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SUGGESTIBILITY, ABSORPTION, AND DISSOCIATION: An Integrative Model of Hypnosis

Etzel Cardeña and David Spiegel

"They'll take suggestion as a cat laps milk."
—Antonio in *The Tempest* by Shakespeare

In *The Tempest,* Shakespeare describes the ploys of Prospero to frighten his enemies through his "high charms." He leads them to distraction, enhances their suggestibility and, lastly, gains insight into the workings of their souls. Prospero has been described as a prototypical Renaissance therapist who works on his victims' imagination (and attentional focus) to achieve therapeutic goals (Schleiner, 1987). However, specific theories on the explicit connections between attention, imagination, and increased suggestibility were not developed until the nineteenth century, particularly in relation to the budding literature on the phenomena and processes that we now call "hypnosis."

As Gheorghiu (1989a) has so aptly summarized, the fates of hypnosis and suggestibility have been very closely linked, although an account of their relationship remains unclear. In practice, the scales of hypnotic susceptibility are almost entirely based on the ability to follow a hypnotist's suggestions to distort perceptions and engage in specific motor actions. This approach has recently been criticized by one of the creators of the widely used Stanford scales as being insensitive to the distinction between voluntary and nonvoluntary compliance with a suggestion (Weitzenhoffer, 1980). In theory, hypnosis has been tautologically explained as enhanced suggestibility or, more currently, as a multidimensional occurrence that includes enhanced suggestibility as one of its core components (Gheorghiu, 1989a). Our approach in this paper is to discuss enhanced suggestibility as one of the three main phenomenal components of hypnosis, the other two being absorption and dissociation. We propose that the usual circularity of the

theoretical discussions on hypnosis and enhanced suggestibility can be avoided by resorting to the more basic processes of attention deployment and processing of information. We will review current findings and related concepts on the nature of "ordinary" conscious experience and how it changes during a typical hypnotic event. We will propose that changes in cognitive processing during hypnosis facilitate the influence of suggestive communications through a diminution of alternative and self-reflective ideation.

Ordinary conscious experience

At any point, we receive information from at least three different and constant sources: the physical and social surroundings, the stimuli generated endogenously by the body, and the vast network of related associations and stimuli generated by the brain/mind. The idea that conscious experience is a filtered version of a much larger number of processes occurring at any one point has a longstanding history in psychology, certainly including the models of unconscious and dissociative processes espoused, respectively, by Freud and Janet. Nonetheless, and perhaps because of a misunderstanding of James's notion of the continuity of the stream of thought, it has frequently been assumed that conscious experience has greater thematic continuity than it actually does.

The account of our ongoing conscious experience as a smooth and thematically congruent process was dealt a devastating blow by Nietzsche at the end of last century. Since then, this notion has been challenged by fiction writers such as James Joyce and Virginia Woolf. In their writings, the ordinary "stream" of awareness is but a collection of brief, ever-changing associations whose claim to continuity, rationality, and "reality orientation" is tenuous. More recent empirical work has confirmed that our account of ordinary experience as possessing thematic continuity and rationality is a false reconstruction rather than an accurate portrayal of the ongoing stream of thought. Further, the capacity to suppress unbidden mentation and maintain a continuous reflective stance is profoundly limited (Uleman & Bargh, 1989), as every meditation practitioner knows.

In a systematic study of thought sampling with University of Minnesota students, Klinger (1978) found that their thoughts tended to be very brief (median of about 5 seconds). These thoughts were commonly related to the immediate situation, including periodic evaluation of goal attainment, and were "reality-oriented." But there was also a substantive proportion of thoughts that included some strangeness and distortion (about ⅕ of the samples). In a series of experiments using signal detection and other paradigms, Singer and collaborators (Singer, 1988) reported that about 50% of their respondents' mentation was unrelated to the specific task in which they were involved. It was also found that, at least in the case of adolescents, a high proportion of their unrelated mentation dealt with unresolved conflictual issues.

Extrapolating from this body of literature, we propose that, under ordinary circumstances, a given "primary" suggestion (see below) might become but one of the number of ever-changing thoughts and images and, at that, one that might be in competition with more urgent issues. Further, the possible impact of a suggestion would probably be intermittently monitored and reflected upon by the thinker. This is not to say that the intended suggestion might not result "in the acceptance with conviction of the communicated proposition in the absence of logically adequate grounds for its acceptance," as McDougall (1908; in Gheorghiu, 1989b, p. 104) would phrase it. Rather, we are proposing that, other things being equal, the disjointed, competitive, stimulus-loaded, and intermittently reflective nature of ordinary processing would not be as conducive to following a suggestion as the hypnotic context. Although suggestibility in occurrences other than hypnosis is not the topic of this paper, it is significant that enhanced suggestibility has been reported in connection with light sleep and drowsiness (Budzynski, 1986), restricted environmental stimulation (Barabasz, 1989), and an exhaustion period following strong emotional expression after pharmacologically induced arousal (Greenberg and Safran, 1987). In all of these procedures, the amount of competition from external sources of stimulation is reduced in comparison with the ordinary mode of consciousness.

Hypnotic processes and suggestibility

Hypnosis and enhanced suggestibility

Suggestion and suggestibility are complex and multilayered concepts with a long history that is only partially related to hypnosis (Gheorghiu, 1989a). In this paper, we are exclusively concerned with a theoretical account of enhanced suggestibility within the hypnotic context. In a very influential, although not uncontroversial distinction, Eysenck and Furneaux proposed in 1945 (see Eysenck, 1989) that there were two main types of suggestibility: primary (involving ideomotor tasks and closely correlated with hypnotizability) and second-

ary (involving indirect sensory procedures and not correlated with hypnotizability). Gheorghiu (1971, 1989a) has clarified this distinction by declaring that "primary" suggestibility involves direct, overt suggestions, whereas "secondary" suggestibility involves indirect, concealed suggestions.

Less controversial, and in Weitzenhoffer's view "unquestionable" (1980, p. 132), have been the experiments showing that hypnotic induction increases direct suggestibility (Weitzenhoffer & Sjoberg 1961; Barber & Glass, 1962; Hilgard & Tart, 1966). Weitzenhoffer (1980) has further characterized the increase in suggestibility following induction procedures as involving only an enhancement of nonvoluntary compliance with the suggestions. This is contrasted with a deliberate, voluntary effort to follow the instructions. In agreement with this position, Bowers (1982) has reported a high correlation between the criterion of behavioral responsiveness to suggestion experienced *nonvolitionally* and the Stanford Hypnotic Susceptibility Scale (Form C). Bowers, Laurence, and Hart (1988) also found that a substantial number of participants (approximately 80%: Table 2, p. 341) passing a test item experienced the enactment of the suggestions as involving some degree of non-voluntariness. Fully 32.2% of their participants reported that their response had been experienced as "happening by itself." Arguably, the ability to experience suggestion as nonvoluntary, which is highly correlated with "objective" indices of hypnotizability, is a personality trait that is rather impervious to training procedures (Crouse & Kurtz, 1984).

A common increase in direct suggestibility following induction procedures is uncontroversial, as Hilgard and Tart (1966) pointed out. However, this does not imply that suggestibility is synonymous with a hypnotic state, which includes other basic phenomena. They further speculated that enhanced suggestibility to some suggestions might disappear in "deeper states of hypnosis." Consistent with this speculation, Hilgard (1986) reports that some of his respondents would lose contact with the hypnotist during self-assessed very deep hypnotic states until the hypnotist would lower the level of depth by placing a hand on the participant's shoulder. A more direct example of this phenomenon can be found in a recent project investigating the phenomenology of self-assessed very deep hypnosis (Cardeña, 1988a). After a procedure minimizing any explicit suggestion other than to go as deeply as possible into hypnosis, the following exchange in reference to a homonyms test took place during a session with a usually very cooperative hypnotic virtuoso:

Hypnotist: I would like you to tell me the first word that comes to your mind. . . . "Arch."

Participant: That's not a word.

H: "A-r-c-h."
(*Long pause during which the participant is silent.*)

H: O.K., let me try another one. "Beat."

P: That's not important.

Rather than a deliberate attempt to resist a request to which the participant had previously acquiesced, the exchange shows that during very deep states the participant's experiences are very unusual. They seem to be spontaneous, out of the ordinary, and reflect a much greater investment in "internally" generated phenomena. Or, as the participant just quoted stated with regards to the items of the homonyms test, "these things aren't here, they're somewhere else. They're only where you are." In a certain sense, in very deep hypnosis the respondents seem to disregard some specific suggestions that may not be meaningful within their current experience. At another level, though, they are actually enacting the higher-order suggestion of going into as deep a state as possible.

The nature of hypnosis

As mentioned, an increase in primary suggestibility commonly follows a hypnotic procedure. Furthermore, it has been well established theoretically (e.g., Hilgard, 1986) and empirically (e.g., Bowers, 1982) that, in addition to perceived nonvoluntary actions, an increase in the vividness and conviction of imaginal experiences are common aspects of the hypnotic experience. It is also clear, for example, that the prominence and characteristics of the imaginal experiences depend on individual factors (Pekala, 1989) and variations in level of depth (Cardeña, 1988a). In agreement with a multidimensional consideration of hypnosis, we will consider the factors that—theoretically or empirically—have been associated with the hypnotic experience.

Shor considered suggestibility to be a common but not characteristic phenomenon of hypnotic experience. The three main factors of hypnosis that he originally proposed are: a) trance (the fading of the "generalized reality orientation," which gives context and perspective to ongoing contents of consciousness); b) nonconscious involvement (the nonconscious fulfilling of a role as a hypnotized participant); and c) archaic involvement (the "transferential" relationship toward the therapist) (Shor, 1962, 1970). Hence, Shor pointed to the nonconscious aspects of cultural socialization (i.e., nonconscious involvement), per-

sonal psychodynamics (i.e., archaic involvement), and cognitive (i.e., trance) elements of a hypnotic occurrence.

Kihlstrom, et al. (1989) recently conducted a factorial analysis of those three factors, plus five other "dimensional variables" (drowsiness, relaxation, vividness of imagery, absorption, and access to the unconscious) that Shor (1979) later developed. They demonstrated that 6 out of the 8 scales loaded in a general factor similar to the absorption construct. The two scales loading poorly with this factor were archaic involvement and relaxation. It is not surprising that archaic involvement, which deals with transferential-laden patterns of response, would be independent from more purely cognitive processes. Certainly the perceived relationship with the hypnotist is basic to the person's trust (or lack of it) to go under hypnosis, but it can be considered more of a requirement to engage in an alternate mode of awareness, rather than an integral part of it.

The finding concerning the factorial independence of relaxation merits a lengthier comment, given Edmonston's (1989) declaration that relaxation is a defining component of hypnosis. The arguments against Edmonston's position are very strong and involve historical, cross-cultural, and experimental evidence. Historically, the association between hypnotic-like occurrences and relaxation was not a part of Mesmer's method, but rather a later development by his disciple, the Marquis de Puysegur. Congruent with this far from inevitable development is the cross-cultural literature on the phenomenology of possession and shamanic events, which bears a close correspondence with reported hypnotic experiences (Cardeña, 1988b, 1989). Also, there is scant but consistent literature showing that *tension* enhancement verbalizations can induce trance experiences (Ludwig & Lyle, 1964), and that strenuous physical activity coupled with a hypnotic induction can enhance suggestibility (Banyai & Hilgard, 1976; Malott, 1984). Lastly, hypnotic virtuosos are able to achieve very deep states while engaged in pedaling an ergometer, even though they may take slightly longer in achieving those states than while relaxed (Cardeña, 1988a). This is probably because of the greater difficulty to engage fully in imaginal experiences while maintaining an active body. Relaxation is a culturally incidental, rather than necessary and sufficient, condition of hypnosis. What the usual relaxation induction does share with other modalities is the prolonged and continuous narrowing of attention on the same type of (e.g., somatic) events, with an associated neglect of much of the usual competing environmental stimulation.

In addition to the theoretically derived factors of Shor, a number of factorial studies give support to at least three common dimensions

of a hypnotic experience: a) lack of reflective awareness, b) a sense of compulsion and enhanced suggestibility, and c) unusual phenomenal occurrences, including effortless experiencing and increase in imagery, changes in body image and somatic sensations, and others (Evans, 1963; Ås & Ostvold, 1968; Field & Palmer, 1969; see also Cardeña, 1988a; Bowers, Laurence, & Hart, 1988). The first factor is similar to the construct of absorption: the second factor directly addresses the findings of enhanced primary suggestibility. Although less overtly, dissociation, which has also been proposed as an experiential and/or theoretical construct underlying hypnotic experience (Hilgard, 1986; Spiegel, 1990) would be a constituent of the "classic suggestion" effect and of other phenomenal occurrences (e.g., a sensation of losing contact with the body). We turn now to a consideration of the relationship between enhanced suggestibility, absorption, and dissociative processes.

Absorption and suggestibility

The construct of absorption has been defined as "a disposition for having episodes of single 'total' attention that fully engages one's representational (i.e., perceptual, imaginative and ideational) resources" (Tellegen & Atkinson, 1974). An absorption scale devised by Tellegen has shown a consistent, albeit moderate, correlation with hypnotizability. In contrast with the usual broken stream of ordinary experience mentioned above, absorption is characterized by focal, undivided attention to an event, either internal or external. Attention can be engaged by a relatively simple stimulus (e.g., a spot on the ceiling) or a complex stimulus (e.g., a beautiful landscape). Along these lines, preliminary analyses suggest that absorption can be conceptualized along two dimensions: internal versus external focus, and narrow versus expansive object of attention (A. Tellegen, personal communication, Fall 1987). What is important is that the individual maintains his/her attention in a certain type of event, which therefore achieves particular salience, rather than doing a frequent sampling of different types of experiential events (e.g., constantly shifting attention from perceptual to imaginal events, etc.). The reduced sampling also implies that frequent changes from a merely conscious to a reflectively conscious stance will be less probable.

In contrast with the frequent appearance of unbidden thoughts and the conscious monitoring of goal acquisition, the absorbed individual becomes fully engaged in a self-initiated activity (e.g., artistic performance) or a passive one (e.g., watching an engaging movie). In the specific case of the hypnotized individual, O'Shaughnessy (1972) has

characterized his/her experience as being "necessarily and continuously unselfconsciously conscious of the hypnotizer, and intermittently conscious of his voice; but he is not conscious of the world. . . . His consciousness of these items *in* the world is a merely *regional or non-connective consciousness.*" The person lacks (in the case of a deeply hypnotized individual), or has greatly diminished (in a less absorbing experience) meta-consciousness (i.e., the awareness of being aware).

The exclusive and continuous concentration on a type of event is incongruous with the actively maintained frame of reference and context that Shor (1959) called "generalized reality orientation." This is defined as a structured frame of reference in the background of attention which supports, interprets and gives meaning to all experiences" (p. 291). The similarity between Shor's concept and "absorption" is borne out not only conceptually, but also by a recent study showing a high correlation between an operationalization of Shor's concept and the absorption scale devised by Tellegen (Kihlstrom, et al., 1989).

The maintenance of perspective and context in any situation should not be considered a given. Rather, it is one of many sources of internal and external stimulation. Baars (1988) has proposed an influential model of cognitive processing that is congruent with current computational models (Spiegel, 1990). It posits multiple levels of cognitive processing and simultaneous sources of nonconscious information. In Baars's model, the "generalized reality orientation" could be regarded as one of the main (unconscious) contexts that is in continuous competition to access the "global workspace" (i.e., consciousness). Enhancing another context (e.g., one affecting internally generated imaginal experiences) through conscious focusing of attention would lower the probability of the "generalized reality orientation" becoming part of the foreground of conscious awareness. This model does not preclude the general "unreflected on" reality orientation from affecting behavior as in the case, for example, of avoiding a negatively hallucinated chair. What happens, rather, is that the behavior is not reflected on and subjected to a perspectival, critical inquiry, as is the case with the more usual form of (fractured) experiencing. It is not that hypnotic experience implies the unavailability of contextual information. Instead, this background information is not accessed and does not become part of a consciousness that is mostly occupied with an absorbing, continuous experience. In Gheorghiu's terms (1989a), "the conscious monitoring authority is bypassed" (p. 42). This discussion does not contradict the notion of strategic, planned enactment of a hypnotic suggestion, but it does imply that these plans are tacitly, unreflectively carried out.

From this perspective, it should be clear that the general increase in suggestibility after a hypnotic induction would be the natural outcome of the changes in relating to the information conveyed. In the ordinary modality of experiencing, a suggestion might be one of a number of events occupying the person's attentional resources. Because of the continuous flux in the contents of consciousness, the suggestion would not only be in competition with other sources of stimulation, but might also be the subject of reflective, critical analysis. In contrast, hypnosis fosters an absorbing, unself-conscious processing of information in which a suggestion might play a more predominant role in the mental life of the individual. Because of the diminished competition with other sources of stimulation, and because of the continuity of unreflective mentation that absorption implies, a suggestion during hypnosis would have greater salience and receive a more intense and enduring focus of attention.

James (1890, pp. 387–88) provides a poignant example of the nature of mental competition. Holding, as he did, that ideas were invitations to action, he wondered why his ideas about getting up and getting dressed on a cold morning did not prevent him from lying in bed for a long period. His answer was that, given the circumstances, every idea/image of getting up, lighting a fire, etc., was counterposed by strong competing ideas about the cold and discomfort associated with getting up. In a hypnotic context, the number of shifts in mental contents is greatly reduced, which may account for the common observation that hypnotized individuals commonly underestimate the amount of time spent in hypnosis (Gheorghiu, 1989a). Because fewer mental shifts occur during hypnosis than during waking, the hypnotized individual might therefore assume that, at least subjectively, fewer changes have occurred and, hence, less time has elapsed.

The effects of a diminished critical process on suggestibility is exemplified by the recent work by Malott, Bourg, and Crawford (1989). The authors found that, in contrast with a nonhypnotic condition, during hypnosis their respondents agreed more and gave fewer counterarguments to persuasive communication. In agreement with an interactionist approach, the authors also report that, during "waking" and hypnotic conditions, highly hypnotizable individuals were in greater agreement with the communication and produced more favorable thoughts than low hypnotizables.

Absorption in a hypnotic context occurs mostly through the interaction between the general cognitive disposition to become absorbed and a specific situation that purposefully seeks to engage the individual's concentration capacities. It is not particularly controversial that hypnotic techniques commonly involve the focusing and narrowing of attention. Thus, breadth and a shifting focus are exchanged for

continuity of attention and an ensuing intensity of the mental events receiving attention. The typical induction procedure usually proceeds by eliminating sources of stimulation (e.g., restricting sensorial stimulation) and directing the attentional resources to one or at most two foci of attention.

Alternatively, induction techniques using confusion and uncertainty may confuse or overwhelm limited attentional resources onto a "contentless" context that the organism is motivated to resolve (Baars, 1988). In addition to hypnotic forms of induction, indigenous practices (e.g., drumming, dancing) commonly involve forms of stimulation that help focus and maintain attention on one or two specific sources of stimulation. A source of particular interest in recent years has been the very high hypnotizability of clinical populations, such as post-traumatic stress disorder and multiple personality disorder (Spiegel, Hunt, & Dondershine, 1988; Spiegel & Cardeña, 1990). These results might represent a "natural experiment" in which predisposed individuals exposed to a traumatic event have their attention automatically drawn by, and focused on, an event that demands immediate organismic response. Later on, given specific internal or external triggers, these individuals may automatically engage themselves in these processes even though they may no longer be adaptive.

Consistent with this view, experimental work suggests that the central characteristics of a laboratory-induced traumatic event may be well retained in memory, to the detriment of specific and peripheral details (Christianson & Loftus, 1987; Loftus & Burns, 1982). It does not take a big speculative leap to propose that, during a traumatic event, the individual engages in a narrower and more focused attentional process, and become more absorbed in the event. This style of cognitive processing would also imply a diminished capacity to process in conscious awareness the context and "generalized reality orientation" of that event (Spiegel & Cardeña, 1990).

Dissociation and suggestibility

In his pioneering work, Janet anticipated much of the present argument by discussing the relationship between narrowing of attention and dissociation (van der Hart & Horst, 1989). The connections between dissociative processes and hypnotic phenomena in general have historical and theoretical underpinnings that are beyond the scope of this paper (Hilgard, 1986; Spiegel, 1990). The notion of dissociation has been used to describe seemingly autonomous psychological systems. These range from a simple "split off" idea with its associated affect, body state, etc. (what Janet called idée fixe), to experienced

alternate identities within the same individual (i.e., multiple personality disorder). We will concentrate our discussion on explaining why suggested and, at times, spontaneous actions are experienced during hypnosis as dissociated from the usual sense of self-control.

To start with, we should point out that the enactment of not fully deliberate acts is a constant occurrence in everyday life. As we engage in any activity, such as writing a paper, there is a constant variety of physical movements (including "classical" hypnosis behaviors such as arms rising and falling) as well as other events that happen without any *deliberate* planning or implementation by the actor. Of course, these actions are usually not regarded as impersonal except in rare modes of experiencing such as depersonalization. In the hypnotic context, however, changes in attentional processes bring about a different relationship to these same behaviors. The "classical suggestion effect," implying an experience of involuntariness, can be accounted for by three factors: the lack of competition of the suggestion with other mental contents, its resulting salience, and the continuous focus of attention placed on it.

As explained above, a hypnotic suggestion gains its importance by the lack of shifts of attention and the lack of competing ideas and contexts. Another implication of the narrowing of attention and disregard of competing stimulation is that a suggestion will achieve particular salience in a person's ongoing experience (or remain as a powerful plan to be instantiated later, in the case of a posthypnotic suggestion). Due to its being paid more and more continuous attention, hypnosis is experienced differently than most other mental states, which are usually of a shifting and discontinuous nature.

To explain the increased experience of involuntariness associated with a hypnotic suggestion, we need only discuss three associated elements. In hetero-hypnosis, the source of the stimulation (i.e., invitation to act) is *not* initiated by the individual himself/herself, but rather by the hypnotist. Consequently, the act does not have the quality of self-referentiality that an overtly planned and implemented action would have. In this sense, the experience of dissociation from a particular action is more veridical than we ordinarily tend to think. The individual did not initiate the action and its continued implementation has some of the automaticity that is common to many of our behaviors and experience. This automaticity, however, might be experienced (correctly, we might add) as being of a more intense and salient nature than that of other behaviors. The reason for this, of course, is that such behavior does not have to compete with as many other equally strong plans and ideas as is usually the case in ordinary experience.

The last element that helps to explain the experience of involuntariness is that the person is led to pay continuous attention to the unfolding implementation of a behavior, thought, etc. As mentioned earlier, many of our acts and mental events in ordinary experiencing could be considered to be nonvoluntary. Ordinarily, we do not pay attention to these events, being as we are drawn by a variety of other events. In the hypnotic context, the hypnotist initiates an action (or takes advantage of a naturally occurring behavior such as tired eyelids), and implicitly or explicitly requires the participant to retain his/her attention on that action. Even if the respondent has to initiate the action voluntarily (i.e., if the "invitation" is not strong enough by itself), by being asked to maintain it and pay attention to it he/she may come to experience it as having some associated involuntariness (Bowers, et al., 1988). Other putative dissociative processes in hypnosis (e.g., amnesia and analgesia) would require a separate discussion, but one that could be framed in terms of the changes in attentional focus and process, and of the diminution of consciousness shifts and reflectivity that we have outlined. Lastly, it should be stated that some experiences during hypnosis (e.g., complex imaginal experiences) are not exclusively or mainly dissociative in nature and deserve a systematic discussion beyond the scope of this paper.

Conclusion

We have presented a theoretical model that seeks to integrate the three concepts that are commonly used to describe hypnotic occurrences: suggestibility, absorption, and dissociation. We propose that changes in attentional continuity and focus are the bases on which hypnotic cognition is built. Whereas the ordinary form of conscious processing is characterized by constant shifts of contents, hypnotic cognition commonly involves a greater moment-to-moment continuity of conscious experience coupled with a diminution of self-reflective processes. Because of the nature of the hypnotic context, competing contexts (including a critical function of the ongoing activities) are neglected in favor of the experiences and behaviors suggested by the hypnotist. And because of the diminished competition with other types of mental occurrences (including self-reflective appraisal), hypnotic suggestions entail greater salience, influence, and perceived involuntariness. Increased suggestibility can thus be seen as the natural outcome of cognitive changes in the way that the individual relates to the information conveyed. Hypnotic cognition can thus be seen as both different from, but explainable in terms of, ordinary cognition.

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