baseline trial. These reported pain reductions, as already discussed,

could only reflect biased reporting that resulted directly from the instruction administered after stimulus exposure. These findings were replicated by Spanos, Burgess & Perlini (1991) within the context of hypnotic deafness. In the latter study, the painful stimulus was replaced by a loud tone and the suggestion for analgesia was replaced by a suggestion for deafness.

The findings of these two reporting bias studies also highlighted the context-dependent nature of suggested perceptual effects and reporting bias. Highly hypnotizable subjects reported altered perceptual experiences on trial 2 regardless of whether or not the suggestion was preceded by a hypnotic induction. Similarly, the trial 3 reports of highs in both conditions were biased to a significant extent. Low hypnotizables, on the other hand, only reported perceptual alterations on trial 2 and biased their reports on trial 3 when they had received the nonhypnotic treatment. For the nonhypnotic lows, suggested effects on trial 2 and reporting biases on trial 3 were as large as those exhibited by the hypnotic and nonhypnotic high hypnotizables.

Unlike earlier attempts to assess reporting bias by examining the correspondence between objective indices and verbal reports or by using post-experimental inquiry techniques, the reporting bias paradigm clearly allows for an index of biased reporting to be obtained independently of actual changes in perceptual experience. This paradigm is also an improvement over Orne's (1959) real-simulator design in that it does not confound subject and treatment variables because both low and high hypnotizables are included in the procedures that are designed to elicit biased reporting. In

addition, the reporting bias design allows for a more adequate control group in that it includes the same types of subjects (i.e., lows and highs) that are included in the demand instruction group.

In three single-session reporting bias studies (Spanos et al., 1994; Spanos et al., 1991; Spanos et al., 1990), Spanos and his associates assessed a number of state and non-state hypotheses concerning the nature of hypnotic behaviour. The interpretation of the findings relevant to these hypotheses are discussed in the next section. Spanos and his associates also conducted two-session studies, discussed in an upcoming section, that examined the association between reporting bias and a wide range of hypnotic phenomena.

Assessments of Neodissociation and Expectancy Hypotheses

The reporting bias paradigm allows an index of suggested perceptual change to be obtained by subtracting trial 2 ratings from those of the baseline trial. Similarly, an index of reporting bias can be obtained by subtracting trial 3 ratings from those of baseline. The neodissociation hypothesis as formulated by Hilgard (1977, 1979, 1994) would make a number of predictions concerning these indices. For example, Hilgard (1979) has argued that the inherent capacity of high hypnotizables to dissociate their perceptual experiences from conscious awareness suggests that nonhypnotic suggestions are less effective in producing perceptual change than are hypnotic suggestions. Secondly, because perceptual changes are produced through dissociation, the reported perceptual alterations of high hypnotizables are unrelated to biased reporting.

The findings of Spanos et al. (1990) and Spanos et al. (1991) did not support these neodissociation predictions. In both studies, the reported perceptual alterations of the highs given the nonhypnotic suggestion on trial 2 were equivalent to those of the highs given the hypnotic suggestion. In addition, the majority of highs in both conditions biased their perceptual reports to an equivalent extent in response to the instructional demand on trial 3. The strong relationship that was found between suggested perceptual change and reporting bias indicated that highs who reported the most intense perceptual changes on the second trial also tended to bias their reports the most on the third trial.

The neodissociation hypothesis also suggests that cognitive strategy use is unnecessary to produce the experience of hypnotic perceptual alteration in high hypnotizables because this effect occurs automatically through dissociation (Hilgard, 1977, 1979, 1994; Miller & Bowers, 1986). From this perspective, the subjects in the two reporting bias studies (Spanos et al., 1991; Spanos et al., 1990) failed to dissociate because the hypnotic suggestions emphasized the use of cognitive strategies. Consequently, the correlation between hypnotic perceptual change and reporting bias may have occurred because subjects attempted to produce these changes with cognitive strategies rather than with dissociation. The neodissociation hypothesis would predict that highs administered a hypnotic suggestion that did not include cognitive strategy use would fail to bias their trial 3 reports because the cognitive mechanisms involved in dissociation are different from those involved in retrospective biasing of perceptual reports.

Spanos et al. (1994) examined this hypothesis by using the pain stimulation and analgesia procedures of Spanos et al. (1990). However, subjects in this study were administered one of two analgesia suggestions on the second trial. In one condition, subjects were told that they could reduce their pain by actively controlling their attentional and thought processes. This suggestion also encouraged subjects to imagine that they had a thick, protective glove covering their hand. In the second condition, subjects were told that hypnosis would act directly on their unconscious to reduce pain and that they were not to engage in imaginings or other cognitive strategies that would produce this effect.

In this study, the high hypnotizables in both conditions reported equivalent pain reductions on the second trial (Spanos et al., 1994). Contrary to neodissociation predictions, highs in the no strategy condition, like those in the strategy condition, biased their pain reports to a substantial extent on the third trial. Furthermore, the reporting biases of the no strategy highs were equivalent to those of the highs in the strategy condition.

Spanos et al. (1994) also examined the response expectancy hypothesis of Kirsch (1985). This hypothesis holds that subjects' prior expectations about their hypnotic responsiveness are the direct and unmediated determinant of their actual hypnotic performance. The expectancy hypothesis predicts that suggestions with or without cognitive strategies will produce equivalent reductions in reported pain if they engender the expectation that analgesia will occur. Like the dissociation hypothesis, the response expectancy hypothesis views reports of reduced pain as accurate reflections of subjective

experience. This hypothesis would therefore predict that expectations of pain reduction will correlate more highly with suggested analgesia than with reporting bias.

As predicted by the response expectancy hypothesis, the extent to which subjects expected to experience hypnotic analgesia predicted their reported pain reductions. However, the relationship between expectancies and reporting bias was as strong as the relationship between expectancies and analgesia. When reporting bias was statistically controlled, the magnitude of the relationship between expectancies and analgesia was substantially reduced. This finding indicates that the significant relationship often obtained between expected and reported hypnotic responsiveness is mediated by biased responding on both indices.

Having addressed a number of hypotheses of both state and non-state researchers, Spanos and his associates conducted two studies involving two sessions each. In one session, subjects were administered the reporting bias paradigm using either the auditory procedures of Spanos et al. (1990) or new procedures involving a suggestion for colour hallucination. In a second session, subjects were administered suggestions for various perceptual alterations. The aim of these studies was to assess the extent to which biased reporting could account for hypnotic phenomena that have been considered central to traditional conceptualizations of hypnotic responding.

Assessing Hypnotic Phenomena with the Reporting Bias Paradigm

In a two-session experiment, Spanos et al. (1992) examined reporting bias and suggested negative visual hallucinations. In the first session, medium and high hypnotizables were given the hypnotic suggestion that they would be unable to see a target word on a page held before them. In a second session, these subjects were administered the reporting bias paradigm using the auditory procedures of Spanos et al. (1991). Spanos et al. (1992) found that reporting bias was highly correlated with session 1 suggested blindness and with session 2 suggested deafness. These findings indicated that subjects who reported the most dramatic hypnotic perceptual alterations tended to be the same individuals who biased their perceptual reports to the greatest extent. In fact, when the effects of reporting bias were statistically controlled, the correlation between suggested blindness and suggested deafness fell to nonsignificance.

In a second study, Spanos, Burgess et al. (1993) assessed reporting bias and performance on Form II of the difficult Stanford Profile Scale of Hypnotic Susceptibility (SPS: II; Weitzenhoffer & Hilgard, 1963). In one session, high hypnotizables were administered the reporting bias procedures using three presentations of a red square and the suggestion that they would see the square as black on the second trial. Following presentation of the trial 3 square, subjects given the instructional demand were informed that they were probably still under the effects of the suggestion on that trial and may have seen the square as black. Subjects who had been given the

instructional demand in session 1 returned to the laboratory and were administered the SPS: II, which consists of nine difficult test suggestions assessing unusual phenomena such as agnosia, negative hallucination, automatic writing, and age regression. Hilgard (1987) suggested that subjects whose scores were within 74% of the highest possible score could be considered "hypnotic virtuosos"; those subjects who possess a particularly marked talent for hypnotic responding.

Spanos, Burgess et al. (1993) found that almost 70% of the high hypnotizables given the instructional demand in session 1 biased their trial 3 colour reports to a substantial degree. These biasers outperformed the nonbiasers (i.e., subjects who failed to respond to the demand instruction) on the test suggestions included in both the pre-test hypnotizability assessment and the SPS: II. On their pre-test hypnotizability dimensions, for example, the biasers reported more intense subjective experiences and higher levels of involuntary responding and suggested amnesia than did the nonbiasers. On the SPS: II, biasers scored nearly twice as high as nonbiasers, and *every* subject who scored in the "virtuoso" range biased their trial 3 colour reports. These findings indicate that much of what constitutes virtuoso hypnotic performance can be understood in terms of the tendency of these subjects to bias their subjective reports in line with suggested demands. As with other studies using the reporting bias paradigm (Spanos et al., 1992; Spanos et al., 1994; Spanos et al., 1991; Spanos et al., 1990), Spanos, Burgess et al. found a substantial correlation between reporting bias and responsiveness to suggestions for perceptual change. When the effects of reporting bias were

statistically controlled, the partial correlations between trial 2 suggested colour change and SPS:II scores were not significant.

In summary, the reporting bias paradigm has produced the same bias effect across studies that have used stimuli in three different sensory modalities (Burgess, DuBreuil, Jones & Spanos, 1991; Spanos, Burgess et al., 1993; Spanos et al., 1992; Spanos et al., 1994; Spanos et al., 1991; Spanos et al., 1990). The findings of these studies indicate that biased reporting is central to a wide range of phenomena that have traditionally been associated with a unique hypnotic state. Along with the finding that high hypnotizables often exaggerate or misdescribe their hypnotic experiences (Spanos et al., 1989a), the results of studies using the reporting bias paradigm support the social psychological view that the verbal testimony of hypnotic subjects should not be taken as accurate and valid reflections of perceptual experience without objective corroboration (Jones & Flynn, 1989; Sutcliffe, 1961).

While studies using the reporting bias paradigm of Spanos et al. (1990) have empirically demonstrated the occurrence of biased perceptual reporting in the hypnotic context, the cognitive processes mediating this bias effect had yet to be determined. One hypothesis suggests that subjects who bias their trial 3 reports engage in the use of conscious deception by falsifying their perceptual experiences in order to meet situational demands. In other words, these subjects intentionally misdescribe what they remember having experienced on the third trial because the instructional demand pressures them to do so in order to maintain their self-presentations as deeply

hypnotizable. This type of behaviour is consistent with Wagstaff's (1981) definition of compliant hypnotic responding as the reporting of a perceptual alteration in the absence of a corresponding change in private experience.

A second hypothesis formulated by Reed, Kirsch, Wickless, Moffitt and Taren (1995) suggests that subjects are not being deceitful when they bias their reports because the instructional demand led them to reflect on their experience of the trial 3 stimulus and to reinterpret the memory of their perceptions in line with this new information. In other words, the reinterpretation hypothesis holds that subjects are reporting honestly about perceptual experiences that have been misremembered. However, it is worth noting that in the reporting bias studies that have been conducted so far, the strong relationship typically found between biased reporting and responsiveness to various suggestions for altered perceptions supports the compliance hypothesis that the purposeful exaggeration of perceptual reports is an integral aspect of the hypnotic context.

Reporting Bias: Conscious Deception or Reinterpretation?

Recently, Reed et al. (1995) administered the auditory procedures of Spanos et al. (1991) to a group of high hypnotizables and a second group of low hypnotizable simulators. In order to support a reinterpretation account of reporting bias, Reed et al. hypothesized that the simulating subjects would bias their loudness reports to a greater extent than the nonsimulating reals. In contrast to this hypothesis, the reporting biases of the reals were found to be

substantial and were equivalent to those exhibited by the simulators. These investigators also found that as many simulators as reals failed to respond to the instructional demand by lowering their trial 3 ratings.

Upon closer examination of the results, Reed et al. (1995) noted that the real highly hypnotizable subjects exhibited more variability in their trial 3 difference scores (trial 3 minus trial 1) than did the simulating subjects. This difference in variability was attributable to the fact that some of the real nonbiasing subjects, but none of the simulating nonbiasing subjects, responded in a counter-demand fashion by reporting an increase in the tone's loudness on trial 3 as compared to baseline. It appeared that the demand instruction inhibited the simulating nonbiasers from reporting a perceived increase in loudness but did not inhibit this reporting among the real nonbiasers. Reed et al. concluded that the greater variability in trial 3 difference scores exhibited by the reals supported the reinterpretation hypothesis that the demand instruction functioned as a nonhypnotic suggestion which altered the remembered intensity of the tone.

In studies using the reporting bias paradigm, a substantial proportion (usually from 25 to 33 percent) of high hypnotizables fail to respond to the instructional demand by lowering their ratings on the third trial (Burgess et al., 1991; Spanos, Burgess et al., 1993; Spanos et al., 1992; Spanos et al., 1994; Spanos et al., 1991; Spanos et al., 1990). As in Reed et al. (1995), some nonbiasing subjects in studies using the auditory procedures rated the third tone as being louder than they had perceived it on the first trial (Burgess et al.,

1991; Spanos et al., 1992; Spanos et al., 1991). Spanos, Burgess et al. (1993) greatly reduced the variability in trial ratings by replacing the auditory stimulus with a red square. In this study, one third of the high hypnotizables failed to respond to the instructional demand, and among these subjects, none rated the square as more red on trial 3 than they had on baseline. This finding suggests that it is easier to remember and rate the colour of a bright red square on a 5-point scale with alternatives ranging from "completely black" to "completely red" than it is to remember and rate the loudness of a tone on a 21-point rating scale.

It is interesting that some of the nonbiasing reals in Reed et al. (1995) reported an increase in the tone's loudness on trial 3 while nonbiasing simulators did not. The apparent inhibiting effect of the demand instruction among simulators may partially be accounted for by Spanos' (1986a) differential demands hypothesis. According to this hypothesis, simulating subjects are exposed to experimental demands that are different from those to which real highly hypnotizable subjects are exposed. Simulators are told to fake hypnosis and behave as if they are deeply hypnotizable without actually trying to experience the suggested effects. Real highly hypnotizable subjects, on the other hand, are under no such constraints. Perhaps some of the simulating subjects in Reed et al., like some of the reals, were unsure how to respond to the relatively subtle social pressures of the instructional demand and chose to report that they had experienced no loudness reductions on the third trial. According to the differential demands hypothesis, nonbiasing simulators may have failed to report a perceived increase in the

loudness of the third tone because they believed that real highly hypnotizable subjects would not report these increases.

More importantly, the interpretation of these differences in variability as supporting a reinterpretation hypothesis is problematic in that Reed et al. (1995) failed to consider that the finding may only apply to the *nonbiasers*. It is perhaps inappropriate to form conclusions based on the responding of simulating and real subjects who fail to bias their perceptual reports and apply these conclusions to the responding of subjects who do bias their reports. A more appropriate test would involve comparisons of the trial 3 ratings of the simulating and nonsimulating *biasers*. If differences could be found between these biasing subjects, then this finding could support the reinterpretation hypothesis. On the other hand, if the trial 3 responding of simulating and nonsimulating subjects was identical, then this would support the alternative hypothesis that biasers are misrepresenting their perceptual experiences by purposely incorporating the effects described by the instructional demand into their verbal reports.

In order to assess the reinterpretation versus conscious deception accounts of trial 3 reporting biases, two studies were conducted using the colour change procedures of Spanos, Burgess et al. (1993) in the first session. In study 1, subjects were administered the deception procedures of Spanos et al. (1989a) in their second session. It was hypothesized that biased reporting in session 1 would be associated with the use of conscious deception in session 2.

In study 2, subjects were interviewed in a second session about their trial 3 responding. This interview was based on the procedures

of Barnier and McConkey (1992) in which some highly hypnotizable subjects admitted that their pseudomemory reports were knowingly biased by experimental demands. As in Barnier and McConkey's study, it was expected that some subjects in the present study would admit that they purposely biased their trial 3 reports because of situational pressures. It was further expected that most of these admissions would occur after a shift in context from the formal to the informal interview. Taken together, the expected results of these two studies would indicate that biased reporting in studies using the reporting bias paradigm reflects conscious deception rather than reinterpretation.

Study 1

The first study examined the extent to which hypnotic subjects purposely give false perceptual reports in order to meet situational demands. Although it is difficult to assess deceitful subjective reporting in the hypnotic context, it is clear that subjects sometimes comply to experimental demands by knowingly misdescribing or exaggerating their hypnotic responses. Spanos et al. (1989a) conducted an experiment in which highly hypnotizable subjects were given the hypnotic suggestion that they would see a blank piece of paper held before them when they opened their eyes. On this paper was a clearly visible number "8." As they were looking at the page, some subjects repeatedly claimed that they could see nothing on it. Following the negative visual hallucination session, subjects who reported a complete inability to see the target stimulus were individually interviewed by a second experimenter. In their interviews, these subjects were informed that previous research indicated that people who are faking hypnosis say they see nothing on the page from the moment they open their eyes, while those who are deeply hypnotized initially see the figure before it fades away. Subjects were then asked to draw what they had seen at each of four 5-second intervals after they had opened their eyes. Fourteen of the 15 completely blind subjects contradicted their earlier blindness reports by drawing an unambiguous number "8" as the figure they had initially seen on the page. The one subject who drew nothing at any of the four time periods returned to the laboratory and was administered the hypnotic suggestion that he could not see the

radiating background lines of the Ponzo illusion (Spanos, Flynn & Gabora, 1989b). Although he claimed that he could not see these background lines, he failed to respond as if the lines were no longer there. This evidence did not support the subject's claims of having experienced complete blindness in response to suggestions for negative visual hallucination.

Spanos et al.'s (1989a) findings are difficult to account for by any hypothesis other than conscious deception. In other words, it appears that when highly hypnotizable subjects are unable to generate the effects called for by hypnotic suggestions, they sometimes engage in conscious deception in order to meet experimental demands. These findings have important implications for hypnosis research, for not only do they demonstrate that verbal reports are invalid as indices of suggested perceptual experience, they also indicate that many of the dramatic perceptual alterations associated with high hypnotizability are also associated with reporting that is purposely misrepresented.

One purpose of this first study was to replicate the findings of the deception paradigm of Spanos et al. (1989a) as well as the findings of studies using the reporting bias paradigm (Spanos, Burgess et al., 1993; Spanos et al., 1992; Spanos et al., 1994; Spanos et al., 1991; Spanos et al., 1990). This study combined the procedures of each of these two paradigms in a two-session experiment designed to assess the extent to which conscious deception accounts for the bias effect typically observed in reporting bias studies. In the first session, medium and high hypnotizables were administered the reporting bias paradigm using the colour change procedures of Spanos, Burgess

et al. (1993). All subjects were exposed to three presentations of a red square and the suggestion that they would see the square as black on trial 2. Following presentation of the trial 3 square, subjects in the demand instruction condition were informed that they probably continued to experience the effects of the suggestion and had seen the square as black on the third trial.

Subjects who received the instructional demand in session 1 returned to the laboratory where they were administered the negative hallucination procedures of Spanos et al. (1989a). Half of the subjects who reported a complete inability to see the target stimulus in this session were administered the interview procedures of Spanos et al. As a subsidiary issue, the effects of differential interview instructions on subjects' posthypnotic reports were also assessed in the present study. The procedures of Spanos et al. were extended with the addition of a second interview to which the remaining half of the completely "blind" subjects were exposed. These instructions informed subjects that while deeply hypnotized people never see the figure at all, those who are less deeply hypnotized see the figure at least part of the time. Unlike the instructions used in the first interview, this second interview was designed to subtly pressure subjects into maintaining their hypnotic reports of complete blindness.

Hypotheses. The reinterpretation hypothesis suggests that hypnotic subjects do not engage in the use of conscious deception in order to meet situational demands. Consequently, this hypothesis would predict that subjects who report complete blindness in the negative

visual hallucination portion of the present study would not contradict these reports by correctly identifying the target stimulus when administered the interview procedures of Spanos et al. (1989a). In contrast to this prediction, it was expected that most of the completely blind subjects administered this interview would admit that they had seen the target stimulus by drawing the number "8" as the figure they had seen when they opened their eyes. As in Spanos et al., this finding would indicate that subjects could correctly identify the target stimulus during the interview because it was consciously perceived and accurately identified at the time of its presentation. This finding would be consistent with the hypothesis that subjects will purposely exaggerate or misdescribe their perceptual experiences when social demands call for these reports.

The reinterpretation hypothesis as formulated by Reed et al. (1995) holds that subjects who bias their trial 3 perceptual reports are reporting honestly about a misremembered perception. Accordingly, this hypothesis would predict that biased reporting in the first session of the present study would be unrelated to the use of conscious deception in the second session. The deception hypothesis, on the other hand, would predict an association between these two indices. Specifically, it was expected that completely blind subjects who admitted in the first interview that they had seen the target stimulus would be more likely to have biased their trial 3 reports in session 1 than would subjects who failed to report complete session 2 blindness. Furthermore, it was hypothesized that completely blind subjects would have biased their trial 3 reports to a greater extent than the non-blind subjects. The predicted association

between biased reporting in the first session and false reporting in the second session would indicate that the same psychological process is mediating response in each of the two test sessions. This psychological process involves the use of purposeful deception.

The inclusion of two interviews in the present study allowed an examination of the effects of differential instructions on the perceptual reports of hypnotic subjects. Because subjects in both interview conditions were exposed to identical testing procedures and visual stimuli in the negative hallucination portion of the study, it is reasonable to assume that they had the same perceptual experiences. Consequently, if subjects were motivated by the desire to report honestly on their perceptual experiences, then these subjects should respond similarly regardless of which of the two interview instructions they had received. However, it was hypothesized that the interview reports of completely blind subjects would differ substantially depending on the interview instructions that were administered to them. It was expected that while most of the subjects in the first interview would contradict their earlier reports of complete blindness by admitting that they had seen the target stimulus, most of the subjects in the second interview would maintain their hypnotic reports by failing to draw the number "8" as the figure they had seen during the hypnotic session. This finding would suggest that the desire of hypnotic subjects to maintain self-presentations as deeply hypnotizable may over-ride the desire to report honestly about private experiences during hypnotic suggestions for perceptual alterations.

Finally, it was predicted that subjects who reported complete session 2 blindness would also have reported more suggested colour change in session 1 than would the non-blind subjects. In addition, it was expected that the completely blind subjects would outperform the non-blind subjects on dimensions of their hypnotizability screening test. Taken together, these findings, along with those previously discussed, would indicate that biased reporting is central to a wide range of hypnotic phenomena. Furthermore, the predicted results of the present study would indicate that biased reporting reflects the conscious use of deception rather than reinterpretation or other mechanisms which imply that hypnotic subjects report honestly about their perceptual experiences. These findings would support Wagstaff's (1981, 1986, 1991a) contention that compliant responding accounts for much of what has traditionally been understood as hypnotic responding.

Method

Subjects

One hundred and eleven Carleton University introductory psychology students (ages 18 years and older) volunteered to participate in a hypnosis experiment for course credit. All subjects had been pretested on the Carleton University Responsiveness to Suggestion Scale (CURSS; Spanos, Radtke, Hodgins, Stam & Bertrand, 1983). Ninety-one of these subjects had attained high scores on the

objective dimension of the CURSS (CURSS:*O*) and the remaining 20 subjects had attained low CURSS:*O* scores.

The CURSS

The CURSS is a 7-item scale which assesses responsiveness to hypnotic suggestions. Typically used for group administration, the CURSS contains the following suggestions; arm levitation, arms moving apart, arm catalepsy, arm immobility, auditory hallucination, visual hallucination, and amnesia for all preceding suggestions. The CURSS includes three indices of hypnotizability. The first index is an objective dimension (CURSS:*O*) which reflects the degree of overt responsiveness to suggestions. The objective dimension ranges from *no suggestions passed* (0) to *all suggestions passed* (7). The second dimension (CURSS:*S*) assesses the extent of subjective responding that corresponds to the hypnotic suggestions. Each suggestion is rated by subjects on a 3-point scale ranging from *no subjective effects experienced* (scored 0) to *high level of subjective effects* (scored 3). The responses on the CURSS:*S* index are summed to yield a single score ranging from 0 to 21. The third dimension of responsiveness provides an index of the extent to which each suggestion overtly passed was experienced as involuntary (CURSS:*OI*). The CURSS:*OI* ranges from 0 to 7.

Procedure

Session 1: Hypnotic Colour Hallucinations. All subjects were individually tested in session 1 by the same male experimenter (see Appendices A to N). Subjects were shown a 2.5" bright red square in the centre of a 10" X 7.5" white card on three successive trials. Prior to each presentation, subjects were told to close their eyes until asked to open them by the experimenter. Subjects viewed the square for 15 sec, after which the card was removed. Fifteen seconds after each exposure, subjects were asked to rate the colour of the square they saw using a 5 point category rating scale with alternatives ranging from "completely black" (scored 1) to "completely red" (scored 5) (e.g., see Appendix D).

The first trial was a baseline, and the second was preceded by a 10-minute hypnotic induction procedure modified from Barber (1969) (see Appendix F). The hypnotic induction was followed by the suggestion that subjects would see a black square in the centre of the card (see Appendix G). After being asked to open their eyes, subjects were administered a questionnaire that was designed to assess their expected colour change on the upcoming trial (see Appendix H). The colour change expectancy questionnaire consisted of the same 5-point category rating scale as was used to rate the colour of the square on each trial. Next, subjects were exposed to the 15 sec presentation of the red square on this second trial. Fifteen sec after its removal, they rated the colour of the square they had seen. Following their colour ratings, the suggestion was cancelled and subjects were administered a wake-up procedure (see Appendix J).

Next, subjects were exposed to the square a third time. This third exposure was preceded by the instruction that the upcoming trial would be "just like trial 1" (see Appendix K). Following the 15 sec exposure on the third trial, subjects were administered their respective treatments. Thirteen subjects (controls) simply waited 15 sec before giving their trial 3 colour reports. However, in this same period, the remaining 98 subjects were administered a 15 sec demand instruction informing them that they had probably continued to experience the effects of the suggestion and had seen the square as black (see Appendix L). Following the demand instruction, subjects gave their trial 3 colour reports. After the colour hallucination session, the 13 control subjects were debriefed (see Appendix N), thanked for their participation, and dismissed from the study. The demand instruction subjects were scheduled to return to the laboratory approximately one week later for their final session.

Session 2: Hypnotic Negative Visual Hallucinations. Session 2 procedures were individually administered by a female experimenter who was blind to subjects' session 1 responding and hypnotizability levels (see Appendices O to R). Subjects were given the negative visual hallucination procedures of Spanos et al. (1989a). In this session, subjects were again administered the hypnotic induction procedure used in session 1 (see Appendix F). They were then informed repeatedly that when they opened their eyes, they would see a blank sheet of white paper (see Appendix Q). The experimenter asked the subjects to open their eyes and look at the

paper, which was held approximately 50 cm in front of them. On the paper was a clearly visible number "8" of approximately 5 cm in height. While the stimulus remained in view, the experimenter asked, "Do you see anything on the paper?" This question was followed by the request to describe the paper. Subjects who reported seeing nothing in response to these two questions were then asked, "Are you sure you see nothing on the paper?"

Following these questions, subjects closed their eyes while the negative visual hallucination suggestion was cancelled and a wake-up procedure was administered (see Appendix R). Subjects who reported that they saw all or part of the figure on the paper were debriefed, thanked for their participation, and dismissed from the study (see Appendix U). Sixteen subjects who responded negatively to the three probes were led to another experimental room where they were greeted by a second female experimenter who questioned them about their negative hallucination responding. Subjects were randomly assigned to one of two interview conditions, with the restriction of an equal number of subjects ($n = 8$) in each condition.

The first interview consisted of the instructions used by Spanos et al. (1989a) (see Appendix S). This interview will be referred to throughout the remainder of this paper as "interview 1". The instructions of interview 1 informed subjects that deeply hypnotized people initially see the figure on the page but that it gradually fades with continued viewing. They were further informed that fakers report seeing nothing on the page at any time. Subjects in interview 2 were told that deeply hypnotized people typically report seeing nothing on the page at any time, while those who are less deeply

hypnotized see the figure at least part of the time (see Appendix T). All subjects were then instructed to draw what they had seen on the paper immediately after they opened their eyes, and at 5, 10 and 15 seconds after that. Subjects who drew a complete and unambiguous number "8" were given a blindness score of 0 (no blindness); those who drew part, but not all, of the number "8" were given a blindness score of 1 (incomplete blindness); and finally, subjects who drew nothing on the page were given a blindness score of 2 (complete blindness).

Results

Hypnotic Visual Hallucinations and Reporting Bias

Based on their negative visual hallucination responding in the second session, subjects were classified into one of three groups: Group 1 consisted of subjects who reported complete blindness in response to the negative visual hallucination and who were administered interview 1. Subjects who reported complete blindness and received interview 2 formed Group 2. Group 3 consisted of subjects who failed to report complete blindness in response to the suggestion for negative visual hallucination. The subjects in these groups were compared to the control (no demand) subjects on colour hallucination responding and reporting bias in session 1.

A 4 (Group: Completely Blind - Interview 1/Completely Blind - Interview 2/Incomplete or No Blindness/Control) by 3 (Trials) mixed analysis of variance was conducted on the session 1 colour ratings of

the three trials (see Table 1). The analysis yielded a significant main effect for Group, $F(3, 107) = 11.83$, $p < .01$, Effect Size = .25, and Trials, $F(2, 214) = 97.17$, $p < .01$, Effect Size = .48. These effects were qualified by a significant Group X Trials interaction, $F(6, 214) = 6.93$, $p < .01$, Effect Size = .16. The mean colour ratings across the three trials for subjects in each of the four groups are shown in Table 2. Simple main effects analyses indicated that subjects in the four groups failed to differ in their colour ratings on trial 1. A significant simple main effect was found for groups at trial 2, $F(3, 275) = 18.06$, $p < .01$. Post hoc analyses using the Tukey-Kramer adjustment for unequal n's (Keselman, Murray & Rogan, 1976) indicated that during their first session, subjects in Groups 1 and 2 did not differ in their trial 2 colour ratings. These completely "blind" subjects reported that the square on the second trial was significantly more black than did subjects who did not report complete blindness and the controls. The mean trial 2 ratings of subjects in the latter two groups failed to differ significantly from one another. A significant simple main effect was also found for groups at the third trial, $F(3, 275) = 10.29$, $p < .01$. Post hoc analyses indicated that subjects in each of the three groups who had been given the demand instruction rated the trial 3 square as significantly more black than did the no-demand control subjects. Completely blind subjects in the two interview conditions failed to differ in their trial 3 ratings and exhibited more substantial reporting biases than did subjects who failed to report complete blindness in the second session.

Analyses within conditions revealed that significant changes in colour were reported across the three trials by subjects in all groups.

Table 1

Summary Table for 4 (Group: Completely Blind - Interview
1/Completely Blind - Interview 2/Incomplete Blindness/Control) by
3 (Trials) Mixed ANOVA

Effect	df	SS	MS	F-Ratio
Main Effects				
Group (G)	3	41.82	13.94	11.83**
Trials (T)	2	102.73	51.36	97.17**
Interaction				
G X T	6	21.98	3.66	6.93**
Simple Main Effects				
Group (G)				
Trial 1	3	.45	.15	.20
Trial 2	3	40.36	13.45	18.06**
Trial 3	3	23.00	7.67	10.29**
Trials (T)				
Control	2	18.65	9.33	17.60**
Interview 1	2	33.25	16.63	31.37**
Interview 2	2	30.58	15.29	28.85**
Incomplete	2	57.73	28.86	54.46**

Note. Analysis based on 111 subjects.

** $p < .01$.

Table 2

Mean Colour Ratings Across Trials for Control, Interview 1 (Int. 1), Interview 2 (Int. 2) and Nonblind Subjects

	Trial 1		Trial 2		Trial 3	
Group	M	SD	M	SD	M	SD
Control (n = 13)	5.00 ^a _a	.00	3.46 ^a _b	1.13	4.85 ^a _a	.38
Int. 1 (n = 8)	4.75 ^a _a	.71	1.88 ^b _b	.84	3.13 ^b _c	.84
Int. 2 (n = 8)	4.75 ^a _a	.71	2.00 ^b _b	1.31	3.13 ^b _c	1.36
Nonblind (n = 82)	4.85 ^a _a	.36	3.67 ^a _b	1.11	4.18 ^c _c	.93

Note. Means within rows sharing common subscripts fail to differ at $\alpha = .05$. Means within columns sharing common superscripts fail to differ at $\alpha = .05$.

Post hoc analyses of the simple main effect for the non-demand control subjects, $F(2, 214) = 17.60$, $p < .01$, indicated that these subjects reported the square as significantly more black on the second trial than they had on the first and third trials. The colour ratings of the latter trials failed to differ from one another.

Significant simple main effects were found for Group 1 subjects, $F(2, 214) = 31.37$, $p < .01$, and for Group 2 subjects, $F(2, 214) = 28.85$, $p < .01$. Post hoc analyses revealed that completely blind subjects given either of the two interviews reported significant session 1 colour change on trial 2 in comparison with their colour ratings of the first trial. These subjects also reported significant colour change in response to the demand instruction on trial 3, but these trial 3 reporting biases were significantly smaller than the suggested colour change reported on trial 2. Finally, subjects who failed to report complete blindness in session 2 also differed significantly in their colour change reports across the three trials in session 1, $F(2, 214) = 54.46$, $p < .01$. Post hoc analyses for these subjects indicated that the square in session 1 was rated as significantly more black on trials 2 and 3 in comparison to trial 1. However, as was the case with the completely blind subjects, the demand-induced reporting biases exhibited by the non-blind subjects were significantly less substantial than the suggested colour changes reported on the second trial.

In summary, subjects in both the control and demand instruction conditions reported substantial session 1 colour change in response to the hypnotic suggestion on the second trial. However, the suggested colour changes of subjects who later reported complete

blindness in session 2 were more substantial than the suggested colour changes of the non-blind subjects and the controls. On trial 3, the colour ratings of the control subjects returned to baseline levels. In contrast, demand subjects rated the trial 3 square as significantly more black than they had on baseline. Among these subjects, those who reported complete session 2 blindness biased their session 1 colour reports to a greater extent than did those who failed to report complete session 2 blindness. This finding does not support the prediction of the reinterpretation hypothesis that biased reporting should be equivalent between completely blind and non-blind subjects. This finding is consistent with the deception hypothesis which predicts that subjects who are most responsive to hypnotic suggestions also bias their perceptual reports to a greater extent than do subjects who are less responsive.

Negative Visual Hallucinations and Interview Reports

The interview responses of completely blind subjects in each of the two interview conditions were compared. When asked to draw what they had seen on the page during the negative visual hallucination suggestion, 7 of the 8 Group 1 subjects drew an unambiguous number "8". In contrast, only one of the 8 Group 2 subjects drew a number "8." In other words, subjects in the latter condition maintained their earlier reports that they were completely blind to the target stimulus. A chi square analysis, $\chi^2 (1) = 9.00, p < .01$, indicated that admissions of having seen the target number "8" depended on which of the two interview instructions the subjects

received. More specifically, when subjects were administered instructions informing them that deeply hypnotized individuals initially see the stimulus before it fades, they were highly likely to report accurately on the target stimulus. In contrast, when subjects were given interview instructions informing them that deeply hypnotized individuals never see the target stimulus, they were likely to maintain their earlier reports of complete blindness. This finding is not consistent with the hypothesis that hypnotic subjects are always honest in reporting on their perceptual experiences. Instead, this finding indicates that subjects will misdescribe their perceptual experiences in order to maintain self-presentations as deeply hypnotizable.

Reported Hypnotic Blindness and Reporting Bias

Completely blind subjects in the two interview conditions and subjects who failed to report complete session 2 blindness were compared on their trial 3 responses in session 1. An examination of the frequencies indicated that of the 8 Group 1 subjects, all had biased their trial 3 colour reports in response to the instructional demand in session 1. Of the 8 Group 2 subjects, 6 had biased their trial 3 reports. Among those subjects who failed to report complete blindness in session 1, 40 biased their trial 3 reports while 42 did not. A 3 X 2 contingency analysis was significant, $\chi^2(2) = 9.12$, $p < .05$. The results of this analysis are presented in Table 3. These results indicated that the frequency of biased versus nonbiased

Table 3

Number of Subjects per Group who Biased Their Colour Reports (Trial 3 < Baseline) Versus did not Bias Their Colour Reports

Group	Biased	Did Not Bias	χ^2
Interview 1	8	0	9.12*
Interview 2	6	2	
Nonblind	40	42	

Note. Only subjects administered the demand instruction were included in this analysis.

* $p < .05$.

reporting differed between the three groups. The contingency table was partitioned into two 2 X 2 contingency subtables in order to locate the differences between the three groups (Siegel & Castellan, 1988). The first contingency subtable compared the frequency of biased reporting between completely blind subjects administered interview 1 and those administered interview 2. This analysis was not significant, $\chi^2(1) = 1.01$, $p > .10$. Next, this contingency table was collapsed to form a second 2 X 2 contingency table comparing the frequency of biased reporting among the 16 completely blind subjects to that among subjects who failed to report complete blindness. This analysis was significant, $\chi^2(1) = 8.11$, $p < .01$. In other words, subjects who reported complete blindness in the negative hallucination session were more likely than Group 3 subjects to have biased their reporting in the colour hallucination session. This finding does not support the prediction of the reinterpretation hypothesis that biased reporting is equally likely to occur among both completely blind and non-blind subjects.

Reported Blindness and Hypnotizability

On the basis of a priori hypotheses, it was predicted that subjects who reported complete blindness in session 2 would outperform subjects who failed to report complete blindness on the subjective and involuntariness dimensions of their pre-test CURSS. The objective (CURSS:O) dimension was not included in this analysis as subjects were selected for participation in this study on the basis of having attained medium or high hypnotizability. A Hotellings T-

squared analysis was significant, $F(2,95) = 4.13$, $p < .05$. Effect size = .08. Means and results for the univariate t tests are presented in Table 4. As predicted, subjects who reported complete session 2 blindness outperformed the non-blind subjects on the subjective and involuntariness dimensions of the pre-test CURSS.

Reporting Bias and Expectancies

The response expectancy hypothesis of Kirsch (1985) suggests that expected responsiveness to suggestions is the direct and unmediated determinant of actual responding. The expectancy hypothesis would predict that subjects who reported the most suggested colour change in session 1 would also have reported higher expectations for colour change prior to their actual responding. From previous analyses, it was found that subjects who reported complete blindness in the second session reported more session 1 colour change than did subjects who failed to report complete session 2 blindness. Therefore, the session 1 expected colour change ratings of completely blind subjects were compared to the expected colour change ratings of the non-blind subjects using a t test. This analysis was not significant, $t(96) = 1.59$, $p > .10$. Contrary to the expectancy hypothesis, the mean expectancy ratings of the completely blind subjects ($M = 1.69$, $sd = 1.14$) did not differ significantly from those of the non-blind subjects ($M = 2.35$, $sd = 1.60$). Expected colour change did not correlate significantly with suggested colour change nor with reporting bias (see Appendix GG).

Table 4

Means and Univariate t's for Completely Blind (n = 16) and Nonblind (n = 82) Subjects on CURSS Dimensions

	M	SD	t	ϵ^2
CURSS:S				
Completely Blind	14.31	3.81	2.47*	.06
Nonblind	11.70	3.89		
CURSS:OI				
Completely Blind	4.13	1.59	2.78**	.07
Nonblind	2.77	1.82		

Note. * $p < .05$. ** $p < .01$.

Discussion

The results of the colour hallucination portion of the present study replicate the colour hallucination findings of Spanos, Burgess et al. (1993) and the findings of the reporting bias procedures within the context of hypnotic analgesia (Spanos et al., 1994; Spanos et al., 1990) and hypnotic deafness (Burgess et al., 1991; Reed et al., 1995; Spanos et al., 1992; Spanos et al., 1991). Both control subjects and those administered the instructional demand reported dramatic perceptual alterations when they were given the hypnotic suggestion on trial 2. On trial 3, the perceptual reports of the control subjects returned to baseline levels. This finding suggests that after the hypnotic suggestion had been cancelled, control subjects were under no pressure to alter their colour ratings on trial 3 and simply reported that the square was red. In contrast to this, subjects who were given the instructional demand after presentation of the third square rated the square on that trial as substantially more black than they had on baseline. Since both control subjects and demand instruction subjects were exposed to identical testing procedures up until the end of the trial 3 presentation, it can be assumed that they both had the same perceptual experiences on that trial. Despite their equivalent experiences, however, subjects in the instructional demand condition reported significant trial 3 colour change relative to the controls. This finding indicates that the instructional demand led subjects to misdescribe their perceptual experiences in order to align them with the information conveyed by the demand.

The findings of the negative hallucination portion of the present study replicate those of Spanos et al. (1989a). Negative visual hallucinations are among the most difficult of hypnotic suggestions to "pass", and in that study, only 15 of 45 highly hypnotizable subjects (33.3%) reported this effect. In the present study, 16 of the 98 demand instruction subjects (16.3%) reported complete blindness when administered the negative visual hallucination suggestion. The lower percentage of completely blind subjects in the present study is largely due to the inclusion of medium hypnotizables among subjects administered the demand instruction in session 1. As in Spanos et al. (1989a), subjects who reported complete blindness in the present study tended to outperform those who failed to report complete blindness on the subjective and involuntariness dimensions of the hypnotizability pre-test. These findings, like those of other studies (Spanos et al., 1987; Spanos et al., 1988; Weitzenhoffer & Hilgard, 1963; Zamansky & Bartis, 1985), attest to both the rarity of negative visual hallucination responding and its relationship with indices of hypnotizability.

More importantly, in both the present study and in Spanos et al. (1989a), all but one subject in interview 1 contradicted their earlier reports of complete blindness by drawing an unambiguous number "8" as the figure they had seen when they opened their eyes. This finding demonstrates that negative visual hallucinators can report accurately about the target stimulus because it was consciously perceived and accurately identified at the time of its presentation. Furthermore, this finding suggests that subjects were engaging in the

use of conscious deception when they reported an inability to see the target stimulus during the negative visual hallucination session.

Reporting Bias as Conscious Deception

As discussed earlier, the reinterpretation hypothesis suggests that hypnotic subjects report honestly on their perceptual experiences and that biased reporting reflects the retrospective distortion of remembered perceptions. Consequently, the reinterpretation hypothesis would predict that biased reporting in the colour hallucination portion of the present study would be independent of deceitful reporting in the negative visual hallucination session. These predictions were not supported by the results. Of the 7 subjects who admitted in interview 1 that they actually saw the figure they had earlier denied seeing, all 7 had biased their trial 3 colour reports in the colour hallucination session. In contrast to this finding, slightly less than half (40) of the 82 subjects who failed to report complete session 2 blindness had biased their trial 3 reports in response to the instructional demand in session 1. Furthermore, completely blind subjects biased their session 1 colour reports to a substantially greater extent than did the non-blind subjects. In short, the findings of the present study indicated that subjects who purposely falsified their negative hallucination reports in the second session were much more likely to have biased their colour reports, and to have biased them more, than had subjects who failed to engage in deception by immediately admitting that they could see the target stimulus. Taken together, these findings suggest that the

instructional demand administered on the third trial pressures subjects into reporting perceptual effects that they know they did not experience.

In the first interview condition, all but one subject accurately identified the number "8" as the figure they had seen when they opened their eyes. This finding alone could indicate that subjects carried out a number of strategies (e.g., crossing or unfocusing their eyes) that produced perceptual distortions. In turn, the demands of the test situation may have led subjects to define visual distortions that fell short of total eradication as "not seeing". This idea could be tested in the present study because of the inclusion of a second interview containing different demands. Since subjects in both conditions were exposed to identical testing procedures prior to their interviews, it is likely that they had similar experiences during that session. Therefore, if subjects were engaged in strategy use to produce visual distortions that were defined as "blindness", but were also motivated by the desire to report honestly on their experiences, then the interview reports of these subjects should be similar regardless of which of the two instructions they had received.

The findings obtained from the two interviews did not support these predictions. All but one subject in the first interview admitted that they had seen the target stimulus while all but one subject in the second interview maintained that they had not. The contrasting interview reports obtained in the present study clearly indicate that subjects were knowingly misdescribing their perceptual experiences by aligning their verbal reports with the demands conveyed to them by their interview instructions. These findings suggest that the

desire of hypnotic subjects to maintain self-presentations as deeply hypnotizable may over-ride their desire to report honestly about their perceptual experiences.

Expectancies and Reporting Bias

The response expectancy hypothesis (Kirsch, 1985) suggests that expected responsiveness to suggestions predicts actual responsiveness among hypnotic subjects. This hypothesis would predict that subjects who had reported the most suggested colour change on trial 2 would have reported more expected colour change prior to their actual responding. The results of the present study did not support this prediction. Subjects who reported the most colour change did not differ in their expectancy ratings from subjects who reported less colour change.

In previous reporting bias studies (Spanos, Burgess et al., 1993; Spanos et al., 1994), expected colour change correlated significantly with suggested colour change and with reporting bias. When reporting bias was statistically controlled, the magnitude of the correlation between expected and suggested colour change was substantially reduced. These findings led Spanos and his associates to conclude that the significant relationship between expected and suggested response to suggestions typically cited in hypnosis studies reflects response to similar situational demands. In the present study, expected responsiveness predicted neither suggested response on trial 2 nor reporting bias on trial 3 (see Appendix GG). The

reasons why the correlations between these indices failed to attain significance in the present study remains unclear.

Implications for the State Perspective

Subjects who reported complete blindness in session 2 also reported more suggested colour change in session 1 than did subjects who failed to report complete session 2 blindness. In addition, completely blind subjects reported more subjective responsiveness and more involuntariness on their hypnotizability screening test. Many of the inter-correlations among these variables were also significant (see Appendix GG). These findings alone are consistent with the state view that the most highly responsive subjects experience more intense perceptual and experiential changes across a wide range of hypnotic tasks (Bowers, 1966; Hilgard, 1977, 1979; Miller & Bowers, 1993; Sheehan & McConkey, 1982; Weitzenhoffer & Hilgard, 1963). However, since these perceptual and experiential changes are believed to result from a breakdown among normal associative processes, the state perspective would predict that performance on hypnotic tasks would not be associated with biased perceptual reporting.

Contrary to state hypotheses, subjects in the present study who reported the most intense perceptual and experiential alterations in response to the suggestions of the three test sessions also tended to be those subjects who biased their colour reports the most during the colour hallucination session. The association between pre-test subjective and involuntariness responding, suggested visual

hallucinations and reporting bias replicate the results of previous studies which also found that biased reporting was associated with responding to a wide range of hypnotic suggestions for experiential and perceptual change (Burgess et al., 1991; Spanos, Burgess et al., 1993; Spanos et al., 1992; Spanos et al., 1994; Spanos et al., 1991; Spanos et al., 1990). The results of the present study indicate not only that biased perceptual reporting may occur in the hypnotic context, but that such reporting may reflect deliberate misrepresentations of subjective experiences in order to maintain self-portrayals as highly responsive to hypnotic suggestions. Taken together, these findings support the skeptical view (Jones & Flynn, 1989; Sutcliffe, 1961) that the uncorroborated verbal testimony of hypnotic subjects cannot be taken as an accurate and valid index of what is actually experienced during hypnotic testing.

Study 2

This second study further addressed the deception versus reinterpretation hypotheses by questioning high hypnotizables about their trial 3 experiences in a post-test interview adapted from Barnier and McConkey (1992). These researchers exposed low and high hypnotizables to a series of slides depicting a purse-snatching incident. In the slides, a male offender bumps into a woman carrying a bag of groceries, spilling its contents onto the street. As the offender helps the woman retrieve the groceries, he reaches into her purse and takes her wallet.

After presentation of the slides, half of the lows and highs were administered a hypnotic induction. All subjects were asked a series of questions concerning their recall of the depicted events. Included among these were leading questions about events that had or had not actually occurred in the slide series. Specifically, the experimenter suggested that the offender had a moustache (true), wore a scarf (false), and helped pick up flowers (false). Subjects' responses during this session were videotaped. After the hypnotic subjects were administered a wake-up procedure, all subjects were questioned by a second experimenter about their recall session.

The second experimenter questioned subjects using the Experiential Analysis Technique (EAT; Sheehan & McConkey, 1982). At certain points during the playback of the recall session, the experimenter stopped the videotape and asked the subjects several questions concerning how they went about conjuring up each scene and what they were thinking about when the experimenter

mentioned the moustache, scarf and flowers. Subjects were then asked to describe what they now remembered about the previous session.

After this questioning, the interviewer appeared to end the experiment by switching off the playback of the recall session, while surreptitiously continuing to videotape the interview. In order to further give the impression that the experiment had ended, the interviewer adopted a casual attitude and told subjects that since the experiment was over, she could now tell them more about the study. She informed subjects that a number of different slides had been shown to see what people could remember about them, and that some of the suggested details were actually in the slides while others were not. Following this, subjects were asked to comment on the experimental proceedings.

Barnier and McConkey (1992) found that a substantial proportion of subjects in both the hypnotic and nonhypnotic conditions recalled seeing the false events that were suggested by the experimenter. Within conditions, high hypnotizables were much more likely than were low hypnotizables to report these false memories. However, the high hypnotizables in this study changed from reporting to not reporting the false items after a shift in the experimental context had occurred. Some highs who had reported during the initial session that they recalled the false events no longer claimed to do so when they were questioned in the second session using the EAT procedures. However, the greatest change in memory reports among these highs occurred in the final, informal session of the study when the interviewer appeared to end the experiment. Of the 19 highs

who initially recalled seeing the scarf, only 3 maintained these reports in the informal interview. Similarly, of the 9 highs who initially recalled seeing the flowers, only 1 claimed to do so in the informal interview.

The pseudomemory reports of subjects whose testimony changed over the course of the experiment were categorized according to whether or not the subject appeared to believe that the false events were present, confusion the subject displayed about the events, and compliance with the perceived demand to report that the items had actually been present in the slides. For example, subjects who were categorized as displaying confusion made comments such as "I found it hard to remember about his scarf. Maybe I just pictured the guy with a scarf (p. 525)." Comments indicating compliance included those such as "I knew he didn't have a scarf. I felt pressured, so I put a scarf on him to give an answer (p. 525)."

Barnier and McConkey (1992) found that the majority of subjects who changed their pseudomemory reports did so because they were either confused about the actual events that were depicted in the slides or they had initially reported the false events because of compliance to situational demands. These researchers acknowledged the possibility that some subjects who displayed confusion may have done so because they viewed it as more socially acceptable than admitting compliance to the pressures of the experimental context. In other words, subjects who complied with situational demands may have adopted the strategy of displaying confusion about the false events in order to avoid the loss of face entailed in admitting that they had purposely falsified their memory reports. Barnier and

McConkey concluded that while high hypnotizables are likely to respond to pseudomemory suggestions, their changes in memory reports under different contexts of testing calls into question the extent to which pseudomemory responses reflect actual changes in memory as opposed to reporting biases.

The second study examined the deception versus reinterpretation accounts of trial 3 reporting biases by using interview procedures adapted from Barnier and McConkey (1992). Highly hypnotizable subjects were administered the reporting bias paradigm using the same colour trial procedures and suggestion for colour change that were used in study 1. After this session, subjects were escorted to another room where they were questioned about their experiences by a second experimenter. This audiotaped interview focused on subjects' responses to the demand instruction on the third trial. They were questioned about what they had been thinking about when they were given the demand instruction and whether or not they felt that this instruction pressured them in any way to give an inaccurate trial 3 colour report. In addition, 3 questionnaires were administered requiring subjects to rate the perceived pressure exerted by the instructional demand, the effect this instruction had on their own colour ratings, and the colour rating they would now give the third square. Finally, subjects were asked, as a "final question", to describe the trial 3 square.

As in Barnier and McConkey's (1992) study, the experimenter appeared to end the interview by switching off the tape recorder and adopting an informal attitude. However, subjects' responses in the informal interview were audiotaped by a hidden tape recorder. The

experimenter told subjects that since the experiment was over, she could tell them more about the study. She then described in detail the differences between the trial 3 reports of demand instruction and control subjects that have been obtained by reporting bias studies in the past. Subjects were asked to comment on these findings, and after their comments, were again asked if the demand instruction pressured them to report the trial 3 square as more black than they had actually seen it.

Subjects' verbal testimony in the formal and informal interviews were analyzed by two independent raters. The variables obtained from these interviews are described in the following section along with predictions of the deception and reinterpretation hypotheses concerning them. A discussion of the expected results of the present study and their implications for state conceptualizations of hypnotic behaviour is also included.

Hypotheses. As in previous studies using the reporting bias paradigm (Burgess et al., 1991; Spanos, Burgess et al., 1993; Spanos et al., 1992; Spanos et al., 1994; Spanos et al., 1991; Spanos et al., 1990), it was expected that approximately one-quarter to one-third of the highly hypnotizable subjects in the present study would fail to bias their trial 3 colour reports in response to the instructional demand. The responses of these nonbiasers could be compared to those of the biasers on indices obtained from both the colour hallucination session and the interview session. It was hypothesized that nonbiasers would differ from biasers on a number of these indices and, within the biasing group, differences were expected

between those who changed from reporting to not reporting black in the trial 3 square during their interviews and those who maintained their biased reports throughout their interviews.

Since the reinterpretation hypothesis holds that the instructional demand induces retrospective distortions in memory, it would predict that biasers would be unlikely to admit during their interviews that they knew the third square was more red than they had reported it earlier. As in Barnier and McConkey (1992), however, it was expected that a substantial proportion of biasers in the present study would admit that they knew the third square was red despite their biased reporting. It was also predicted that biasers who made these admissions would be more likely than biasers who did not to report that the instructional demand pressured them into biasing their colour ratings on the third trial.

The interview procedures of the present study clearly place subjects in the potentially embarrassing situation of having to account for their biased reporting. Consequently, it seemed inevitable that some biasers would maintain throughout the interviews that the third square was partially black in order to avoid the loss of face entailed in invalidating their earlier perceptual reports. Maintaining earlier biased reporting could support a reinterpretation account of demand-induced memory distortions. However, it was predicted that these "nonconfessing" subjects would make explicit comments indicating that they knew the trial 3 square was red. Taken together, the explicit change in colour reporting of the "confessors" and the contradictory comments of the nonconfessors would indicate that the third square was accurately

perceived during its presentation and correctly recalled after its removal. These findings would indicate that the trial 3 colour reports of these subjects were purposely misdescribed during the colour hallucination session.

It was also expected that subjects' oral and questionnaire descriptions of the perceived pressure exerted by the instructional demand would differ according to whether or not they had biased their perceptual reports in the first session, and if they had, whether they invalidated these reports in the interviews. Because nonbiasers had, by definition, failed to bias their trial 3 reports, they were in no danger of losing face by reporting accurately on their trial 3 experiences. Consequently, it was expected that these subjects would admit that they felt pressured by the instructional demand, even though this pressure did not influence their colour ratings. Nonconfessors, on the other hand, were expected to deny both that they had felt pressured by the demand and that it had an affect on their colour reports. Finally, because confessors had invalidated their earlier perceptual reports during their interviews, it was predicted that these subjects would report that they felt pressured by the instructional demand and that they biased their trial 3 reports in response to this pressure.

Subjects' interview testimony was analyzed to identify the types of explanations they provided for their biased reporting. The reinterpretation hypothesis would predict that biasers would explain that they described the trial 3 square as partially black because they believed it actually did contain some black. In contrast, if nonconfessors were more likely to report that the square was

partially black because of after-images, unconscious influences, reinterpretation and the like, then this finding would suggest that these subjects knew all along that the third square did not contain any black. Similar findings were also expected for subjects who changed from reporting to not reporting black in the third square. For these confessors, the loss of face entailed in reversals of their earlier perceptual reports could only be lessened by disavowals of responsibility for their biased reporting. Hence, confessors were expected to attribute their biased reporting to effects that were beyond their voluntary control.

At the beginning of the informal interview, the bias effect obtained in previous reporting bias studies was described in detail and subjects were asked to comment on these findings. At this point, subjects could formulate their own hypotheses for why individuals might bias their perceptual reports. It was expected that subjects might account for biased reporting by invoking effects such as unconscious influence or reinterpretation, or that biasers might be complying to situational demands. However, it was expected that nonbiasers would be more likely than biasers to invoke compliance hypotheses of reporting bias.

The predicted results of the present study would support the hypothesis that the bias effect consistently obtained in studies using the reporting bias paradigm reflects reporting that is purposely falsified by situational demands. These findings would provide further support for Sutcliffe's (1961) skeptical view of the validity of verbal reports. In addition, the predicted association between reporting bias, suggested colour change and performance on the

hypnotizability screening test would support the social psychological perspective that compliance, rather than dissociation or other unusual cognitive mechanisms, accounts for much of the dramatic perceptual and experiential alterations that are reported by highly hypnotizable subjects in the hypnotic context.

Method

Subjects

Thirty Carleton University introductory psychology students volunteered to participate in a hypnosis experiment of approximately one hour in duration. All of these subjects had pre-tested as high hypnotizables (scores 5 to 7) on the objective dimension of the CURSS (CURSS:O; Spanos et al., 1983). Subjects received course credit for their participation.

Procedure

Hypnotic Colour Hallucination Session. All subjects were administered the procedures for eliciting reports of suggested colour change and demand-induced reporting biases that were used in study 1 (see Appendices A to M, with the addition of the new experimental consent form in Appendix V). These procedures were individually administered by the same male experimenter. Upon completion of the experimental consent form, subjects were administered the ABS or absorption subscale of the Differential

Personality Questionnaire (TAS; Tellegen, 1982; see Appendix W). The absorption subscale of the TAS consists of 34 items which assess the extent of sustained and "noncritical" judgement that is involved during activities such as reading a novel, observing cloud shapes change in the sky and watching a movie. Each item is scored on a 4-point scale with alternatives ranging from "Never" (scored 1) to "Very Frequently" (scored 4).

Interview Session. Following their colour hallucination session, all subjects were led to a different experimental room, where they were greeted by a female experimenter who informed them that she wished to question them about their experiences during the previous session. The procedures used in this interview were adapted from Barnier and McConkey (1992) (see Appendices X to EE). The experimenter asked subjects' permission to tape their responses using a tape-recorder sitting on the table in front of them. Unbeknownst to subjects, their responses throughout the entire interview were also surreptitiously recorded by a tape recorder concealed in a tissue box on the table. The experimenter began the session by briefly describing the procedures used in the previous session and reviewing each subject's colour reports, focusing primarily on the reports given in response to the demand instruction on trial 3 (see Appendix X). Subjects were asked to recall the demand instruction administered after presentation of the trial 3 square and to describe their thoughts when the experimenter gave them this instruction. They were also asked if the instruction had any effect on their colour ratings of that trial and if it pressured

them into reporting the square as more black than they had actually seen it. Subjects were then administered three short questionnaires. The first questionnaire asked them to rate the extent to which they felt pressured by the demand instruction to report the square as less red than they had actually seen it (Ques. 1; see Appendix Y). This questionnaire consisted of a 4-point category rating scale with alternatives ranging from "I felt no pressure" (scored 1) to "I felt strong pressure" (scored 4). The second questionnaire also consisted of a 4-point category rating scale that asked subjects to rate the extent to which the perceived pressure of the instruction led them to give a more black colour rating than they otherwise would have (Ques. 2; see Appendix Z). Scale alternatives ranged from "The pressure didn't lead me to change my rating at all" (scored 1) to "The pressure led me to change my rating by a great deal" (scored 4). Finally, subjects were administered a questionnaire asking them to report the colour of the square "now that the social pressure is off" (Ques. 3; see Appendix AA). This questionnaire consisted of a 5-point category rating scale that was identical to that used for trial ratings in the colour hallucination session.

After these questionnaires were completed, the experimenter asked subjects to describe what the square looked like on trial 3. Following this final question, the experimenter turned off the tape recorder, put down her papers, and appeared to end the interview session. She informed subjects that since the experiment was over, she could tell them a bit more about the study (see Appendix BB). The experimenter described the differences in trial 3 ratings between control and demand instruction subjects that have been

found in similar studies in the past. Subjects were informed that since the instructional demand was given after they had already been exposed to the square, it could not have influenced what they had actually perceived on that trial. The experimenter told subjects that she was interested in determining the reasons why control subjects and demand instruction subjects give conflicting reports on the third trial. Finally, subjects were asked to comment on these findings, and to tell the experimenter whether or not they felt pressured by the instructional demand.

At the end of the informal interview, subjects were orally debriefed (see Appendices CC and DD) and dismissed from the experiment. When the entire study was completed, all subjects were re-contacted and informed that their responses had been recorded by a hidden tape recorder during the entire interview session. They were then asked to sign a release form granting permission for their tapes to be reviewed by the experimenters involved in the study (see Appendix EE).

Judges' Ratings of Interview Variables

The taped interviews were transcribed (see Appendix FF) and were content analyzed by two independent raters, both of whom were blind to subjects' responses during the colour hallucination session. Discrepancies were resolved through discussion. The formal and informal interviews were scored separately for the following variables.

Pressure Reports. In addition to their pressure ratings on the first questionnaire given in the formal interview, subjects were asked in both the formal and informal interviews whether they felt pressured by the instructional demand. The two raters scored these pressure responses on a 3-point rating scale as follows: 0 (not pressured at all), 1 (somewhat pressured), and 2 (definitely pressured). Inter-rater agreement was found to be 93% for the formal interview, and 97% for the informal interview.

Colour Reports. After completing the three questionnaires in the formal interview, subjects were asked, as a "final question", to describe the square on the third trial. Subjects' oral colour reports were coded dichotomously as 0 (completely red) or 1 (mixed red and black). No subject reported that the trial 3 square was completely black. Inter-rater agreement on the colour descriptions was 93%.

Giveaway Statements. For the formal interview, the raters were asked to code dichotomously for the presence or absence of statements indicating that the subject knew, despite his or her oral colour description, that the trial 3 square was actually red. These "giveaway" statements included comments such as "I knew it was red", "I saw it as red, but the instruction made me remember it as black", "I saw black, even though the square was red", and "I know it's not black." The reinterpretation hypothesis would predict that biasing subjects would not make statements such as these because they are reporting honestly about misremembered perceptual experiences. Inter-rater agreement was 100%.

Uncertainty. The two raters also examined subjects' oral colour descriptions for qualifying statements that indicated uncertainty or a lack of confidence in memories of the trial 3 square. Qualifying statements included comments such as, "I think there was black in it", "I saw black in it, but I'm not really sure", and "I thought I saw black, but it probably wasn't there." This variable was coded dichotomously for the presence or absence of such statements. Inter-rater agreement was 93%.

Explanations for Biased Reporting. In both the formal and informal interviews, subjects often gave reasons for why they reported that the trial 3 square had black in it. Subjects cited twelve different reasons why they had biased their reports. For each subject's responses in the formal interview and again in the informal interview, the two raters coded dichotomously for the presence or absence of these explanations. The categories used in the coding scheme are shown in Table 5. Inter-rater agreement for these explanations was found to be 98% in both the formal and informal interviews.

Hypotheses. When subjects were asked to comment on the bias effect obtained in previous reporting bias studies at the beginning of the informal interview, they often devised their own accounts for why individuals would describe the trial 3 square as partially black.

2

PM-1 3 1/2" x 4" PHOTOGRAPHIC MICROCOPY TARGET
NBS 1010a ANSI/ISO #2 EQUIVALENT

PRECISIONSM RESOLUTION TARGETS

Table 5

Explanations for Biased Reporting

- 1.) *Afterimages*
- 2.) *Bad lighting or just "the lighting"*
- 3.) *Reflections on the square/card*
- 4.) *Because my eyes had been shut for a long time*
- 5.) *Because there was black in it* (e.g., "It made me remember it more, that it really was black, "It made me more confident/reassured me that it was black.")
- 6.) *Because of hypnosis* (e.g., "I was still under the effects of hypnosis/the suggestion.")
- 7.) *Because of suggestion/unconscious effects or influence*
- 8.) *Reinterpretation/retrospective influence* (e.g., "It made me remember the square as black", "It made me second-guess what I had seen".)
- 9.) *Imagining/visualization* (e.g., "It made me visualize the square as black/imagine that the square had black in it", "I pictured a black square".)
- 10.) *Convinced myself/made myself think it was black*
- 11.) *Compliance* ("It made me say that it was more black", "It made me want to think that it was more black", "I wanted to conform to the norm".)
- 12.) *Adopting the role of the "good hypnotic subject"/pleasing the experimenter* (e.g., "I thought that if he said that, then I must have seen it as black", "I knew I was deeply hypnotizable, so I thought there should have been black in there".)

These hypotheses were similar to the reasons subjects gave for biasing their own responses. The two raters coded dichotomously for the presence or absence of these hypotheses using the same list as was used in coding the explanations for biased reporting. The difference, however, was that the subjects' hypotheses referred to the biased reporting of other individuals and not to their own. Inter-rater agreement for the presence or absence of these hypotheses was 99%.

Change in Colour Reporting. In both the formal and informal interviews, the raters coded for whether or not the subjects were maintaining or changing their colour reports. Subjects who consistently described the square as red and at no point mentioned that it had black in it were given a score of "0". From their responses during the interviews, it was obvious that these subjects were those who had failed to bias their trial 3 reports in the colour hallucination portion of the study. Subjects who reported that the square had black in it, but then changed those reports by admitting it was red were given a score of "1". Subjects in this group included those who made comments such as "I can make myself believe things that aren't really there, so when he said that, I guess...", "I said it was black...but it was definitely red", and "I guess I was influenced when I said there was black in it. I convinced myself there was". Subjects who maintained that the square really had black in it were given a score of "2". These subjects made comments such as "I honestly think that's [the black] what I saw", "I could still see the black there", and "You can't really pressure someone into describing what they

saw...I know what I saw". Inter-rater agreement for these colour change reports was 87% in both the formal and informal interviews.

Results

Classification into Groups

For most of the analyses conducted for the present study, it was expected that subjects would differ on many of the dependent variables as a function of whether or not they admitted on the colour rating questionnaire given in the formal interview that the trial 3 square was more red than they had earlier reported. On the basis of their colour ratings in the first session and ratings on the questionnaire administered in the formal interview, subjects could tentatively be classified into one of three groups. Subjects who rated the trial 3 square the same as they had on the baseline trial were labelled "nonbiasers". On the colour rating questionnaire administered during the formal interview, nonbiasers reported once again that the square on the third trial was the same colour they had seen it on baseline. The second group of subjects consisted of biasers who rated the trial 3 square during the interview as more red than they had reported it during the colour hallucination session. These subjects were labelled "confessors" because they were admitting that they knew the square was more red than they had reported it earlier. All but one of these subjects rated the trial 3 square on the interview questionnaire the same as they had rated it on baseline. This subject was actually a "partial confessor" in that she reported

the square as more red than she had reported it during the colour hallucination session, but less red than she had on baseline. Finally, the third group of subjects consisted of biasers who rated the trial 3 square during the interview the same as they did during the colour hallucination session (i.e., partially black), and more black than they had rated it on the baseline trial. These subjects were labelled "nonconfessors".

Two discriminant function analyses were conducted to see how well the raters' change in colour reporting scores in the formal and informal interviews could be used to classify subjects into one of the three groups derived from questionnaire colour reports. The responses of one subject during the informal interview were so vague that the raters were unable to assign her a change in report score. Consequently, this subject was left out of the analyses involving the raters' change in reporting scores. However, because she rated the trial 3 square during the formal interview the same as she had rated it on the baseline trial, she was later classified as a "confessor" in subsequent analyses. The first discriminant function was significant, $\chi^2 (2) = 72.96, p < .01$, indicating that subjects could successfully be classified into one of the three groups based on the rater's coded change in colour reports. Overall, 76.7% of the subjects were successfully classified into one of the three groups.

Examination of the classification results indicated that 100% of the nonbiasers were successfully classified into the nonbiasing group from the raters' change in reporting scores. It was also found that 100% of the biasers who were rated as maintaining during the interview that the square had black in it were successfully classified

into the group labelled "nonconfessors". The classification results for subjects labelled "confessors" were not quite so clear. Only 2 (22.2%) of these 9 subjects were successfully classified into the correct group. The remaining 7 subjects (77.7%) were identified as belonging to the group of nonconfessors. Examination of the raw data revealed that these subjects had rated the trial 3 square during the formal interview as more red than they had reported it during the colour hallucination session. It appears that these subjects were willing to admit on the interview questionnaire that they knew the square was more red than they had reported it earlier, but when these same subjects were asked to describe the square in face-to-face communication with the experimenter, they reverted back to their earlier reports and claimed that they had seen black in the square.

For the informal interview, the discriminant function analysis predicting group membership from the raters' change in colour reporting scores was significant, $\chi^2 (2) = 69.00, p < .01$. Examination of the classification results indicated that, overall, 93.1% of subjects were successfully classified into groups on the basis of the raters' change in colour reporting scores. This finding constitutes an appreciable increase after the percentage obtained from the formal interview. As was the case with the analysis for the formal interview, 100% of both nonbiasing and nonconfessing subjects were correctly classified into their respective groups. Six subjects (75%) were successfully classified into the group of confessors, while the remaining 2 (25%) were incorrectly classified into the group of nonconfessors. One of these subjects was identified as the partial confessor discussed earlier. This subject described the square as

having some black in it, but admitted that if the experimenter had not given her the instructional demand, she "would've seen it [the trial 3 square] completely red". While this subject responded more like a nonconfessor in some respects (e.g., she reported no perceived pressure in response to the instructional demand), it was decided to classify her as a confessor in subsequent analyses, thus rendering it more difficult to support the hypotheses of the present study. The second subject who was incorrectly classified was coded as maintaining his report that the square had black in it because he denied that he felt pressured to report the square as black and stated that, "When I saw it, I think it was a little bit black. But I knew the colour was red". This subject contradicted his biased reporting in the colour hallucination session by stating during the formal interview that he knew the square was red and by rating it as completely red on the interview questionnaire. Because this subject correctly identified the colour of the trial 3 square on the interview questionnaire, he was classified as a confessor.

The discriminant function analyses, especially for the change in colour reporting variable in the informal interview, correctly classified the majority of subjects into the group categories derived from the colour ratings on the questionnaire that was administered in the formal interview. As was mentioned earlier, it was predicted that subjects in the three groups would differ in their responding during both the colour hallucination session and the interview session.

Change in Colour Reporting

Two 2 X 2 contingency analyses compared confessors and nonconfessors on the oral colour descriptions given during the interviews. The results of both of these analyses are presented in Table 6. The 2 X 2 contingency analysis for colour reports given during the formal interview failed to attain significance, $\chi^2 (1) = 3.18$, $p > .05$, indicating that both confessors and nonconfessors tended to describe the trial 3 square as partially black.

Examination of the raw data revealed that all nonconfessors continued to report that the square had black in it. Two confessors changed from reporting to not reporting black in the trial 3 square. Six confessors described the square as partially black despite rating it on the interview questionnaire the same as they had on the baseline trial of the colour hallucination session. The remaining confessor was the "partial confessor" described previously who also maintained in her oral description that the square was partially black.

In contrast to this first analysis, the 2 X 2 contingency analysis comparing the colour reports of confessors and nonconfessors during the informal interview was significant, $\chi^2 (1) = 13.65$, $p < .01$. As they had in the formal interview, all 13 nonconfessors maintained in the informal interview that the trial 3 square contained black. In contrast, 6 of the 8 confessors included in this analysis changed from reporting black in the square during the colour hallucination session to not reporting it in the informal interview. Two confessors still reported that they remembered black in the square. Both of these

Table 6

Number of Biasers per Group who Reported Black Versus Did Not Report Black in the Trial 3 Square

Interview Context	Reported Black	Did Not Report Black	χ^2
<hr/>			
Formal			
Confessors	7	2	3.18
Nonconfessors	13	0	
Informal			
Confessors	2	6	13.65**
Nonconfessors	13	0	

Note. ** $p < .01$.

subjects were those described earlier who admitted on the questionnaire that they knew the square was more red than they had reported it during the colour hallucination session.

Reporting Bias and Reinterpretation

The two raters coded the testimony of nonconfessors for the presence or absence of statements made which indicated that they knew the square on the third trial was actually red. Contrary to the reinterpretation hypothesis, 8 of the 13 nonconfessors made comments during the formal interview indicating that they knew they had seen a red square. These comments were very explicit in nature, and included the following: "I know it was red", "I was thinking that I'd see some black and red, and that it was still red", "I think it [the demand instruction] kind of made me forget how red it was", "I saw red. But then maybe since I thought I should have seen all black, I saw black. Even though the card was red". Although these 8 nonconfessors reported knowing that the trial 3 square was red, they nevertheless maintained throughout both interviews that they had seen it as partially black.

Uncertainty in Colour Reports. In the formal interview, the colour descriptions of subjects who described the trial 3 square as partially black were analyzed for the presence of qualifying statements indicating uncertainty about these colour descriptions. Of the 7 confessors and 13 nonconfessors who maintained in the formal interview that the square had black in it, 3 confessors and 8

nonconfessors made statements indicating uncertainty about the square actually containing black. Four confessors and 5 nonconfessors failed to qualify their colour reports. A 2 X 2 contingency analysis failed to attain significance, $\chi^2 (1) = .64, p > .10$, indicating that subjects in the two groups did not differ in the frequency with which they qualified their oral colour descriptions.

Colour Hallucination and Reporting Bias

In order to compare the three groups in the colour hallucination portion of the study, a 3 (Group: Nonbiasers/ Confessors/ Nonconfessors) by 3 (Trials) mixed analysis of variance was conducted on the mean colour ratings across the three trials for subjects in each group (see Table 7). The analysis yielded a significant main effect for Group, $F (2, 27) = 9.83, p < .01$; Effect Size = .42, and Trials, $F (2, 27) = 43.45, p < .01$; Effect Size = .62. These significant main effects are qualified by a significant Group X Trials interaction, $F (4, 54) = 8.15, p < .01$; Effect Size = .38. The mean colour ratings across the three trials for subjects in each of the three groups are presented in Table 8. Simple main effects analyses yielded a significant simple main effect for Group at Trial 2, $F (2, 69) = 14.93, p < .01$. Post Hoc (Tukey's) comparisons indicated that both confessors and nonconfessors reported more suggested colour change on the second trial than did the nonbiasers. The mean colour ratings of confessors and nonconfessors failed to differ significantly from one another on the second trial. A significant simple main effect was also found for Group at Trial 3, $F (2, 69) = 12.08, p < .01$. Post hoc

Table 7

Summary Table for 3 (Group: Nonbiasers/Confessors/Nonconfessors)
by 3 (Trials) Mixed ANOVA

Effect	df	SS	MS	F-Ratio
Main Effects				
Group (G)	2	14.30	7.15	9.83**
Trials (T)	2	28.08	14.04	43.45**
Interaction				
G X T	4	10.53	2.63	8.15**
Simple Main Effects				
Group (G)				
Trial 1	2	.10	.05	.11
Trial 2	2	13.68	6.84	14.93**
Trial 3	2	11.06	5.53	12.08**
Trials (T)				
Nonbiasers	2	.75	.38	1.17
Confessors	2	14.53	7.26	22.70**
Nonconf.	2	30.62	15.31	47.85**

Note. Analysis based on 30 subjects.

** $p < .01$.

Table 8
Mean Group Colour Ratings Across Trials

	Trial 1		Trial 2		Trial 3	
Group	M	SD	M	SD	M	SD
Nonbiasers (n = 8)	4.88 ^a _a	.35	4.50 ^a _a	.54	4.88 ^a _a	.35
Confessors (n = 9)	4.89 ^a _a	.33	3.33 ^b _b	.87	3.33 ^b _b	.87
Nonconf. (n = 13)	5.00 ^a _a	.00	2.85 ^b _b	1.14	3.69 ^b _c	.63

Note. Means within rows sharing common subscripts fail to differ at $\alpha = .05$. Means within columns sharing common superscripts fail to differ at $\alpha = .05$.

comparisons yielded results similar to those found on trial 2. Both confessors and nonconfessors reported substantially more black in the trial 3 square than did the nonbiasers. Again, the mean trial 3 colour ratings of confessors and nonconfessors failed to differ significantly from one another.

Analyses within groups revealed that significant colour changes were reported across the three trials by both confessors, $F(2, 54) = 22.70$, $p < .01$, and nonconfessors, $F(2, 54) = 47.85$, $p < .01$. The simple main effect for nonbiasers failed to attain significance, indicating that nonbiasing subjects did not differ in their colour reports across the three trials. For the confessors, post hoc comparisons indicated that both the trial 2 and the trial 3 squares were rated as significantly more black than that rated on the baseline trial. Ratings on the second and third trials for confessors failed to differ significantly from one another. Post hoc comparisons indicated that nonconfessors also rated the square on trials 2 and 3 as significantly more black than on trial 1. However, the trial 3 reporting biases of these subjects, though substantial, were significantly smaller than the suggested colour change reported on the second trial.

Questionnaire Ratings

A oneway multivariate analysis of variance (MANOVA) compared the ratings of confessors, nonconfessors and nonbiasers on the three questionnaires administered in the formal interview. The MANOVA was significant, $F(6, 52) = 9.81$, $p < .01$; Effect Size = .53. Univariate

analyses indicated that the groups differed in their ratings on the first questionnaire, $F(2, 27) = 3.44$, $p < .05$; Effect Size = .20. Recall that this first questionnaire asked subjects to rate the extent to which they felt pressured to report the trial 3 square as more black than they had actually experienced it to be. Post hoc comparisons indicated that nonbiasers ($M = 2.25$, $sd = .89$) reported experiencing more pressure to rate the trial 3 square as black than did the nonconfessors ($M = 1.54$, $sd = .52$). The mean pressure ratings of the confessors ($M = 2.00$, $sd = .50$) fell between those of the nonconfessors and the nonbiasers, and were not significantly different from the mean ratings of either of these two groups. These results indicate that nonconfessors were less likely to admit that they had experienced any social pressure to bias their reports than were the nonbiasers. Confessors reported experiencing more pressure than did the nonconfessors, but less pressure than the nonbiasers.

The second questionnaire administered in the formal interview asked subjects to rate the extent to which they gave a more black rating on trial 3 because of the pressure they felt. A significant univariate F test indicated that subjects in the three groups differed in their mean ratings on this questionnaire, $F(2, 27) = 7.85$, $p < .01$; Effect Size = .37. Post hoc comparisons indicated that only the confessors admitted that the demand instruction pressured them into reporting the trial 3 square as more black than they had actually seen it. The confessors admitted a greater extent of biased reporting ($M = 1.78$, $sd = .67$) than did the nonconfessors ($M = 1.15$, $sd = .38$) and the nonbiasers ($M = 1.00$, $sd = 0.00$). Subjects in the latter two

groups failed to differ significantly in their mean effects of pressure ratings, and reported that the demand instruction had little effect on their ratings of the third trial.

The third and final questionnaire given in the formal interview asked subjects to rate the colour of the square now that the social pressure was off using the same 5-point colour rating scale that was used to rate the square during the colour hallucination session. The univariate F test was significant, $F(2, 27) = 15.29$, $p < .01$; Effect Size = .53. Post hoc comparisons revealed that nonconfessors ($M = 3.69$, $sd = .63$) reported during the formal interview that the trial 3 square had more black in it than did the confessors ($M = 4.67$, $sd = .50$) and the nonbiasers ($M = 4.88$, $sd = .35$). The colour ratings of the confessors and the nonbiasers failed to differ significantly from one another.

In summary, subjects in the three groups differed in their responses to the three questionnaires administered in the formal interview. Biasers who admitted in the interview that the instructional demand had pressured them into biasing their colour ratings (confessors) reported experiencing as much social pressure to do so as did the nonbiasing subjects. Nonbiasing subjects reported that they had felt pressured into reporting that the square had more black in it than they had actually seen, but that this pressure did not induce them to bias their trial 3 colour reports. In contrast to the pattern of responding exhibited by the nonbiasing subjects and the confessors, biasing subjects who maintained during the interview that they had actually seen black in the trial 3 square (nonconfessors) reported experiencing little social pressure on that

trial and denied that this pressure had any effect on their colour ratings.

Oral Reports of Pressure

A 3 (Group: Confessors/ Nonconfessors/ Nonbiasers) by 2 (Pressure Reports) mixed analysis of variance was conducted on the oral descriptions of pressure given in response to the experimenter's question asking subjects whether or not they felt pressured by the demand instruction to rate the square as more black than they had actually seen it. This question was asked in both the formal and informal interviews, and the dependent variable in this analysis was the raters' scoring of the subjects oral reports as ranging from "no pressure" (scored 0) to "definitely pressured" (scored 2). The results of this analysis are presented in Table 9. The 3 X 2 interaction was not significant, $F(2, 27) = .80, p = .46$. The main effect for the formal and informal pressure reports was also not significant, $F(1, 27) = 3.30, p > .05$. However, a significant main effect was found for Group, $F(2, 27) = 7.89, p < .01$; Effect Size = .37. The relevant means are provided in Table 10. Post hoc comparisons indicated that nonbiasers reported throughout both interviews that they experienced significantly more pressure to bias their trial 3 colour ratings than did the nonconfessors. Confessors reported experiencing more pressure than the nonconfessors, but less pressure than the nonbiasers. However, the extent of pressure reported by the confessors failed to differ significantly from that reported by subjects in either of the other two groups.

Table 9

Summary Table for 3 (Group: Nonbiasers/Confessors/Nonconfessors)
by 2 (Interval) Mixed ANOVA on Oral Pressure Reports

Effect	df	SS	MS	F-Ratio
<hr/>				
Main Effects				
Group (G)	2	6.62	3.31	7.89**
Interval (I)	1	.51	.51	3.30
Interaction				
G X I	2	.25	.12	.80

Note. Analysis based on 30 subjects.

** $p < .01$.

Table 10

Mean Pressure Ratings Across Interview Contexts

Group	n	M	SD
Nonbiasers	8	1.00 _a	.54
Confessors	9	.61 _{ab}	.80
Nonconfessors	13	.19 _b	.33

Note. Means within columns sharing common subscripts fail to differ at $\alpha = .05$.

Explanations for Biased Reporting

Of the 22 biasers in the present study, 18 (81.8%) provided explanations for their biased reporting. Only 1 nonconfessor and 3 confessors failed to offer such explanations. In order to facilitate analysis of the types of reasons given by subjects for biasing their colour reports, the 12 predominant explanations were collapsed into three categories. The first category was labelled *perceptual effects*, and included explanations that did not involve the cognitive processes of the subject. Specifically, the category of perceptual effects included explanations that the square appeared partially black because of lighting or reflections, after-images, having the eyes shut for a long period of time and because the square actually did have some black in it. The second category was labelled *cognitive effects* and included explanations involving the cognitive processes of the subjects. This category included unconscious influence, the effects of hypnosis, reinterpretation of the memory of the square, self-deception, and the use of imagery. The third category was labelled *effects of role demands* and included explanations indicating that the subject was motivated to present himself or herself in a manner consistent with the hypnotic role (e.g., reporting black in the square because it was expected of a deeply hypnotizable subject). For each explanation category, separate 2 X 2 contingency analyses compared confessors and nonconfessors on the frequency with which these explanations were reported in the formal and informal interviews. The results of these analyses are presented in Table 11. None of the 2 X 2 contingency analyses approached

Table 11

Number of Biasers per Group who Provided or did not Provide
Explanations From the Three Categories

Category	Interview Context	Provided	Did Not Provide	χ^2
Perceptual	Formal			
	Confessors	2	7	1.96
	Nonconfessors	4	9	
	Informal			
	Confessors	0	9	3.86
	Nonconfessors	4	9	
Cognitive	Formal			
	Confessors	3	6	.28
	Nonconfessors	3	10	
	Informal			
	Confessors	5	4	1.35
	Nonconfessors	4	9	
Role Demands	Formal			
	Confessors	2	7	.65
	Nonconfessors	5	8	
	Informal			
	Confessors	2	7	3.18
	Nonconfessors	0	13	

significance. These results indicate that during their interviews, confessors and nonconfessors did not differ from one another in the frequency with which the three types of explanations were used to explain biased reporting.

Since confessors and nonconfessors failed to differ from one another in the explanations they provided, they were combined in another series of analyses to determine whether they favoured certain explanations over others. In the formal interview, 15 of the 22 biasing subjects provided explanations for their biased reporting. Three of these subjects provided more than one explanation (e.g., stating that there actually was black in the square and that they reinterpreted their perceptual memory) which were classifiable in more than one category. Obtaining more than one observation per subject violates the assumption of independence of observations needed in order to conduct chi square analyses (Siegel & Castellan, 1988). Thus, Cochran Q tests were used to ascertain whether biasers preferred to use a particular type of explanation to account for their biased reporting.

During the formal interview, *perceptual effects* were cited 7 times by the 15 subjects who provided explanations for their biased reporting, *cognitive effects* were also cited 7 times, and the *effects of role demands* was cited 6 times. The Cochran Q test failed to attain significance, $Q(2) = .14$, $p < .10$, indicating that in the formal context, subjects who attempted to explain their biased reporting did not show a preference for the type of explanation they chose. During the informal interview, 13 biasers provided explanations, and 2 of these subjects provided multiple explanations that were classifiable in

more than one of the three categories. The Cochran Q test was significant, $Q(2) = 6.00$, $p < .05$, indicating significant differences in the frequency with which the three types of explanations were used to account for biased reporting. Unlike the findings obtained from the formal interview, only 2 subjects in the informal interview explained their behaviour by indicating that they were adopting the role of the good hypnotic subject. Four subjects reported perceptual effects, such as after-images and reflections, as the reason they had biased their reports. The most frequently cited explanations were those that were categorized as cognitive effects. Nine subjects provided explanations that fell within this category by commenting that they were still under the effects of hypnosis, had reinterpreted their memory of the trial 3 square, and the like. These findings support the hypothesis that biasers were most likely to explain their biased reporting by invoking cognitive or perceptual effects rather than compliance to role demands.

Hypotheses for Biased Reporting

At the beginning of the informal interview, both biasing and nonbiasing subjects often provided their own hypotheses for why individuals would bias their trial 3 colour reports. These hypotheses were similar to the explanations provided by subjects for their own biased responding and were classifiable in the same three categories.

Preferred Hypotheses. Separate 3 X 2 contingency analyses were conducted to determine whether the groups differed in the

frequency with which the three categories of hypotheses were cited to account for biased reporting. The results of these analyses are presented in Table 12. Examination of the frequencies revealed that only 1 nonconfessor, 1 nonbiaser and no confessors reported that they believed perceptual effects such as reflections on the square or afterimages accounted for the biased reporting of demand instruction subjects. The observed and expected frequencies associated with this category were far too small to allow for meaningful analysis (Siegel & Castellan, 1988). The 3 X 2 contingency analysis for hypotheses belonging to the category of *cognitive effects* failed to attain significance, $\chi^2 (2) = 1.31, p > .10$. This finding indicates that subjects in the three groups failed to differ significantly in the frequency with which cognitive effects such as reinterpretation or unconscious influence were used to account for reporting bias. Finally, a 3 X 2 contingency analysis compared the three groups on the frequency with which compliance or other behaviours associated with role demands were reported. This analysis was significant, $\chi^2 (2) = 11.87, p < .01$. The comparison between confessors and nonconfessors was not significant, $\chi^2 (1) = 1.35, p > .10$. When these two groups were combined and were compared to the nonbiasers, the analysis was significant, $\chi^2 (1) = 10.52, p < .01$. These results indicate that nonbiasing subjects were far more likely than biasing subjects to hypothesize that compliance, expectations and other behaviours consistent with the demands of the hypnotic role are largely responsible for the bias effect typically found in reporting bias studies.

Table 12

Number of Subjects per Group who Provided or did not Provide
Hypotheses From the Three Categories

Category	Provided	Did Not Provide	χ^2
<hr/>			
Perceptual Effects			
Nonbiasers	1	7	NA
Confessors	0	9	
Nonconfessors	1	12	
Cognitive Effects			
Nonbiasers	3	5	1.31
Confessors	2	7	
Nonconfessors	6	7	
Role Demands			
Nonbiasers	6	2	11.87**
Confessors	0	9	
Nonconfessors	3	10	

Note. ** $p < .01$.

In order to ascertain which hypotheses were preferred by biasers and nonbiasers, two Cochran Q tests were conducted. The analysis for the biasers was significant $Q(2) = 7.09, p < .05$, indicating that these subjects exhibited preferences in the types of hypotheses they cited. Of the 11 biasers who offered hypotheses about biased reporting, only 1 hypothesized that perceptual effects accounted for biased reporting, and only 3 hypothesized that compliance or other conforming behaviours were responsible. Most biasers (8) reported that they believed cognitive effects such as unconscious influence and reinterpretation accounted for the bias effect. For the 7 nonbiasers who provided hypotheses, the analysis was not significant, $Q(2) = 3.43, p > .10$. Nonbiasers, unlike biasers, did not seem to prefer one type of hypothesis over others in accounting for the reporting biases that were described to them. As predicted, biasing subjects were more likely to devise hypotheses in which subjects were not responsible for their biased reporting.

Reporting Bias, Suggested Colour Change and Hypnotizability

Two oneway ANOVAs compared nonbiasers, confessors and nonconfessors on the subjective and involuntariness dimensions of the pre-test CURSS. Neither the analysis for the CURSS:*S* dimension, $F(2, 27) = .96, p > .10$, nor the analysis for the CURSS:*OI* dimension, $F(2, 27) = .88, p > .10$, were significant. Table 13 shows the means for these analyses. As predicted by the state perspective, suggested colour change on trial 2 correlated with responding on the subjective dimension of the CURSS (see Appendix HH). However,

Table 13

Mean Responsiveness on CURSS Dimensions for Nonbiasers (n = 8),
Confessors (n = 9) and Nonconfessors (n = 13)

Group	CURSS:S		CURSS:OI	
	M	SD	M	SD
Nonbiasers	10.88 _a	3.18	3.50 _a	1.85
Confessors	10.78 _a	1.99	2.56 _a	1.33
Nonconfessors	12.31 _a	3.25	3.31 _a	1.60

Note. Means within columns sharing common subscripts fail to differ at $\alpha = .05$.

responsiveness on both of these indices also correlated significantly with reporting bias on trial 3. When the effects of reporting bias were significantly controlled, the partial correlation between suggested colour change and subjective responding on the CURSS was not significant. These findings are consistent with the findings of other studies using the reporting bias paradigm (Spanos, Burgess et al., 1993; Spanos et al., 1992; Spanos et al., 1994; Spanos et al., 1991; Spanos et al., 1990), and indicate biased reporting is associated with the hypnotic performance of those subjects who are most responsive to suggestions.

Reporting Bias and Correlates of Hypnotizability

Numerous studies (see de Groh, 1989 for a review) have reported moderate correlations between subjects' expectations about their hypnotic responding and their actual responsiveness to suggestions. As discussed previously, Kirsch (1985) has interpreted these findings as indicating that subjects' expectancies are the direct and unmediated determinant of their hypnotic responding. In the present study, expected colour change predicted suggested colour change on the second trial. This finding is consistent with the response expectancy hypothesis. However, expected colour change also predicted reporting bias on the third trial. As in Spanos, Burgess et al., (1993) and Spanos et al. (1994) the partial correlation between expected and suggested colour change was not significant when the effects of reporting bias were statistically controlled.

Other studies have also reported moderate correlations between absorption and hypnotizability (for a review see de Groh, 1989). In the present study, absorption scores on the ABS were significantly correlated with responding on the subjective dimension of the pre-test CURSS and with suggested colour change in the colour hallucination session. As with expectancies, however, scores on the ABS also correlated with reporting bias. The partial correlations between ABS scores and CURSS:S responding, and ABS scores and suggested colour change, fell to nonsignificance with the effects of reporting bias statistically controlled.

Taken together, these findings support the social psychological hypothesis that responding on questionnaires assessing the correlates of hypnotizability may be biased by the same demands that call for dramatic, suggestion-induced perceptual and experiential alterations (de Groh, 1989; de Groot, Gwynn & Spanos, 1988; Spanos, Arango & de Groot, 1993).

Discussion

Reporting Bias as Conscious Deception

Twenty-two of the 30 highly hypnotizable subjects (73.3%) in the present study responded to the instructional demand by reporting that the square on trial 3 was more black than they had seen it on the baseline trial. Later, 9 of these biasers (40.9%) admitted in their interviews that they knew the third square was more red than they had reported it in the first session. The remaining 13 biasers (59.1%)

maintained their biased reports by stating throughout their interviews that they had seen the third square as partially black. These findings alone could support the hypothesis that the instructional demand had induced distorted recall in more than half of the biasing subjects. However, 8 of the 13 nonconfessors (61.5%) "gave themselves away" by making explicit comments that they knew the trial 3 square was actually red.

Taken together, these findings do not support a reinterpretation account of trial 3 reporting bias. During their interviews, the 9 confessors who changed their colour reports and the 8 nonconfessors who "gave themselves away" could respond in these manners because they had consciously perceived a red square during the third presentation and had accurately remembered it later when questioned about their responding. These findings are consistent with the hypothesis that biased reporting reflects experiences that are purposely misdescribed because of the information conveyed to subjects by the instructional demand.

Biases also exhibited a great deal of uncertainty in their colour descriptions given at the end of the formal interview. Of the 7 confessors and 13 nonconfessors who described the third square as partially black, 11 (3 confessors and 8 nonconfessors) expressed uncertainty about their reports by stating, for example, that they weren't sure they had really seen any black in the square. These qualifying statements could indicate confusion in the memory of the third square. However, it is important to keep in mind that most of the biasing subjects either admitted directly, in the case of the confessors, or indirectly, in the case of the nonconfessors, that they

knew the square was actually red. These findings suggest that subjects may have purposely displayed confusion in order to appear honest about their inaccurate perceptual reporting.

Situational Pressures and the Invalidity of Perceptual Reports

Other studies (Spanos et al, 1989a; Spanos, Gwynn, Comer, Baltruweit & de Groh, 1989; Spanos & McLean, 1986) found that subjects could be induced, under certain conditions, to disavow their earlier reports of hypnotic perceptual and memorial change. Spanos, Gwynn et al. (1989) and Spanos and McLean (1986) obtained disavowals of hypnotic pseudomemory reports by contacting the "hidden observer" of their subjects in a post-test hypnotic session. As discussed in study 1, Spanos et al. (1989a) induced highly hypnotizable subjects to reverse their earlier reports of hypnotic negative visual hallucinations. Spanos and his associates argued that most subjects could be induced to invalidate their earlier reports in post-experimental interviews *when these invalidations were consistent with the hypnotic role*.

There is no question that the post-experimental interview techniques used in the present study placed subjects in the potentially embarrassing position of having to account for their biased reporting. Demands for honest reporting are an implicit component of the hypnotic context, and subjects are well aware that a psychology experiment, as a scientific endeavour, requires honest reporting about subjective experiences (Orne, 1962, 1979, 1981; Spanos, 1986a, 1991). Under the present circumstances, it was

difficult for biasers to invalidate their earlier perceptual reports without appearing dishonest in their initial reporting. Consequently, these subjects chose a number of strategies to avoid or reduce the loss of face they experienced when confronted with their biased reporting.

One strategy chosen by 3 subjects was to argue that the experimenter in the colour hallucination session administered the instructional demand *before* the third presentation of the square. Two of these subjects were nonconfessors, and the third was the "partial confessor" discussed earlier. By describing the experimental procedures in this manner, these subjects implied that the instruction acted as a suggestion which produced the perception of black in the trial 3 square. Such reporting could indicate that these subjects were actually confused about the order with which the events of the previous session had occurred. This hypothesis would be consistent with the reinterpretation account of memorial distortions. However, all 3 of these subjects also explicitly commented that they knew the square was actually red. This finding suggests that they were not confused about the experimental procedures and were especially not confused about the colour of the square that they had seen. Rather, altering the order of the experimental procedures may have been a strategy adopted by these subjects to deflect attention away from their own biased reporting and thus to avoid the social embarrassment of having to account for it.

By far the most common strategy chosen by biasers to avoid losing face was to fail to invalidate their earlier perceptual reports.

The 13 nonconfessors in the present study chose this strategy by maintaining on the third questionnaire and in their oral interview responses that the square was partially black. Consistent with this idea are the differences between nonconfessors and nonbiasers in their reports of perceived pressure and its effects. As discussed earlier, nonbiasers were in no danger of appearing dishonest by reporting accurately about their trial 3 perceptual experiences. Consequently, nonbiasers reported on both the first questionnaire and in their oral testimony that they had felt pressured by the instructional demand to rate the square as more black than they had seen it. Nonconfessors, on the other hand, denied that they felt any pressure to report the third square as more black and also denied that the demand had any affect on their trial 3 colour ratings.

In contrast to these findings, the 9 confessors reported that they experienced more pressure to bias their colour reports than did the nonconfessors, but less pressure than that reported by the nonbiasers. However, confessors, unlike the nonconfessors, reported that the perceived pressure of the instructional demand induced them to describe the trial 3 square as more black than they had actually seen it. In summary, the pressure reports of subjects in the present study reflected strategies aimed at avoiding the loss of face entailed in admitting that they had knowingly biased their perceptual reports. Because nonbiasers were faced with minimal social embarrassment about their colour reporting, they were free to describe the amount of pressure they experienced when given the instructional demand. Consequently, these subjects reported that they had felt pressured to bias their colour ratings, but that the

pressure did not influence them in their actual colour reporting. Nonconfessors, on the other hand, avoided social embarrassment by maintaining that they saw the square as partially black. In order to validate their biased colour reports of the third trial, these subjects could only deny that they had felt pressured by the demand instruction and that it had any effect on their colour ratings.

The interview responding of the confessors merits some discussion. On the third questionnaire, all of the confessors (excluding the "partial confessor") reported that the trial 3 square was the same colour they had seen it on the baseline trial. Despite these reports, however, when asked to describe the square at the end of the formal interview, 7 of the 9 confessors described it as partially black. Only 2 confessors reported in the formal interview that the square was, in fact, red. By the end of the informal interview, however, 5 more confessors changed from reporting to not reporting black in the trial 3 square.

The results for the confessors could be interpreted as follows. These subjects may have found it less socially embarrassing to admit on the questionnaires that the instructional demand had induced them to bias their trial 3 reports than to make these admissions in face-to-face communication with the experimenter. Furthermore, since the experiment appeared to be over, confessors may have believed that they would avoid the social embarrassment of having to account for the discrepancies between their colour ratings on the third interview questionnaire and those given during the colour hallucination session. However, these discrepancies became salient at the beginning of the informal interview when the experimenter

described the differential trial 3 responding of demand subjects and controls and continued to question them about their own responding. Realizing that they had invalidated their earlier perceptual reports on the third questionnaire, confessors may have decided to "come clean" during the informal interview by admitting that the third square was more red than they had reported it earlier. In contrast, nonconfessors had no colour rating discrepancies to account for and could therefore more easily continue to report that they recalled the third square as containing some black.

Explanations and Justifications for Biased Reporting

In the formal interview, 15 of the 22 biasers (7 confessors and 8 nonconfessors) explained their biased reporting by invoking perceptual effects such as after-images and reflections, cognitive effects such as unconscious influence and reinterpretation, and the effects of role demands (e.g., "Probably because he said that, it made me want to think that it was more black than it really was"). The formal interview testimony revealed that these subjects did not prefer one type of explanation over others when accounting for their reporting biases. During the informal interview, 13 biasers offered explanations for their biased perceptual reporting. However, in the informal interview biasers were much less likely to admit that they had biased their reports in order to meet the demands of the hypnotic role. Only 2 subjects, both confessors, made comments indicating that they had complied to experimental demands (e.g., "I looked and tried to find the black, but there wasn't any" and "It [the

demand instruction] probably did influence me to say there was some black in there. And I knew that the square was red."'). In the informal interview, biasers were most likely to attribute their reporting biases to cognitive effects that were beyond their control.

The reinterpretation hypothesis would predict that biasers, particularly those who maintained throughout the interviews that they had seen the square as partially black, would attribute these reports to the fact that the third square actually did contain some black. This finding would be consistent with the idea that biased reporting reflects honest descriptions of memories that are distorted by the instructional demand. However, only 4 nonconfessors, and no confessors, explained that they had reported black in the square because there truly was black in it. In addition, two of these nonconfessors also invoked the influence of perceptual and cognitive effects in accounting for their biased reporting.

Taken together, the explanations for biased reporting that were obtained from the formal and informal interviews reflected attempts, even among the confessors, to present themselves as honest individuals despite their biased reporting. During the formal interview, both confessors and nonconfessors were likely to attribute their biased reporting to the influence of perceptual and cognitive effects. These subjects were also likely to make comments indicating that their reporting biases reflected attempts to conform to the demands of the hypnotic role. However, when the context changed from the formal to the informal interview, confessors and nonconfessors were much more likely to attribute their biased reporting to cognitive effects than they were to the effects of role

demands. At the beginning of the informal interview, the experimenter described the differences between demand subjects and controls and explained that no perceptual alterations could have been experienced by subjects administered the instructional demand. The information that was thus conveyed to subjects by the experimenter indicated to them that she knew their own reports were biased by the instruction. In this context, biasers would lose face in outright admissions that they had purposely misdescribed their experiences because by making these admissions they would appear dishonest in their original perceptual reporting. Consequently, the only way that they could account for their earlier perceptual reporting while still presenting themselves as honest individuals was to disavow responsibility for their biased reports. These disavowals of responsibility could most conveniently be made by contending that the instructional demand exerted unconscious and retrospective influences over which subjects had no control.

As support for the idea that biasers were motivated to appear honest in their reporting, the hypotheses about biased reporting that they and the nonbiasers devised at the beginning of the informal interview were compared. Among the 8 nonbiasers in the present study, 7 offered hypotheses that they believed explained the bias effect described to them by the experimenter. These subjects were equally likely to report the influences of perceptual effects such as after-images (reported by 1), cognitive effects such as unconscious influences and reinterpretation (reported by 3) and response to role demands (reported by 5). With respect to the latter category, the nonbiasers were quite explicit about the effects of role demands,

even reporting that biasers were trying to "be more sociable", "please the experimenter" and were "just lying about seeing the black".

Of the 22 biasing subjects in the present study, 11 provided hypotheses for biased reporting. Unlike those of the nonbiasers, however, the accounts provided by the biasers mostly involved the effects of unconscious cognitive influences. Only 3 biasers, all nonconfessors, mentioned that subjects might be complying to experimental demands, but denied that these demands had any effect on their own perceptual reports. It is clear that the hypotheses provided by biasers, like the explanations they gave for their own biased reporting, were calculated to disavow responsibility for inaccurate perceptual reporting by attributing it to effects that are not under subjects' voluntary control.

Correlates of Hypnotizability and Reporting Bias

In the present study, suggested colour change on the second trial predicted responding on the subjective dimension of the hypnotizability screening test. This finding is consistent with that of study 1 and with those of other studies using the reporting bias paradigm (Spanos, Burgess et al., 1993; Spanos et al., 1992; Spanos et al., 1994; Spanos et al., 1991; Spanos et al., 1990). These findings are also consistent with the significant relationships between hypnotizability and responsiveness to difficult suggestions that are often cited by state researchers (e.g., Hilgard, 1965, 1977, 1979, 1994; Weitzenhoffer & Hilgard, 1963) as demonstrating the inherent capacity to dissociate that is possessed by the most responsive of

hypnotic subjects. However, suggested colour change and pre-test subjective responsiveness in the present study also correlated significantly with reporting bias. As in study 1 and earlier reporting bias studies, the partial correlation between suggested trial 2 perceptual alterations and subjective responding on the CURSS was substantially reduced with the effects of reporting bias statistically controlled. In addition, subjects in the present study who biased their reports on the third trial also reported more colour change in response to the hypnotic suggestion on the second trial than did subjects who failed to bias their trial 3 reports. These findings suggest that the enhanced subjective and perceptual responding of the most highly responsive subjects do not demonstrate the heightened capacity of these subjects to dissociate perceptual experiences from conscious awareness. Instead, these findings demonstrate the greater willingness of these subjects to bias their reports in response to the demands of the hypnotic context.

The present study also assessed the relationship between hypnotic responding, correlates of hypnotizability and reporting bias. As discussed in study 1, Kirsch (1985) argued that subjects' expected responsiveness to hypnotic suggestions determines their actual responding. Kirsch's response expectancy hypothesis is premised on the notion that hypnotic subjects are honest both in reporting their subjective experiences in response to hypnotic suggestions and on questionnaires assessing their expectancies. In the present study, expected colour change significantly predicted reported colour change in response to the hypnotic suggestion on the second trial. As in other reporting bias studies (Burgess et al., 1991; Spanos, Burgess

et al., 1993; Spanos et al., 1992; Spanos et al., 1994; Spanos et al., 1991; Spanos et al., 1990). however, expected colour change also correlated significantly with reporting bias. The partial correlation between expected and suggested colour change in the present study fell to nonsignificance when the effects of reporting bias were statistically controlled.

Similar findings were obtained with absorption as assessed with the ABS (TAS; Tellegen, 1982). Numerous researchers (for a review see de Groh, 1989) have interpreted the moderate relationship typically found between absorption and hypnotic responsiveness as reflective of a stable trait of absorption in imaginative events outside of the hypnotic context. As hypothesized by these researchers, in the present study absorption was found to predict suggested colour change during the colour hallucination session and subjective responding on the screening test of hypnotizability. Because absorption is believed to reflect an inherent attribute of subjects, these researchers would not predict a significant relationship between absorption and biased reporting. In the present study, however, absorption was found to correlate significantly with reporting bias. Furthermore, the significant relationships between absorption and suggested colour change, and absorption and subjective responsiveness on the CURSS were not significant when the effects of reporting bias were statistically controlled.

Taken together, these findings are consistent with the hypothesis of researchers (e.g., de Groh, 1989; de Groot et al., 1988; Spanos, Arango et al. 1993) who argue that the frequently-cited correlates of hypnotizability may reflect responding that is context-dependent. In

other words, questionnaires that attempt to identify these correlates are typically administered within the hypnotic context.

Consequently, responding on these questionnaires may be biased by the same demands that bias overt and subjective responding to hypnotic suggestions.

Conclusion

The results of the present study are consistent with those of previous reporting bias studies and clearly demonstrate that biased perceptual reporting can be elicited through manipulations of situational cues that have nothing to do with hypnosis. From these studies, Spanos and his associates concluded that biased reporting is central to a wide range of hypnotic phenomena that have traditionally been associated with a unique hypnotic state. These findings support the skeptical view, as formulated more than 30 years ago by Sutcliffe (1961), that the verbal testimony of hypnotic subjects cannot be taken at face value if this testimony is not supported by some type of objective corroboration. The empirical research that has attempted to obtain this corroboration has overwhelmingly demonstrated that the perceptual alterations reported by hypnotic subjects are unaccompanied by actual changes in perceptual experience.

The findings of the present studies indicate that biased experiential reporting may often reflect purposeful misrepresentations that are induced by the pressures of hypnotic role demands. These findings support the hypothesis of Spanos et al.

(1989a) that highly hypnotizable subjects will, under some circumstances, knowingly misdescribe their perceptual experiences in response to the situational pressures of hypnotic testing. In the present studies, the association between perceptual reporting that was deliberately falsified and responsiveness to a variety of hypnotic suggestions for perceptual and experiential change supports Wagstaff's (1981, 1986, 1991a) contention that much of hypnotic behaviour can be understood as compliance to experimental demands.

It is important to point out that the present findings do not necessarily indicate that *all* hypnotic responding reflects compliance or deceitful reporting. As indicated earlier, some studies (e.g., Kirsch et al., 1989; Spanos et al., 1989) have obtained findings that are difficult to account for by compliance alone. Nisbett and Wilson (1977) proposed that a great deal of information is processed unconsciously and that when subjective experiences are not distinctive or unique, individuals often refer to contextual cues in order to classify their experiences. Applying an attribution theory framework to reports of hypnotic depth, Radtke and Spanos (1981) argued that the subjective experiences which accompany hypnotic suggestions are often ambiguous in nature. The lack of distinctive internal changes leads hypnotic subjects to rely on contextual information when defining the experiences that accompany their hypnotic responding. If the situation is convincingly defined as hypnosis, subjects will use this information as well as their pre-existing expectations to define themselves as having entered a unique hypnotic state. Thus, while the subjective experiences of

hypnotic subjects are often indistinct, the context in which they find themselves is certainly unique.

In the present studies, however, perception of a bright red square on the third trial cannot convincingly be classified as an ambiguous experience. The findings of these studies indicate that subjects who had consciously perceived the square and accurately remembered it after its removal were nevertheless likely to bias their reports when they were administered the instructional demand. These subjects were unquestionably placed in a situation where they experienced conflicting role demands. On the one hand, they were well aware of the implicit demands to be honest when reporting their perceptual experiences. On the other hand, individuals who were motivated to present themselves as deeply hypnotizable were subtly informed by the instruction that good hypnotic subjects should have seen some black in the square on the third trial. Some subjects failed to respond to this instruction and reported honestly that the square was the same colour they had seen it on baseline. However, since most of these subjects had failed to respond to the hypnotic suggestion on the second trial, they were under no pressure on the third to present themselves as deeply hypnotizable. Only 3 of the 8 nonbiasers in study 2 had reported suggested colour change on the second trial. The perceived conflict in role demands on trial 3 was evident in the interview testimony of one of these subjects who stated that she considered biasing her colour report because she "knew that was what [the experimenter] wanted", but that she decided to report honestly that the square was red.

From the present studies and others using the reporting bias procedures, it appears that responsiveness to the suggestion for perceptual change on the second trial predisposes subjects to biased reporting on the third. The results of the present studies suggest that when responsive subjects experience a conflict in role demands, the desire to maintain self-portrayals as deeply hypnotizable individuals may be stronger than the desire to report honestly on perceptual experiences. The interview testimony of biasers in study 2 indicated that these subjects were aware of demands for honesty and were also aware that they had been less-than-honest when they reported the square as partially black on the third trial. The testimony of some of these subjects tended to suggest that they engaged in strategy use to reduce their feelings of dishonesty when they biased their reports. For example, 4 subjects attempted to engage in self-deception by trying to "convince themselves", albeit unsuccessfully, that the square contained some black. Three subjects reported that they pictured a black square on the third trial. This latter finding could indicate that these 3 subjects imagined a black square as they gave their trial 3 colour ratings in order to feel more honest about their biased reports. Nevertheless, 6 of these 7 subjects commented that they knew the square was actually red. These comments indicated that the self-deception and imagery techniques that were used by these subjects to reduce feelings of dishonesty were unsuccessful in dispelling the knowledge that the square was red despite their reports to the contrary.

In summary, the available empirical evidence indicates that hypnotic subjects may often define ambiguous subjective

experiences as unique to hypnosis by using cues in the hypnotic context to aid them in classifying their internal experiences (Radtke & Spanos, 1981). From a social psychological perspective, reporting of subjective experiences during hypnotic responding may reflect misattributions, focusing attention to or away from stimuli while making causal attributions, self-deception and other factors which suggest that information is being unconsciously processed but which do not presuppose the existence of a unique hypnotic state (Barber, 1979; Diamond, 1989; Coe & Sarbin, 1972; Sarbin, 1981; Radtke & Spanos, 1981; Spanos et al., 1989). In addition, hypnotic subjects actively engage in the use of cognitive strategies in order to produce the subjective effects that accompany their hypnotic responding (Barber, 1979; Spanos, 1986a; Spanos, 1991). Importantly, however, the findings of the present studies, along with those of Spanos et al. (1989a), indicate that when subjects are unable to generate these subjective effects, they may purposely falsify their perceptual reports in order to meet the demands of the hypnotic context and to present themselves as good hypnotic subjects. These findings have profound implications for theories of hypnosis that are based on the assumption that the verbal testimony of hypnotic subjects allows direct access to their private experiences.

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Appendix A

Hypnotic Colour Hallucination Procedure

Instructions Prior to Baseline

In this experiment, we're going to be looking at the way different people perceive colour. In this case, I'm going to ask you to report the colour of a square on a card at different times. It's pretty straightforward. Here we have an experimental consent form which describes the study a bit more and lets you know what your options are.

[THE EXPERIMENTER ADMINISTERS THE CONSENT FORM FOR THE SUBJECT TO REVIEW AND SIGN.]

Appendix B

Informed Consent

GUIDELINE

THE PURPOSE OF AN INFORMED CONSENT IS TO INSURE THAT YOU UNDERSTAND THE PURPOSE OF THE STUDY AND THE NATURE OF YOUR INVOLVEMENT. THE INFORMED CONSENT MUST PROVIDE SUFFICIENT INFORMATION SUCH THAT YOU HAVE THE OPPORTUNITY TO DETERMINE WHETHER YOU WISH TO PARTICIPATE IN THE STUDY.

Research Personnel

The following people are involved in this research project and may be contacted at any time: Cheryl Burgess (Research Personnel, 788-2600, ext. 2683) and/or Dr. Nicholas Spanos (Faculty Supervisor, 788-2600, ext. 2682). Should you have any ethical concerns about this study, please contact Dr. Lise Paquet (Chair, Department of Psychology Ethics Committee, 788-2600, ext. 2692) or Dr. Bill Jones (Chair, Department of Psychology, 788-2600, ext. 2648).

This study involves the perception of colour. On three separate occasions you will be presented with a coloured square on a card. Following each presentation, you will be given a questionnaire which asks you to report the colour of the square. At some point in this procedure, you will receive an hypnotic induction like the one you were given in your first session in this laboratory. We are interested in examining the effects of hypnotic suggestions on people's visual perceptions.

This experiment does not involve any painful or unpleasant sensations. However, if at any time you wish to withdraw from the experiment, you are free to do so without loss of experimental credit or compensation.

I, the undersigned, have read the above and am willing to participate in the experiment described therein. I understand that I am free to withdraw from the experiment at any time.

Signature of Research Participant _____

Signature of Research Investigator _____

Date _____

Appendix C

Instructions for Colour Reporting

A few seconds after each presentation of the coloured square on the card, I will give you a questionnaire to fill out. This questionnaire asks you to circle the number by the colour that corresponds to the colour of the square you saw on the card.

The procedure is this: Before each trial, I'd like you to close your eyes. When I tell you to open them, please do so and look at the card held in front of you. Then, I will take the card away. When the time ends, I will give you the colour report questionnaire to fill out.

Okay, what we're going to do right away is get an initial colour report. Please close your eyes.

[THE EXPERIMENTER ADMINISTERS TRIAL 1 FOR 15 SEC, TAKES THE CARD AWAY FOR A 15 SEC WAITING PERIOD, THEN ADMINISTERS THE COLOUR RATING SCALE.]

Appendix D**Trial 1 Colour Rating Scale**

Please circle the one response that best describes your experience on this last trial. On this trial, the color of the square on the card I saw was:

1	2	3	4	5
Completely black	Mostly black with some red	Equal parts red and black	Mostly red with some black	Completely red

Appendix E

Instructions Prior to Hypnotic Induction Procedure

Okay, now we're ready for the second trial. On this trial, I'm going to give you an hypnotic induction procedure. When people are hypnotized, they are able to produce great changes in their visual perceptions. For instance, while hypnotized, a person is able to 'see' a different colour than the one which is before them. Now, I would like to hypnotize you to see how well the procedure works in altering your perception of colour. Is this all right with you?

Appendix F

Hypnotic Induction Procedure

Close your eyes. Your willingness to be hypnotized depends on your willingness to cooperate. It has nothing to do with your intelligence. As for your willpower, if you want to, you can pay no attention and remain awake all the time. On the other hand, if you pay close attention to what I say, and follow what I tell you, you can easily fall into a hypnotic sleep. Hypnosis is nothing fearful or mysterious. It is merely a state of strong interest in some particular thing. In a sense, you are hypnotized whenever you see a good show, and forget you are part of the audience, but instead feel part of the story. Your cooperation, your interest, is what I ask for. Your ability to be hypnotized is a measure of your willingness to cooperate. Nothing will be done that will in any way cause you the least embarrassment.

Now relax and make yourself entirely comfortable. Relax completely. Relax every muscle of your body. Relax the muscles of your legs. Relax the muscles in your arms. Make yourself perfectly comfortable. Let yourself be limp. Relax more and more, more and more. Relax completely. Relax completely. Relax completely.

Your legs feel heavy and limp, heavy and limp. Your arms are heavy, heavy, heavy as lead. Your whole body feels heavy, heavier. You feel tired and sleepy, tired and sleepy. You feel drowsy and sleepy, drowsy and sleepy. Your breathing is slow and regular, slow and regular.

You feel pleasantly drowsy and sleepy as you continue to listen to my voice. Just keep your thoughts on what I am saying. You are going to get much more drowsy and sleepy. Soon you will be deep asleep, but you will have no trouble hearing me. You will not wake up until I tell you to. Remember that the dangers of hypnosis are a myth. Nothing will be done that is in any way harmful to you. I shall now begin to count. At each count, you will feel yourself going down, down, down, into a deep, comfortable, a deep, restful sleep. A sleep in which you will be able to do all sorts of things I ask you to do. One--you are going to go deeply asleep...Two--down, down, into a deep, sound sleep...Three--Four--more and more, more and more asleep...Five--Six--Seven--you are sinking, sinking, into a deep, comfortable, a deep, restful sleep. Nothing will disturb you. Pay attention only to my voice and the things I tell you...Eight--Nine--Ten--Eleven--Twelve--deeper and deeper, always deeper sleep...Thirteen--Fourteen--Fifteen. You will always hear me clearly no matter how deeply asleep you may be...Sixteen--Seventeen--deep asleep. Nothing will disturb you. You are going to experience many things that I will tell you to experience...Eighteen--Nineteen--Twenty. Deep asleep. You will not awaken until I tell you to do so. You will wish to sleep and have the experiences I shall presently describe.

You are feeling comfortable, relaxed, thinking of nothing, nothing but what I say. Your eyes are closed, comfortable closed. You are thinking of nothing, nothing but what I say. Your arms and legs are heavy, your arms and legs are heavy and you are relaxed. The muscles of your face, arms and legs are relaxed. Your whole body is

relaxed. Drift deeper. It feels as though you are going backward into the darkness, backward into the darkness, and as you go backward into the darkness you feel more and more comfortable, more and more relaxed. You are listening only to my voice, only to my voice, thinking of nothing, absolutely nothing, concentrating only on my voice, listening only to my voice. You are feeling comfortable and relaxed, comfortable and relaxed, and you are in a deep, sound sleep--a deep, sound sleep--fully prepared to respond to and experience what I will ask you to do.

Appendix G

Suggestion for Colour Hallucination

In a moment, I will ask you to again open your eyes and look at the card. This time, however, you will see that the square on the card is no longer red. Instead, you will see a black square on the card. Remember, when you open your eyes, I want you to do your best to see only a completely solid, dark, black square in the center of the card. You will see nothing else on the card, only a black square. You will no longer see the red square that was on the card before. Instead, I want you to do everything you can to see only a black square on the card. Open your eyes and look at the black square on the card.

[THE EXPERIMENTER ADMINISTERS TRIAL 2]

Appendix H

Expectancy Questionnaire

Please circle the one response that best describes what you expect to experience on the next trial. On this trial, I expect that the colour of the square on the card will be:

1	2	3	4	5
Completely black	Mostly black with some red	Equal parts red and black	Mostly red with some black	Completely red

Appendix I

Trial 2 Colour Rating Scale

Please circle the one response that best describes your experience on this last trial. On this trial, the color of the square on the card I saw was:

1	2	3	4	5
Completely black	Mostly black with some red	Equal parts red and black	Mostly red with some black	Completely red

Appendix J

Cancellation of the Colour Hallucination Suggestion

Okay, that's fine. Now, close your eyes and let your vision once again return to normal. Trial 2 is over.

Wake-up Procedure

You are going to wake up in a few minutes. You will feel refreshed, wide awake, and in a good mood. I will count from five to one, and with each count, you will be more fully awake. Five....starting to awaken....four....more and more awake...three....still more and more awake....two....becoming more and more awake....one....wide awake. Open your eyes....wide awake.

Appendix K

Instructions Prior to Trial 3

The next trial is just like trial 1. I'll present the card to you, and when I give you the questionnaire, you will report the colour of the square that you saw. Please close your eyes.

[THE EXPERIMENTER ADMINISTERS TRIAL 3.]

Appendix L

Demand Instruction

People like you who can be deeply hypnotized usually continue to experience the effects of suggestions for a short time, even after the suggestion has ended. For this reason, you probably saw the square as black on this trial.

[THE EXPERIMENTER ADMINISTERS THE TRIAL 3 COLOR RATING SCALE]

Appendix M**Trial 3 Colour rating Scale**

Please circle the one response that best describes your experience on this last trial. On this trial, the color of the square on the card I saw was:

1	2	3	4	5
Completely black	Mostly black with some red	Equal parts red and black	Mostly red with some black	Completely red

Appendix N

Debriefing

This study sought to assess the effectiveness of hypnotic procedures in altering sensory experiences. Much has been written on the effectiveness of hypnotic procedures in altering perception, but few controlled laboratory studies have been conducted to assess these assertions. We are trying to isolate which particular variables, such as expectancies, are related to hypnotic responding.

We have found in previous studies, such as pain studies, that success with suggestions seems to generalize to other situations in the absence of explicit instructions. We examined this phenomenon using a visual stimulus.

We would appreciate it if you would not disclose the procedures of this experiment with others, so that they will have no biased preconceptions should they decide to participate in this study.

Thank you very much for your participation.

If you have any ethical concerns regarding this experiment, please contact any any or all of the following faculty members:

Dr. Nicholas Spanos, ext. 2682, Loeb A307 (Faculty Supervisor)

Dr. Lise Paquet, ext. 2692, Loeb A533 (Chair, Department of
Psychology Ethics Committee)

Dr. Bill Jones, ext. 2648, Loeb B559 (Chair, Department of Psychology)

Appendix O

Hypnotic Negative Visual Hallucination Procedure

Preliminary Instructions

In this session, we're going to be looking at the way people react to hypnotically-induced changes in their visual perception. First of all, I'll be giving you a hypnotic induction and a suggestion which informs you that you won't be able to see a certain stimulus. You will be asked questions about your experiences at different times. Right now, however, I'd like to give you an experimental consent form which describes the study a bit more.

[THE EXPERIMENTER ADMINISTERS THE CONSENT FORM FOR THE SUBJECT TO REVIEW AND SIGN.]

Appendix P

Informed Consent

GUIDELINE

THE PURPOSE OF AN INFORMED CONSENT IS TO ENSURE THAT YOU UNDERSTAND THE PURPOSE OF THE STUDY AND THE NATURE OF YOUR INVOLVEMENT. THE INFORMED CONSENT MUST PROVIDE SUFFICIENT INFORMATION SUCH THAT YOU HAVE THE OPPORTUNITY TO DETERMINE WHETHER YOU WISH TO PARTICIPATE IN THE STUDY.

Research Personnel

The following people are involved in this research project and may be contacted at any time: Cheryl Burgess (Research Personnel, 788-2600, ext. 2683) and/or Dr. Nicholas Spanos (Faculty Supervisor, 788-2600, ext. 2682). Should you have any ethical concerns about this study, please contact Dr. Lise Paquet (Chair, Department of Psychology Ethics Committee, 788-2600, ext. 2692) or Dr. Bill Joiner (Chair, Department of Psychology, 788-2600, ext. 2648).

This study involves the perception of a visual stimulus. You will be given an hypnotic induction procedure like the one you received in the first session in this laboratory. Following this, you will be given a suggestion which informs you that you will be unable to see a figure on a page held before you. At various times during the procedure you will be asked about your experiences during the suggestion. We are interested in examining the effects of hypnotic suggestions on people's visual perceptions.

This experiment does not involve any painful or unpleasant sensations. However, if at any time you wish to withdraw from the experiment, you are free to do so without loss of experimental credit or compensation.

I, the undersigned, have read the above and agree to participate in the experiment describes therein. I understand that I am free to withdraw from the experiment at any time.

Signature of Research Participant _____

Signature of Research Investigator _____

Date _____

Appendix Q

Suggestion for Negative Visual Hallucination

In a moment, I'll ask you to open your eyes and look at a blank piece of white paper held before you. You will see nothing on this paper; it will be blank, absolutely blank, just a blank sheet of white paper. Remember, this paper has nothing on it. It is blank, completely blank. You will see nothing but a blank piece of white paper. Open your eyes, and look at the blank piece of white paper.

[THE EXPERIMENTER HOLDS THE PAPER APPROXIMATELY 50 CM IN FRONT OF THE SUBJECT.]

FIRST PROBE: Do you see anything on the paper?

SECOND PROBE: Please describe the paper.

[THE THIRD PROBE IS ONLY FOR SUBJECTS WHO REPORT SEEING NOTHING ON THE PAPER IN RESPONSE TO THE FIRST TWO PROBES.]

THIRD PROBE: Are you sure you see nothing on the paper?

Appendix R

Cancellation of the Negative Visual Hallucination Suggestion

Okay, that's fine. Now, close your eyes. The suggestion is over. When I ask you to open them again, your vision will have returned to normal.

Wake-up Procedure

You are going to wake up in a few minutes. You will feel refreshed, wide awake, and in a good mood. I will count from five to one, and with each count, you will be more fully awake. Five....starting to awaken....four....more and more awake...three....still more and more awake....two....becoming more and more awake....one....wide awake. Open your eyes....wide awake.

Appendix S

Interview 1 Instructions

In your session with [EXPERIMENTER'S NAME] you were able to look at the page s/he was holding and see nothing on it. The ability to block out visual stimuli in this way is a very interesting talent that only a few hypnotizable possess and I would like to interview you so that you can help us to find out more about the cognitive processes that go on when people are able to see a page but mentally block out what was on the page.

From previous research that we have done we know a little bit about the process. For example, we know that people who were faking hypnosis and people who were really hypnotized describe things very differently. Fakers always say that from the moment they opened their eyes the page was completely blank and they could see absolutely nothing on it. However, deeply hypnotized people always tell us that when they opened their eyes they could see the figure on the paper, but as they kept looking the figure disappeared. As yet, we have little information about how long it takes the figure to disappear after subjects have opened their eyes and looked at it. Therefore, what I'd like you to do is draw, as accurately as you can, what the figure looked like at four different intervals. First, I'd like you to draw what the figure looked like immediately after you opened your eyes, then what it looked like 5 seconds after you opened your eyes, 10 seconds after you opened your eyes, and 15 seconds after you opened your eyes.

Appendix T

Interview 2 Instructions

In your session with [EXPERIMENTER'S NAME] you were able to lock at the page s/he was holding and see nothing on it. The ability to block out visual stimuli in this way is a very interesting talent that only a few hypnotizable possess and I would like to interview you so that you can help us to find out more about the cognitive processes that go on when people are able to see a page but mentally block out what was on the page.

From previous research that we have done we know that deeply hypnotizable people like yourself see absolutely nothing on the paper from the time they opened their eyes. However, people who were not deeply hypnotized sometimes see the figure at least part of the time that they had their eyes open. In other words, these subjects admit that they were not reporting truthfully when they said that they could see nothing on the paper. They actually could see the figure at least part of the time. Therefore, we would like you to draw anything that you saw on the paper at four different intervals. First, I'd like you to draw what the figure looked like immediately after you opened your eyes, then what it looked like 5 seconds after you opened your eyes, 10 seconds after you opened your eyes, and 15 seconds after you opened your eyes. If you didn't see anything on the paper at any point, just leave the page blank.

Appendix U

Debriefing

This study sought to assess the effectiveness of hypnotic procedures in altering sensory perceptions. Specifically, we are interested in examining hypnotic visual alterations.

Much has been written on the effectiveness of hypnotic procedures in altering perceptions, but few controlled laboratory studies have been conducted to systematically test these assertions. We are trying to isolate which particular variables, such as expectancies, are related to hypnotic responding.

We would appreciate it if you would not disclose the procedures of this experiment with others, so that they will have no biased preconceptions should they decide to participate in this study.

Thank you very much for your participation.

If you have any ethical concerns about this experiment, please contact any or all of the following faculty members:

Dr. Nicholas. Spanos, ext. 2682, Loeb A307 (Faculty Supervisor)

Dr. Lise Paquet, ext. 2692, Loeb A533 (Chair, Department of
Psychology Ethics Committee)

Dr. Bill Jones, ext. 2648, Loeb B559 (Chair, Department of Psychology)

Appendix V

Informed Consent

GUIDELINE

THE PURPOSE OF AN INFORMED CONSENT IS TO INSURE THAT YOU UNDERSTAND THE PURPOSE OF THE STUDY AND THE NATURE OF YOUR INVOLVEMENT. THE INFORMED CONSENT MUST PROVIDE SUFFICIENT INFORMATION SUCH THAT YOU HAVE THE OPPORTUNITY TO DETERMINE WHETHER YOU WISH TO PARTICIPATE IN THE STUDY.

Research Personnel

The following people are involved in this research project and may be contacted at any time: Cheryl Burgess (Research Personnel, 788-2600, ext. 2683) and/or; Dr. Nicholas Spanos (Faculty Supervisor, 788-2600, ext. 2682). Should you have any ethical concerns about this study, please contact Dr. Lise Paquet (Chair, Department of Psychology Ethics Committee, 788-2600, ext. 2692) or; Dr. Bill Jones (Chair, Department of Psychology, 788-2600, ext. 2648).

This study involves the perception of colour. On three separate occasions you will be presented with a coloured square on a card. Following each presentation, you will be given a questionnaire that asks you to rate the colour of the square. At some point, you will be administered a hypnotic induction procedure like the one you were given in your first session in this laboratory.

After you are finished with this session, you will be interviewed by a second experimenter. This interview will be audiotaped so that we will have a record of the descriptions you give us.

This experiment does not involve any painful or unpleasant sensations. However, if at any time you wish to withdraw from the experiment, you are free to do so without loss of experimental credit or compensation.

I, the undersigned, have read the above and am willing to participate in the experiment described therein. I understand that I am free to withdraw from the experiment at any time.

Signature of Research Participant _____

Signature of Research Investigator _____

Date _____

Appendix W

TAS
PLEASE CIRCLE THE APPROPRIATE NUMBER
(1 = NEVER; 4 = VERY FREQUENTLY)

1. Sometimes I feel and experience things as I did when I was a child.
Never 1 2 3 4 Very Frequently

2. I can be greatly moved by eloquent or poetic language.
Never 1 2 3 4 Very Frequently

3. While watching a movie, a television show, or a play, I may become so involved that I forget about myself and my surroundings and experience the story as if it were real and as if I were taking part in it.
Never 1 2 3 4 Very Frequently

4. If I stare at a picture and then look away from it, I can sometimes "see" an image of the picture, almost as if I were still looking at it.
Never 1 2 3 4 Very Frequently

5. Sometimes I feel as if my mind could envelop the whole world.
Never 1 2 3 4 Very Frequently

6. I like to watch cloud shapes change in the sky.

Never 1 2 3 4 Very Frequently

7. If I wish, I can imagine (or daydream) some things so vividly that they hold my attention as a good movie or story does.

Never 1 2 3 4 Very Frequently

8. I think I really know what some people mean when they talk about mystical experiences.

Never 1 2 3 4 Very Frequently

9. I sometimes "step outside" my usual self and experience an entirely different state of being.

Never 1 2 3 4 Very Frequently

10. Textures - such as wool, sand, wood - sometimes remind me of colour or music.

Never 1 2 3 4 Very Frequently

11. Sometimes I experience things as if they were doubly real.

Never 1 2 3 4 Very Frequently

12. When I listen to music, I can get so caught up in it that I don't notice anything else.

Never 1 2 3 4 Very Frequently

13. If I wish, I could imagine that my body is so heavy that I could not move it if I wanted to.

Never 1 2 3 4 Very Frequently

14. I can often somehow sense the presence of another person before I actually see or hear him/her.

Never 1 2 3 4 Very Frequently

15. The crackle and flames of a wood fire stimulate my imagination.

Never 1 2 3 4 Very Frequently

16. It is sometimes possible for me to be completely immersed in nature or in art and to feel as if my whole state of consciousness has somehow been temporarily altered.

Never 1 2 3 4 Very Frequently

17. Different colours have distinctive and special meanings for me.

Never 1 2 3 4 Very Frequently

18. I am able to wander off into my own thoughts while doing a routine task and actually forget that I am doing the task, and then find a few minutes later that I have completed it.

Never 1 2 3 4 Very Frequently

19. I can sometimes recollect certain past experiences in my life with such clarity and vividness that it is like living them again or almost so.

Never 1 2 3 4 Very Frequently

20. Things that might seem meaningless to others often make sense to me.

Never 1 2 3 4 Very Frequently

21. While acting in a play, I think I could really feel the emotions of the character and "become" him/her for the time being, forgetting both myself and the audience.

Never 1 2 3 4 Very Frequently

22. My thoughts often don't occur as words but as visual images.

Never 1 2 3 4 Very Frequently

23. I often take delight in small things (like the five-pointed star shape that appears when you cut an apple across the core or the colours in soap bubbles).

Never 1 2 3 4 Very Frequently

24. When listening to organ music or other powerful music, I sometimes feel as if I am being lifted into the air.

Never 1 2 3 4 Very Frequently

25. Sometimes I can change noise into music by the way I listen to it.

Never 1 2 3 4 Very Frequently

26. Some of my most vivid memories are called up by scents and smells.

Never 1 2 3 4 Very Frequently

27. Certain pieces of music remind me of pictures or moving patterns of colour.

Never 1 2 3 4 Very Frequently

28. I often know what someone is going to say before he or she says it.

Never 1 2 3 4 Very Frequently

29. I often have "physical memories"; for example, after I've been swimming I may still feel as if I'm in the water.

Never 1 2 3 4 Very Frequently

30. The sound of a voice can be so fascinating to me that I can just go on listening to it.

Never 1 2 3 4 Very Frequently

31. At times I somehow feel the presence of someone who is not physically there.

Never 1 2 3 4 Very Frequently

32. Sometimes thoughts and images come to me without the slightest effort on my part.

Never 1 2 3 4 Very Frequently

33. I find that different odours have different colours.

Never 1 2 3 4 Very Frequently

34. I can be deeply moved by a sunset.

Never 1 2 3 4 Very Frequently

Appendix X

Session 2 - Interview Procedure

Introduction to Interview

EXPERIMENTER TELLS SUBJECT:

"What I'd like to do now is to have you describe your experiences in the session you just completed where you rated the coloured square. I'll be asking you a few questions, and at various times I'll give you a few short questionnaires to fill out. What we'd like to do is to find out about the experiences people have when they are given the kind of procedures that you've just received. I will be tape-recording your responses as well, so that we have a record of some of the experiences that you describe. Is this all right with you?"

[EXPERIMENTER TURNS ON THE TAPE RECORDER]

Interview Procedure

ORAL QUESTIONS:

"As you recall, after the experimenter showed you the card on trial 3, which was the last colour trial that you were given, you rated the square as [TRIAL 3 NUMERICAL RATING]. On this scale, that means that you saw the square as [TRIAL 3 DESCRIPTION]. Now, this colour rating is [MORE BLACK, THE SAME, MORE RED] than what you

gave on the first trial. On that occasion, you rated the square as [TRIAL 1 NUMERICAL RATING], or [DESCRIPTION]. What we're interested in finding out are the kinds of things people think about and experience during that last trial."

QUESTION 1. "After you were shown the coloured square on the third trial, the experimenter told you that deeply hypnotized people continue to experience the effects of suggestions for a short time even though the suggestion has ended, and for that reason, you probably saw the square on the card as black on that last trial. As you recall, you rated the colour on this trial only after you had been given this instruction. Would you please tell me what you were thinking about when the experimenter gave you this instruction?"

QUESTION 2. "What influence do you think this instruction had on your colour rating of that last trial?"

QUESTION 3. "Did you feel that this statement pressured you in any way to rate the square as more black than you actually saw it?"

QUESTIONNAIRES:

"Now what I'd like to do is to give you a couple of short questionnaires asking you about your experiences on trial 3. Please read them over carefully." [EXPERIMENTER ADMINISTERS THE THREE RATING SCALES, ONE AFTER ANOTHER]

3 OF/DE 3

PM-1 3 1/2" x 4" PHOTOGRAPHIC MICROCOPY TARGET
NBS 1010a ANSI/ISO #2 EQUIVALENT

PRECISIONSM RESOLUTION TARGETS

QUESTION 4. "Can you tell me now what the square looked like during the third trial?"

Appendix Y

Questionnaire 1 (Ques. 1) - Pressure Rating Scale

To what extent did you feel any pressure to rate the square as less red on trial 3 than what you had experienced it to be?

1	2	3	4
I felt no pressure	I felt slight pressure	I felt moderate pressure	I felt strong pressure

Appendix Z

Questionnaire 2 (Ques. 2) - Influence of Pressure

To what extent did you give a lower (more black) colour rating on trial 3 than you had actually seen the square to be because of the pressure you felt?

1	2	3	4
The pressure didn't lead me change my rating at all.	The pressure led me to change my rating slightly.	The pressure led me to change my rating to a moderate degree	The pressure led me to change my rating by a great deal.

Appendix AA

Questionnaire 3 (Ques. 3) - Colour Rating Scale

On trial 3, you rated the square as _____. Now that the social pressure is off, what colour rating would you give the square on trial 3?

1	2	3	4	5
Completely black	Mostly black with some red	Equal parts red and black	Mostly red with some black	Completely red

Appendix BB

Informal Interview Instructions

UPON COMPLETION OF THE INTERVIEW QUESTIONS AND QUESTIONNAIRE ADMINISTRATION, THE EXPERIMENTER SHUTS OFF THE TAPE RECORDER (WHILE KEEPING THE HIDDEN TAPE RECORDER PLAYING), PUTS DOWN HER PAPERS, ETC., ADOPTS AN INFORMAL ATTITUDE AND APPEARS TO END THE INTERVIEW SESSION.

EXPERIMENTER TELLS SUBJECT:

"Now that the experiment is finished, I can tell you a little bit more about the study. We've used the procedures in this experiment a number of times to see what people report about their colour change experiences. Earlier, we discussed what the experimenter told you after you'd seen the square on trial 3. He told you that people who are deeply hypnotized continue to experience the effects of suggestions for a short time and will see the square as black on the last trial. Actually, some people are given this instruction after trial 3, and some are not. When people aren't given this information, their trial 3 ratings are usually the same as those they gave on the first trial. In other words, if they rate the square as "completely red" on the first trial, they usually rate it as "completely red" on trial 3. But when we tell people after they'd seen the square that they probably continued to experience the effects of the suggestion and seen it as black, they sometimes report that they did see the square

as more black than they had on trial 1. We know that this information couldn't have influenced their perception of the trial 3 square, because they'd already seen it and it had been taken away! However, these people often say that the trial 3 square is more black, while people who aren't given this information say it's red. What we want to find out is, what's going on here? Now that you know what we've been doing and what we've been finding in the past, what do you think about these things? Do you have any comments to make?"

[SUBJECT ANSWERS. THEN EXPERIMENTER ASKS:]

"Did you feel any pressure when you heard this instruction?"

Appendix CC

Oral Debriefing

In this study, we are interested in assessing the effects of hypnotic procedures in altering perceptual experiences. Much has been written about the effectiveness of hypnosis in altering perception, but few controlled laboratory studies have been conducted to test these assertions. We are examining these ideas using a visual stimulus.

In addition, we are interested in examining the effects of information given to people after they have been exposed to the visual stimulus. Therefore, after you had already seen the square on the last trial, you were told that people often continue to experience the effects of suggestions even after they have been cancelled, and for this reason you probably saw the square as black on that trial. We would like to find out whether this information affects people's ratings of the colour of the square, and whether or not they felt any pressure to respond in a certain way when they were given this information. The results of this experiment may prove useful to other experimenters when conducting hypnosis studies.

We would appreciate it if you would not disclose the procedures of this experiment with others so that they will have no biased preconceptions should they decide to participate in this study. It is crucial to the success of this experiment that others not know ahead of time what we are doing.

Thank you very much for your participation.

Appendix DD

Ethics Form

If you have any ethical concerns regarding this experiment, please contact any or all of the following faculty members:

Dr. Nicholas Spanos, ext. 2682, Loeb A307 (Faculty Supervisor)

Dr. Lise Paquet, ext. 2692, Loeb 533 (Chair, Department of
Psychology Ethics Committee)

Dr. Bill Jones, ext. 2648, Loeb B559 (Chair, Department of Psychology)

Appendix EE

Debriefing and Audiotape Release Form

A while ago you participated in a hypnosis experiment in which you were asked to rate the colour of a square presented to you on three separate trials. As you recall, you were shown a red square on the first trial and were asked to rate its colour. Before the second trial, you were given a hypnotic induction and the suggestion that you would see a black square on the next trial. Following your colour rating, the colour change suggestion was cancelled and you were given a wake-up procedure. Finally, you were presented with the third trial, which you were told would be just like the first. After you saw the square, but before you rated its colour, the experimenter told you that people who can be deeply hypnotized usually continue to experience the effects of suggestions for a short time, and for this reason you probably saw the square as black on the last trial. From past research we have conducted using these procedures, we know that when participants are provided with this information, they sometimes rate the square as being more black on trial 3 than they had on trial 1.

We are interested in finding out whether the information administered to participants after they have seen the coloured square has any effect on their colour ratings. Participants sometimes report that this information caused them to feel pressure to alter their trial 3 colour ratings in a certain way. When you were interviewed by the second experimenter after this session, you discussed with her some of the things you had experienced during the third trial, and whether or not you had felt any pressure on that trial. As you recall, the experimenter recorded your descriptions with a tape recorder. When the interview appeared to be over, the experimenter turned off the tape recorder and gave you a more detailed description of the study. She described the procedures mentioned above, and asked if you had any comments to make about those procedures. However, we are also interested in finding out what you had to say about the experiment when you thought the session was over. Therefore, we continued to tape your comments with a tape recorder that was hidden from your view. The reason we did this is so we could also have a record of the spontaneous comments you wanted to make about the study.

We want to emphasize that your taped comments about the study will not be assessed until you have given us your permission to use them in our analyses. Should you give this permission, your taped comments will only be assessed by experimenters who are part of this study. No one else will have access to them. Of course, all the information you have given us will be kept confidential as to your identity. Should you decide that you do not want your tapes to be assessed, they will be erased immediately without analysis and without loss of experimental credit or compensation to you.

I, the undersigned, have read the above and give my permission for the taped comments I made in this study to be assessed by the experimenters who are involved in the study. I understand that the comments I made therein will be kept confidential as to my identity.

Signature of Research Participant _____

Signature of Research Investigator _____

Date _____

If you have any ethical concerns regarding this experiment, please contact any or all of the following faculty members:

Dr. Nicholas Spanos, ext. 2682, Loeb A307 (Faculty Supervisor)

Dr. Lise Paquet, ext. 2692, Loeb 533 (Chair, Department of
Psychology Ethics Committee)

Dr. Bill Jones, ext. 2648, Loeb B559 (Chair, Department of Psychology)

Appendix FF

Study 2 Interview Transcripts

[Experimenter's questions and comments are in italics]

NONBIASERS

Subject 1:

Q1. *So, when he gave you that instruction, can you remember what you were thinking about?*

A1. When he told me I saw it as black? (*Yes.*). I was thinking that I didn't see it black the last time, so...[laughs]

Q2. *Okay. What influence do you think that instruction had on your colour rating of this last trial?*

A2. Well, none really, because I didn't see it black...you know, the last time.

Q3. *Did you feel that that instruction contained any pressure to rate the square as more black than you had actually seen it.*

A3. Yeah, kind of. I didn't...Like, I wasn't sure, maybe I wasn't hypnotized. But it felt like I was. And I didn't see any black in it. Like, I saw little bits of black...[unintelligible]...through it. (*That was on trial 2?*) On all of them.

[E. administers the questionnaires.]

Q4. *Tell me now what the square looked like during this last trial.*

A4. It was red with a little line of black through the centre of it. (*And the second trial?*) It was red, pretty much the same.

Informal Interview

[The procedure has been described in detail to the subjects, emphasizing the differences in trial 3 ratings between demand instruction subjects and controls; i.e., controls rate trial 3 as red, demand subjects say they saw some black in it]

t

Q: *Do you have any ideas about what's going on here?*

A. [Laughs.] I have no idea. Interesting, though. But I have no idea.

Q. *When Jerry gave you that instruction, did you feel that there was pressure for you to say that there was more black.*

A. Yeah, I did. Like I just thought, like, I didn't see it, so...Right, yeah, there was a little bit of pressure there. Like I should've saw it black [unintelligible]. (*But in this case you didn't respond to that pressure because your [trial 3] rating is the same [as trial 1].*) Yeah. (*But most people do respond to that...*) Really? Maybe they...maybe they just wanna...they don't want to let the experiment down, kind of thing? (Sort of like they want the experiment to "work", or whatever.) Yeah, yeah. They wanna give you what you're lookin' for. (*Well, see, that's a possibility. And that's the kind of thing we want to find out.*)

Subject 2:

Q1. *What were you thinking about when he was giving you that instruction?*

A1. Um..."Uh oh...it was still red." [Laughs.] Because I saw red. Um...I didn't see any black at all, and.. um...I just saw it red, and he told me I saw black, but I didn't, so...

Q2. *What influence do you think this instruction had on your colour rating of that trial,?*

A2. None. [Laughs] [Pauses]. (*That's fine.*)

Q3. *That instruction that Jerry gave you...Do you feel that it pressured you in any way to rate the square as more black than you actually saw it?*

A3. Yeah, I did. But I wasn't going to do that because of that [laughs]. But, I kinda thought, "Uh oh", because I knew, well I figured, that's what you wanted [laughs]. But I thought, "No, I'm not going to do that", so...It crossed my mind.

[E. administers the questionnaires.]

Q4. *Okay, as a final question, can you just describe to me what the square looked like on the third trial?*

A4. Um...Red. Actually, it was slightly orange, more than red. But, I mean, it was red.

Informal Interview

Q.: *I was just wondering if you had any comments to make about it, what you think might be happening here.*

A.: Um...[laughs]. I have no idea [laughs]. I'm sorry. I don't know. I did think that it...it might have influenced people's ratings of the box. Because I thought about it, kind of...so...but...not at all. I...I told you.

Q.: *Did you feel that that instruction that Jerry gave you was putting some pressure on you to rate the square as more black than you saw it?*

A.: Yeah, a little, a little. I thought...actually I thought, "Am I supposed to say it's black?" [Laughs.] I wasn't sure. I thought, "Well, I'll just say what I saw." But, there was a little bit...of pressure.

Subject 3:

Q1. *Could you tell me what you were thinking about when Jerry gave you that instruction after trial 3?*

A1. Um...About the black? (Uh huh.) Um...I figured it would be black. Because he told me that deeply hypnotized people see it as black. (Okay. Well, this is on trial 3. [reiterates the demand procedures on trial 3]. (Do you remember what was going through your mind when Jerry told you that?). I thought...um...I didn't see that.

Q2. *Okay. What influence do you think that instruction had on your colour rating of that last trial?*

A2. No influence, really.

Q3. *Okay. Do you feel that that instruction pressured you in any way to rate the square as more black than you actually saw it?*

A3. Oh, some.

[E. administers the questionnaires.]

Q4. *Okay, just one more question. Can you describe what the square looked like on trial 3?*

A4. *Trial 3? Um...It was...red.*

Informal Interview

Q: *Do you have any comments to make about the procedures?*

A. *Um...Um...Just.. When I..ah...There was another one...one where I said that I expected to see....(Yeah. The expectancy questionnaire.) And then, um...when I was coming awake, I guess he said it was going to be black. And then, I didn't see the black. Um...At that time I thought that it was [unintelligible]....it's going to be black. (You mean on this last trial?) Yeah, yeah. Experimenter reiterates DI procedures and differences between DI and control subjects.]*

Q: *Did you feel, when you were given this instruction, that there was some pressure for you to say that the square was black?*

A: *Yeah. And that's why I sorta laughed when I saw that it was red. [Laughs.] (That's what we're looking at. The differences when we give people that instruction.) Could that be like...sorta like, when, ah, when you're hypnotized and they bring you back to childbirth and they want to find out if you've been abused. The person who's, ah, doing the hypnotizing puts a suggestion in there that, um, many people think that they've been abused. [E. tells S. what we are looking at in this experiment, and thanks S.] Did I pass or fail [laughs]?*

Subject 4:

Q1. *Would you tell me what you were thinking about when Jerry gave you that instruction?*

A1. That it had been black, or...(Yes.) Um...Actually, that it would most probably would be red again. That's what I was thinking. That was basically it. It seemed red again and I just could see red. I was trying to see the black, but when I saw the thing again it was red, so I just said it was red. (*Okay, but thus is just the third trial, where there was no hypnosis involved at all.*) Okay. Well, I was thinking about the instructions he gave me before, too, like, for the first one [trial 2]. Like, that was going through my mind. And then when he said it was going to be black there was no...I don't know, it was just, like...in my mind, that I didn't see black. (*Okay, so you were thinking back on that colour trial.*) Yeah.

Q2. *Did you feel that that instruction Jerry gave you was pressuring you in any to rate it as more black than you saw it?*

A2. I don't think it's pressure, really...I guess that it's just, like, a suggestion or something, but I don't think it was pressuring me into thinking that it's black. (*Uh huh.*) No, I don't think so. It may, like, not pressure me into thinking, you know, it has to be black, I have to see it as black. Maybe it's just a suggestion that, you know, that I think it might be black. And...it wasn't exactly pressure, no.

Q3. *What influence do you think that instruction had on your rating of that last trial?*

A3. It didn't affect my rating.

[E. administers the questionnaires.]

Q4. *Could you just describe to me what the square looked like during the third trial?*

A4. What it looked like. Um, actually, it kind of looked like orangey-red. Kind of, like, a small square in, sort of, a white piece of paper...right in the centre. Um...I think that's it.

Informal Interview

Q: *What I'm just asking people about after the experiment, is why they think we might be getting these differences between experimentals and controls.*

A: I think that it's hard because you want to believe that you can be hypnotized, you know? Then, you think, "Okay, then, if I don't do that then I guess that I'm not hypnotizable." Like, "if I don't see any black in it. I want to be hypnotized, so..." I guess it depends on the people and the how other people view them. That's what I think. *(So, they're...)* They're perception changes by what others perceive them to be. Like, if someone told you that "this is black" and it's not it's actually red, then just to go along with them and to be more sociable. *(Oh. So you're talking about them just "going along" with it.)* Yes. I think so. Maybe that's it. I don't know [laughs]. *(So, they're not seeing it as black, they're just -)* Yes, I can see that. Just because the experimenter says that...and then they think, "Okay, I'm a highly hypnotizable."

Q: *When Jerry gave you that instruction, did you feel that there was pressure there for you to say that it was more black?*

A: I guess there would be. I didn't...I'm trying to think back, now. I think I said there wasn't, but I think there was a slight pressure. Like, I guess that would determine if you're hypnotizable or not. If you didn't see any black you're not hypnotized...can't be hypnotized or anything like that. But then, um...there was that slight pressure, but not a lot of pressure on me....For the first one (trial 2), I was picturing a black square like he said...but I opened my eyes and saw a red one [laughs].

Subject 5:

Q1. *When Jerry gave you that instruction, can you remember what you were thinking about?*

A1. I don't think I was even thinking of the instruction. I was thinking what the colour was. I have trouble remembering he even said that but...yeah, he did say it. Um...I don't know. I think...I think I was thinking...I was looking for the black, and I didn't see any. (*Uh huh.*) Because, like, I was looking for it, but I couldn't see any black. (*Uh huh. So, the square was gone and you were thinking about...?*) I was thinking about whether I had seen the black or not, and I, I didn't...

Q2. *What influence do you think that instruction had on your trial rating of the colour?*

A2. Um...I thought that it was pretty red, but I... had to make sure that I didn't see any black.

Q3. *Okay. Do you think that that instruction made you feel any pressure to say that the square had more black in it than you actually remembered?*

A3. Um...I guess...Whatever, it's like...causing you to think back on it in order to see the black in it.

[E. administers the questionnaires.]

Q4. *Okay, just one more question. Could you just explain what the square looked like on this trial?*

A4. On the third trial? (*Uh huh.*) Okay. Um...I wasn't too sure but, on the questionnaire it asks you, "with some black", and I wasn't sure what it was talking about...um, was it supposed to be all black, or was it supposed to be darker? But, looking back, I, I...I kind of, um...I

don't know...I kind of thought I saw dark around the outside...darker black - er...darker shaded on the outside than on the inside of the square. But, I, I'm not, like, absolutely positive. Like, I knew it was red, but...[laughs].

Informal Interview

Q: *Do you have any ideas about this, at all?*

A: About why someone would put down black? Well is that typical "to please the, ah, experimenter" or whatever? {Laughs.} Um...I don't know. Maybe they like to think of themselves as deeply hypnotizable, or not, or whatever. So, they put down black. So...I guess...or, maybe that was caused by the suggestion when you're really unsure about what you saw...because you think that maybe there was some black there, so you should have it, so you put down that you should have seen some black.

Q: *When he gave you that instruction, did you feel that there was pressure there, and that you were expected to say that there was some black in it?*

A: Yeah. I don't know. I guess I was...when he said that, I was kind of...I guess I thought I was expected to do it, but I saw the red. Uh huh. Like, I should have seen it [laughs].

Subject 6:

Q1. *Could you explain a little bit about what you were thinking about when he gave you that instruction after the third trial?*

A1. When he asked me that...when he told me that I'll probably see black? Um... Well, I was expecting to see black. I was expecting to see black on this one [points to trial 2], but then, I didn't see it I was

disappointed so um...I was expecting it to be black, actually. (*Okay. Well, it's just this one I'm interested in right now [points to trial 3]*) Oh, okay. [E. reiterates trial 3 procedure.] I think he probably was expecting me to see black on this one [points to trial 2], so that's why he said that on that one [points to trial 3] probably.

Q2. *Okay, well, do you think that that instruction he gave you after trial 3 had any influence on what you rated it as?*

A2. No, it didn't.

Q3. *When Jerry gave you that instruction, did you feel that it was pressuring you to...*

A3. Rate it black? (*Yeah, to rate it as more black.*) Yeah, I felt that pressure. I felt that pressure on trial 2, actually, but I didn't see it so I just put "completely red". (*And how about when you were given that instruction after trial 3?*) Yeah, yeah...I felt there was pressure there to rate the square as black. (*But you didn't do it.*) No. Was I expected to see black? (*Um...not really.*) I didn't think so.

[E. administers the questionnaires.]

Q4. *And could you just describe what the square looked like to you on trial 3?*

A4. Um...it lult looked like a...a square...a square with cardboard all around it on a background...and it was red. The square was red.

Informal Interview

[Before the informal interview begins, S. asks:] How did I do on this one? (*Oh, fine. This is the kind of thing we've sometimes been finding. But, I'll tell you a little more about it now that it's over.*) Was it about the pressure? (*Yeah. That's exactly what it's about.*) Was it about, ah...like...has anyone else done this before? I guess so,

eh? (*This experiment? Yes.*) [E. gives the informal interview information.]

Q: *What do you think of these things?*

A: Cool. I just think that some people felt the pressure and were just lying about seeing black. Are you trying to see how many lie? (*Well, we're trying to get at few things here..*)

Q: *Did you feel pressured by the instruction?*

A: Yeah, I kind of felt pressure. But a lot of pressure on this one [points to trial 2]. I woke up and I looked at it and I knew I was lookin' at what I put down [completely red].

Subject 7:

Q1. *When Jerry was giving you that instruction, can you remember what you were thinking about?*

A1. Um...I was thinking that I probably wasn't really hypnotized. That I saw red, like in terms of the colour. So, when he said that deeply hypnotized people still see it as black...I thought that I wasn't deeply hypnotized because I saw that it was red instead of black.

Q2. *Okay. What influence do you think the instruction had on your colour rating of the third trial?*

A2. I don't think it had any influence at all.

Q3. *Did you feel that that instruction was pressuring you in any way to rate that the square was more black than you actually saw it?*

[E. administers the questionnaires.]

A3. No. [Stops.]

Q4. *Can you describe what the square looked like during the third trial?*

A4. It looked like a really, really red square [laughs].

Informal Interview

Q: *Do you have any comments about what we've been doing and what we've been finding?*

A: Um...Okay, you have been finding that a lot of people will see black once you tell them that they should've seen it? *(They say there's black in it.)* I don't know. I know I didn't, so...[laughs]. I guess it's just to be expected. Because, um...I mean, you don't really know what you're doing here, what exactly is going on at this point. I mean, I've been hypnotized once before and it was different then, so I can understand how people would react when [unintelligible]. *(Oh, I see. If you remember, a lot of questions were asking you about social pressure. Is that instruction pressuring people.)* I would think so. I think it pressures some people.

Q: *Did you feel pressure?*

A: No, but sometimes I feel social pressure. It all depends on the situation, like getting married or whatever. Like, people my age, people I know, etc. etc. *(Right. Well, that's another thing we're trying to see here. The social pressure of that instruction. Now, you didn't respond at all, so-).* I could see it being different...I could see my response on trial 3 being different if I had responded differently on trial 2. If I had seen it black on trial 2, my trial 3 might have been different. *(Well, why do you think that would be?)* Because when he said to me that people who are deeply hypnotized will

continue to see the black there, and I don't know any better, and if I had been deeply hypnotized - which, I don't think that I was - then I might say, "Um...well, maybe it was black. Well, maybe he's right."

Subject 8:

Q1. *Do you remember what you were thinking about on trial 3 when he gave you that instruction?*

A1. Um...[laughs]. Just that the square was red [laughs]. I didn't see black, no. Um...It it was red [laughs].

Q2. *Okay. What influence do you think that instruction had on your colour rating on the third trial.*

A2. Um...I don't think it had any effect. Because I saw the red [laughs].

Q3. *Do you feel that this instruction was pressuring you in any way to rate the square as more black than you actually saw it to be.*

A3. Um...well, it was just a kind of pressure, but I knew it was red when I opened my eyes [laughs].

[E. administers the questionnaires.]

Q4. *And, could you describe what the square looked like on trial 3 as you were looking at it?*

A4. Um...Well, actually it all depends what colour you look at it. It looked sort of orangey-red, but I picked the red [laughs]. But I guess it's the same thing. On trial 3.

Informal Interview

[As S. is filling out payment slip, she says:] I hope that I did it right [laughs]. [E. says she did it just fine, and then explains past findings]. *(Most people who are given that instruction [after trial 3] do it [report there's black in it].)* Well, I knew the square was red [laughs].

Q: *Do you have any idea why some other people might say there's black in it?*

A: Um...maybe after-images? I don't know. Maybe when you look at a red square and you look at a white wall, you'll see the green. Maybe it's the same idea. *(But then the thing is that the control people don't do that and they saw it, too.)* Yeah. I don't know [laughs]. *(I'm wondering if the instruction itself is pressuring them. I mean, they know they saw it as red, but -)*

Q: *When Jerry gave you that instruction, did you feel that you were expected to say that it was black?*

A: Yeah. I mean, like...before, on the second trial, after the hypnosis I really did see a black card. Afterwards, when I didn't see the black card, I thought, "Well, it's definitely not black." *(On this last trial?)* I did see it as red. *(So, you felt some pressure to say it was black on the last trial, but you knew you saw it as red?)* Uh huh.

CONFESSORS

(biasers who rated trial 3 as more red during interview than they had during the first session)

Subject 9:

Q1. *Could you tell me what you were thinking about when Jerry was giving you that instruction?*

A1. Well, just that (unintelligible)...I thought, "I feel really stupid now " [laughs]. I just thought, "Okay".

Q2. *What influence do you think that Jerry's instruction had on your colour rating of the last trial?*

A2. Well, it was actually 4-and-a-half... because it was less intense than with the hypnosis, but it was still...it still had black, so I gave it a 4. Because I saw them as two boxes. Like, a red one with a black outline kind of thing. So, the black one [unintelligible].

Q3. *Do you think that that instruction Jerry gave you pressured you in any way to rate the square as more black than you actually saw it?*

A3. I don't think so. I think I saw it as black, like...four-and-a-half [laughs].

[E. administers the questionnaires.]

Q4. *Can you describe to me what the square looked like on that last trial?*

A4. Well, it was sort of a... red box with sort of a black outline, you know? Like the box was red, you know what I mean? With a black outline and...I don't know. With a red square in the middle. With a black outline, probably. I don't know. [unintelligible] The red sort of faded to black, you know what I mean?

Informal Interview

S. Do people often see it as completely black? (*No, hardly ever.*) Oh okay, oh good. Because, I was, like, "It's not all black." (*No, there may have been had a couple completely black, but not very many. Most people seem to score around the mid range.*) Actually, the first time it confusing. It was, like, "Completely black, completely red". It was, like,...it looked like red with black through it. [unintelligible]. I was, like, "I don't understand. What do you mean" [unintelligible]. (*For this trial [points to trial 2] that's what we expect. This one [points to trial 3] we're interested in what happens when you tell people something after it's over and the square is taken away. What are they going to do? And what we find is that if you don't give people that instruction after they've seen it, they say it's completely red. But if you do give them the instruction after they see it, they say they saw some black in it. Now, these are really different findings. What do you think of this?*) I [pause] don't know [laughs]. Maybe afterwards they start thinking, "Well, I guess..." You know? But, I don't know. [laughs] [Pauses. Silence. Won't continue.]

Q. Well, when Jerry gave you that instruction, do you think it put any pressure on you?

A. Not really. No...no. [laughs]

E. [Experimenter reiterates differences in trial 3 between DI subjects and controls.]

S. I don't know. Yeah, I can see how it could sort of creep in your mind that...that..."What did I see?" [Stops] (*Um hum?*)

Subject 10:

Q1. *Would you tell me what you were thinking when Jerry gave you that instruction?*

A1 On the third trial? (*Yeah, on the third one.*) Um...[Laughs.] Um...I just...was picturing the square as the same thing as when I saw it red...Okay, then that just stuck in my mind. And then when he said it, it was kinda like, "Okay, well then maybe I did see it the same way [as suggested by the DI]." So then I think it might have...affected my answer because I was still kind of....You know. [laughs] It just seems like...Just because I kind of seen it like that pictured in my head...[Pause.]

Q2. *Okay. What influence do you think his instruction had on your colour rating of this last trial?*

A2. Um. Like, uh, I don't know. It was just [unintelligible] and, um...[Pause.]

Q3. *Okay. Did you feel that his instruction ; assured you in any way to rate the square as more black than you actually saw it to be?*

A3. Mm...Maybe a bit, but...uh [laughs] There was, like, some black in it but, um...[Laughs. - uneasy.]

[E. administers the questionnaires.]

Q4. *Now, just one more question. Can you tell me what the square looked like to you on that last trial?*

A4. Um, I just...It looked red, but...then there was a darker colour...and it looked kind of beige black, kinda like, in it. Because I'd kinda seen that in my mind...Maybe because I'd just seen that on trial 2, type thing. (*Kind of a carry-over effect?*) Yeah.

Informal Interview

Q. Do have any ideas about what's happening here?

A. No. [Laughs - Long Pause.]

Q. Well, do you think that the instruction that Jerry gave you...Do you think that it made you feel some pressure?

A. Maybe a bit. Yeah, I don't know because I can make myself imagine things that aren't really there. [laughs] So, like if someone would say something like I could, you know, like...I don't know, just...visualize something as black...then I would just picture it in my head. And then, because he said that...[trials off - long pause]

Subject 11:

Q1. *Would you tell me what you were thinking about when Jerry gave you that instruction?*

A1. [Laughs.] Well, I actually thought, "Why are you telling me this? You shouldn't tell me this." But, I just thought, "Oh, I should probably see black if I see it." And then at first, I saw a little bit of black, but the more I concentrated on it, it seemed that there was a shadow going over it.

Q2. *What influence do you think that instruction had on your colour rating of this trial?*

A2. Probably quite a bit. Probably.

Q3. *Did you feel that that instruction pressured you in any way to rate the square as more black than you actually saw it.*

A3. Maybe it did influence how I looked at it, but I don't think I felt pressure to say it was black. (*Okay, so you'd already seen [the square] and it had been taken away, and then he gave you that instruction. Do you feel that instruction pressured you to say it was more black than you saw it?*) Probably...not...I didn't feel pressured, but probably it did influence me to think that it was more black.

[E. administers the questionnaires.]

Q4. *One more question. Can you tell me now what the square looked like during the last trial?*

A4. The colour...of the square? [E. nods.] Um, it was red, and then it had black around the corners of it. So it was red in the middle, and then it was just sort of grey after that first part.

Informal Interview

Q. *Do you have any comments about this?*

A. I don't know, I...I guess that probably, you know, I was influenced when I thought that, ah..."There's black there", you know. I convinced myself that there was black there [laughs] so...um...I guess the pressure did, you know influence the way I said. (*Because I noticed here that you said you...did experience a little bit of pressure and that maybe it had an affect, and that if you could do it again you'd rate it [the square] the same as you did on trial 1*) Yeah. Probably. (*Now, what we're finding is that we've got a lot of people admitting that.*) [Laughs.] No, I did feel the pressure but...but not...Like, I really did some black in there. Like, not as strong black, but, you know.

Q. *Did you feel pressured by the instruction?*

A. Uh huh. Yeah. But, nothing overwhelming, but...um...you know, I'd probably would look at...definitely now, I'd probably say, "all red", but...knowing me...Now it's like, "It's red, it's really red." [Laughs.] But...Are people just saying like, they see...like, are people saying that they saw red and then they say that it was completely black after, or...? (*Well, most people don't say it's completely black, but that it had black in it. Most people do what you had done.*) Great [laughs].

Subject 12:

Q1. *Now, would you tell me what you were thinking about as Jerry was giving you that instruction?*

A1. Um...I still sort of felt, like...I wasn't completely out of the hypnosis. I just felt, like...I don't know [Stops.]

Q2. *Okay. What influence do you think that instruction had on your rating of that trial?*

A2. Um...It's really hard...um...I'm not sure whether this would've been...really it was black. But I know it's not black. And I don't know whether that had anything to do with [laughs]...with what I, um [did]...because he said that. I don't know, for sure.

Q3. *Okay. Did you feel that that instruction pressured you in any way to rate the square as more black than you actually saw it.*

A3. I'm not sure whether it was pressure, but it...it...um. Maybe if he hadn't have said that, I would've seen it completely red. But I'm not really sure.

[E. administers the questionnaires.]

Q4. *All right. Now, could you just describe to me what the square looked like on trial 3?*

A4. Okay. All I could see was, like, two of the red squares, but...which, one, ah...was darker. Was, um...was just darker than. Like not red, it was more, um...like there was a shadow in it. (*A darker shadow?*) Uh huh.

Informal Interview

[After explaining the reporting bias procedures and explaining the differences in trial 3 colour ratings between demand subjects and controls, the subject says the following:] I think he said that [the demand instruction] before he showed it [the square] to me. (*Uh huh?*) Before he showed me the square. (*Oh. Okay.*) I, I can't...I can't remember exactly, but, um...I think...you know...um...like...I don't know what I'm saying [laughs].

Q: *Well, do you have any idea...Well, it [the demand instruction] is supposed to come afterwards. And when we do give it after people already see it, and when we do, they 'll say they saw some black in it. Do you have any ideas about this? We're just trying to find out what's going on.*

A: Um...I can't even say for sure, if he said it beforehand or after he showed me the square, but I was thinking he showed to me...he said that beforehand. "You...You probably...you...you'll probably see black." And then he showed it to me. But...um...I'm not sure if it would have made that much difference.

Q: *Well, when he told you that, do you think you felt that you were in a situation where you felt some pressure to report the colour a certain way.*

A: It...I don't think there was pressure, it was like...it was like an, an option. To see it that way. It was an...I didn't feel pressure to say,

um...but, it made me think, "Oh. Well. Maybe I will see black", and then I saw it, and there was some black in there.

Subject 13:

Q1. *When he gave you that instruction, can you remember what you were thinking about?*

A1. Um...no, but I saw the black.

Q2. *Do you think that instruction had any influence on what you said the colour was on that trial.*

A2. Yes [laughs]. (*Okay, how do you think it influenced you?*) Um...just to say that it...that I saw complete black. Um, I just pictured it in my head.

Q3. *Do you feel that that instruction he gave you pressured you in any way to rate it as more black than you had actually seen it?*

A3. Um no, I think that it's pressure.to think...um...whether it was...um... whether it was red or black.

[E. administers the questionnaires.]

Q4. *Can you just tell me now what the square looked like to you on trial 3?*

A4. That, essentially it was mostly red. When he said that it should...that you should continue to see it as black, I sort of thought about it more, and...I guess [laughs].

Informal Interview

Q: *Do you have any ideas about what's going on here?*

A: Um...I guess that it has the effect of making you second-guess what you saw and to say that it was really black [laughs].

Q: *When Jerry gave you that instruction, did you feel that it was pressuring you, that you had to say that you saw some black in it?*

A: Um...maybe a little. But not, like, a lot. [E. again explains trial 3 differences between demand instruction subjects and controls.] (*Do have any other ideas about why we're getting these differences?*) [Laughs.] No, not really.

Subject 14:

Q1. *Can you remember what you were thinking about when he gave you that instruction?*

A1. Um...When he said that highly hypnotized people see it as being completely black, still, I mean, you have an after-effect...an after-image...and you can see it as completely black. (*And is that what you saw?*) No. It wasn't all black. It had streaks of black in it.

Q2. *Do you think that that that instruction he gave you influenced your colour rating of the third trial?*

A2. I think so. (*Really?*) I saw streaks of black in it. So, it was mostly black. I think that, after he said that, I kind of saw more black than I would have normally.

Q3. *Do you feel that that instruction pressured you in any way to give a more black colour rating on the third trial than what you had actually seen?*

A3. Yeah, I think a little.

[E. administers the questionnaires.]

Q4. *Okay. Can you just describe what the square looked like to you?*

A4. Um...After he told me that it was supposed to be black? (*Right.*) Um...Well, I...I kind of saw it as being all red in the beginning and then I did see streaks, kind of, forming in it, of black.

TURNED TAPE RECORDER OFF - HIDDEN TAPE RECORDER MALFUNCTIONED, SO THERE IS NO TAPED INFORMAL INTERVIEW - BUT I WROTE DOWN S.'S COMMENTS

Q: *Do you have any ideas about what's going on here?*

A: I don't know.

Q: *Do you think the instruction he gave you pressured you to say that the square was more black than you actually saw it?*

A: A bit. I think I said it was more black when he told me that. I saw it was red when I opened my eyes, but when he told me that I thought I'd seen some black in it.

Subject 15:

Q1. *When Jerry was giving you that instruction, do you remember what you were thinking about?*

A1. Um...Nothing that I can remember then. I just...you know...[trials off - long, long pause].

Q2. *Do you think that that instruction he gave you had any influence on your colour rating of this trial?*

A2. No. Well, I think it influenced me to think of the colour as black. I think that's what I did.

Q3. *Okay. Did you feel that the instruction he gave you pressured you to rate the square as more black than you actually saw it to be?*

A3. No. I know what I saw and I saw...that the square had black.

[E. administers the questionnaires.]

Q4. *Can you tell me now what the square looked like during that last trial?*

A4. It was very...it was very confusing, really. I mean, like, I saw the whole thing was red. And then, like, I remembered it had black. When he said that, I saw it as black. (*Okay.*) But maybe I shouldn't have said it was black, because he could have influenced my ability to remember which colour I saw.

Informal Interview

Q: *Do you have any ideas about why this is happening?*

A: [Long, long pause. S. says nothing.] (*Because, you know, we want to know why we're getting two different findings.*) I don't know.

Q: *When Jerry gave you that instruction afterwards, did you feel any pressure to say that the square was more black than you actually saw it?*

A: I don't think I really was pressured. [Long pause.] (*I was just wondering about this [trial rating questionnaire], where you said that, if you had to rate it again [trial 3 square], instead of 4 you would say that it was red [5]. How come? I'm just curious.*) [Long, long pause.] I think it's because...when it did say the red, I wrote black. I'd like to go over and over it, but I don't think it influenced me that much. When I saw it, I think it was a little bit black. But I knew the colour was red. (*Okay. So you knew it was red, but you saw some black in it.*) Uh huh.

Subject 16:

Q1. *When he gave you that instruction, do you remember what you were thinking about?*

A1. I thought it would be black, but...Every time I saw it differently, it would be black, I'd open up my eyes and it would be black, and it really was. Except the last time, it was, ah...it was all red and in the middle it had black...like on the inside of the square. But on this one, it was streaks, on trial 2. On trial 2, it had black...had some black streaks. (*Okay. So he had given you the hypnotic induction and the suggestion before you saw the square, and when you looked at it you saw it as being partially streaked with black..*) Uh huh, right. (*And then he cancelled it. And then on this trial [points to trial 3] he showed you the square first, and then he gave you the instruction after it was gone.*) I didn't realize he gave it in that order, but...[laughs]. I...I don't know. I was...I guess I was...I don't know, I felt like I was...I don't know...I felt [unintelligible]

Q2. *Okay. What influence do you think that instruction he gave you, had on your trial 3 rating?*

A2. Well, because it was before on trial 2, when he said it would be all black, I expected to open my eyes and it would be all black, but it wasn't. So, I didn't really think it would be all black when he told me that after the trial. *(So, you'd already seen it, and then he gave you that instruction, and do you think that that instruction itself had any effect on what you had said you'd seen.)* Um...Well, I guess a little bit because I was...I guess I was just kind of looking for it to be black. But when I opened my eyes I just looked and I...I didn't try and look into it. Because I tried to do that on the first one [trial 2] and look and see if I could see any black, and think it was black, but it...it was striped but it wasn't all black.

Q3. [E. reiterates trial 3 procedures] *Do you feel that that instruction pressured you to say that it had more black in it than you actually saw?*

A3. Um...Well, I wanted to say it was all black, but it really wasn't, so...No, I guess not. No, maybe it was striped. It probably was, though. I don't know. Um...it might have had a little black, but it didn't have a lot of black, but maybe it kind of...you know. Probably because he had said that it was black, it did make me think that, probably. It might have influenced me. [unintelligible] I saw red but I was thinking black, so I thought it was black. *(So, you thought there might have been a bit of black in there?)* Well, yeah, but, I think it was probably just because I was thinking I had probably seen it. Because...I don't know, probably because he said that [the DI], it probably made me want to think that it was more black than it really was.

[E. administers the questionnaires.]

Q4. *Okay. Can you just describe to me what the square looked like on the third trial?*

A4. The square? I don't know. It looked hard...and red. And...well, with the little bit of black that I saw but it probably was all red.

Informal Interview

Q: [E. explains differences in trial 3 ratings between demand subjects and controls, then says:] *Now, what we're wondering is, what's happening here? Is the instruction itself pressuring people, is it making them want to -*

A: Probably, because I found I looked and tried to find the black, but there wasn't any.

Q: *Do you think you had seen it as red, and that the instruction pressured you -*

A. Yeah, I put down...I put down that I could slightly see some black, but it probably wasn't there. More...of what he said made me think that it was black. *(Did you feel that he was pressuring you at all -)* Well, yeah, because he said that it was mostly black, but I didn't see the black. *(On this one, though [points to trial 3] when he said you had probably seen it as black, so it was gone -)* Oh, no, I didn't see it as black. I saw a little bit of black, but it probably wasn't really black that I had seen, it was just... *(Oh, okay.)*....[E. talks to S. for awhile about past findings, and says:] *(...And that's what we're interested in finding. Is that instruction pressuring people?)* I think so.

Subject 17:

Q1. *Do you remember what you were thinking about when he told you that?*

A1. Well, when he said...when he mentioned that...suggested that I saw it black originally...I wasn't sure, type thing? So, I, kind of...I was thinking in my head, like, "Oh no", or whatever. Like, when he

showed me it again. I wasn't sure it was red (*On this one [points to trial 13.] Yeah. (Okay, on the third trial. Okay. So you'd already seen it, it was taken away, so, it's gone -) didn't he say that I'd probably see it black...that I had seen it black and people who are hypnotized will continue to see it after they're hypnotized, which, I thought...he was expecting me to see it black again. (You already had seen it at that point and it was gone.)*)

Q2. *What influence do you think that that instruction had on your colour rating of the last trial? This one right here [points to trial 3]. When he gave you that instruction, do you think it had any influence on what you said you saw, and what influence would that be?*

A2. I think it...would it have...I think it did, slightly. You know, if you tell me I had seen the black...well...It always goes back to this one here, the second [trial]. When he was telling me I'd see it black and I was relaxed...and I was actually expecting to see it black. And then after I saw it, and I was confused about it, but then, in comparison with the third one, I knew that it was a dark, actual red. Like, even if he said to me it's gonna be black, I wouldn't have believed him. I knew that it would be a red square. But when I looked at it, it seemed like it had sort of little black dots in the square. Maybe it's just the way...maybe because I had my eyes closed for a long period of time, and the lighting in the room, or whatever. Because the first time I saw it, it was completely red, so...I guess...maybe I was seeing black because I expected it to be black. I don't know. I don't know.

Q3. *Well, do you think that that instruction he gave you pressured you in any way to say to say that you saw it as more black than you had actually seen it?*

A3. No, I don't. I don't think it really pressured me. If it was pressure, it was just very, very low. I thought it had dots through it, but I don't think it pressured me. More...more influence, than pressure. (*Um, influence...in what way?*)

Um...AHHH...Um...Influenced me...you're going to see black, you're going to see black, you're going to see black. And I thought, "Maybe I will."

[E. administers the questionnaires.]

Q4. *Could you just describe what the square looked like, when you were looking at it, on trial 3?*

A4. Okay...it looked...Red. Definitely red. There was definitely a lot of red in it, okay? And there was...actually reflections in it. And it looked black, sort of, you know. Actually, there was a lot of...a lot reflections in there. Yeah, there was reflections in it, which I'm sure kind of influenced me that it was black. Like...there were all these different shades in it, right? Like, my eyes were open and I was looking at it and it looked like it had little black spots in it. Like, you know, it was...ah, what would you call it...a consistent, um...shade of black, with little dots in the middle.

Informal Interview

[When E. says that she'll tell him more about the study "now that it's over", he asks:] Pressure's in here, right? [Laughs.] In other words.

Q:. *Do you have any idea about why that would happen?*

A:. No idea. No idea at all. Like, I knew that...well, actually, I knew that the square was red. And I knew that he would definitely be using the same square. I knew that he wouldn't be popping up and down a lot. I knew he'd use the same square red. And I just think...I don't know...I just think that I'd see the red. But I knew it was going to be red, but then...I...I...I kind of knew what he was trying to do. Like, he was going to tell me it's black. And then I actually thought that I was going to see it black. Because I pictured it in my head, right? I just pictured it black, right? And then when I opened my eyes, I saw red. And I think...and I honestly wondered

if it was because I was thinking black, and then I thought, "Maybe there is some black in there", and I'd see red. And then that's why I made...like that's why I said "with some black." I know it wasn't, but...That's on the second. On the third, that's where I was kind of confused, you know? Then I started getting analytical, thinking, "Am I sure it's there, do I see it as black?", things like that. "There's gotta be some black in there." And I'm sure if you showed it to me now, I'd say it was completely red.

Q: *Well, when he gave you that instruction, do you feel you were pressured to say you saw some black in there?*

A: Well...well, initially, when he said...afterwards, he said something as if I had seen it all black - (*This one? [Points to trial 3.]*) Whatever. But, like, you know, "more people say that this is black after, so you saw it completely black." Right? And then, when he starts, you know, saying you see it black after [unintelligible] you go, "Well, I didn't see it black the first time, I'm definitely not going to see it black the second time." Right? So, I don't know whether that caused me to put "some black" or not. Right? maybe with more time after, I probably would've said, "completely red." I'm pretty sure. Like, right now, if I saw it, I'd probably say it was red. I would say...I don't know. I would say there was influence. (*That he had told you that you probably saw it as black -*) Yeah. And come to think of it, now that he did say it, it probably did influence me to say there was some black in there. And I knew that the square was red. Right? But if you knew the state I was in...Like I knew that the square was red. I knew it here [points to trial 3] and I knew it here, too [points to trial 2]. I knew it was red there. And I knew it was red...whenever. And he said something like, "The square is red but you'll see it as black." And that just reinforced the fact that, okay, it is completely red. Right? And...it was weird. (*And you knew this one, the trial 3 one, was red as well, right?*) Yeah, like I...I...The thing is...um...it's like your visual reality, I guess. The reality is it was red. But my perceptual one was, with some black, and that led me to...I guess it would be really different now.

Nonconfessors

(biasers who rated trial 3 the same in the interview
as they had in the first session)

Subject 18:

Q1. *When Jerry gave you that instruction, can you tell me what you were thinking about?*

A1. Well...when he said, "you're going to see the square as black", I thought, "I wonder if I'm going to think it's black because of what I did see, or if I'm going to think it's red." And then when he said that, I thought, "Isn't that going to make me see it as being black?" Like, I wondered if he hadn't have said it, it would have changed what I had seen, you know what I mean? I wondered as to what level his suggestion affected what I saw. So, when he said that I almost felt like saying, "You shouldn't have said that because maybe it changed." You know what I mean?. Not that I would have changed my answer...but if he didn't say...he...he said, "Many hypnotized people find that" or whatever. Which made me go, "I wish he hadn't have said that" then I think it would have been slightly red. Or in other words, I was still under the effects of the hypnosis at that point. Especially since the hypnosis was so long. That one was really, really long. And then coming out, it was like [unintelligible]...it was like, "Oh, that was really quick" so...You know what I mean? (*So, the square had been taken away, and you'd already seen it...and then he gave you that instruction about seeing it as black. Now, what you have to do is remember the square. Because it's not there in front of you anymore.*) Well, that's it. When he said, "I'm going to show it to you again", I was thinking exactly, "I wonder what colour I'm going to see it as?" And then when he said, "many people find...", I went, "Oh, maybe you shouldn't have said that, because that is going to make me do think that I'm supposed to think...to see it as black". You know what I mean? Like I was still under...Because I was imagining it so hard that...But because he said that, I was imagining it as black. So, I looked at it. It wasn't solid black. (*When you were*

thinking about it?) When I was thinking about it, it was black because he said, "Many people see it as black." And when I looked at it, it was really black. (*Okay.*)

Q2. *What influence do you think his instruction had on your colour rating of that trial?*

A2. Well, see, I don't know if I really...I might have looked at it and didn't have seen anything...Like, that it was red. I don't know that... if I really had that. More than having seen it as totally red.

Q3. *Do you feel that that instruction pressured you in any way to rate the square as more black than you actually saw it?*

A3. Not necessarily more black, but just, whatever. Like, I don't feel that it was all just one way or the other. It was almost like when he said it I was disappointed. I was like, "Oh, most people see it as black." I know it affected me, but it didn't affect me either way. It just made me aware of the fact that it's possible that...I didn't see it as totally black.

[E. administers the questionnaires.]

Q4. *Okay, now I just want you to tell me what the square looked like during the trial.*

A4. In the middle? The second trial? (*No, the third trial, sorry.*) Oh, it looked...um...Well, beforehand when I...Like at the start, you know when I saw it and it was completely red, it [the questionnaire] said, "Mostly black with some red.", I thought, "I wonder what that would be like? Black or black and red?" Because all I saw was the red, right? So I didn't know if it was spotty. It's not like that, it's like, um...it's like, um...it's like a shadow, or like a...you know when you take that colour thing and you put it over the lights? (*Uh huh.*) It's like you can tell it's red but you can tell it's black. It's like a dark...um...(That's this trial? The third one?) The third one? Yeah.

It was red, but it was darker, but, ah...Like a red with a shadow on it. (Okay.)

Informal Interview

S. (interrupts) Didn't it go like this? Didn't he say, "Now, you're going to look at the square and then tell me. Some people..." I'm sure he said it before. "Some people are still under the effects and see the square as black", and then I opened my eyes and looked at it. He said it before I looked at it. (Oh.) Yeah, because my eyes were closed, and I was going, I was thinking, "I wonder what it's going to look like when I open my eyes", and then when he said that, I thought, "Oh, maybe that's gonna change what it looks like", and then I opened my eyes and looked at it. (Oh. And that was on trial 2? Trial...?) Trial 3. That was on trial 3. When he said it was over and he counted down, he said now we're going to look at it again. (Right.) And then he goes, "And tell me [unintelligible]. And then he said, "Some people are still under the effects of...and it can alter what you see", and then I looked at it. (And then he showed you the square?) Yeah. I didn't look at it, and then I looked at it. (Oh, okay. It's supposed to go afterwards.) Because that's the difference between somebody who's mind [unintelligible] hasn't changed it any differently and...so they're going, "Oh this is what everybody else does, so this is what I should have been doing" and then writing and then writing it differently just to please the experimenter, eh? (Right.) Yeah. And that's why I said I felt disappointed because I really...because of the test I did at the start, right? They do the same sort of thing where they ask you to do the thing with your arms, right? And then they said...they tapped the table and said, "Now, you're going to forget everything, but write down what you remember. And so then, after they give you back the memory, you again have time to write down.[unintelligible]...because I remembered everything. But the middle page I got [in the amnesia part of the CURSS] didn't have very much stuff on it. And I wondered, "Now if somebody told...Like at that time, I wondered...that's why when I when I was doing this it was the same

type of effect. That's why I said I was disappointed because I thought, "I wonder what it's gonna look like when I open my eyes. Why did he say that? Because it's probably gonna change the way it's gonna look", and then I looked at it.

Subject 19:

Q1. *Would you just tell me what you were thinking about when Jerry gave you that instruction?*

A1. Which instruction? *(The one that came after trial 3. Where he showed you the square...)* And then he told me that hypnotized people...see it as black? *(Right.)* Um...I could remember the black square. I could remember what he told me. And then...he told me that hypnotized people...see a completely black square. I didn't really but I saw it as red with some black in it. *(Okay.)*...[unintelligible - something about "it was, like, a little box".]...To me, it looked dark, I saw some, kind of like, black, but that's because he suggested it to me. And then I saw the red with...dark all over it. *(Okay...You had seen the square and it had been taken away, and then you gave the rating of the colour you saw it. So, he'd already shown it to you and then it was gone, and then he told you about the deeply hypnotized people continuing to see it as black. Now, the description you're giving me...where did that come in? Is that when you are actually looking at the square, or...?)* When I was looking at the square. [Pause. Experimenter reiterates where trial 3 demand instruction is given.]

Q2. *What influence do you think that instruction had on your colour rating?*

A2. I think that he...maybe it made me remember it more. I think...I think I...I just saw more black than I thought it would be. So, I was remembering seeing more black that I actually did...on the red square. Because he told me that after. But, I saw some black,

but I don't think I saw it that much...to actually say there's black on the square.

Q3. *Okay. Do you feel that the instruction that Jerry gave you...pressured you in any way to rate the square as more black than you actually saw it to be?*

A3. Um...No, not really, because there was some black when I opened my eyes...there was some...But I don't think...I would have written number 4 [slightly black] even if he hadn't have told me that. But the fact that he told me kind of made me kind of reassured, or whatever, that I didn't just see anything, but that I really did see what I saw. It...it was kind of there.

[E. administers the questionnaires. While she's filling them out, she asks the following about questionnaire 1.] Well, I didn't feel pressured, like I felt...um...like reassured....sort of...reassured about what I saw. (*Okay.*)

Q4. *Okay, just as a final question. Can you tell me now what the square looked like on the third trial?*

A4. It was red, and...there was like...like...there was like dots on it. Kind of like, you know when you shut your eyes really, really...really, really strong, and you sort of get little dots of white? That's what it looked like when I opened my eyes, but there was dots of black. Not totally black but just...just little dots.

Informal Interview

Q. *Do you have any comment to make about the different findings [between DI subjects and controls] that we've been getting?*

S. Well, I think I would've...said number 4 even if Jerry hadn't told me anything...if he just showed me the square...because that's...that's what I saw. Like, I don't think that...I think that...what he told me

didn't have any influence on what I saw. I would've...I would've written that anyhow. But, I don't know. [Laughs.]. I don't know, so I mean, what are you gonna do? I don't know. Maybe it does suggest to them, you know...maybe it does. But because some people haven't...seen it as black, they think, "Well, should I have seen some black there? Should I have?" And then they might...they might rate that they saw some black just because they think that they should. Because they think, you know, "Well, if he's saying that then there's gotta be a reason, so I must have seen some black. I've gotta have seen some black."

Q. Do you think that instruction pressured you in your rating?

A. No, I don't think so. I don't think so. Because you can't really pressure someone into describing what they saw. Like, I know what I saw, you know. Which, um...actually, I got held up where I work. Yeah, I got in a hold-up and um...I work in pharmacy and they held me up for drugs, and um...I had to go down to the police station and try and identify...and I think, you know, if everyone else in the pharmacy, all the other technicians, would have seen, you know..."I saw a blond guy"...well, I saw a brown-haired guy. I don't care if any suggestion that they all saw a blond-haired guy with thin eyebrows, I saw a black-haired guy with thick eyebrows. I mean, that's what I saw. I went down to the station and I pointed out some guys in a book. It's just like with...what Jerry said when...he said that and maybe it would have pressured someone else, but I know that I saw some black on it. It made almost the square look like a really darker red. You know, almost like fuchsia. Because it was that, kind of like, you know, a darker red. Maybe it's because I had my eyes closed for a long time, too. But I saw some black in it.

Subject 20:

Q1. *So, I'm just wondering what you were thinking about when he gave you that instruction.*

A1. What I was thinking. Um. Well, I didn't think anything. Um. I don't know. I didn't think it worked. (*Okay. Well, this isn't the second trial, where you were given the hypnosis. The hypnosis is already cancelled. This is the third one when he showed it to you, he took it away, and then he said deeply hypnotized people might continue to see it as black. And then you gave your colour rating. Now, when he was telling you that, what was going through your mind?*) Well, um...I wanted to make sure that I did it right and it's not kind of...do what he's saying, type thing, you know...I figure that if he's saying that there's black there, then I must be seeing black, type of thing, you know. [unintelligible]

Q2. *Do you think that his instruction had any effect on your colour rating of that last trial?*

A2. Well, it didn't change my, ah...rating...ah...I don't...I don't really think it did. Um...Let's see...Um...I think because I was trying to control [mumble] a lot on the third...kinda...[mumble, mumble]. so that I tried not to get me to do that [mumble, mumble]. (*Were you trying to remember the colour when you were doing that?*) Well, I was trying to...I guess the colour did a little in comparison with the first time I saw it. Um...Definitely it was a lot darker [on the third trial]. But I wasn't really sure if it was black...Like, I never saw black, I just saw it a lot darker...and that...

Q3. *Do you feel that Jerry's instruction pressured you to say that you saw the square as more black than you actually did see it?*

A3. Not really. I don't think so.

[E. administers the questionnaires.]

Q4. *Just as a final question, can you describe what the square looked like during that last trial?*

A4. Well, it just looked...you know...When I was comparing it with what I remembered the first time, it was just a little darker. Just like a deep red. [mumble, mumble]...black. Like, it didn't completely change to a black colour...[mumble]...It was a deeper red.

Informal Interview

Q: *Do you have any ideas about why we are getting these kinds of differences?*

A: I think it's maybe because...I think it's to please the experimenter...I don't know. But personally I...I didn't feel too pressured into doing it myself. Like, I don't know, maybe it's just bad lighting in there. I [saw it as] a brighter purple...I don't know...Um...But I found myself...um...I don't know what I'm saying...um...I...I don't know. To me, I...I...I'm one of those people who still had the hypnosis effect. It's just that when he was saying that I remember...When he was saying that, I remember trying to...[unintelligible]...and trying to make myself believe it, you know? *(Oh yeah. Here you mean? On the third trial?)* Yeah, it's possible for people...because some people are...once they've gone through hypnosis...they try to get into it. And they say that they really try and do it. Like, not try to lie or something, but try to make themselves...[unintelligible] by seeing it [unintelligible].

Subject 21:

Q1. *I'm just wondering what you were thinking about when Jerry was giving you that instruction.*

A1. Okay. Um. [Laughs.] Well actually, the one thing that I noticed was that the light...the lamp in the experiment seems to be red. And so, I found that I was trying to think red, you know, because of the lamp. And, um, when he showed me the card, I thought, "Okay, I saw it", but then he took it away, um...it didn't look red anymore. And so when he said that some people, you know, see the square as black, I was thinking, "Okay, I'm not crazy" [laughs]. I don't know if that's what you want, but...(Oh yeah. *These are just open-ended questions where you're just giving your impressions. They're very subjective, okay. There are no right or wrong answers.*)

Q2. Okay. *That instruction Jerry gave you after trial 3, what influence do you think it had on your colour rating of that trial?*

A2. Um...Well, I didn't really, like...I didn't really decide what colour to put down because of what he said, but it did make me a little more confident in putting down "2", because...it was kind of confusing on the third trial because what you feel and what you think you know doesn't matter. That's what I'm saying. Because I was thinking about, you know, um...[unintelligible].

Q3. *Do you think that that instruction Jerry gave you pressured you in any way to rate the square as more black than you actually saw it?*

A3. Um...I didn't, but I thought at the time, like, "Okay. Could somebody else maybe?" Like, I know I couldn't do that [unintelligible]. Like, I do know that [laughs]. (Okay.) I...I sort of saw it as, um...as, like, a grid...like, of different colours, as opposed to just a colour. [unintelligible]...not all black.

[E. administers the questionnaires. While S. is filling them out, she says the following:] That's hard. Because I know...I know it was red, but...or I thought it was, different, so...Um...It's...it's not so much a pressure thing. I mean, like...like my brain told me that it was a different colour and I totally thought it was different. But now,

when you ask me about the colour, I say, "Okay, it was red", but when I saw it, it looked different at the time.

Q4. *Okay. This is the last question. Can you just describe one more time what the square looked like on the last trial?*

A4. Um...Well it was, like, a hole cut in the paper, and so it was black with, like red. But it was sort of like a...a red wash over it. Like, if you've ever seen, like, black cloth under red lace...it was like that...like, black with the red over it.

Informal Interview

Q: *Now, I'm just wondering if you have any comments to make about that.*

A. Um, well, in my case, how I saw it was, um...[unintelligible]...but...um...Like I wouldn't feel that there was a long time to [unintelligible] Like, on the second trial I gave it an entirely black rating. ..And so, the whole time I looked at the square, I saw it differently than I did the first time. But, um...actually, what was occurring to me at the time when he said that was...I just thought that, you know, [SOUNDS LIKE - it was just a suggestion] And I can remember thinking that...um...if he told me not to say [unintelligible], I probably would have seen the red in it. Because he told me that um...No, no, well, I did see it was red but it did influence me unconsciously to see black in it. On that third trial.

Q: *When Jerry gave you that instruction, did you feel that there was any pressure there?*

A: Um...I have to...I have to say slightly, I guess, because even though I didn't really feel...like when he was telling me to change [unintelligible]...at that point, um...it didn't, like, it didn't...um...[unintelligible] [E. tells S. that we're trying to find out they experienced during the third trial, and what people think about

the difference between DI subjects and controls]. So, you're hypothesis is that they're going to be different [trial 3 ratings between demand subjects and controls.] (*Oh, definitely they're different. But we just want to find out why they're different. So, we are asking people the kinds of things they experienced during the session.*) I convinced myself it was black, like...because I saw it as black. I mean I was thinking, with the red light there,...that the room was sort of being really red.

Subject 22:

Q1. *Can you remember what you were thinking about when Jerry was giving you that instruction after trial 3?*

A1. Well, I kinda thought...you mean, after hypnotizing me? When he said that deeply hypnotizable people continue to see it as a black square? (*Yes. After trial 2, when the hypnosis was over. But trial 3, he told you it was going to be just like trial 1, and then you looked at it, and then that instruction told you that you'd probably continued to see it as black. So, you'd already seen it on the last trial, he took it away, and then he told you about the deeply hypnotized people seeing it as black, and ...What were you thinking about when he gave you that instruction?*) I recall seeing the square with some black. I was thinking that, um, I'd see some black and red, and that it was still red. Because I'd never [unintelligible]. Because I remember before seeing it as red [trial 1], and that then I was thinking that, um, black was in it [trial 3].

Q2. *Do you think that that instruction Jerry gave you after trial 3 had any influence on your colour rating of this trial?*

A2. I think a little bit. [Stops.]

Q3. *Do you think that it pressured you to say that the square was more black than you remembered it?*

A3. No, I don't think that I felt pressure at all. I don't think that had anything to do with my rating of that trial. *(So, what do you think it had to do with?)* I think it has to do with making you see the black when you saw it. *(Okay, so, it was already gone by then, and then he gave you that instruction that you'd seen it as black.)* Well, after his instruction, I saw it as black.

[E. administers the questionnaires.]

Q4. *Could you just describe what the square looked like on the last trial?*

A4. It changed colour and it was red and it had, like, little flecks of black in it. But not...but I wouldn't say it was, like, black, probably but kind of...it wasn't like a true red. On the first trial it was kind of, like, red.

Informal Interview

Q: *Do you have any idea why that would happen? Why we're getting that finding? Of two different things happening?*

A: Well, I think, um...I don't know...it's kinda like a mind-set. It's just like if you were in a classroom, I think, um...I don't know, if you...something if you were about to write a test or something, and if you were told that it was multiple choice, but in your mind...But in this case, I don't know, I think that it's just because when you hear that afterwards, then, in your mind you start to think that maybe you...you did see something different than what you saw.
[Unintelligible]

Q: *Well, do you think that when Jerry gave you that instruction, you felt pressured to say that there was more black in it.*

A: Not in my mind, so much that I was thinking, like...even when I saw the square, like...to me it wasn't [SOUNDS LIKE - kinda red!...But I know that he said that, um...that if you saw the black it was normal [laughs]. So that made me feel good.

Subject 23:

[E. explains entire procedures, but when she tells S. that demand instruction came after she saw the square but before she rated it, S. says:] I don't remember that [laughs]. [E. explains it again.] Oh, okay. I know I saw black.

Q1. *Can you tell me what you were thinking about when Jerry gave you that instruction?*

A1. I don't know, I just...I just saw some black in there. It was just...like it was in the middle of the colour. [Unintelligible.]

Q2. *Okay. When he gave you that instruction, do you think it had any influence on what colour you said the square was?*

A2. Not really. It was pretty much...I saw most of it red, but in the corner it had some black, but...I don't know.

Q3. *Do you feel that that instruc.on he gave you pressured you to rate the square as more black than you actually saw it?*

A3. Not really, no. Um...Like, I saw it and there was black in there, so...

[E. administers the questionnaires.]

Q4. *Just one more question. Can you describe what the square looked like on trial 3?*

A4. Well, it was...um...the red was all, like, it was almost in the centre of the square and, like, there was, like, black around the corners. Black. And then it just kind of melded together.

Informal Interview

[After E. has explained everything we've found in previous studies, S. says:] You see, I didn't feel any pressure for me because...because I didn't...you know, you would probably think that it was mostly black, but...I mean, it wasn't like the black was the only colour (*On this last trial?*) Yeah. Most people see it...uh, they think it's just like, another hypnotic suggestion...to see the black there, expecting mostly black when they're finished. I mean, like, it's mostly black. Like I didn't...something like that. (*And you remember seeing some black in it?*) Yeah. Just, uh...mostly not too much. It was mostly red, but there was, you know, in the left corner, I saw black.

Q: *Do you have any ideas about why we are getting these differences?*

A. No, uh...like, uh...I don't...I don't know.

Q: *When he gave you that instruction after the square had been taken away, did you feel like there was pressure on you at all to -*

A: Actually, no. Because when he said something about, most people still see a lot of black in it...you know...I didn't feel pressure because I did. You know, because I didn't see...I thought everybody was wrong because I did see...all that black. But, um...I didn't feel pressure to say...(*But you said you saw some black.*) Yeah. But not as much as he thought I should have seen. Not more black than what I actually did.

Subject 24:

Q1. *Do you remember what you were thinking about when he gave you that instruction?*

A1. What I was thinking about? (*Yeah.*) Um...Well, just...I don't know. I wasn't really thinking anything other than the square and what colour...um...what colour it was.

Q2. *Okay. What influence do you think that instruction had on your colour rating of this trial?*

A2. Um...Well, it probably influenced me to think that it was...it was more black than red. Like, ah, I saw more black. Um...And it was red, but...That's actually what I think I saw.

Q3. *Okay. Do you feel that that instruction he gave you pressured you in any to say that the square was more black than you actually saw it to be.*

A3. I don't think it pressured me. I think it kind of made me forget how red it was. I think it made me think it was black [laughs]. Um...more black than red.

[E. administers the questionnaires.]

Q4. *Just one more question. Can you describe what the square looked like on the last trial when you were looking at it?*

A4. It's pretty weird. Like, I find I see red, but it's kinda like it's got black on it. Like it's not, you know, like, um...like not true black, but I find that I see black on it, but I think that it should be red [laughs]. But...um... it was mostly red. I saw black on top of red.

Informal Interview

Q: *I'm just wondering if you had any ideas about what we've been finding.*

A: I don't know. I think it's, ah...I don't know...like, you almost...magically at one level of things. This is...this is...you know what I mean? Like it's...very logical that this is red, but in all honesty, "it might be black". [laughs] You know what I mean? I think...I think...not really...you're not really...kind of like it's more like what you think you saw. I guess because of what suggestion someone's giving you to see. You see it, and you see...I see equal parts of red and black, just like I did here [points to trial 2]. But, um...you kind of think, "Well, that square's red [laughs]. Okay, I know the square's red, so why am I not seeing red." Like, you...This is honestly what I think I'm seeing, but...I know it's not, like, what he was going on about...you know.

Q: *Well, when he gave you that instruction, did you feel that it was pressuring you into saying it was more black than you actually remembered it being?*

A: No, I honestly think that's what I saw.

Subject 25:

Q1. *When Jerry was giving you that instruction, do you remember what you were thinking about?*

A1. Um...Well, I was thinking I'd probably see it as black.. And I saw it as black. (Okay. But you had already seen it on the third trial, and it was taken away. And now he's telling you that deeply hypnotized people see it as black. When he was telling you, do you remember what you were thinking about?) No, I don't remember.

Q2. *Okay. Do you think that instruction he gave you had any influence on what you said you saw on trial 3?*

A2. Um...yeah, yeah it did. Because I was thinking that...I was really thinking that I could see this, like...I could see black. (*Okay. So you'd already seen it, so were you thinking back on what you had seen?*) Yeah.

Q3. *Do you think that Jerry's instruction pressured you in any way to rate the square as more black than what you actually saw?*

A3. Um, no. I think...I think that I was...I think before he said it to me and I saw it, I remember seeing it as black. I saw it and I really think that I saw black in there.

[E. administers the questionnaires.]

Q4. *Can you just describe to me what the square looked like on trial 3 as you were looking at it?*

A4. Um...Well, it was...It had this black around the outside. Like, in the middle there was a lot of red...and then it kind of faded into black around it. And then...it was mostly just red...with sort of black around it.

Informal Interview

Q: *Do you have any ideas about why we might be getting these two different responses?*

A: I don't know. Maybe because some people did actually see some black...probably could see some black. I could still see the black there.

Q: *When Jerry was giving you that instruction, did you feel any pressure to say that it was more black?*

A: Uh, uh. No.

Subject 26:

Q1. *When Jerry was telling you that, can you remember what you were thinking about?*

A1. Um...Well, I thought that I was just thinking that I was...like, deeply hypnotizable, type thing. And I was thinking that, since I was, then I thought there would be some black relative to the first trial.

Q2. *Okay. What influence do you think that that instruction had on your colour rating of the last trial?*

A2. Maybe some. Um...I saw it...I saw the square relatively the same colour as I did on trial 2. But it was nothing compared to trial 1. Trial 1 was completely red, you know, and it definitely wasn't black. Um...and as long as the lights were all the same and everything...like, the lighting in there, then...then that wouldn't have had anything to with it because...hypnotized...then it was because of the hypnosis and not because he told me that.

Q3. *Okay. Do you think that the instruction pressured you in any way to say the square was more black than what you actually saw it be?*

A3. No. I don't think so.

[E. administers the questionnaires.]

Q4. *Okay. Can you just describe to me what the square looked like on trial 3 as you were looking at it?*

A4. Um...It sort of looked .like, red...and , like, red and black. Kind of a...kind of a whole other colour, not...not just red, I think. Like it was kind of, almost. like, purple. With the black.

Informal Interview

Q: *Do you have any comments about that? Do you have any ideas about why we're getting these two different findings?*

A: Well, I suppose if you, ah...if you'd just been under hypnosis, then you're used to getting a suggestion and following the instruction. Maybe, so I think it might influence you. But, um...for me, I mean, I was just reporting it very honestly.

Q: *When he told you that, did you feel that it was pressuring you to say something different than what you really experienced?*

A: No, it wouldn't...I couldn't describe it as pressure. It was...it just influence to...go along with thinking that it was black. Like, I didn't...I don't remember exactly seeing the red and saying black, because that's what he wanted.

Subject 27:

Q1. *Do you remember what you were thinking about when he gave you that instruction?*

A1. Nothing. (Okay.) I think that I was probably just listening to his voice.

Q2. *What influence do you think that instruction had on your colour rating of that trial?*

A2. I don't know. I still continued to see the square as black. [Pause.] (*Okay, well, we'll be talking about that.*) Well, I would have to say that this colour [points to trial 3] was different from the second trial. (*So, you wrote on hear that the first trial looked more orange to you, and the third one looked more brown.*) Burnt-orange.

Q3. *Do you think that that instruction Jerry gave you pressured you in any way to say that the square as more black than you had actually seen it?*

A3. No. [Emphatically. Stops.]

[E. administers the questionnaires. S. reads the third questionnaire out loud, the one that says, "Now that the social pressure is off, what colour rating would you give the square on trial 3", then says:] That's a weird question. You know. Because I did experience black and I said after..."Let me see that square." And when I looked at it, like under the light, it was really red. You know? But I don't think that has to do with social pressure. I don't know.

Q4. *Can you just tell me what the square looked like during the last trial, as you were looking at it?*

A4. What it looked like? Well, it was, ah...consistent. You know, like, the burnt orange colour was consistent.. All over. And it was, like, a square...and it was different from trial 2, where the black was all in the middle and the rest was red.

Informal Interview

Q: *Do you have any ideas about why we are getting these two different findings?*

A: I don't really know. Beats me [laughs]. What I do know is that when Jerry was using the hypnotic induction - and I told him this afterwards - um...when he kept suggesting, "black", um...there was actually black in my visual field. You know when he asked me to? *(We get a lot of different reports about what people see on the second trial. But it's just this trial, the third trial, that we just can't really figure out. Why the instruction's doing this to people.)* Maybe it's an after-image. *(Well, maybe people are remembering it a certain way, or maybe the instruction is pressuring them to say it's more black than they saw it.)*

Q: *When Jerry was giving you that instruction, did you feel that it was pressuring you?*

A: No. No, not at all. You know, and the colours that I saw in the different trials were quite distinctly different. Like, this was one [points to trial 1] was very deep orange. It was robust, you know. This one [points to trial 2] was mostly robust orange, but with brown in the middle. Almost like a square within a square. This one [points to trial 3] was burnt orange. Like...But it was consistent. All over. The colours were, you know...I mean, the only thing I can offer is that the only thing I experienced was three different colours. Three different times. Significantly different. Like, I can't tell you why that is. Who knows?

Subject 28:

Q1. *When he gave you that instruction, do you remember what you were thinking about?*

A1. Um...Just that before he gave it to me, it was partially black, so it was darker than on...(Than on...?) Well, it was the same as it was on trial 2.

Q2. *Okay. What influence do think that instruction had on your colour rating on this trial?*

A2. Um...Not a lot, because I could really see it as black...I could really see it as darker. Yeah. It was black. (E. reiterates trial 3 procedures.) *(Do you think that that had any influence on what you said you had seen?)* Um...yeah. A little bit. Just a little. Um...just that after, you know, I expected that it was darker, kind of thing.

Q3. *Okay. Do you feel that that instruction pressured you in any way to rate the square as more black than you actually saw it to be?*

A3. No. Uh uh.

[E. administers the questionnaires.]

Q4. *Okay. Could you just describe what the square looked like on trial 3 as you were looking at it?*

A4. Um it was red like, you could tell it was still red, but it was a lot darker than...The more I looked at it, the darker it gets.

Informal Interview

Q: *Do have any ideas about it?*

A: No. So you think it has something to do with the instruction? At the end? *(Yeah.)* Um...I don't know. [Stops.]

Q: *Did you feel any pressure when Jerry gave you that instruction? Like, did you feel that you were expected to say -*

A: Um... not when I really think about it. Like, I didn't really see that much black in it to begin with, so it was just...I don't know, I don't think so. I didn't see that much black in it.

Subject 29:

Q1. *When he was giving you that instruction, do you remember what you were thinking about?*

A1. *When he was telling me that I still was going to see it as black? (You'd already seen it and he was telling you that you probably had seen it as black.) Oh, I don't know [laughs]. Like...I don't get what you mean. Like, after I'd seen it this time, right [points to trial 2]? (No, on the last trial.) On the last time. Okay, he showed it to me, I closed my eyes again, right? And then I was supposed to open my eyes again and then rate it. (Yeah. He showed it to you, told you to close your eyes, told you that people who are deeply hypnotized might continue to experience the effects of the suggestion and see it as black, and for this reason -) No. He said that to me before. (Oh. So you remember him saying it before the trial?) Yeah. That's the way I remember it. I remember him saying it before he showed me the square, and then he...like, my eyes were still closed at this time, right? No...wait a minute! [Confused.] (Are you confusing it with trial 2? Because that's what happened on trial 2.) No, I remember because...I remember when I opened my eyes to look at the square, I, like...after he had said that, I thought that I was going to be seeing black and then I didn't see, like, you know what I mean? Like, I saw red and black. Like, my eyes were, like...do you know what I mean? After I opened my eyes, I'd already been out of the hypnosis, and...like, I saw red with black. With a...there was, like, black things in it. Yeah. So, have I answered your question right or not [laughs]? (Oh, no. That's fine, but...Okay. So, when you were looking at it you saw some black in it, and then after he told you that -) Yeah, I was gonna put this number [points to 3] but I...You know, the red was a little more vibrant than the black was. But there was black in there.*

Q2. *Okay. What influence do you think that instruction he gave after the third trial had on your trial rating?*

A2. Maybe because when I opened my eyes, I guess I was expecting to see all black. You know what I mean? Because, you know, he said that usually happens, right? And so, when I opened my eyes, I was expecting to see all black, but I didn't see all black. Like, I saw red...but then, maybe, since I thought I should have seen all black, I saw black. Even though, like, the card was red. You know what I mean?

Q3. Okay. Do you think that the instruction Jerry gave you pressure you into saying that the square was more black than you actually saw it to be?

A3. No, I wouldn't say pressure. He just said it, like...you know, he just, like, said it. It wasn't like...He wasn't taking it like, ultimately serious, but like, I guess, when he said it, I thought, "Well, you know. Maybe I'm gonna open my eyes and the square's going to be black", but then...No, I wouldn't say...I wouldn't say that I felt pressure. No.

[E. administers the questionnaires.]

Q4. Could you just describe what the square looked like to you on the third trial?

A4. When I opened my eyes, like...like it was dark. Like the square was darker. It wasn't, like, I...when I had seen it on the first trial, it was, like red. Like, I...it was...Like, I almost thought it was, like, a reddy orange. You know, like if there would have been something on here that said "reddy orange", like I probably would have circled "reddy orange", right? Because it was like, you know...you could tell the colour was bright. And when I opened my eyes on the third trial, it wasn't as reddy, it was darker. Like, it just looked darker. You know, it was like...like, kinda like a shadow. When I first opened my eyes it was, like you know what I mean, I had to look...look at the colour more than I had to do when I just opened my eyes and I knew the colour was red on the first trial, so...that's just basically it. Like, I'd seen...It wasn't as...as bright, and...I don't know. I can barely

describe it. It's just, like...I don't know. It's like it's...Like, it was...Like, there was just some black in there. Like, it just...you know what I mean? I felt like, like...when I opened my eyes and I looked at it, like I could see that there was red, but then sort of black, too. Like, when I first opened my eyes, the colour was dark, dark and then when my eyes went...you know what I mean? Like, became more focused, it became redder with some black. Like, if Jerry had...if Jerry had probably said to me, like, "open your eyes, go like that". you know, open and shut really quickly, I would've rated the square black. Like, on the third trial. Like, I...if I would've went like this [open and shuts eyes quickly] it would've been black to me. If I just opened my eyes and go...like that. You know what I mean?

Informal Interview

Q: *I'm just wondering if you have any comments to make about it?*

A: Hmm...Why. I don't know, because...you know, when you're hearing the voice, like...when you get this, you're not even hypnotized anymore. You know what I mean? So, you're thinking in your head, "Wow", you know. You'd just been hypnotized. If you tell me to open my eyes and see black, then...I didn't do it, right? If I don't, maybe. You know what I mean? Like, maybe it didn't happen right, I don't know. I mean, when he said that to me, like...a thought went through my head, it was, like...like I knew the square was red, you know what I mean? Like, from back here I knew the square was red, right? And...and...I don't know. I just...when I opened my eyes, like...like...maybe it was because I was still...still...maybe drowsy or whatever...or whatever you want to call it. Like, I wasn't...I don't know why. I mean, I...I...obviously, when you say, you know what I mean, the square, "most people are gonna think it's black". you're gonna go with the...you know what I mean, conform to the norm, you know what I mean?

Q: *Did you feel that that instruction was pressuring you to say-*

A: Well, I didn't think it was pressuring me, but, it kinda made me feel...well, maybe, you know, what's right and what's wrong, like, you know what I mean? Kinda put...like, I was being graded on this. Like, it's...you know what I mean? Like...Not so much that it's pressure, because if I didn't, you know...If I would've saw completely black, I would've said, "completely black, you know what I mean? So that if I would've saw completely red, I would've said, "completely red". I would just say it how I saw it, you know what I mean? No, I wouldn't...It was probably pressure to a certain degree, but not total pressure that made me write "seeing it as mostly red with some black". (*Do you think that it made you say that you saw some black in it when you actually had seen it as red?*) No..I saw it with some black in it. And I don't know if that's because he said it, but when I opened my eyes that's how I saw it.

Subject 30:

Q1. *When he gave you that instruction, do you remember what you were thinking about?*

A1. Um...The instruction that I probably saw it blacker? (*Yeah, um -*) What...what instruction? (*Okay. He had shown you the square.*) This one [points to trial 3]? (*Yes, the very last one that you had.*) What I thought was that...okay, can we go back a little bit to trial 2? (*Uh huh.*) Um...I was expecting to see a black square. Because, um...I told him something else just before this one, trial 2. And, um...but the square was a little too red, so I...so I got angry when I didn't see the black. I really want to see the black. So, then when it came to this one [points to trial 3] later on, I wasn't expecting to see a red square but I noticed that it was the same square so I saw it, kind of black. The point I want to say is that I got mad because I didn't see it. I was expecting to see something very black, so I...[laughs]. But the thing is that I...I really wanted to see some, so I guess I was...just kind of...

Q2. *Well, when Jerry had shown you the square on trial 3, and then he took it away, you had already seen it, so do you think that that instruction -*

A2. *And I also think that maybe he said that...that highly hypnotized people see the...usually see the...what, what he said there? I can't say it as well, but...So, I guess that did, ah that...like I got that suggestion and I followed it.*

Q3. *When Jerry gave you that instruction, I mean you'd already seen the square and it was taken away, do you think that that instruction pressured you in any way to say that the square was more black than you'd already seen it?*

A3. *Um...Not too much, because the hypnotized part was over. So, I didn't take that seriously. I didn't take that very...as a pressure. (So you saw some black in it.) Yeah, I saw some black later on. Because I was told...I was told, "hypnotized". I mean, I still sensed that I should be seeing black. Even though he woke me up. But, um...I still was...I still was dreaming that I could see black. Even though I didn't see any on the second trial.(Do you think that the instruction he gave you about deeply hypnotized people seeing it as black; do you think it had any influence -) It did. I think so. (What kind of influence do you think it had?) Well, I think it's...it's...maybe I believe that I'm a hypnotized person. That, I should be like that. So...so that kind of influenced the...So, I have to conform to that...what he said. I'm not taking it personally, but...but...So is your question there about how people conform to influence? (Yes. Well, that's one of the things we're getting at here. But I have a few questionnaires here that ask you about that influence.)*

[E. administers the questionnaires.]

Q4. *Just one more question. Can you just describe what the square looked like during the final trial?*

A4. It...it was red, but I...I kind of seen some black shadow on it. Like, dark shadows on it. Um...I...I think I imagined it, a little. Kind of thought that it was there...it was in the square. But I...I knew that, at first...I still remember that, at first, it was all...um...Actually, it's not exactly red when you first see it, it's more dark orange. I don't know if it was the lighting, but there was a...there was a red circle like this [refers to colour rating scale]. It was just there, so I knew it was red. But...I...I did see...I think I did imagine that...I mean, I saw it...kind of dark black - uh - dark red with black. With some dark shadows on it.

Informal Interview

Q: What do you think of these findings?

A: That's amazing. But I think it was more unconscious, you know. I mean, that suggestion [the demand instruction] I think...I think makes people think it was black, you know. I don't know. Maybe. Because...because Jerry did say it quickly on trial 2. Well, he did say it, but I didn't see it as black. I did affect me, I think. A little.

Q: Do you think that it was pressuring you?

A: Maybe unconsciously. I don't think...I don't know. Like, is it possible to pressure unconsciously [laughs]? Like, a pressure that I don't notice, like...? Because I did think about that, that much. And I wasn't pressured, but I just...I mean I was pressured, but not very much. (So, you're pretty sure you saw some black in it?) Yes, I was sure. Because I was surprised at seeing the black. I was quick to answer that [questionnaire colour rating], I think.

Appendix GG

Correlations Between CURSS Dimensions, Expectancies, Suggested Visual Hallucinations and Reporting Bias

	<i>S</i>	<i>OI</i>	EXP	CLRCH	BLIND	RB
<i>S</i>	1.00	.70**	-.25**	.28**	.20*	.23*
<i>OI</i>	.68**	1.00	-.22*	.31**	.25**	.29**
EXP	-.24*	-.20*	1.00	-.16	-.16	-.09
CLRCH	.19*	.19*	-.13	1.00	.45**	.58**
BLIND	.12	.16	-.13	.30**	1.00	.39**

Note. Correlations based on 98 subjects. Zero order correlations are shown above the diagonal, partial order correlations (controlling for reporting bias) are shown below the diagonal.

S = CURSS:*S*; *OI* = CURSS:*OI*; EXP = Trial 2 Expectancies; CLRCH = Suggested Colour Change; BLIND = Blindness Scores; RB = Reporting Bias.

* $p < .05$. ** $p < .01$.

Appendix HH

Correlations Between CURSS Dimensions, Absorption, Expectancies,
Suggested Colour Change and Reporting Bias

	<i>S</i>	<i>OI</i>	ABS	EXP	CLRCH	RB
<i>S</i>	1.00	.69**	.41*	-.04	.36*	.31*
<i>OI</i>	.70**	1.00	.17	.18	.19	.12
ABS	.32*	.14	1.00	-.24	.35*	.42*
EXP	.12	.26	-.07	1.00	.46*	-.44*
CLRCH	.23	.15	.13	-.26	1.00	.63**

Note. Correlations based on 30 subjects. Zero order correlations are shown above the diagonal, partial order correlations (controlling for reporting bias) are shown below the diagonal.

S = CURSS:*S*; *OI* = CURSS:*OI*; ABS = Absorption; EXP = Trial 2 Expectancies; CLRCH = Suggested Colour Change; RB = Reporting Bias.

p* < .05. *p* < .01.

END

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FIN