

MAIN PAPER

HYPNOSIS AND COGNITIVE-EXPERIENTIAL SELF-THEORY: A NEW CONCEPTUALIZATION FOR HYPNOSIS?

Richard J. Brown and David A. Oakley

Hypnosis Unit, University College London

ABSTRACT

Evidence for a shift from analytical to holistic processing during hypnosis is presented as a basis for a new conceptualization of hypnosis in terms of Epstein's integrative theory of personality, Cognitive-Experiential Self-Theory (CEST; e.g., Epstein, 1973, 1990, 1994). Support for this view comes from parallels between the hypnotic state and the experiential system as embodied in CEST and from converging lines of enquiry from cognitive psychology. It is concluded that there is significant heuristic value in such a conceptualization, which can form a framework within which to organize data and generate research, and can serve as an interface between cognitive psychology, the psychology of individual differences and hypnosis theory.

Despite pervasive theoretical differences within the field, the notion that hypnosis involves some sort of temporary suspension of critical thought to allow a more holistic, intuitive, emotional and imaginal way of thinking to predominate has proved extremely popular (e.g., Spanos & Barber, 1974; Crawford, 1982). Such an idea is appealing for a number of reasons. For example, a number of studies have indicated that hypnosis is characterized by an increase in imaginative processing (e.g., Crawford & Allen, 1983; for a review see Sheehan, 1979), heightened creativity (e.g., Raikov, 1983) and affect intensity (e.g., Crawford, Clarke, Kitner-Triolo & Olesko, 1989). Moreover, there is evidence to suggest that the ability to enter hypnosis might be facilitated by an everyday preference for a holistic style of thinking (e.g., Tellegen & Atkinson, 1974; Wallace, 1990) that, in extreme cases, involves considerable engagement in fantasy-related behaviour during normal waking — the so-called fantasy-prone personality (Lynn & Rhue, 1986)

The idea that hypnosis involves a shift from an analytic to a more holistic style of processing — a notion we shall refer to as the *analytic-holistic hypothesis* — is well represented, albeit often implicitly, in many contemporary cognitive accounts of hypnosis. For example, both neodissociation theory (e.g., Hilgard, 1977), and its more recent interpretation dissociated control theory (e.g., Bowers 1992), regard the disruption and inhibition of higher executive functions (the seat of conscious, analytical processing) as central to the induction and maintenance of hypnosis. The neuropsychophysiological model of Crawford and Gruzelier (1992) embodies a more explicit version. Citing evidence indicating a cerebral activity shift from left frontal to right

posterior sites during a hypnotic induction (e.g., for a review see Crawford, 1994), Crawford and Gruzelier argue that hypnosis is characterized by a switch from a focused to a diffuse style of attentional processing corresponding to a shift from an analytical to a more holistic mode of cognition.

However, although the analytic-holistic hypothesis has played a major role in shaping cognitive theorising about hypnosis, it suffers from one fundamental shortcoming. Generally speaking, within the literature 'holistic processing' has been used as an umbrella term to describe such concepts as intuition, imagination and emotion with no clear indication as to the relationships, should they actually exist, between these constructs. Clearly, as a definition of holistic processing 'that-which-is-not-analytic' is unsatisfactory. In short, what is missing is an adequate theoretical framework to organize data concerning hypnosis and the analytic-holistic hypothesis and to generate research in order to assess the validity of the notion. We attempt to address this shortcoming in the remainder of this paper by presenting a conceptualization of hypnosis in terms of an established theory of personality, Cognitive-Experiential Self-Theory (e.g., Epstein, 1973, 1990, 1994).

HYPNOSIS AND COGNITIVE-EXPERIENTIAL SELF-THEORY

Epstein's (e.g., 1973, 1990, 1994) Cognitive-Experiential Self-Theory (CEST) is a cognitively oriented, global theory of personality which postulates the existence of a superordinate division of mental functions into two systems: the rational and the experiential systems. According to Epstein, conscious, deliberative thinking is not the natural mode of processing for humans as it is a highly inefficient way of dealing with the vast amount of information presented to the individual. The majority of information, he argues, is processed automatically and effortlessly outside conscious awareness, providing an efficient and adaptive method of responding to incoming data. CEST postulates that these forms of information processing are carried out separately by the rational and experiential systems respectively — the dynamic balance between both mediating all behaviour. Table 1 presents a comparison of the attributes of these systems.

According to CEST, the rational system operates within established rules of inference: it is conscious, logical, analytical and is affect-free. Epstein suggests that this system is, evolutionarily speaking, relatively 'new', coming about through the gradual acquisition of language by our forebears. In contrast, the experiential system is a relatively crude system, evolved over millions of years and present in both animals and humans, that automatically processes information and directs behaviour according to the emotional valence of prior experience. It is thus fundamentally pre-conscious and operates according to a holistic process based, in part, on maintaining a favourable pleasure-pain balance. Such a view has much in common with that of Oakley (1985). All behaviour is a result of the dynamic interplay between the operations of these two systems; the relative degree to which either is used in preference to the other is determined jointly by individual differences and the processing demands of the situation.

The essence of our conceptualization is that hypnosis represents one situation where the balance of processing is altered in favour of the experiential system. Such a notion is consistent with the reduction in planning functions, critical judgement and reality testing which many have suggested are inherent to the hypnotic experience (e.g., Shor, 1959; Woody & Bowers, 1994). Moreover, the form in which Epstein proposes the experiential system encodes information, namely imagery, metaphors and narratives, are assumed by many to be integral to the induction and maintenance of hypnosis (e.g., Waxman, 1989).

Table 1. Comparison of the experiential and rational systems

Experiential system	Rational system
1. Holistic operation	1. Analytic operation
2. Affective: Pleasure-pain oriented	2. Logical: Reason oriented
3. Associationistic structure	3. Logical structure
4. Behaviour mediated by 'vibes' from past experiences	4. Behaviour mediated by conscious appraisal of events
5. Encodes reality in concrete images, metaphors and narratives	5. Encodes reality in abstract symbols (words and numbers)
6. Rapid processing: Oriented towards immediate action	6. Slower processing: Oriented towards delayed action
7. Slower to change: Changes with repetitive or intense experience	7. Changes more rapidly: Changes with speed of thought
8. More crudely differentiated: Broad generalisation gradient; stereotyping	8. More highly differentiated
9. More crudely integrated: Dissociative; context-specific processing	9. More highly integrated: Cross-context processing
10. Experienced passively and preconsciously	10. Experienced actively and consciously
11. Self-evidently valid: 'Experiencing is believing'	11. Requires justification via logic and evidence

From 'Cognitive-Experiential Self-Theory: An integrative theory of personality' by S. Epstein, in R.C. Curtis, *The Relational Self: Theoretical Convergences in Psychoanalysis and Social Psychology*, New York: Guilford Press. Copyright 1991 by Guilford Press. Adapted by permission.

Should hypnosis represent a significant shift towards holistic, experiential processing one would also expect to find an increase in the emotionality of hypnotized subjects, a hypothesis borne out by a small number of studies (e.g., Crawford *et al.*, 1989). Moreover, the fantasy-prone subjects of Lynn and Rhue (1986) proved more likely to report physical reactions to violence in films and on television than their less fantasy-prone counterparts. Clearly, responding to emotionally arousing material in this way would suggest that fantasy-prone (and therefore hypnotically susceptible) subjects are more sensitive to the unconscious emotional evaluation of stimuli than those less prone to fantasy. Given that hypnosis involves a bias towards experiential processing, one might predict that the more prone to processing experientially during everyday life one is, the more susceptible one will be to hypnosis. Furthermore, the observed relationships between fantasy-proneness, hypnotic susceptibility and creativity (e.g., Lynn & Rhue, 1986) are also consistent with the conceptualization advanced here, as CEST regards the experiential system, due to its holistic and associationistic nature, to be the seat of intuitive wisdom and creativity.

CEST proposes a division of mental function that is *prima facie* very similar to that proposed in traditional psychoanalytical theory, with the primary and secondary processes corresponding to the experiential and rational systems respectively. However, there is one fundamental difference. Unlike psychoanalytic theory, CEST has a strong evolutionary component, suggesting that the experiential system is phy-

logenetically ancient and present in both human and non-human species alike. Conversely, the rational system is evolutionarily recent — being based on language — and is unique to humans. Such a notion is strongly supported by Reber's (1992) evolutionary argument for a dissociation between explicit and implicit memory processes. Citing the 'developmental lock' model (Wimsatt, 1986; Schank & Wimsatt, 1987) Reber argues that, given the relative evolutionary infancy of consciousness, explicit memory systems must have developed on the basis of a pre-existing system of implicit processes. This system is highly resistant to change and, because of its phylogenetic antiquity, should be present in many species other than our own. Furthermore, if one assumes that analytical processes require consciousness for their operation, then it follows that the implicit system must operate according to non-analytical rules. This not only furnishes CEST with a strong evolutionary backbone, it could provide a significant source of cross-fertilization between hypnosis research and cognitive psychology should our conceptualization prove valid.

We would make a strong claim, therefore, that CEST is a useful heuristic within which to organize data concerning hypnosis and the analytic-holistic hypothesis. As a cognitive account of hypnosis, however, it is not sophisticated enough to allow detailed explanations and predictions to be made on the basis of it. In short, it is the barest of bones of an information processing theory — what is needed is some empirical flesh. To this end, an examination of research concerning the analytic-holistic dichotomy within cognitive psychology as a whole has yielded a number of potentially fruitful avenues for investigation (see Brown, 1996). Work from the fields of attention, perception, memory, problem solving and cognitive style demonstrate a remarkable convergence in favour of the conceptualization of mental processes that is fundamental to CEST. For the sake of brevity, we provide only a brief illustration here.

The question of whether multidimensional stimuli are perceived analytically or holistically has enjoyed a significant resurgence in recent years (Smith, 1989). Much of this revival stems from earlier research concerning dimensional integrality and separability (Shepard, 1964; Lockhead, 1972; Garner, 1974) and is firmly rooted in the best standards of cognitive psychology. This research has shown that certain dimensional combinations lend themselves more to a holistic form of processing; these have been described as 'integral stimuli' (Lockhead, 1972; Garner, 1974). Conversely, other combinations of dimensions have been described as 'analysable' (Shepard, 1964; Lockhead, 1972) or 'separable' (Garner, 1974) because they are more likely to be processed analytically.

However, more recently research has indicated that both integral and separable stimuli may, under certain conditions, be processed separably and integrally respectively. For example, a set of stimuli composed of dimensions of size and brightness, the prototypical example of separable stimuli, are often processed holistically under incidental conditions or concurrent task demands (e.g., Foard & Kemler-Nelson, 1983). Thus, it is not simply the stimulus that determines the nature of the processing operation performed, but task requirements also. One clear prediction from our conceptualization might be that hypnosis represents one such task manipulation that motivates the holistic processing of stimuli usually processed analytically.

Furthermore, a number of findings indicating that subject factors influence the nature of the processing operation performed might also be of relevance here (see Foard & Kemler-Nelson, 1983). For example, several studies have shown that cognitive development appears to proceed in parallel with a shift from a holistic to a more analytical form of perceptual processing (e.g., L.B. Smith and Kemler, 1977). Thus,

young children tend to process stimuli commonly perceived as separable by adults in a holistic fashion, with this tendency diminishing as the child matures. Such a developmental trend from integral to separable processing might go some way towards explaining the observed pattern of superior hypnotic susceptibility in children (e.g., Hilgard, 1965). An investigation of the relationship between hypnotic susceptibility and integral versus separable processing preference may shed some light on this matter.

On the basis of this perceptual research, Foard and Kemler Nelson (1983) concluded that holistic processing is a primitive fall-back mode of cognition that operates in the absence of the ability or inclination to process analytically. Clearly, such a conclusion is consistent with the organization of mental processes that we have presented here. Furthermore, this research offers tried and tested methodologies with which to test the validity of our ideas. Work is currently under way in our laboratory in an attempt to do just this.

CONCLUSIONS

Our conceptualization of hypnosis in terms of CEST provides a useful heuristic within which to organize data concerning the analytic-holistic hypothesis. Furthermore, extension of this conceptualization to incorporate research from psychology as a whole provides not only theoretical substance but a number of potentially useful methodological paradigms with which to assess the validity of our claims. In addition, through such a process of cross-fertilization it is hoped that our conceptualization offers considerable potential for hypnosis research and theory to enrich our understanding of the nature of intuition, and the relationship between cognition and emotion.

REFERENCES

- Bowers, K.S. (1992). Imagination and dissociation in hypnotic responding. *International Journal of Clinical and Experimental Hypnosis* **40**, 253–275.
- Brown, R.J. (1996). Analytic and holistic processes in hypnosis and cognitive psychology. Unpublished doctoral manuscript, University College London.
- Crawford, H.J. (1982). Cognitive processes during hypnosis: Much unfinished business. *Research Communications in Psychology, Psychiatry and Behaviour* **7**(2), 169–179.
- Crawford, H.J. (1994). Brain dynamics and hypnosis: Attentional and disattentional processes. *International journal of clinical and experimental hypnosis* **42**(3), 204–232.
- Crawford, H.J. & Allen, S.N. (1983). Enhanced visual memory during hypnosis as mediated by hypnotic responsiveness and cognitive strategies. *Journal of Experimental Psychology: General* **112**(4), 662–685.
- Crawford, H.J., Clarke, S.N., Kitner-Triolo, M. & Olesko, B. (1989). EEG correlates of emotions: Moderated by hypnosis and hypnotic level. Paper presented at the meeting of the American Psychological Association, New Orleans.
- Crawford, H.J. & Gruzelier, J.H. (1992). A midstream view of the neuropsychophysiology of hypnosis: Recent research and future directions. In E. Fromm & M.R. Nash (Eds), *Contemporary Hypnosis Research*, pp. 227–266. London: Guilford.
- Epstein, S. (1973). The self-concept revisited, or a theory of a theory. *American Psychologist* **28**, 404–416.
- Epstein, S. (1990). Cognitive-experiential self-theory. In L. Pervin (Ed.), *Handbook of Personality: Theory and Research*, pp. 165–192. New York: Guilford Press.
- Epstein, S. (1994). Integration of the cognitive and psychodynamic unconscious. *American Psychologist* **49**(8), 707–724.
- Foard, C.F. & Kemler-Nelson, D.G. (1983). Holistic and analytic modes of processing: The multiple determinants of perceptual analysis. *Journal of Experimental Psychology: General* **113**, 94–111.

- Garner, W.R. (1974). *The Processing of Information and Structure*. Potomac, MD: Erlbaum.
- Hilgard, E.R. (1965). *Hypnotic Susceptibility*. New York: Harcourt, Brace & World.
- Hilgard, E.R. (1977). *Divided Consciousness: Multiple Controls in Human Thought and Action*. New York: Wiley.
- Lockhead, G.R. (1972). Processing Dimensional Stimuli: A note. *Psychological Review* **79**, 410–419.
- Lynn, S.J. & Rhue, J.W. (1986). The fantasy-prone person: Hypnosis, imagination and creativity. *Journal of Personality and Social Psychology* **51**(2), 404–408.
- Oakley, D.A. (1985). Animal awareness, consciousness and self-image. In D.A. Oakley (Ed.), *Brain and Mind*, pp. 217–251. London: Methuen.
- Raikov, V.L. (1983). Creativity and Hypnosis. *Perspectives Psychiatriques* **21**(2), 111–118.
- Reber, A.S. (1992). The cognitive unconscious: An evolutionary perspective. *Consciousness and Cognition* **1**, 93–133.
- Schank, J.C. & Wimsatt, W.C. (1987). Generative entrenchment and evolution. In A. Fine & P. Machamer (Eds), *PSA 1986: Proceedings of the meetings of the philosophy of science association*, pp. 33–60. East Lansing, MI: Philosophy of Science Association.
- Sheehan, P.W. (1979). Hypnosis and the process of imagination. In E. Fromm & R.E. Shor (Eds), *Hypnosis: Developments and New Perspectives* (2nd ed.), pp. 381–411. New York: Aldine.
- Shepard, R.N. (1964). Attention and the metric structure of the stimulus space. *Journal of Mathematical Psychology* **1**, 54–87.
- Shor, R.E. (1959). Hypnosis and the concept of the generalized reality orientation. *American Journal of Psychotherapy* **13**, 582–602.
- Smith, J.D. (1989). Analytic and holistic processes in categorization. In B.E. Shepp & S. Ballesteros (Eds), *Object Perception: Structure and Process*. Hillsdale, NJ: Erlbaum.
- Smith, L.B. & Kemler, D.G. (1977). Developmental trends in free classification: Evidence for a new conceptualisation of perceptual development. *Journal of Experimental Child Psychology* **24**, 279–298.
- Spanos, N.P. & Barber, T.X. (1974). Towards a convergence in hypnosis research. *American Psychologist* **July**, 500–519.
- Tellegen, A. & Atkinson, G. (1974). Openness to absorbing and self-altering experiences ('absorption'), a trait related to hypnotic susceptibility. *Journal of Abnormal Psychology* **83**(3), 268–277.
- Wallace, B.J. (1990). Imagery vividness, hypnotic susceptibility, and the perception of fragmented stimuli. *Journal of Personality and Social Psychology* **58**(2), 354–359.
- Waxman, D. (1989). *Hartland's Medical and Dental Hypnosis* (3rd edition). Bailliere Tindall: London.
- Wimsatt, W.C. (1986). Development constraints, generative entrenchment, and the innate-acquired distinction. In W. Bechtel (Ed.), *Integrating Scientific Disciplines*, pp. 185–208. Dordrecht: Martinus-Nijhoff.
- Woody, E.Z. & Bowers, K.S. (1994). A frontal assault on dissociated control. In S.J. Lynn & J.W. Rhue (Eds), *Dissociation: Clinical and Theoretical Perspectives*, pp. 52–79. New York: Guilford Press.

Address for correspondence:

Richard Brown,
Hypnosis Unit,
Department of Psychology,
University College London,
Gower Street,
London, WC1E 6BT,
UK

E-mail: zcjt16@ucl.ac.uk