

Imagery and its Complex Relationship to Effects

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Notes:

- 1 From the currently available documents one cannot make reliable conclusions on the termination of the treatment; it seems likely, however, that the impression given in the Studies of a complete healing does not correspond with the facts and that some severe symptoms persisted which required the patient to be referred to a sanitarium; cf. Hirschmüller (1978b).
- 2 It is the letter of June 28th, 1892, in which Freud announces that he will publish, together with Breuer, the theory of abreaction; Reicheneder (1983), p. 232.
- 3 A letter to Fließ, dated February 4th, 1888, suggests that the method used by Freud was most probably Bernheim's Suggestive Therapy: „The car costs a lot and with the visits and the suggesting, which is what my job really is, I idle away hours better suited for working“; cited from Reicheneder (1990), P. 196.
- 4 On speculations for this delay, cf., among others, Chertok (1968).
- 5 Cf., among others, Hirschmüller (1978), Reicheneder (1983), and Andersson (1962) who agree that Freud must have used a combination of Breuer's method and Bernheim's suggestive therapy. Andersson (1962) in particular emphasizes that one could not speak of a cathartic therapy for the simple reason that its „psychopathological formula“, i.e. the scheme of abreaction had not yet been developed.
- 7 In De la Suggestion ... (1888), Bernheim describes the therapeutic procedure: „The patient is put to sleep by way of suggestion ...; he is now also treated with suggestion in that the vision of healing is forced into his mind. Liébault's method proceeds this way: in a loud voice before the sleeping patient, the symptoms he has previously felt are claimed to have disappeared. Thus one tries to convince him that the symptoms have gone or will go away ...“ (p.190).
- 8 Ellenberger (1973) comments on Freud's A Case of Successful Treatment by Hypnotism (1892-93): „One cannot speak of catharsis here; it was a treatment in the mode of Bernheim“ (p. 669). Hirschmüller (1978a) describes the therapeutic method applied in the case of Nina R. as „hypnosis according to Bernheim“ (p. 156).

Peter W. Sheehan'

Imagery is a rich and creative process that can assist one to adapt, and it is well known that the capacity to image vividly and to become absorbed in imaginative experiences is positively related to susceptibility to hypnosis. Typically, however, only a moderate proportion of the variance of hypnotic test scores can be accounted for in terms of imagery ability. One may explain this in a number of ways - by reference, for example, to errors of measurement, inherent limitations in the measuring instruments themselves, or to the fact that processes other than imagery co-determine effects. Interpretation of the available data must be phrased to acknowledge the complex relationship of imagery to effects and to recognize, in particular, the validity of the last of these alternatives.

Imagining is a rich and creative process that has occupied the attention of poets, philosophers, and psychologists throughout the ages. It is theoretically intriguing to hypothesize about the meaning of mental events that have such obvious "thing quality." Controversy still abounds about whether the thing-quality of so-called images is an illusion, and about the essential relationship between "what we see" and "what we think we see." In fact, the nature of the relationship between what we say we see and what exists "out there", and the fact that there is such a discrepancy at times between the two defines, I think, one of the most intriguing aspects of hypnosis. It is not surprising in this sense, also, that the dominant theoretical issue through time in the history of nonhypnotic research into imagery is "how closely do imagery and perception really correspond - structurally, functionally, and interactively?" (see Finke, 1985).

This paper considers first the relationship between hypnosis and imagery, and then explores some of the factors that affect the strength of the link between the two. It is argued that the relationship between imagery and hypnosis is a deceptively complex one

and that a range of factors actually define the kind of influence imagery has on hypnotic performance. The common view that imagery is the dominant trait variable in understanding hypnosis has tended to cloud our comprehension of the essential variability lying in the data. It is such variability, however, that will shape the research directions of the future and will offer us the most interesting theoretical challenges.

First, let me set the stage by discussing imagery as a correlate of hypnosis. For the most part, this view emphasizes the trait-character of imagery response.

1. Imagery as a Correlate of Hypnosis.

In a previous paper of mine at the International Congress of Psychology (Sheehan, 1989), I argued that the most dominant view of imagery in the field of hypnosis is the notion that imagery is a reliable and stable correlate of hypnotizability. Since that time, research has continued to focus on the nature of imagery and how different measures of imagery are related to hypnotizability (e.g. Kahn, Fromm, Lombard, & Sossi, 1989; Lombard, Kahn, & Fromm, 1990). There are many measures of imagery (see Table 1) and correlates of hypnotizability (see Table 2) that help explain the prevalence of the view that imagery is a major, reliable correlate of hypnotizability. The data associated with these many measures and variables emphasise, for the most part, the importance of skill, the relevance of context, and the characteristics of the state of consciousness that we choose to label "hypnosis." The Model of hypnotic response that will inevitably embrace the full influence of

Betts questionnaire upon mental imagery (QMI; Betts, 1909)
Creative imagination scale (CIS; Wilson & Barber, 1978)
Gordon test of imagery control (Gordon, 1949)
Imaginal processes inventory (Singer & Antrobus, 1972)
Individual differences questionnaire (IDQ; Pavio, 1971)
Inventory of childhood memories and imaginings (ICMI; Wilson & Barber, 1983b)
Phenomenology of consciousness inventory (PCI; Pekala & Levine, 1981-1982)
Preference for magic cognitive style (PICS; Isaacs, 1982)
Questionnaire on subjective experiences in hypnosis (QSEH; Farthing, Brown & Venturino, 1983)
Shortened version of qmi (Sheehan, 1967)
Tellegen absorption scale (TAS; Tellegen & Atkinson, 1974)
Verbalizer-visualizer questionnaire (VVQ; Richardson, 1977)
Visual elaboration scale (VES; Slee, 1976)
Vividness of visual imagery questionnaire (VVIQ; Marks, 1973)

Table 1: Sample of measures of imagery

Imagery

Vividness of imagery
Ease of imaging
Control over imagery
Imagic style

Fantasy

Proneness to fantasy
Ease of fantasizing
Motivation for development

Absorption

Attentional capacity
Concentration on inner feelings and thoughts
Effortless experiencing

Dissociation

Involuntariness of response
Dualistic thinking

Rapport

Relationship with the hypnotist
Interpersonal attraction
Evaluation apprehension

Ease of relaxation

Context

Situational constraints
Demand characteristics
Attitudes, and preconceptions
Expectancies and beliefs

Table 2: major correlates of hypnotizability

imagery will be one that accentuates person attributes (incorporating attitudes, beliefs, skills, and abilities), setting features (involving expectancies, demand characteristics, and rapport), and processes related to state of consciousness (incorporating also the effects of induction procedures).

The evidence is compelling that imagery ability is positively related to hypnotizability. The very notion of skill, for example is reflected directly in the more modern concept of „fantasy-proneness“ which has been researched extensively by Lynn and his associates

(e.g., see Lynn, 1988; Lynn & Rhue, 1987; Suita, 1990) and linked also to a range of relevant correlates that include level of hypnotizability, ability to hallucinate, and the subject's developmental history and psychological adjustment (Lynn, 1988). The major thrust of the data is that the relationship between hypnosis and imagery is essentially a nonlinear one in which high imagery ability does not predict hypnotizability quite as reliably as low imagery predicts insusceptibility. Some low susceptible subjects can and do utilize definite imagery skills in the hypnotic setting (see Jackson, 1984) and seem similar to Wilson and Barber's (1983a) fantasy addicts in some aspects of their imaginative involvements. A number of very susceptible subjects, on the other hand, who are high in imagery skills cannot demonstrate aspects of fantasy proneness that other susceptible subjects will show. Most recently, Wallace (1990) has challenged us by the finding that approximately 6.8 percent of his subjects were poor imagers but still highly susceptible to hypnosis, while a comparable number (6.6 percent) were vivid imagers but low in susceptibility to hypnosis. The implications of the fact there is a nonlinear relationship between imagery and hypnosis (see also, Cross & Spanos, 1988-1989) must be properly understood, for it is only this hypothesis that can explain some of the apparent anomalies in the data. These are illustrated, for example, by the fact that low susceptible subjects will evidence imagery capacity at times and make adaptive use of it in their efforts to do suggestion tasks. Imagery and its related concepts, fantasy-proneness, and absorption are by no means pure predictors of hypnotizability, and high susceptible subjects may respond just like low susceptible subjects behaviorally, but respond similarly for other reasons. Co-determination of effects occur, and the variables contributing to the effects found in the hypnotic setting appear to combine differently for low and high susceptible subjects.

Consider, for instance, the unpublished research completed in my laboratory at the University of Queensland on the relationship between vividness of imagery, absorption, and hypnotic susceptibility. On the grounds that imagery and hypnosis are related, it seems plausible to argue that hypnotically induced pseudomemory would be shown by subjects reporting more vivid imagery, greater absorption capacity and higher preference for an imagic cognitive style (see Table 1). Such a view draws support from the notion that pseudomemory is a distortion of fact, and imagery reflects the unreal; and commonality in that respect can be argued to determine the relationship. Research shows the opposite, however. Subjects who demonstrated pseudomemory, compared to those who did not, had significantly less (rather than more) vivid imagery, and indicated less of a preference for imagic cognitive style. There were no significant differences between groups for absorption. Table 3 illustrates the nature of the anomalous effect for imagic style. The table shows the expected relationship between imagery and level of susceptibility (telling us what we

already know), but a reversal of this relationship for pseudomemory response. The reasons for these data have been argued elsewhere (Statham, 1989) in terms of the overarching influence of cognitive style. The details of the data give us a clue to the explanation of the effect. Subjects who illustrated the strategy of being deluded about what was shown had appreciably less vivid imagery than those who showed pseudomemory in company with cooperative, motivated compliance strategies. It appears that imagery had less of a role to play in the occurrence of pseudomemory when subjects' belief systems were entirely consonant with what was suggested. The data expose us to the interesting notion that imagery is important in hypnosis, but other variables like „belief“ can achieve the same hypnotic outcomes and may do so at times in ways that diminish the apparent relevance of imagery. Obviously, because the relationship between hypnosis and imagery is non-linear, it was overstepping the mark to argue that pseudomemory and imagery should be positively related. Data tell us it is the „believed-in“ quality of the distortion in pseudomemory that could be its most distinguishing feature.

Level of susceptibility	Pseudomemory response	
High	12.45	Present 10.11
Medium	11.03	Absent 12.68
Low	10.89	

Table 3: mean imagic style scores for susceptibility groups and categories of pseudomemory response

In this and other studies, however, it must be said that inconsistency in the data may also reflect in part differences in the psychometric validity of the measures of imagery (and hypnosis) that are used (see Table 1). Errors of measurement are inevitable in the task of assessing the meaning of subjects' verbal reports about the imagery being experienced (and how hypnotised they feel). The detection of such errors are, in turn, integral to the problem of trying to distinguish verbal reports about hypnosis and imagery that are accurate from ones that cannot be trusted.

Upon close analysis of data-sets across a range of hypnotic phenomena, results point very firmly to the view that the association between imagery and hypnosis is multidimensional in character. Perhaps the most persuasive reason for pursuing cognate variables that pattern the data (such as absorption, attentional capacity, imagic style, and effortless experiencing) as well as indirectly related variables such as contextual constraints, motivations and expectancies (see Table 2) lies in the fact that the positive relationships that have been observed between imagery and hypnotizability are not just anomalous; they are also only

moderate in strength. As asserted elsewhere (Sheehan, 1982), tests of imagery ability rarely account for more than 40% of the variance of subjects' scores on hypnotic test scales. A link is evident, but only in part, and it is necessary to appeal to multiple dimensions at work. I believe one process (like delusion, for example) can „do the work“, as it were, that makes another (like imagery, for example) redundant at times - a view that is congruent with the notion that hypnosis itself is a complex, multi-faceted phenomenon. Further, process variables measuring similar things (like imagery vividness and absorption) may at other times jointly operate to determine hypnotic responsiveness. The latter notion we can easily accept; the former notion as yet is, I believe, a foreign one in the literature debates. Before addressing some of the theoretical implications of the hypothesis of multidimensionality, let me comment briefly on the situational components of hypnosis. They represent a particularly compelling category of influence.

2. Imagery and the Influence of Setting

The hypnotic setting itself emphasizes strongly the relevance of imagery. The susceptible subject brings particular cognitive skills to a specific test situation in which imagery responses are typically activated or encouraged by the hypnotist in the way that he or she instructs subjects and the types of suggestion tasks that subjects are requested to do. Standard instructions for hypnosis, for example, typically request that subjects imagine suggested events just as they are happening; and hypnotic-test items themselves, more often than not, either suggest specific images that the subjects should evoke (e.g., „your hand and arm feel as if a heavy object is weighing it down“), or urge the subject to arouse imagery of his or her own choosing (e.g., „you are back at school now. Tell me what you see“). Response in hypnosis, then, as it reflects imagery and related processes of imaginative absorption is the result of behaving in a situation where, more often than not, there are explicit cues for responding in a make-believe, unreal, and fanciful way.

The lure of the hypnotic patter is so strong that it is not surprising that hypnotized subjects talk about images as if they really exist and are objects to be scrutinized. One is reminded immediately of Binet and Fere's remark that in every image there is the germ of an hallucination. If some theorists would have their way even, we might even wish to argue that in every hallucination there is evidence of disguised imagination at work - with permission to the subject to speak in the „language of reality.“

Elsewhere in the program of this Congress, I have drawn attention to the major role contextual factors play in shaping hypnotic response. There the focus was on pseudo-memory. Context here is argued to have a pervasive effect across the full range of hypnotic phenomena. Context may shape, modify and define the nature of subjects' imagery re-

sponses as well, and this influence is highlighted most sharply by the data of Council, Kirsch and Hafner (1986) in their analysis of expectancy (vs. absorption) in the prediction of hypnotic responding which has been analysed in more detail recently by Woody and his associates (Woody, Bowers, & Oakman, 1990).

Council and his associates found that imaginative absorption was associated with hypnotic response expectancies more strongly than with actual hypnotic outcomes. They found that absorption was appreciably associated with measures of hypnotic response when the test of absorption occurred just prior to the induction of hypnosis, rather than when the test of absorption was administered previously in a context not associated with hypnosis. Council argued that absorption is related to hypnotic responsiveness through the mediation of hypnotic response expectancies - a challenging observation to many of the conclusions of workers in the field. The results of Council and his associates constitute strong evidence for the relevance of context of testing to the observed relationship between imaginative absorption and hypnotic susceptibility. Although the debate is not yet entirely resolved - the effect has been replicated for females, but not for males, for example (De Groot, Gwynn, & Spanos, 1988), the issue continues to be strongly argued (see Spanos & Chaves, 1989) and it is obvious that hypnotic subjects are highly sensitive to the effects of contextual cues and their expectations of being hypnotized.

The data gathered by Council et al. (1986) are entirely consistent with the wider point of view expressed by Lynn (1988) that a rich variety of variables moderate the relationships between scales that tap imaginative involvement and variables hypothetically related to fantasy proneness, including the idiosyncratic interpretations of suggestions that some subjects display. To quote, „Scales that measure absorption and fantasy proneness rely on subjects' interpretations of their experiences and abilities, and self-reports are notoriously sensitive to social-desirability biases, demand characteristics, and context and expectancy effects (Lynn & Rhue, 1987, p. 42).“ Recent evidence (Woody et al., 1990) suggests as well that the direction of contextual influence is two-way. Context effects operate by affecting hypnotic behavior when the hypnosis scales are administered first and when they are administered after tests of imagination.

3. The Multidimensionality of the Relationship between Imagery and Hypnosis

There are by now a host of implications in the hypnotic literature that the observed relationship between imagery and hypnotizability is multifactorial in character (with consequent implications for the strength of the relationship between single variables), but still too frequently theories are proposed on the basis of the prediction that the degree of asso-

ciation is unintentionally strong. One such view is that proposed by Wilson and Barber (1981, 1983a) who talk of particular persons as „fantasy addicts“ and „fantasy proneness“ as a unitary entity. This has profound implications for our understanding of hypnosis. The viewpoint they espouse appeals to the primary influence of proneness to fantasy and imagination among excellent hypnotic subjects. This approach, analysed elsewhere in detail by Lynn (1988) attempts to isolate a fundamental personality variable defined in terms of fantasy proneness that underlies hypnotic susceptibility. One can argue, however, that imaginative involvement or fantasy proneness is only one of many possible expressions of a higher order factor which also underlies hypnotic susceptibility - along with (for example) altered states of consciousness, aesthetic experiences, and other processes such as effortless experiencing (P. Bowers, 1978). Data supporting such a view have been reported by Jamieson (1987) who conducted extensive analyses of subjects' responses on the Tellegen Absorption Scale (Tellegen & Atkinson, 1974) and examined the sensitivity of this test for differentiating subjects in terms of the level of their hypnotic susceptibility. His data supported a model where hypnosis, imagination and several other variables can be viewed legitimately as expressions of a single underlying human capacity. Hypnosis and imagination were related to this underlying variable as primary factors to a higher order factor and not as the elements of a simple, single ability measure. Several candidates were canvassed for the identity of the higher order variable and imagination was rejected by Jamieson as inadequate to explain all of its manifestations. Flexibility in the ability to selectively shift between different patterns in the deployment of attention was regarded as the most plausible link between the factors of imaginative absorption and ability to respond to hypnotic suggestions. This flexibility expresses what I and others (e.g., Richardson, 1989) have argued elsewhere - theorising about the role of imagery must take account of the joint influence on response of both person and situation variables. As Richardson (1989) asserts, „Weak imagers who may be uncertain as to how they should carry out imaginal instructions are likely to produce responses that contribute to error variance, while vivid imagers, who understand the instructions and are able to carry them out, can produce more relevant percept-like content that has theoretically predictable effects.“

4. Conclusion

In conclusion, this paper argues that examination of the role and functions of imagery in hypnosis has been dominated too much up to this point in time by concern about unidimensional processes of influence. The view prevalent in the literature that imagery is a mostly reliable (and valid) correlate of the hypnotizable personality is likely to be incorrect.

Contemporary research has highlighted, in particular, that we need to give more attention to the role context plays in shaping the imagery effects that have been observed, and the relationship existing between imagery and hypnosis is clearly of a character that attitudinal and/or expectancy variables have a much stronger influence that we have hitherto considered. Variables like dissociation - assumed originally to be relatively unrelated to imagery - are now being linked back to imaginative involvement (and ultimately to hypnosis) in theoretically provocative ways (Woody et al., 1990).

Finally, there are paths in common to hypnosis among several separately named variables, and I want to suggest (as supported by the data in Table 3) that process-related variables like imagery and delusion may at times provide alternative routes in the determination of hypnotic outcomes. Indeed, it may even be the case that some of the variables we study facilitate well-known outcomes or are the vehicle of them, but are not the substance of the effects.

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The Chronobiological Theory of Therapeutic Suggestion: Towards a Mathematical Model of Erickson's Naturalistic Approach

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■ Erickson's naturalist approach to therapeutic suggestion emphasizes that the classical phenomena of hypnosis can be experienced as spontaneous manifestations of the "common everyday trance" without being directly suggested by a therapist. The chronobiological theory of therapeutic suggestion proposes a mechanism for this aspect of Erickson's naturalistic approach: the classical phenomena of hypnosis are expressions of the normal range of cybrenetic homeostatic psychobiological behaviors that are manifest in ultradian and circadian rhythms. Hypnotherapeutic suggestion is the psychosocial "entrainment" of this natural range of rhythmic chronobiological behavior for therapeutic purposes. This association between chronobiology and hypnosis integrates many of the classical historical phenomena of hypnosis with recent research unifying life processes from the psychosocial and behavioral levels to the neuroendocrinal, psychoimmunological and cellular-genetic-molecular levels.

Since it is exactly ten years since the publication of the first paper proposing an association between Milton Erickson's naturalistic approach to therapeutic hypnosis and the psychobiological rhythms of chronobiology (Rossi, 1982), it is appropriate to examine the research generated by this hypothesis. The chronobiological hypothesis proposes that the „basic stuff“ of hypnotherapeutic suggestion is the accessing and utilization of the normal range of cybrenetic, homeostatic psychobiological parameters that are manifest in ultradian (many cycles every 24 hours) and circadian rhythms (one cycle every 24 hours) throughout the day. Hypnotherapeutic suggestion is regarded as the psychosocial „entrainment“ of this natural range of chronobiological behavior for therapeutic purposes. Since it is now believed that biological rhythms are a fundamental expression of organization and information processing in all living systems (Lloyd and Rossi, 1992), this theoretical integration may infuse hypnosis with a variety of new approaches to therapeutic suggestion that can operate with a greater degree of specificity on all levels from the