

## **Anomalous experiences and hypnosis**

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### Abstract

Throughout its history, mesmerism and its later development as hypnosis have been related to reputed psi-phenomena and to various alterations of consciousness. Although most of the older literature would not stand up to current methodological strictures, there are some reports that are still baffling and both the consistency of the reports and more recent meta-analytic work suggest that we should investigate the psi-hypnosis relationship more programmatically. With respect to alterations of consciousness within the hypnotic context, most previous work has had the confound of specific suggestions. In this paper I review the literature on hypnotic phenomenology, point out its limitations, and present recently published data that supports specific alterations associated with experienced depth: mostly relaxation during a resting baseline, mild to moderate changes in sensations and body image during light/medium hypnosis, and radical alterations of body image (e.g., floating, sinking), and dreamlike and transcendental (e. g., merging with a light) during deep and very deep hypnosis. Many of these phenomena have also been observed during other altered states such as OBEs and NDEs, which have been of great interest to the parapsychology field.

### Mesmerism, hypnosis, and psi phenomena

Ever since the exuberant collective healings of Mesmer in the Paris of the late eighteenth century, much has been speculated and researched about the collection of phenomena and techniques that we refer to as hypnosis. While there is growing interest on topics such as the therapeutic uses of hypnosis, other areas have been neglected in contemporary research, among them spontaneous anomalous experiences within the hypnotic context. An anomalous experience can be defined as a statistically uncommon alteration of consciousness (e.g., synesthesia), or one that, although not uncommon, seems to deviate from the culture's conception of reality (e.g., psi phenomena; Cardeña, Lynn, & Krippner, 2000). The gist of this paper will focus on spontaneous alterations of consciousness within the hypnotic context, including some recently published data, after a brief discussion of mesmerism, hypnosis and psi phenomena.

It is typically assumed that what we acknowledge as hypnotic phenomena and procedures derive from the techniques of the 18<sup>th</sup> Century physician Franz Anton Mesmer,

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albeit not from his theory of animal magnetism. This is debatable since Mesmer's procedures differed greatly from current hypnosis. They could involve music and a grand entrance by Mesmer himself, "magnetic passes" of the mesmerist's hands over the patient's body, or indirect contact through rods immersed in "magnetized" water. These sessions occurred in an emotionally charged setting in which there might be crying, fainting, and other dramatic behaviors, not very unlike the exorcisms that Mesmer wished to replace (Laurence & Perry, 1988). These manifestations became far more subdued after one of his disciples, the Marquis de Puységur, discovered that one of his "magnetized" peasants, Victor Race, went into what looked like a sleep-like state, in which he seemed to manifest a "wiser" self. Eventually, a model of physical quiescence and suggestions to relax and enter a sleep-like state became what we call nowadays hypnosis, although physically active inductions are effective and have their applications (Cardeña et al., 1998).

From its inception, reports started pouring in that mesmerism/hypnosis enhanced the creativity and paranormal abilities of hypnotically gifted individuals, allowing them to diagnose and prescribe for their own and others' maladies, demonstrate telepathy and clairvoyance, be hypnotized at a distance, and so on (Crabtree, 1988; Gauld, 1992). With few exceptions, such as the demonstrations by Alexis Didier and Mme. B in 19<sup>th</sup> century France, most earlier reports of enhanced paranormal abilities would not meet contemporary criteria for good scientific reporting and control (Gauld, 1992). There were enough suggestive observations, however, to justify Dingwall's (1967-68) remark concerning a possible connection between psi phenomena and hypnosis that "(A) n attitude of suspended judgment both as regards the past and the present is perhaps the most judicial" (V. 1, p. 297).

Most hypnosis researchers in the 20<sup>th</sup> Century made a concerted effort to eliminate any whiff of paranormality or esoterism, but there were still various controlled studies, although not programmatic research, on the reputed link between psi phenomena and hypnosis. Two meta-analyses of all published studies to that date provide a strong support of Gauld's assertion (1992) that the early mesmerism/hypnosis authors were "certainly on to something." Among the conclusions of the meta-analyses (Schechter, 1984; Stanford, 1992) are:

- 1) Psi scoring was higher in hypnosis than control conditions in 16 of 20 studies ( $p < .006$ , one tailed)
- 2) In 19 studies, psi scoring in the hypnosis condition was significantly higher than MCE (mean chance expectation) in 9 studies, and non-significantly higher in 6 others.

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- 3) Methodological flaws did not relate significantly to results, although, as in some other areas of psi, there seems to be a significant experimenter effect (Stanford, 1992).

The possible relationship between hypnosis and psi was identified by Palmer (1987) as one of the strongest findings in parapsychology and deserves a full paper of its own. It is puzzling that it has not received more recent attention from the field. For instance, a question that deserves further research is whether reputed enhanced psi phenomena depend on a trait (high hypnotizability), a state (the hypnotic context), or an interaction between the two.

### Mesmerism, hypnosis, and alterations of consciousness

Whether or not interpreted as referring to psi phenomena, reports of alterations of consciousness were yoked to mesmeric and hypnotic procedures from the beginning, and there were attempts to categorize them. One of the most important hypnosis authors of the 19<sup>th</sup> Century, Kluge, described six degrees (what would be now called "levels") of the magnetic state, including phenomena such as "darkness", "self-contemplation," and "universal clarity" (Ellenberger, 1970). However, when reviewing the literature on phenomena described within hypnosis, a distinction must be made between consciousness alterations in response to specific suggestions and those occurring spontaneously. The former, such as in inductions of quasi-mystical experiences (e.g., euphoria, expansion of time and space, unspeakable beauty; Aaronson, 1967; Sacerdote, 1977) are of great interest, but they do not distinguish between the "artifact" (e.g., response to specific suggestions) of hypnosis and its "essence" (i.e., phenomena presumably intrinsic to hypnosis; Orne, 1959). Multifactorial experiential models of hypnosis involving increased suggestibility, lack of reflective awareness/dissociation, and alterations in consciousness/ absorption have been developed (Ås & Ostvold, 1968; Cardeña & Spiegel, 1991; Evans, 1963; Field, 1965), but there has been little research on hypnotic phenomenology, especially among very responsive individuals (Weitzenhoffer, 2000). This is a basic issue in the study of consciousness because hypnotizability has been positively correlated with mystical, psi-related, near-death, and other anomalous experiences (Cardeña, Lynn, & Krippner, 2000).

Gill and Brenman (1959) reported that while entering hypnosis many participants reported changes in body image (e.g., swelling of the head, mouth and arms) and body sensations (e.g., dizziness and sensations of floating), and a fading of the sense of external reality. As hypnosis continued, the specific configuration of the changes became more idiosyncratic. Ludwig (1965) gave a questionnaire to participants before and after a long

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hypnotic challenge procedure. In contrast with no-hypnosis, hypnosis fostered reports of phenomena such as a sense of unreality, merging with the surroundings, and unusual sensations, which the author interpreted as alterations in thinking and time sense, sense of loss of control, increased meaning, decreased affect, and changes in body image and somatic sensations. Ernest Hilgard (1968) interviewed 159 participants after their first standard hypnotic induction. Reports of unsuggested experiences included disinclination to speak, move or think, feelings of compulsion in response to suggestions, changes in body image (in appearance and size), changes in body sensations (e.g. dizziness, floating, spinning) and a similarity to sleep. More recently, Pekala (1991), using his standardized questionnaire, also found alterations associated with hypnosis in the following areas: body image and sensations, time sense, perception, meaning, affect, and imagery, besides a general sense of alterations in consciousness. As compared to hetero-hypnosis, self-hypnosis is characterized by greater imagery, free-floating attention, and receptivity to "internal stimuli" (Fromm et al., 1981).

Besides hypnotic experience in general, some authors have taken seriously the notion of levels of hypnosis and have researched alterations of highly hypnotizable people during "deep" levels of hypnosis. Perhaps the first well-known modern author to dedicate a work specifically to deep hypnosis was Milton Erickson (1952), who defined it as an "unconscious level of awareness without interference by the conscious mind." He described loss of contact with the body during plenary (very deep) hypnosis and explained it as a pattern of retarded psychological and physiological functioning with lack of spontaneity. In a later paper, Erickson (1965) wrote about the experiences of hypnosis and other altered states of the eminent consciousness author Aldous Huxley. The latter described the beginning of hypnotic experience as a withdrawal from outer reality concerns, characterized at later stages by changes in body sensation ending in synesthesia, a sense of loss of personal identity, and lack of mental content.

More systematically, Tart (1970) devised a deep hypnosis procedure (i.e., asking a participant to go as deeply as possible into hypnosis without any other overt suggestions or instructions) and published a report about the phenomenology of a hypnotic "virtuoso." He described the participant's progression into self-assessed deep hypnosis without any specific suggestions along various dimensions: 1) his body became very relaxed until awareness of the body was lost, 2) awareness of breathing gradually disappeared, 3) absolute blackness was perceived, 4) sense of identity and ego-awareness waned and gave rise to a sense of potentiality, 5) time slowed down until it became meaningless, 6) spontaneous mental activity was lost, and 7) a feeling of oneness with the universe ensued.

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Tart's case study was subsequently replicated in within-subject designs. Sherman (1971) found statistically significant clusters of phenomena related to deep hypnosis. The deepest level of hypnosis included difficulties in talking, feeling oneness with everything, loss of individual identity, episodes of absolute mental quiet and voidness, feeling in a different level of reality, and great brightness. The very deep hypnotic state was also correlated with occurrences of reductions in EEG amplitude. A medium level of hypnosis was characterized by pleasant emotional experiences, simple images, and body sensation (e.g., relaxation, wavelike experiences, motion). Ideas, worries, and "normal verbal thinking" were reported during light hypnosis.

Feldman (1976) obtained a similar pattern of results as Sherman (at the beginning of hypnosis mainly changes in body image and bodily sensations; in deeper hypnosis, phenomena such as feeling one with the surroundings, being immersed in blackness, a sense of awe and wonder). He also found that participants' expectations were negligible predictors of deep hypnotic phenomena. Ernest Hilgard (1986) carried out some informal research and stated that deeply hypnotized individuals spontaneously reported losing contact with their body, an altered sense of time and mystical phenomena such as a sense of oneness and ineffability.

Despite the consistency of the findings on the phenomenology of deep hypnosis, they have had various methodological shortcomings, including: a) no control for relaxation effects (all studies reviewed), b) no quantitative analysis published and reliance on case studies (Erickson, Hilgard, and Tart), c) no comparison conditions (Sherman, Tart; Feldman used a baseline condition as "control"), and d) lack of a previously validated instrument to evaluate alterations in consciousness (except for Feldman, who administered the rarely-used Linton-Langs questionnaire).

To reduce or eliminate some of these shortcomings and investigate the effect of physical activity on phenomenal experience, I carried out a study (Cardeña, 2005) using a "neutral" hypnosis procedure (i.e., no specific suggestions other than asking the person to go into a very deep, and undefined, state of hypnosis) with highly hypnotizable participants.

### *Sample*

Out of an initial sample of about 150 undergraduates, 12 individuals were selected (mean age = 20.42, SD=2.54, all of them European-American, 8 women). The criteria for selection included scoring very highly on standardized hypnotizability scales and not manifesting overt pathology, as measured by the Minnesota Multiphasic Personality

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Inventory (MMPI). As can be seen in Tables 1a-b, this group had very high scores in hypnotizability and the related construct of absorption. Furthermore, as evaluated by the Myers-Briggs Inventory, 10 out of the 12 participants tended to have a global, intuitive type of perception, consistent with proposals that hypnotic virtuosos tend to be imaginative and creative (Hilgard, J., 1979), and that hypnosis involves a holistic type of thought (Crawford, 1981).

**Table 1a:**

**Demographic and personality variables**

| <u>Participant</u> | <u>Age</u> | <u>Sex</u> | <u>Major</u> | <u>Personality Type*</u> | <u>Ego-strength**</u> |
|--------------------|------------|------------|--------------|--------------------------|-----------------------|
| #1                 | 18         | M          | Physics      | INTP                     | 50                    |
| #2                 | 23         | M          | Psych/Stat   | ENFJ                     | 51                    |
| #3                 | 20         | M          | Undeclared   | ISFJ                     | 41                    |
| #4                 | 20         | M          | Physics      | ENTP                     | 46                    |
| #5                 | 27         | F          | Linguistics  | INTJ                     | 54                    |
| #6                 | 18         | F          | Zool/Psych   | ENFP                     | 49                    |
| #7                 | 19         | F          | Biochemistry | ENFP                     | 45                    |
| #8                 | 20         | F          | English      | INFP                     | 47                    |
| #9                 | 21         | F          | English      | INFP                     | 50                    |
| #10                | 21         | F          | Psychology   | ENFP                     | 49                    |
| #11                | 18         | F          | Psychology   | ENTP                     | 50                    |
| #12                | 20         | F          | Biochemistry | ESTJ                     | 31                    |
| Means              | 20.42      |            |              |                          | 46.92                 |

\* According to the Myers-Briggs Inventory, where E=extraverted, I=introverted, S=sensing, N=intuition, T=thinking, F=feeling, J=judging, P=perceptive. The result of 10 out of 12 participants having an intuitive style of perception would be statistically significant assuming a binomial probability of 50% or even 55% for the distribution of "Ns" among this sample (p=.0193 for 50% probability, p=.0421 for 55% probability, one tailed test)

\*\* Barron's Ego-Strength Scale of the MMPI

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**Table 1b:**

**Hypnotizability and related variables**

|             | HGSHS:A | IS    | SHSS:C | SPS:1 | SPS:2 | DPQ  | PAS  |
|-------------|---------|-------|--------|-------|-------|------|------|
| Group Means | 10.58   | 26.75 | 10.58  | 19.5  | 21.08 | 25.5 | 8.08 |

HGSHS:A= Harvard Group Scale of Hypnotic Susceptibility, Form A, score range = 0-12.

IS= Field's Inventory Scale of Hypnotic Depth, score range = 0-38.

SHSS:C= Stanford Hypnotic Susceptibility Scale, Form C, score range = 0-12.

SPS:1= Stanford Profile Scale of Hypnotic Susceptibility, Form 1-Revised, score range = 0-27.

SPS:2= Stanford Profile Scale of Hypnotic Susceptibility, Form2-Revised, score range = 0-27.

DPQ= Absorption Scale of the Differential Personality Questionnaire, score range = 0-34.

PAS= Perceptual Alterations Scale of the MMPI, score range = 0-25.

### *Design*

This study was repeated-measures factorial, with 2 (hypnosis versus no hypnosis) x 3 factors (types of physical stimulation: motionless on a bed or “quiescent,” “pedaling” a stationary bicycle at a comfortable rate, and having a “motor” do the pedaling at a comfortable rate). This paper focuses only on hypnotic phenomenology during deep states; further details about the statistical analyses and the effect of physical activity can be found elsewhere (Cardeña, 2005).

### *Procedure*

After participant selection, three hypnosis training sessions were conducted to familiarize participants with the laboratory and physical conditions, and let them practice going in and coming out of hypnosis by themselves. They also practiced a numerical self-report scale of hypnotic depth (0=wide awake... 41= very deep hypnosis), which previous research has shown to be a valid indicator of changes in subjective experience (Laurence & Nadon, 1986). The experiment took place in a silent and dimly lighted room. In the three hypnosis sessions physical conditions were administered in counterbalanced order, with a 1-30 induction count; the only suggestion was that as the count progressed participants would go into an increasingly deeper level of hypnosis, until they “came out” of hypnosis by



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themselves. At the end of the induction and at 5 minute intervals the experimenter repeated the word “state,” to elicit a numerical depth report, and asked “what are you experiencing?” Participants were free to report their experience at any other point if they so desired. The length of the hypnosis sessions was not predetermined. After the hypnosis session, control sessions were conducted with a 1-30 count, but without the suggestion to go into deep hypnosis. The sessions were recorded and later transcribed.

After every session participants were interviewed about their experience and completed the Phenomenology of Consciousness Inventory (PCI; Pekala, 1991) for their “deepest state,” and a comprehensive checklist of psychological phenomena for each level of hypnosis (including no hypnosis). This paper reports the comparison between the hypnosis and control conditions, as measured by the dependent variables of the PCI, and descriptions of different levels of hypnosis as evaluated by depth reports, in-session verbalizations, and phenomena significantly more frequently endorsed for each level, as measured by chi squares.

### *Results*

As Table 2 shows, during very deep hypnosis participants mentioned alterations in body image, time sense, perception and meaning, and the sense of being in an altered state of awareness. They also reported increases in affect, attentional focus, and amount and vividness of imagery, but less self- awareness, rationality, voluntary control, and memory. Variables that seem irrelevant to hypnosis such as “sexual excitement” showed no differences between conditions.

**Table 2:**

**Mean scores and SDs in the Phenomenology of Consciousness Inventory\***

| <b>Dimension</b>          | <b>Hypnosis</b> | <b>Control</b> | <b>F (df=1,10)</b> | <b>d</b> |
|---------------------------|-----------------|----------------|--------------------|----------|
| <b>Altered Experience</b> | 3.70 (.86)      | 0.61 (.99)     | 56.0***            | 3.49     |
| Body image                | 3.89 (1.10)     | 0.95 (1.36)    | 29.9 ***           | 2.49     |
| Time sense                | 4.13 (1.45)     | 0.59 (1.25)    | 57.5 ***           | 2.74     |
| Perception                | 4.06 (1.52)     | 0.51 (.89)     | 70.0 ***           | 2.99     |
| Meaning                   | 3.07 (1.52)     | 0.46 (.97)     | 25.5 ***           | 2.15     |
| <b>Positive Affect</b>    | 2.27 (1.06)     | 1.18 (1.44)    | 9.8*               | 0.9      |
| Joy                       | 3.39 (1.56)     | 1.47 (1.83)    | 10.8**             | 1.18     |
| Sexual Excitement         | 0.8 (1.03)      | 0.91 (1.92)    | 0.0                | -0.07    |
| Love                      | 2.62 (1.63)     | 1.17 (1.52)    | 14.0**             | 0.96     |
| <b>Negative Affect</b>    | 1.1 (1.02)      | 0.29 (.53)     | 20.6**             | 1.05     |
| Anger                     | 0.79 (1.32)     | 0.29 (.70)     | 4.1                | 0.5      |

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|                          |             |             |          |       |
|--------------------------|-------------|-------------|----------|-------|
| Sadness                  | 1.29 (1.30) | 0.27 (.59)  | 10.5**   | 1.06  |
| Fear                     | 1.29 (1.43) | 0.31 (.67)  | 24.7**   | 0.92  |
| <b>Attention</b>         | 4.68 (.81)  | 3.83 (1.28) | 3.5      | 0.83  |
| Direction                | 4.76 (.79)  | 3.47 (1.60) | 7.0*     | 1.07  |
| Absorption               | 4.57 (1.36) | 4.36 (1.42) | 0.1      | 0.16  |
| <b>Visual Imagery</b>    | 4.87 (1.06) | 2.26 (1.64) | 29.98*** | 1.98  |
| Amount                   | 5.33 (.83)  | 2.03 (1.53) | 80.89*** | 2.81  |
| Vividness                | 4.5 (1.50)  | 2.47 (1.93) | 15.95**  | 1.23  |
| <b>Self Awareness</b>    | 2.87 (1.06) | 4.83 (1.20) | 24.18*** | -1.82 |
| <b>A.S. of Awareness</b> | 4.97 (.94)  | 1.05 (1.22) | 50.47*** | 3.78  |
| <b>Arousal</b>           | 1.53 (1.40) | 1.52 (1.41) | 0.0      | 0.01  |
| <b>Rationality</b>       | 3.76 (1.42) | 5.04 (1.24) | 9.1**    | 1.01  |
| <b>Voluntary control</b> | 1.83 (1.08) | 3.89 (1.66) | 16.8**   | -1.54 |
| <b>Memory</b>            | 4.81 (.89)  | 5.42 (.71)  | 19.3***  | -0.79 |
| <b>Internal Dialog</b>   | 2.62 (1.77) | 3.46 (2.05) | 1.3      | -0.46 |

\*\*\*=  $p < .001$ ; \*\*=  $p \leq .01$ ; \*=  $p < .05$

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The experience sampling during the sessions and the checklist provide specific information on the content of these alterations and are arranged by the level of hypnosis in which they were typically reported. At the level of no hypnosis and feeling slightly different than normal, participants did not report any change other than some relaxation. The next level, light/medium hypnosis, was typically mentioned at the beginning of the hypnosis sessions and involved body sensations and, less frequently, changes in body image. Relaxation increased, especially in the quiescent condition (e.g., participant #11: "Slowly relaxed. I can't really feel my body"), along with tingling (e.g., P #12: "Darkness, tingling sensations"), "feeling light," and "spinning." There were also changes in body image (e.g., P#2: "My hands have been growing, they are like big rocks") and an increasing sense of well-being (e.g., P #1: "Feeling mellow, both physical and emotional"). Respondents also mentioned increased concentration on their inner experience and losing touch with the external environment.

Most anomalous phenomena were related to deep and very deep hypnosis. The sensation of "lightness" became more pronounced, such as the body floating, flying, leaving the physical body, and so on (e.g., P #9: "It's just sort of me floating," P #2 "I don't have a physical body anymore"). There were also, paradoxically, frequent reports of the body falling down (e.g., P#3: "sinking deep, deep"), sometimes into a dark liquid. In any case, at this level

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if there was an experience of a body it was of a phenomenal, not physical, body. Somatic sensations were often incorporated into ongoing, imaginal events (e.g., P #8: “walking down in a spiral staircase”).

Overall there was a change of modality from concepts to spontaneous imagery, often including geometric designs such as prisms, grids and tunnels (e.g., P #10: “(Pictures) like nothing else in this world: geometric”), which became more elaborate and vivid, sometimes in a cross-modal or synesthetic way (e.g., P #4: “lines of different colors that stretch infinitely... making music that I have never heard before”). There were also common reports of “having no thoughts” (e.g., P #9: “For a while I was just total nothing”). Various categories referring to imagery were endorsed at this level: “increased quality,” “sustained sequences,” “spontaneous imagery,” “greater realness,” and “imagery not referable to a sensory modality,” sometimes interpreted as similar to “dreaming” (although no one was observed to have fallen asleep). There were ubiquitous reports of both “flashes of light” and “brightness” (e.g., P #5: “Colors with lots of light and energy”), and also, paradoxically, “great obscurity” (e.g., P #3: “Complete black, no sense of clearness”).

Emotions were generally very positive (e.g., P #4: “All the feelings that are good just surround me”), although a few respondents also mentioned some fear about the unusualness of the experiences encountered. With respect to cognition, participants mentioned “difficulties remembering” everyday activities but “suddenly remembering” forgotten events, along with “greater control” over their mental states while maintaining “free floating” attention. Many transpersonal/spiritual experiences were reported including a sense of timelessness, “being one with everything,” “greater relatedness,” “loss of identity,” but being “in touch with one’s inner self” (e.g., P #5: “I’m not matter anymore... just energy”). There was as well a sense of “being in a different reality” that entailed “profound personal insight,” “increased sense of potentiality,” and “increased meaningfulness.”

A general sequence of hypnosis experience (see Table 3) is that at the beginning, participants just felt more relaxed. Light/medium hypnosis was mostly characterized by alterations in body sensations and body image, which later became experiences of floating/flying (and sometime sinking), and an increasing disconnection from the body and the environment. As hypnosis became “deeper,” there was a shift from conceptual thinking to spontaneous imagery, which became dreamlike (and experienced as very real) or gave rise to timeless experiences of pure light and love, no thoughts and cognitive emptiness, and an overall sense of euphoria, potentiality, meaningfulness, insight, and connectedness with all.

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**Table 3:**

**Characteristic phenomena according to hypnotic depth**

|                              | No     | Light /Medium                                   | Deep/very deep                             |
|------------------------------|--------|---|--|
| Body Sensation               | Same   | Deep relaxation, spinning, etc.                 | Disembodiedness                            |
| Emotion                      | Same   | Mildly positive                                 | None or more intense (e.g., “awe, wonder”) |
| Attention                    | Same   | Focused on body changes                         | Free-floating                              |
| memory                       | Same   | Same  | Infrequent retrieval of forgotten material |
| Thought                      | Same   | Decrease of “mental chatter”                    | Totally absorbed in event, or absent       |
| Imagery                      | Poor   | Simple (e.g. geometric forms), light, blackness | Complex imagery                            |
| Time Sense                   | Normal | Slow  | Timelessness                               |
| State of Consciousness (SOC) | Same   | Trance  | Akin to lucid dream; or transcendent SOC   |
| Transpersonal experiences    | None   | Well-being                                      | Merging, becoming one with all; “void”     |

In interviews at the end of the experiments and 8 months later there was no mention of any negative effects, but of various positive sequelae (e.g., greater perceptual vividness and dream recall, increased personal insight and inner peace, decrease in anxiety and nightmares). This suggests that, in addition to its research potential, deep hypnotic experiences may be of great benefit in therapeutic and self-growth contexts.

### Conclusions

With respect to a possible connection between mesmerism/hypnosis and psi phenomena, earlier reports of enhanced psi abilities would not, in general, stand up to current evidential requirements, however a few observations with exceptional participants are suggestive of actual psi. More recent meta-analytic studies make a stronger case for a connection between a hypnotic context and psi performance, although two important hypotheses require further testing. The first one would evaluate to what extent the apparent increase in psi performance is due to a general mechanism (e.g., decrease in exteroceptive stimulation and greater focus on “internal” stimuli; Honorton, 1977), or to a specific interaction between a trait (high hypnotizability) and a state (the hypnotic context), considering the evidence that highly hypnotizables tend to experience anomalous experiences.

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The second hypothesis would test whether an experimenter effect, and not hypnosis, may explain previous significant findings. In any event, the meta-analyses are based on mostly older data that require replication with more sophisticated methodology.

The patterns of spontaneous anomalous experiences by high hypnotizables in a hypnotic context are remarkably consistent and also resemble descriptions of various anomalous experiences. For instance, deep hypnosis reports included a sense of the reality of connectedness with everything (the landmark of a mystical experience; Wulff, 2000); a bright light and a sense of pervading well-being (as in near-death experiences; Greyson, 2000); a sense of floating out of the body (as in OBEs; Alvarado, 2000); geometric constants that, in some cases, became part of more elaborate imaginal events (as in experiences with psychedelics; Siegel, 1977); and even specific shamanic phenomena such as seeing one's body as a skeleton (Cardeña, 1987).

These results are unlikely to be attributable to religious beliefs (the context was secular and participants seemed to be truly surprised at what they were experiencing), expectations (that, when measured, have not seemed to account for most phenomena; Cardeña, 2005; Feldman, 1976), to experimenter effects or demand characteristics (which were intentionally minimized), nor to such events as use of psychoactive drugs or life-threatening circumstances. Rather, they seem to manifest basic aspects of mental states, at least among a highly select group. The results support the notion that anomalous experiences (and their likely neurological underpinnings, see Newberg & D'Aquilli, 2000) may give rise to mystical beliefs (the "Perennial Philosophy" of Huxley, 1946), rather than the converse (Katz, 1983).

Also, the results of the projects reviewed strongly suggest that different modalities of experience are consistently manifested according to self-assessed levels of hypnotic depth. The similarity of reports amongst different participants and with those from other contexts evidence identifiable states of consciousness. The studies reviewed also belie the concept of a single "hypnotic state." The participants' reports and an inspection of the cluster of phenomena according to depth level suggests that different levels of hypnosis (e.g., light vs. very deep) are better conceptualized as discreetly distinct modes of experiencing (Tart, 1975) than as variations in intensity (Singer, 1977). The non-linearity of certain phenomena (e.g. emotional intensity) and the emergence of occurrences (e.g. "merging with a light") only at a very deep level support this contention. A model of levels of hypnotic experience is consistent with different phenomena mediated by increasing absorption as mentioned in the classical meditation literature (Holroyd, 2003). For instance, experiences during "deep states" of

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meditation (e.g., “there was no sense of my physical body... no thought,” “you’ve fallen into a hole that’s so deep,” “utterly serene;” Gifford-May & Thompson, 1994) are interchangeable with those derived from deep hypnosis. It also bears mentioning that a study with meditators found significant changes in meaning, time sense, love, and state of awareness (Venkatesh, Raju, Shivani, Tompkins, & Meti, 1997). Thus, the phenomena reported in the study are not exclusive to a hypnosis context but are consistent with other findings that hypnotic virtuosos have a propensity to report various anomalous experiences (Pekala & Cardeña, 2000).

Which brings us to the philosophical question of the nature of deep hypnotic experience. While avoiding the pitfalls of positing a somewhat pejorative "regression" terminology, some authors maintain that a form of cognition similar to that expressed during deep hypnosis may be common during infancy, and could underlie ordinary consciousness (e.g., Hunt, 1985). Some of the imagery (e.g., falling through a tunnel, finding viscous substances) are consistent with the notion of neurological (Newberg & D’Aquilli, 2000) and psychological (Groff, 1985) predispositions and deserve further investigation. In any case, research in this area seems unlikely to be explained in terms of "faulty brains" (cf. Rose, 1988), but suggests a basic aspect of consciousness that may be life-changing and have evolutionary implications (McClennon, 2001).

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