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The Role of Phenomenological Control in Experience

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Abstract
To varying degrees, people have the capacity to alter their subjective experience such that it misrepresents reality in ways consistent with their goals and such that the misrepresentation can be sustained over at least minutes despite clear contrary evidence. In other words, people have a capacity for phenomenological control. People can use this capacity to fulfill requirements of social situations or personal needs. One such prominent situation is hypnosis. Another situation that psychologists often place people in is the psychological experiment, in which it is often clear to subjects what experiences are desired. Situations in life may also call for certain experiences, for example, encountering a spiritual world according to one’s religious beliefs. These experiences can be constructed so that they seem to confirm the beliefs of all the people involved.

Keywords
phenomenological control, hypnosis, hallucinations, illusions

Evidence That Phenomenological Control Produces the Experience by Altering Relevant Neural and Physiological Mechanisms

Much of the evidence for phenomenological control comes from hypnosis, a culturally defined situation where people know it is appropriate to construct relevant experiences (“phenomenology” meaning experience). We will then show that the concept of hypnosis comes with misunderstandings, such as the need for an induction. Next, we will consider how phenomenological control may be applied in experimental paradigms without the researcher—or participant—realizing it. Finally, we will consider how phenomenological control may be responsible for various phenomena in everyday life.

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2022, for a review). Kinnunen et al. (1994) compared people screened to respond to hypnotic suggestions (“highs”) with those screened to not respond much (“lows”) yet asked to fake being highs (lows who are “simulators”). After responding to hypnotic suggestions, subjects were asked about their experience (e.g., “Were you really unable to bend your arm?”) while their skin conductance responses (SCRs) were measured. On the basis of SCRs, the authors found that highs were largely truth tellers, in contrast to simulators.

Further, highs claim they experience a suggestion, there is a corresponding involvement of relevant brain regions (see Dienes et al., 2022, for a review). For example, Derbyshire et al. (2009) found that when fibromyalgia patients who were highly hypnotizable were given suggestions to increase or decrease pain, they gave subjective reports of pain that were correlated with activation in the “pain matrix” (i.e., the pattern of brain activity associated with pain, as shown by functional MRI). McGeown et al. (2012) suggested to highly hypnotizable subjects that they should either add color to a gray-scale image or drain color from a colored image. Large subjective changes in color were accompanied by changes in activation in color perception areas (V4). In sum, when people respond to the demands of a situation with phenomenological control, neural and physiological measures often change correspondingly.

**But Is an Induction Needed for Hypnotic Response?**

One might think that compelling changes in subjective experience according to goals requires a hypnotic induction, that is, a procedure to put people in a special state that allows such experiences. A number of studies have compared response to suggestions after a hypnotic induction with those same suggestions given with no induction. In reviewing key studies, Martin and Dienes (2019) found an average increase of approximately one out of 10 suggestions successfully passed. This small increase in response following an induction is accompanied by an equivalent increase in subjects’ expectancy that they will respond after an induction rather than without an induction (Braffman & Kirsch, 1999). A simple theory is that the small increase in response after an induction is caused by the difference in expectations. Relatedly, Lush et al. (2021) found a higher response without an induction than with one when the suggestions in the noninduction condition were framed as measuring a skill.

Any suggestion that can be passed after an induction can be passed without an induction. For example, subjects given the posthypnotic suggestion that words on the screen are written in a meaningless foreign script can halve Stroop interference (Raz et al., 2006), but the same suggestion without a hypnotic induction halves Stroop interference as well (Raz et al., 2006; see also Connors, 2015, for a review of delusion suggestions being passed without an induction).

Keeping with the terminology of hypnosis may hinder understanding what is actually going on. “Hypnosis” comes with cultural beliefs such as that a special procedure is required to induce it or that the response seen in hypnosis is peculiar to the hypnotic context. Further, despite hypnosis being the Greek word for sleep, hypnotic response in no way depends on feeling sleepy. In addition, the notion that hypnotizability scales (i.e., sets of hypnotic suggestions to determine how many a person passes) measure “suggestibility” implies that they measure the extent to which people can be led to do things against their better judgment. In fact, response is sensitive to a person’s goals, for example, the goal to behave normally outside the hypnotic context (e.g., a posthypnotic suggestion to cough whenever the word “experiment” is heard does not elicit a cough when subjects are intercepted on campus by confederates; Spanos et al., 1987). In sum, the situation labeled “hypnosis” is simply one culturally specific case in which people exert a skill to create subjective experiences in order to meet their own goals. To help divest the concept of myths, we can refer to the skill as the capacity for phenomenological control. Lush et al. (2021) created a corresponding scale to measure this capacity, the Phenomenological Control Scale. The Phenomenological Control Scale is closely based on scales to measure hypnotizability but with reference to the hypnotic context removed. Hypnotizability scales typically start by defining the situation as hypnotic and repeatedly telling the subject that they will become deeply hypnotized (the hypnotic induction). Instead, the Phenomenological Control Scale tells subjects, “You will shortly be given some exercises in the use of your imagination to create certain experiences. The aim is to see how much you can control the way you experience some simple events.” The Phenomenological Control Scale consists of 10 suggestions, including suggestions for apparently involuntary arm movements, paralysis, experiences of a mosquito, changes in taste, hearing music, and amnesia.

**Phenomenological Control Hidden in the Lab**

If an effect could be produced by phenomenological control, a simple hypothesis presents itself: The effect is produced by phenomenological control. If it is, then there should be a positive slope in a regression plot.
showing the relation between the extent to which a person experiences the effect and their trait capacity for phenomenological control. (If the effect is entirely produced by phenomenological control, the slope should be steep and the intercept should be close to 0; see Dienes, 2022.) If there is evidence for no slope, phenomenological control can be ruled out as contributing to the effect. Consider the phenomenon of visually evoked auditory response (vEAR), in which a silent moving image of objects colliding creates in many people the sensation of hearing them collide (see Resnick, 2018, for an example). Hearing imagined sounds as if they are real is one of the standard suggestions used in screening phenomenological control. Indeed, the extent to which people experience vEAR is strongly related to their score on the Phenomenological Control Scale (with zero intercept; Lush et al., 2022). See Figure 1.

The “rubber-hand illusion” arises when a rubber hand, visible to the person, is synchronously stroked at the same time as the person’s actual hidden hand; the person comes to feel the rubber hand is their own. Indeed, when the extent to which ownership is felt during synchronous or asynchronous stroking is regressed against hypnotizability, the slope is steep, and a score of zero on phenomenological control predicts disagreement with the feeling of ownership of the rubber hand (Lush et al., 2020). The difference in ownership between synchronous and asynchronous stroking, expected by participants across the full range of phenomenological control, is about the same for people low and high in phenomenological control; however, for people who are high in phenomenological control, the difference between synchronous and asynchronous stroking is greater in degrees of agreement that they feel ownership, whereas for people who are low in phenomenological control, it is a difference in degrees of disagreement. These results can be explained by people both high and low in phenomenological control responding to demand characteristics within the limits of honesty: Only those with some phenomenological control can on average agree that there is a feeling of ownership. The rubber-hand illusion may be largely a construction based on interpreting demand characteristics.

Of course, not all experiences are based on phenomenological control. For example, the Müller-Lyer illusion occurs when diagonal lines at the end of a horizontal line go outward rather than inward, causing the horizontal line in the former case to look longer than in the latter case. When the extent to which the Müller-Lyer illusion is experienced is regressed against scores on the Phenomenological Control Scale, the slope is zero and the intercept large (Lush et al., 2022). That is, phenomenological control plays no role in the experience of this effect, which likely arises from perceptually encapsulated processes that perhaps have to do with inferring the most likely ecological stimulus that would cause the sensory input.

The effects considered previously in this section were tested in the same session in which phenomenological control was measured. When two measures are taken in the same context, demand characteristics imply that the measures should be related (Council et al., 1986). The following were measured out of context, that is, in apparently unrelated sessions. Mirror-touch synesthesia occurs when a person feels touch that they see someone else receive. Vicarious pain occurs when a person feels pain when they see someone else receiving noxious stimulation. Both effects depend steeply on hypnotizability, with small though not necessarily zero intercepts, when tested in unrelated contexts (Lush et al., 2020). That is, when people believe that they should have the same experiences as someone else, they can construct these experiences. These constructions may occur as much in everyday life as in the lab.

Parson et al. (2021) found that placebo pain relief correlated with hypnotizability (i.e., phenomenological
control). Some placebo pain relief may be produced by the general process of phenomenological control; whether there are other processes unique to the placebo effect remains to be explored. But surely if there is a process such as phenomenological control that can be intentionally used to reduce pain, it sometimes will be, both inside and outside the lab.

The correlations above were used to test a causal theory: namely, that phenomenological control caused the phenomena of hallucinating sounds (vEAR), tactile sensations (touch synesthesia), and pain (vicarious pain, placebo) and distortions of feelings of embodiment (rubber-hand illusion). These correlations in principle could have other causal explanations. But note that in all cases, suggestion has been shown in other studies to cause something similar to each of the effects—auditory and tactile hallucinations are part of the Phenomenological Control Scale (Lush et al., 2021), pain can be suggested to be higher or lower (Derbyshire et al., 2009), and out-of-body experiences can be suggested (Facco et al., 2019). So a causal effect in the predicted direction is already established. And the theory is simple and general: Phenomenological control is a general process that can be used to construct many different sorts of experiences without needing specific mechanisms for each effect.

The findings indicate how carefully demand characteristics have to be considered in psychological studies (Orne, 1962). An effect being real subjectively, neurally, and physiologically is consistent with a general process that responds to demand characteristics.

**Phenomenological Control Hidden in Everyday Life**

Just how many experiences in everyday life are constructed by phenomenological control is uncertain. But some appear to be. The autonomous sensory meridian response (ASMR) has become a popular phenomenon in the last decade; in 2021, it was the second most frequent YouTube search (Bhattacharjee, 2022). In response to videos of someone whispering in an intimate way, stroking an object, or tapping or scraping, a tingling is felt in the scalp going down to the neck. When the rated intensity and frequency of such tingles are regressed against scores on the Phenomenological Control Scale, the slope is steep and the intercept approximately zero (Lush et al., 2022). That is, the sensations of ASMR may be largely constructed on the basis of a belief in the slope being steep and the intercept being zero. But note that in all cases, suggestion has been shown in other studies to cause something similar to each of the effects—auditory and tactile hallucinations are part of the Phenomenological Control Scale (Lush et al., 2021), pain can be suggested to be higher or lower (Derbyshire et al., 2009), and out-of-body experiences can be suggested (Facco et al., 2019). So a causal effect in the predicted direction is already established. And the theory is simple and general: Phenomenological control is a general process that can be used to construct many different sorts of experiences without needing specific mechanisms for each effect.

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Why do people vary in their capacity for phenomenological control? Some people low in this capacity seem to be able to be trained to be high (Lynn et al., 1999), but others do not respond to training, so individual differences remain. Decades of research into the correlates of hypnotizability have revealed little that is enlightening about why the trait exists so pervasively and why there might be individual differences (Lynn et al., 2019). Perhaps a range of levels of the trait is stable in a population if there are costs as well as benefits to using the capacity for phenomenological control.

In what way does phenomenological control involve control? Control via self-deception has paradoxical properties: Subjects may fail to distinguish reality from suggestion (Connors, 2015) and continue responding despite trying to resist (Lynn et al., 1984). Nonetheless, people appear to strategically choose to create these experiences: They are not elicited when contextually inappropriate (Spanos et al., 1987) or when they violate moral principles (Coe et al., 1973), and people often cease creating the experiences when it is apparent that the experimenter seriously expects them to stop (e.g., telling subjects that they can actually remember when playing them a video of material for which they have been given an amnesia suggestion; Coe, 1996).

Why would people have the capacity to distort their experiences (see Fig. 2)? Should we not have experiences that reflect reality as accurately as possible? Dienes and Perner (2007) proposed that as spirit-possession experiences were ubiquitous across continents and throughout history, often helping the person possessed to speak with the authority of a powerful spirit, the function of phenomenological control may have been to convince the person themselves of their specific culturally beliefs, especially of the spirit world, so that they could convince others of their contact with that world, bonding them to their group and enhancing their status. Indeed, Pekala et al. (1995) found that out-of-body experiences and experiences of contact with
the spirit world correlated with hypnotizability. Because phenomenological control is guided by goals and intentions, it can fit whatever beliefs a given culture has; and in our time and culture, that is a peculiar mixture of the powers of hypnotism, the healing power of pills, tingles produced by folding sheets—and surely much else yet to be shown.

Recommended Reading


Lynn, S. J., Kirsch, I., Terhune, D. B., & Green, J. P. (2020). A useful review of the field of hypnosis, a prime example of the use of phenomenological control.

Transparency

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Declaration of Conflicting Interests

The author(s) declared that there were no conflicts of interest with respect to the authorship or the publication of this article.
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