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Beyond Words:

A Conceptual Framework for the Study and Practice of Hypnotherapeutic Imagery

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ABSTRACT

This paper provides a conceptual framework for the study and clinical application of hypnotherapeutic imagery (HTI). Using the grounded theory method of conceptual analysis, a unified theoretical framework is constructed from a multidisciplinary review of literature (i.e., this new theory is based on the collection and analysis of independently sourced data). The aim is to enumerate the chorographical features of HTI simulations within the mental landscape, rather than seeking to predict them. This is achieved using a combination of ontological, epistemological, and methodological inquires. Because mental simulation is both symptomatic of mental disorders and a psychotherapeutic agent, used across various treatment modalities, an attempt is made to isolate those variables that differentiate HTI from other instances of mental simulation. Lastly, applied principles from multiple disciplines are used to formulate HTI methodology designed to effectively enhance intuitive understanding and unconscious problem-solving.

ARTICLE

The science of mental simulation traces back to Francis Galton (1880), with the clinical value of controlled mental simulation first documented by Pierre Janet in an 1894 paper titled, *Histoire d'une idée fixe, Revue Philosophique*. Using a technique he called imagery substitution, Janet describes the case of Justine, who developed a morbid fear of death after helping her mother—a nurse—treat dying patients. Traumatized by the experience, Justine became haunted by intrusive images of naked corpses, including a Chinese general she had seen. During flashbacks, Justine would be thrown into hysterical seizures. Applying his substitution technique, Janet suggested seeing nice clothing on the corpses, followed by an image of the general marching comically. This stopped the hysterical attacks. Similar imagery work was used to address reoccurring nightmares, which ceased after a year of treatment (cited in Van der Hart & Friedman, 1989).

Another historical figure in hypnosis, Milton Erickson, reports the use of mental simulation during hypnosis to address a wide variety of concerns, including behavior modification. For example, a man who had been arrested repeatedly for voyeurism approached Erickson for advice. Erickson asked him to describe, in detail, what he would like to see. The man responded by absorbing himself in mental simulation of a female body, including the type of clothes she would wear and how she would take them off. Erickson instructed him to reexperience the scene a few

dozen times. Then he asked, "Where will you find this girl?" The man replied, "She's nonexistent. It's just my idea." Erickson then asked, "Well, do you think you'll go out and try to find her?" The man's automatic reply was, "Hell no." Explaining the therapeutic nature of the experience, Erickson pointed to the value of mental simulation as an opportunity for implicit learning (Erickson & Haley, 1985, p. 105).

As for my own recent experience with this technique, while writing this paper I received a call from a former patient who was in an acute state of psychological shock. Three days previous, in a state of utter panic, she had dragged her adult son's unconscious body from the bottom of her swimming pool. After applying CPR and getting him to the hospital, his life was saved. Now she suffered from adrenal fatigue, unrelenting anxiety, and insomnia. At night she was plagued by visions of a seemingly lifeless body at the bottom of her pool, as well as the sound of gurgling in his lungs as she performed CPR and chest compressions.

In an attempt to provide immediate relief, I asked who she would want to have witness one of the most important moments of her life—the day she saved her son's life. Without hesitation, she said my mom and dad. Next, I instructed her to go back and relive the event, moment by moment, but this time seeing her parents standing there yelling out, "You can do this!" I told her to hear them cheering as she hoisted her son's body from the pool, to hear them acknowledging her courage. After mentally simulating paramedics placing her son in the ambulance, I told her to feel both parents wrapping their arms around her and telling her how proud they are of her. The phone call ended after 17 minutes with the client entirely satisfied with the intervention's effects, so much so that no further therapy was scheduled.

Purpose of the study

The purpose of this study is to provide a conceptual framework for the study and applied use of hypnotherapeutic mental simulation as a discrete method. Mental simulation (imagery) is defined as any sensory experience that is evoked without the corresponding external stimuli (e.g., smelling a rose when no rose is present). This analysis addresses conceptual questions, such as whether it is possible for mental simulation to be hypnotic without performing a trance induction, followed by procedural implications and specific criteria by which we operationalize hypnotherapeutic imagery.

Because many other treatment modalities include the use of mental simulation (e.g., CBT, Ego-State Therapy, EMDR), its use as a hypnotherapeutic procedure will be uniquely identified as *hypnotherapeutic imagery* (HTI). This model is needed because existing definitions of mental simulation in hypnosis lack operative definitions and the level of detail needed to critically analyze clinical features. While sophisticated computational models exist for visual mental images (e.g., Kosslyn et al., 2006) theory and domain extensions to hypnosis, with unique theoretical premises and ontogenetic development, are still lacking.

Methodology

The methodology for this qualitative study was structured using the following phases: a) mapping the most relevant data sources, b) categorizing the selected data, c) identifying and naming concepts, d) deconstructing the concepts into distinct categories, and then, e) integrating the concepts to form meaningful principles. To this end, I examined titles, abstracts, reference lists, and publications to identify multidisciplinary conceptual data representative of cognitive psychology, marketing psychology, neuropsychology, psycholinguistics, psychotherapy outcome

studies, social psychology, and, of course, research specific to hypnosis. As with any conceptual analysis, my primary objective was to reconstruct a unified theoretical framework from the multidisciplinary literature (Jabareen, 2009).

Finally, the generalizability of this study sets it apart from other studies in the field. Since the pioneering work of Hilgard and Weitzenhoffer (1961) hypnosis researchers have reported hypnotic susceptibility scores to aid the interpretation of experimental outcomes. Within the context of clinical hypnosis, hypnotic susceptibility has been equated with treatment utility (i.e., certain techniques may only be appropriate for high scorers). As originally demonstrated in casework reported by Milton Erickson, even seeming failures of hypnotic induction can be used to therapeutic advantage (Short, 2020). This leads to a consideration of other probable benefits of hypnosis, which include heightened rapport yielding greater therapeutic alliance, the natural benefits of deep relaxation, decreased ironic processing effects, and as detailed in this paper, the focused activation of unconscious intelligence.

Therefore, this study includes data derived from disparate fields that mostly rely on random sampling from the general population (e.g., cognitive psychology, social psychology, marketing psychology, etc.) the assumption is that the outcomes represent the natural capabilities of the average individual. Therefore, the conclusions of this study are meant to be generalized to any person entering a clinical practice.

The overarching concept of HTI

The overarching concept for HTI is that mental simulation mediates unconscious perception, memory, attitudes, emotions, and higher cognition (implicit learning). This assumption is based on changes in behavior that follow the use of imagery, and which are not intentional or known to conscious awareness. When we consider that mental simulations affect the mind in much the same manner as physical experience (e.g., Kappes & Morewedge, 2016; Steinmetz et al., 2018), it adds new meaning to Picasso's dictum, "Todo lo que puedas imaginar es real" (everything you can imagine is real).

Defining Hypnosis

Understanding HTI begins with defining hypnosis. While the field remains divided over the state/nonstate controversy, most agree that hypnosis represents a complex configuration of interacting variables on several different levels. Mounting evidence points to the importance of social, cultural, cognitive, and neurophysiological variables (Lynn et al., 2015; Raz & Shapiro, 2002; Starker, 1975).

While there is a long history of defining hypnosis as any change in behavioral responsiveness following a hypnotic induction (Hull, 1933), Spanos and Chaves (1989) make the point that hypnosis has no single verifiable methodology. Furthermore, going all the way back to James Braid (1846) and Pierre Janet (1925), it has been shown that hypnotic induction is not essential to the effects of hypnotherapy. More specifically, hypnotic induction fails to make a meaningful contribution to the enhancement of imagery (Starker, 1974). Some have even argued that the suggestion to experience trance potentially decreases responsiveness to suggestion (Erickson, 1932; Lynn et al., 2002). Because, the designation of induction imagery versus treatment imagery is arbitrary and artificial (Lynn et al., 2017), the circular argument that hypnotic imagery is what follows the use of induction imagery must be rejected.

Recently, leading hypnosis scholars have begun to shift the conceptual emphasis from suggestibility to *meta-consciousness*, which Lynn et. al (2019) define as the ability to consciously describe the link between subjective experiences and behaviors and their cognitive, affective, and situational antecedents and potential consequents. As Dienes and Hutton (2013) explain, "It is this experience of involuntariness under hypnotic suggestion which makes the experience of carrying out otherwise mundane actions, such as slowly raising one's arm, holding one's arm out straight and rigidly, acting like a child, and so on, hypnotic rather than mundane" (p. 293). As argued in the *cold control theory of hypnosis*, the experience of hypnosis is essentially the activation of executive control without conscious intention to act (Dienes & Perner, 2007). These *implicit processes* can include the self-regulation of planning (i.e., deciding how compliant or resistant to be during hypnosis), focusing attention (i.e., being in trance), working memory (i.e., post-hypnotic suggestion), and complex behavioral tasks (e.g., automatic writing); but without the subjective feeling of having control over these activities. Thus, *any mental simulation associated with a shift in executive functioning, from conscious to unconscious, should be considered hypnotic*. As one of the simpler hypnotic phenomena to elicit, if spoken with conviction HTI can be initiated with a single statement, "See what images automatically come to mind—without any effort whatsoever."

Unconscious Intelligence and Problem-Solving Structure

In this section we seek to better understand how HTI makes meaningful contributions to the application of knowledge for problem-solving (i.e., a synthesized activation of higher cognitive systems with motivational systems towards some practical end). Thus, the architecture of unconscious intelligence necessarily involves implicit perception, learning, and cognition, which is organized by implicit attitudes, emotion, and goals in such a way as to construct increasingly complex problem-solving behavior. As summarized in modern research of unconscious processes—it seems that all of the higher cognitive functions that contribute to conscious awareness are also able operate in an unconscious mode (Bargh, 2017; Weinberger & Stoycheva, 2019).

The idea that intelligence does not require conscious awareness finds support in modern neural network models. While competing models are better at explaining different aspects of unconscious behavior, there is a growing consensus that implicit learning is founded on elementary associations, it is a mandatory product of ongoing processing, it produces distributed knowledge, and is unsupervised and self-organizing (Cleeremans & Dienes, 2008). While the implementation of this type of problem-solving may be conscious, the origin of the solution is unknown to conscious awareness (it is intuitive). When combined with the definition of hypnosis, we see that the intersection of HTI with unconscious intelligence begins with the relaxation or distraction of conscious intention following the establishment of a purposeful problem-solving context.

A central assumption for the HTI framework is that the activation of intelligence (the use of knowledge to solve problems) requires an identified problem (with both cognitive and motivational dimensions), as reflected in the aphorism, "Necessity is the mother of invention." The clinical practice of first asking a client to describe his or her problem is so deeply embedded in tradition that it is easy to overlook its methodological role. The customary question, "What are you wanting help with today?" initiates a conscious effort to define one's immediate experience in terms of goal-oriented problem-solving. If the client's reply is followed by hypnotic procedure, then we have a two-step process: a) conscious encoding of a problem, followed by, b) post-encoding unconscious neural reactivation in the same brain regions used for conscious thought (Creswell et al., 2013). As outlined in Dijksterhuis and Nordgren's (2006) unconscious thought

theory (UTT), during the earlier stage of information acquisition conscious processes are superior to unconscious processes both in terms of accuracy and discernment. While unconscious processes can make rapid, rough estimations; slow, effortful conscious thought is needed for precise determinations, such as recognizing when correlation does not mean causation (for a detailed discussion, see Kahneman, 2011). According to the ‘‘best of both worlds’’ hypothesis, information should first be encoded thoroughly and consciously with the subsequent thought process delegated to more expansive unconscious processes (Dijksterhuis & Nordgren, 2006).

However, in some cases, individuals lack conscious insight into the origin(s) of their distress. Since the earliest days of psychotherapeutics, HTI has been used to identify problems previously unknown to conscious awareness. For example, prior to the invention of psychoanalysis, Freud described an "indispensable" clinical technique stating, "I inform the patient that, a moment later, I shall apply pressure to his forehead, and I assure him that, all the time the pressure lasts, he will see before him a recollection in the form of a picture or will have it in his thoughts in the form of an idea occurring to him; and I pledge him to communicate this picture or idea to me, whatever it may be" (Freud & Breuer, 1895, p. 200). Within the context of HTI theory, conscious insight into the nature of the problem should be deliberated on consciously, prior to engaging in further hypnotic work (i.e., conscious knowledge of the problem benefits subsequent unconscious searches for solutions). This methodology combines traditional talk therapy with hypnotherapy. In other words, during hypnosis the practitioner seeks to engage unconscious processes in clinical problem-solving (implicit learning) whereas during ordinary talk therapy conscious problem-solving is prioritized (reason and intention).

Conscious versus Unconscious Modes

Conscious and unconscious processes are often framed as a dichotomy. However, as John Bargh (2017) argues, "We now know the unconscious is not a second mind within us playing by its own rules…unconscious psychological processes make use of the very same brain regions and systems the conscious mind does…We have a single unified mind that operates in both conscious and unconscious modes" (p. 13). The same of course is true for imagery, which can include visual, auditory, tactile, olfactory, or kinesthetic phenomenology. Due to its complexity and integrative activity across disparate brain regions, imagery has been classified as a higher cognitive function (Kosslyn et al., 2001). As with other higher cognitive functions, imagery is not specifically localizable within discrete brain regions. This helps us understand why some aspects of HTI are processed consciously and others unconsciously—with or without the use of a trance induction. Accordingly, the collective finding of the new unconscious research is that there are no "pure" unconscious or conscious processes (Weinberger & Stoycheva, 2019, p. 133). This means that hypnotic interventions should not be focused on the elimination of conscious awareness but rather seek to create an environment that favors unconscious processing and automaticity of executive functions.

The therapeutic Agency of Mental Simulation

Working from an evolutionary model, Freud (1923) stated that thinking in pictures "stands nearer to unconscious processes than does thinking in words, and it is unquestionably older than the latter both ontogenetically and phylogenetically" (p. 21). As we follow this idea to modern theories of cognition and psycholinguistics, a hierarchy of cognitive complexity can be inferred, in which: (a) disparate images join to form a metaphor (Rothenberg, 1988), (b) with metaphor serving as the basis of thought (Lakoff & Johnson, 1980), (c) and cognition forming the coherent

narratives that encapsulate meaningful life experience (Aldama, 2010). Similarly, neurological studies of imagery show that *visual imagery helps initiate information processing by depicting information essential to cognition* (Kosslyn, 1996; Kosslyn et al., 2006).

Without the capacity for mental simulation, individuals would be unable to reactivate and transform representations of objects and events that are not unfolding in the immediate moment. Thus, imagery supports the "what if" function that acts as a fulcrum for intelligent problem-solving. By way of analogy, imagery is to unconscious intelligence as a provocative question is to conscious reason. Both initiate a search across planes of experience. While spoken questions initiate a language-based search (linear, sequential effortful thought), contextually rich imagery primes a system-wide search (parallel processing) that includes unconscious/implicit perceptions, cognition, and emotion. As this search continues, any unsuccessful attempt to retrieve inaccessible information (consciously) is likely to prime the later recognition of the information through a process of spreading activation (Yaniv & Meyer, 1987). Thus, there is value in defining the clinical problem as a question that only unconscious intelligence can answer (Lankton, 1983; Short, 2020).

When the aim of mental simulation is to stimulate unconscious intelligence, rather than conscious insight, the quality of thought is likely to be more creative and the solutions more divergent from existing solution sets. This finding has been well documented in UTT and summarized in the *convergence-versus-divergence principle*, which states that conscious thought, and memory search during conscious thought, is focused and convergent. In contrast, unconscious thought is more divergent (Dijksterhuis & Nordgren, 2006).

This characteristic is essential when processing multisensory imagery, which can represent complex actions and events that change over time (Holmes & Mathews, 2010). A single image will simultaneously possess numerous meanings that may cross dimensions of time, person, and place. While consciousness uses serial processing—focusing on one small aspect of the image (e.g., "I see my mother's face"), there are countless other meaningful associations that are necessarily processed outside of conscious awareness (e.g., "every experience I have ever had with mother, or while longing to be with mother"). We know that these implicit dimensions of experience are concurrently processed and that all neural networks are always turned on and working (Kosslyn et al., 2001).

This brings us back to UTT conceptual framework and *the principle of capacity*, which states that conscious thought is constrained by the low capacity of consciousness versus the much higher capacity of unconscious processes. It follows that conscious thought by necessity often takes into account only a subset of the information that is relevant to a given task (Dijksterhuis & Nordgren, 2006). Thus, not only does HTI facilitate knowledge building outside the bounds of language and established belief, it might also activate implicit knowledge not available to conscious awareness (for a counter argument, see Moga & Dienes, *this issue*).

Here we conclude with the conceptual definition of HTI as a molecular approach to increased *intuitive understanding* within a problem-solving context. More specifically, HTI seeks to achieve increased understanding through a synthesis of emotion and cognition as novel connections are formed across associational networks. This process is hypnotic when the elemental qualities of the mental simulation form automatically and their semantics are processed outside of conscious awareness. In other words, after the mental image is created, the person both feels different and thinks differently but without being able to verbalize this new knowledge. In this regard, the effect of HTI can be described as a form of implicit learning (Berry et al., 1993).

Chorographical features of HTI

HTI is operationally defined as multi-dimensional sensory-based representations (e.g., visual, auditory, tactile, olfactory, and/or kinesthetic) that are verbally suggested in the absence of environmental input. These mental representations are processed in a relaxed, passive state, most commonly with eyes closed, but definitively without effortful conscious control.

While types of mental simulation can be categorized by sensory modality (visual vs. auditory, etc.), I have created a chorographical analysis, which is more comprehensive and precise. This is crucial for individualizing treatment during clinical practice as well as increasing independent variables for research. The goal is to construct a taxonomy capable of differentiating crucial versus inconsequential elements of mental simulation against a measure of long-term clinical progress.

The following nine chorographical features (with a total of 21 subordinate dimensions) provide a systematic, detailed description of accessible regions in the mental landscape. Each chorographical feature can be conceptualized as an independent unobtrusive prime (it can be easily seen/heard yet attention is not placed on the exact stimulus, so its influence is unconscious) that has been studied in cross-disciplinary studies as well as applied clinical practice.

Imagery scaling

Imagery scaling is defined as changes in the framing of mentally simulated objects. The three variations reviewed here are size comparisons (size), proximal or distal representations (spatial), and the gestalt content as general or molecular (focus). Similar to the entertainment industry's use of cinematic effects during filming, scaling depicts the strategic manipulation of how imagery content is perceived. In a landmark study illustrating the effects of scaling, Kosslyn (1975) asked subjects to imagine animals standing next to one another, such as a rabbit next to an elephant or a rabbit next to a fly. When asked, "Does the rabbit have two front paws?" it took more time to evaluate an animal when the subjective image of it was small, relative to the comparison object.

From treatment outcome research, it seems that the quality of the acute imagery experience during psychedelic treatment mediates long-term improvements in mental health (Roseman et al., 2018). Thus, it is reasonable to assume that the same might be true for HTI. In sum, chorographical adjustments to the scale of HTI are meant to intensify or diminish their emotional impact, and ease of processing, for reasons of clinical quality and safety.

As a clinical example of size scaling, the therapist might suggest, "Your recent accomplishment looms large in your mind—the size of a mountain. In contrast, the many failures it took to get here…the boulders that you crawled over, now seem so small and insignificant." Not only can we assume that these manipulations impact ease of cognitive processing (i.e., the accomplishment is easier to think about because it is so big), we should also recognize that the drawbacks of direct suggestion (e.g., "you will ruminate less on your mistakes and instead focus on your accomplishments") are avoided when HTI is used to unobtrusively prime the clinical goal.

Suggestions for spatial scaling function much the same as size. Moving the object closer increases clarity and emotional impact, while moving an image to the background decreases the significance of any metal representations paired with that object. For example, while helping a woman in a verbally abusive relationship, I suggested, "You can go up into your princess tower. You are now so high up that he can no longer reach you. His screaming is like arrows that hit way

below your window and then fall harmlessly to the ground" (when I asked her what she had dreamed of becoming while still a small child, she said that she had often pretended to be a princess and wanted to grow up and live in a castle).

Imagery can be scaled using a focus that is abstract or more concrete in its construal. This is not the same as size or distance but rather the gestalt by which an object is perceived. For example, a woman who is asked to visualize her mother's face will have a different experience from someone who is instructed to visualize skin tissue, with small hair follicles, overlaying fatty tissue, blood vessels, and bone. The latter type of focus was referred to by Milton Erickson as a molecular view, which he used with patients who experienced disturbed body image (see Short et al., 2005). Similarly, Pierre Janet (1898) would use the molecular perspective to break down traumatic memories (fixed ideas), subdividing them into their composite parts to such a degree that they lost their emotional significance.

Thermal imagery

Thermal imagery is defined as the mental simulation of objects, events, or contexts associated with varying degrees of temperature. These range from circumstances that reduce body temperature (cold) to those that increase body temperature (hot). When we consider the meaningfulness of metaphors such as, "she gave me the cold shoulder" vs. "she gave me a warm smile" it suggests that thermal dynamics have social as well as somatic relevance. Accordingly, in a priming research paradigm it was found that experiences of physical warmth (or coldness) mediate feelings of interpersonal warmth (or coldness), without the person's awareness of this influence (Williams & Bargh, 2008).

For clinical examples, I have used the mental simulation of warmth ("see your hands comfortably heating up over a cozy fire") to relieve arthritis pain and the simulation of cold ("an icepack has been resting on your forehead") to alleviate migraine headache pain. In those instances when I measured skin temperature, changes of up to ten degrees Fahrenheit were observed. In the published literature, there is an interesting account of Milton Erickson eliciting spontaneous thermal imagery that utilized the alternating sensations of freezing cold and then burning heat to successfully treat Raynaud's disease (Short et al., 2005, pp. 27–28). From clinical experience, I have found that thermal imagery is most emotionally potent when paired with a readily available attachment imagery. For example, "You can feel the warmth of your mother's embrace and that feeling will stay with you throughout the days and weeks to come."

Temporal imagery

Temporal imagery is defined as changes in the temporal context of mentally simulated events. The three variations reviewed here are simulations of the past (temporal regression), the future (temporal progression), and a mixture of elements from the past, present, or future into a single scene (transtemporal merging).

At the start of this paper, I provided an example of temporal regression during a phone call—going back in time by three days to reorganize the emotional impact of her son's near drowning. As another example, the therapist might broadly suggest, "Now you can see a younger version of yourself. And, you can return to all the thoughts and feelings of that younger self, as you seek to better understand the world." In theory, this simulation would help the therapist gain access to implicit memories that are otherwise invulnerable to modification. As explained by

Mitchell (2006), during the formative years of childhood, a one-time incidental exposure may result in long-term effects that operate outside of conscious awareness.

Temporal progression is sometimes referred to "end-result imagery" or "goal-oriented" imagery because it often depicts the contents of a desired future. Recently, it has been argued that the benefit of mental simulation for goal attainment is associated with the extent to which the progressive imagery focuses on the pleasures of goal attainment as well as the challenges and steps of reaching those goals. Using imagery to feel better is not motivating. Thus, it has been shown that focusing on pleasurable results alone results in drive reduction, whereas optimal outcomes include both desired outcomes and immediate challenges (Oettingen et al., 2009). In other words, clients should be instructed to supplement the pleasurable aspects of goal attainment with specific plans for reaching those goals (Gollwitzer & Sheeran, 2006), thus you suggest that they can see themselves overcoming obstacles.

As stated by Perunovic and Wilson (2009), "A large part of individual's conceptualization of their present self draws upon memories of the past and imaginations of the future. At the same time, their reconstructions of their past and predictions for their future are influenced by present beliefs, feelings, and self-views" (p. 347). Thus, any therapy that limits its reach to the past, the present, or to the future fails to address the interdependency of temporal experience. With that in mind, I began using *transtemporal merging*—which is defined as any mental simulation that integrates imagery from the past and/or the future into a single meaningful present moment. An example of merged temporal elements could be an older, wiser, motherly version of self who has traveled back in time to address the needs of a six-year-old version of self, with the present-age self standing nearby to witness the interaction.

Perspective-taking imagery

Perspective-taking is the process of shifting the perceptual angle from one locus of experience to another. The three variations reviewed here are behind one's own eyes and ears (first-person perspective), behind the eyes and ears of someone else, or "seeing me as you" (second-person), and witnessing a mental landscape from a bird's eye view as an amorphous, objective observer (third-person).

As an example of first-person perspective-taking, one might suggest, "Return to a safe secure moment in your life…and really look closely at what surrounds you." This perspective is used to intensify the emotional experience of a given event (Nigro & Neisser, 1983)**;** as well as the psychophysiological responses to the simulation (Wang & Morgan, 1992). Thus, the imagery is used to create positive anchors for those caught in states of turmoil or despair.

As an example of second-person perspective-taking, a therapist might suggest to a father, "In your mind, return to the house but in the body of your son. Look down at that math test in your hands, with the large red 'D' on it and then look up at the face of an angry parent." Interestingly, research has revealed that feeling close to others is not associated with the amount and diversity of social interaction but rather nonobvious, cognitive indexes of including the other in the self ("I see the world as you do"). These indexes predicted relationship maintenance and correlate with self-reported love (Aron & Fraley, 1999). HTI provides instant access to such indexes when it is conducted in a second-person perspective. This perspective as been shown to not only increase empathic concern (Chambers & Davis, 2012) but also increase social mimicry, which both promotes social bonds and enables individuals to coordinate their behavior with others (Galinsky et al., 2005). Clinical observation from my practice indicates that second-person perspective also

effects theory of mind. For example, when an angry client simulates the subjective experience of the offender, he or she will subsequently remark, "Now I can see that he didn't mean to hurt me."

Lastly, picturing an event from a third-person visual perspective provides a more objective assessment of situations. In this reflective mindset, people tend to reflect on actions and life events in terms of their broader significance as opposed to their concrete detail (Libby et al., 2014). This perspective is used to decrease the amount of emotion clients experience while recalling the past (Berntsen & Rubin, 2006). When recalling traumatic events, those who take an observer point of view relive less of the emotional content than people who see the memory from their original, first-person perspective, thus reducing the risk of treatment related deterioration (Kross & Ayduk, 2011; Mclsaac & Eich, 2004).

Emotive imagery

Emotive imagery is defined as the mental simulation of objects, events, or contexts associated with strong emotional reactions. Certain objects, such as a close attachment figure, can produce significant emotional and cognitive alterations, even in a priming research paradigm (Gillath & Karantzas, 2019). The context in which the event is cast (e.g., a childhood home, vs. church, vs. work) will summon different dimensions of personality (Gieseking et al., 2014). While all images will carry some type of emotional signal, the content of emotive imagery is specifically chosen for its emotional effect. To highlight their motivational impact, the variations of emotive imagery are identified as having negative valence (aversive) or positive valence (reinforcing).

As an example of aversive imagery, I was asked to use hypnosis for smoking cessation by someone who had worked for twenty-five years as a hypnotherapist. Concerned about finding an acceptable procedure with an established expert, I suggested she "hallucinate" herself and then hypnotize that person. For twenty minutes, she remarked to her mentally simulated self, "It looks like dog shit, it smells like dog shit, it tastes like dog shit!" This single event ended her cravings. Also known as hypnoaversion, this technique has been used to treat alcohol abuse, smoking, and overeating (Miller, 1976).

As an example of reinforcing imagery, we can return to the example at the start of the paper, in which I used the imagery of adoring parents to reinforce a heroic self-image, thereby neutralizing trauma effects. To individualize my technique, I asked who she would want to have witness one of the most important moments of her life. She automatically responded with highly accessible imagery (mom and dad). After asking what images were most disturbing (the gurgling sound and limp body), a contrast was created between a negative outcome and the new positive event that was simulated.

In theory, this type of reinforcing imagery should facilitate future heroic behavior/emotion states—even without the use of an explicit post-hypnotic suggestion. Recent research demonstrates the importance of positively valanced imagery for non-conscious goal pursuit. However, this modern framework departs from the idea that a goal is represented as a desired state (e.g., seeing yourself as a hero) and instead identifies three characteristics of this representation that render non-conscious goal pursuit more likely to occur: a) its mental accessibility, b) the discrepancy of the represented state with the actual state, and c) its association with positive affect (Custers & Aarts, 2005). Thus, when using HTI the imagery content should always be tailored along these three dimensions.

Linguistic imagery

Linguistic imagery is defined as the mental simulation of individual letters, words, phrases, or sentences that convey a meaningful message. While the primes (imagined print) within this simulation can also have an auditory quality (phonics are automatic during reading), the emphasis is on seeing the word, phrase, or sentence. Spontaneous instances of linguistic imagery are reflected in the modern aphorism, "I saw the writing on the wall" or historical accounts of someone witnessing God's finger writing a cryptic message on a wall (a combination of pictorial, linguistic, and mystical elements).

Interestingly, people preferentially use pictures to represent proximal events, while using words to represent distal events (Coulmas, 2008). Also, in a priming paradigm study, words were better conveyors of semantic information, presumably because pictures are context-bound representations whereas words activate a large set of semantic features (Durso & Johnson, 1979). Thus, it might be more useful to implement linguistic forms of HTI when seeking to mediate long-term goals and developmental trajectories that involve changing contexts.

That having been said, concrete words (e.g., father) are likely to be encoded by the image system along with visual imagery. Both of these are easier to access from memory than are abstract words (e.g., success), which are likely encoded by the verbal system only (Amit et al., 2009).

As a clinical example of linguistic imagery, while working with a young adult who was struggling to organize his future plans, I instructed him to see blank note cards floating in space and to watch printed words, each depicting a different life priority, suddenly appear on each of the cards. After this was achieved, I instructed him to watch as the words automatically sorted themselves in a line, with the lowest priority furthest out and his highest priority appearing right in front of his eyes. This individual was surprised by the emotionality he experienced when visualizing the word depicting his top priority yet he said at some level he knew all along that this was what he truly wanted (special instances, in which the linguistic stimuli are simulated in subliminal form, are later categorized under the heading of *ultra-marginal imagery*).

Synesthetic imagery

Synesthetic imagery is intended to evoke synesthesia, which is the experience of a sensation in one sensory modality triggered involuntarily and automatically by a sensation in a different sensory modality. For example, hearing music and perceiving colors or tasting shapes. In clinical literature, synesthesia is considered to be a rare genetic condition, or result from brain damage, or when using hallucinogenic drugs. However, it has been shown that synesthesia can be produced using hypnosis (Cohen Kadosh et al., 2009; Kallio et al., 2017) and argued that an ability to experience the phenomenon is possessed by most if not all people (Marks, 1978).

While the idea of being able to "taste" something we see/hear sounds extraordinary, visual/audio synesthesia are commonly used in computer marketing to create the effect of smelling and tasting an online product (Nelson & Hitchon, 1995). Thus, it should come as no great surprise that hypnotic suggestion can be used to evoke subjectively compelling experiences with sensory alteration. It is important to note that actual sensory ability is not likely to change with hypnotic synesthesia (Anderson et al., 2014), limiting its practical application to problems of subjective reality and emotionality.

While this type of imagery has the potential to achieve positive clinical results in any category of subjective distress (Rader et al., 1996), I have only seen it taught for the purpose of

hypnotic pain control (e.g., De Benedittis, 2016). Because pain exacerbation occurs after introducing unpleasant odor, light, or sound (Malenbaum et al., 2008; Villemure et al., 2006), it logically follows that imaging pleasing sights or sounds might help alleviate pain.

Another interesting possibility is that the subjective lack of volition produced by hypnosis (cold control theory) may circumvent the problem of ironic rebound. More specifically, Wegner's theory of ironic processes suggests intentional efforts to suppress undesirable experiences, such as pain, leads to a more distressing experience (Wegner, 2004). The use of cross-modal synesthesia enables patients to mediate the experience of pain without intentional cognitive effort, thus creating the phenomenological experience of automatic coping.

A third possibility is that the experience of synesthesia shares the same cognitive mechanisms as metaphor (Anaki & Henik, 2017). For example, if the smell of fish can lead to increased suspicion, then the imagery of softening a previously intense color or the smoothing of a formally jagged shape can metaphorically suggest a reduction in pain. As common with metaphors, the imagery moves from something concrete (e.g., "watch the color representing your pain, and see how it becomes more pleasing") to something rather abstract (i.e., pain management). Accordingly, it has been proposed that for all individuals there is a lower, unconscious degree of synesthesia (without explicit sensory manifestations) that aids in the construction of abstract associations between different perceptual fields (Bragança et al., 2015). If this is so, then hypnotic synesthesia can be viewed as an amplification of this natural process.

Mystical imagery

Mystical imagery is defined as the mental simulation of an alternate reality. The different variations of mystical imagery reviewed here include transportation into a different body (embodiment), anthropomorphous metaphysical events (entity encounters), and implausible juxtapositions (paradoxicality). While the objects within this simulation can be concrete and familiar, their relationships to one another are surreal. As with all other classes of imagery, the clinical objective is not altered states of consciousness but rather altered states of reality. The intent is to loosen associations between established sets of emotion, cognition, and behavior and to excite implicit creativity.

As a close kin to HTI mystical imagery, the imagery produced by psychedelic drugs have been shown to result in new emotional associations and increased cognitive flexibility (Gallimore, 2015; Prochazkova et al., 2018; Watts & Luoma, 2020). Another close kin is the surreal imagery of dreams, which has been found to impact long-term emotionality (Davidson et al., 2005). From these outcomes, we can infer the value of HTI to stimulate increased use of symbolic processes, fantasy, exceptional affective states, and imagination during clinical problem-solving.

As an example of embodiment, I had a client ask me to use hypnosis to help him achieve insight. As he put it, "I can never get anywhere because my problems are hidden in the shadows, which are always behind me, no matter which direction I turn." In response, I suggested he become a beautiful black swan, with an exceedingly long neck that can turn in any direction. Following a twenty-minute simulation, not only did he achieve the insight he was hoping for, he was also able to end his routine trips to the chiropractor due to increased neck and back flexibility (this would be expected due to neuronal reuse/overlap, see Weinberger & Stoycheva, 2019).

As another example, a woman requested hypnosis for help with infertility. In response, I suggested she become a wide-open fertile valley. Having become the valley, she was filled with

fragrant flowers, buzzing bees, and a gentle breeze. In this embodied state, her spirit was to be experienced as an eagle flying low through the valley (knowing she was ovulating, she rushed home to have sex with her husband and became pregnant).

Another type of mystical imagery is entity encounters, which are more common than one might expect. Children characterized by high intelligence and advanced social skills are likely to spontaneously generate imaginary companions (Taylor et al., 2004). Similarly, religious adults might hear the voice of God/Allah or see an angel. As an example of an entity encounter, I told a woman (an elderly nun) to experience a hypnotic dream, during which she encountered "the Lion of Judea." After ascribing surreal features to the creature (e.g., wings the size of trees and a voice that made the ground shake), I suggested, "He is now speaking to you in love and wisdom, a beautiful eternal truth that you are meant to know." During the use of this HTI, the woman's body quivered and her breathing became labored, as if she were gasping for air. The emotional effect was profound. Relevant research for these types of primes comes from treatment outcome studies of psychedelic treatment regimens. For entity encounters that are drug induced, they often produce positive emotions such as joy, trust, surprise, love, kindness and friendship, although fear is also a common emotion associated with entity encounters (Lutkajtis, 2020).

The final variation, paradoxicality, involves the use of self-contradictory phrases, such as "dazzling obscurity," "whispering silence," or "teeming desert." As observed by William James (1902, p. 412), in mystical literature paradoxical terminology is used to convey the idea of something beyond the ordinary. Clinical experience suggests that this type of imagery fosters a sense of awe or confusion. As an example of paradoxicality, Ericksonian hypnotherapists sometimes use contradictory statements to describe a trance experience, such as, "During this trance, you will know without knowing what you know and go into the future to see something that has been invisible" (for more information, see Lankton, 1983).

Ultra-marginal imagery

Ultra-marginal imagery is defined as the mental simulation of concealed information. The four variations reviewed here are statements we cannot discern (concealed auditory input), written messages we cannot see (concealed literary production), unexplained behavior (concealed intention), and rewards or punishments we cannot conceptualize (concealed outcomes). While the presence of any of these events is consciously processed, the content details are presumably processed without conscious attention. This is the equivalent of using subliminal primes within a mentally simulated environment. While the presence of implicit details is a given during all acts of mental simulation (Kosslyn & Moulton, 2009), the suggestion for ultra-marginal elements is meant to heighten suspense & curiosity, thus intensifying the focus of attention, as well as increasing the range of opportunity for unconscious creativity.

As an example of concealed auditory input, the therapist might suggest, "Your father is whispering in your ear. You cannot consciously determine what he said but you can feel a powerful emotional reaction after hearing those whispered words." The possible variations on a concealed whisper are endless and therefore amenable to the client's interests and emotional concerns.

As an example of concealed literary production, the therapist might suggest, "You are to write a letter that outlines how you will transform your life and become the person you long to be. However, the sentences you write will remain invisible for now. It is only your unconscious intelligence that will study the contents of the letter and put it all into action." Following this procedure, one of my clients reported, in a ten-year follow-up, that she had carried the letter in

reoccurring dreams. And though she never saw the letter's contents, she felt that it altered the course of her life (for more details on this case, see Short, 2021, pp. 169–170).

As an example of concealed intention, a young woman who had just successfully restored her marriage, witnessed her husband die of cardiac arrest the evening of their final couple's session with me. After hospitalization for attempted suicide, she requested another couple's session to try and "feel closer" to her (deceased) husband. During this visit, I had her visualize a visceral encounter with him. During that encounter, I suggested, "When you walk into the adjacent room, you will see that your husband has placed a surprise for you there. It is both shocking and deeply meaningful. He does not tell you why he selected this present but eventually you will understand." Her response was extraordinary (for more details on this case, see Short, 2021, p. 96).

Finally, ultra-marginal imagery that conceals outcomes is most likely to be utilized for motivational purposes. Religion's use of the imagery of heaven, contrasted with that of hell, often includes ultra-marginal elements. For example, "The beauty of heaven is beyond what you can perceive with mortal eyes." Along the same lines, strong promotion motivation can be achieved using the suggestion, "The pride and joy you will feel after quitting smoking cannot yet be visualized in your conscious mind—the image is simply too beautiful."

In addition to its motivational value, there might be implementational value when planning action without conscious involvement. Labeled as the paradox of introspection, Schooler, Ariely, and Loewenstein (2003) found that the direct pursuit of positive internal states can produce a negative effect, with the active monitoring of pleasure and the deliberate intention to enjoy an activity leading to decreased enjoyment. The concept of ultra-marginal imagery presupposes goal-oriented unconscious cognition.

The strategic clinical use of unconscious imagery has received little attention. In practical terms, ultra-marginal imagery allows us to enter and meaningfully explore emotional spaces that have become segregated from conscious awareness. Knowing that explicit imagery plays a role in informing implicit memories (Kosslyn & Moulton, 2009), my suspicion is that implicit imagery can be expected to do the same, and perhaps in more profound ways.

Procedural principles

By studying the principles of mental processing and the effects of specific situational variables, practitioners of hypnosis are better prepared to make strategic calculations and exercise the type of reflective discernment facilitated by conscious processes. In this analysis, conventional hypnosis practice (including formal trance induction) was deemphasized in favor of principle-based methodology derived from modern studies of the unconscious processing mode. These principles have been classified under five broad headings: (a) automaticity, (b) imaginability, (c) functional relevance, (d) iterative processing, and (e) congruency.

Automaticity

The first rule of HTI is that all content and action must be experienced as automatic and free of conscious control. Suggestions to facilitate automaticity can be straightforward, for example, "Close your eyes and see what image automatically comes to mind." For clients who are doubtful of their responsiveness to hypnosis, ironic processing (Wegner, 1994) can be utilized. For example, "No matter how hard you try not to see it, an image will still automatically appear." In related priming paradigm research, it has been found that unconscious processing is more likely to occur when a person is: relaxed, not actively strategizing, and their attitude is passive and receptive

(Ramsøy & Overgaard, 2004; Weinberger & Stoycheva, 2019, p. 133), which points to the importance of suggesting these behaviors in preparation for HTI.

Imaginability

For HTI, all suggested imagery should be readily available for simulation. Imaginability refers to the extent to which words evoke concrete sensations (Rasmussen & Berntsen, 2014). The best way to assess a client's faculty for images is through direct questioning, for example, "What images easily come to mind when I mention the word 'relaxation?'" Another method is to draw on probable everyday exposure (e.g., a tree) or from knowledge of the client's life experience (e.g., the image of a rescue mission with a client who is currently working on a S.W.A.T. team). Another good possibility is to add onto existing imagery (e.g., Janet dressing the dead corpses in clothing).

Functional relevance

Clinically relevant imagery either primes a problem definition or possible solutions. Problem/solution sets can be divided into three broad categories: (a) trauma resolution, (b) drive reduction, and (c) drive activation. To make informed chorographical choices, it is important to elicit a detailed description of the undesirable phenomenology (Chaves, 1999). For example, for the client who describes a traumatic divorce as "making me feel cold and numb," the thermal imagery of warmth is indicated. For the client in shock, who says, "I cannot even say what my problem is because everything is swirling around me like a tornado," a third-person perspective is indicated, with some distal scaling. As an example of simulating a mental experience for drive reduction, outcome studies have shown that the imagined consumption of a food reduces its actual consumption (Kappes & Morewedge, 2016). Lastly, when discussing the problem of addictive, out-of-control behavior, researchers have noted that strong craving (of longer durations) is preceded by affectively charged sensory imagery that simulates the experience of target acquisition and consumption (Kavanagh et al., 2009). Thus, it is not the content of the mental simulation that is inherently useful or problematic, but rather the function of the imagery relative to an identified problem or solution.

Iterative processing

The rule of iterative processing states that optimal problem-solving incorporates both conscious and unconscious process work. This concept has been elaborated in explicit–implicit interaction theory, which addresses the integration of the results of explicit and implicit processing and iterative (bidirectional) processing (Hélie & Sun, 2010). One important objective of iterative processing is neural integration such that the activation of a goal leads to activation of many other behaviors lower in the hierarchy (Aarts & Dijksterhuis, 2000).

In the clinical context, this iterative process, between conscious and unconscious processes, can be illustrated in the following case. A man complained of depression but could not say why. When asked to close his eyes and see his depression, he saw an image of his wife yelling at him and criticizing him. I asked if he knew how to assert himself with his wife. He replied that he did not. So, I asked what he does professionally, he smiled with pride and said, "I'm a fixer. I tell CEOs how to fix their companies." Next, I asked, "What if one of these dominant CEOs tells you no?" With a tone of voice that reminded me of a mafia boss, he replied, "They never say no." Next, I had him close his eyes and see himself as "the fixer" talking politely with his wife about the things that need to change in their relationship.

Congruency

The rule of congruency states that, when possible, action in a mentally simulated environment should be congruent with posturing or movement in the physical world. While mental simulation is primarily a mental event, emotion and cognition are facilitated by the movement of a physical body. For example, researchers have found that changing body posture mediates the subjective energy level, with a slumped posture depressing energy levels versus an erect posture which increases feelings of energy (Peper & Lin, 2012). This phenomenon can be understood in terms of neuronal reuse and overlapping systems for physical and imagined movement. Both activate the supplementary motor area (SMA), the premotor cortex (PMC), and the cerebellum (Lotze et al., 1999; Michelon et al., 2006), though of course the activation is not identical so as to prevent overt movement (Solodkin et al., 2004). Along similar lines, visual imagery involves a network of brain areas from the frontal cortex to sensory areas, overlapping with the default mode network (DMN), and can function much like a weak version of afferent perception (Pearson, 2019). Thus, when clients need to see things from a new perspective, the embodied action would be to turn their head in a new direction. If ego dissolution is required (i.e., reduced neural activity in the DMN), then the body should be fixed in a still position, as we are accustomed to seeing in traditional hypnotic posturing (Deeley et al., 2012). However, if motivation and goal pursuit are required, then active states of hypnosis (movement with eyes open, Banyai & Hilgard, 1976), would be more congruent.

Limitations

The HTI conceptual framework offers an understanding of clinical-grade imagery in the context of hypnosis. But no predictions have been made. Using experimental studies, causal chains need to be systematically studied using research methodology suitable for the study of HTI. At best, this study clarifies variables of interest and provides a precise terminology for identifying the object of observation.

A clear priority for future research is to determine the role of unobtrusive primes (those elements available to perception but not consciously considered) associated with any given construction of mental simulation. This would be analogous to distinguishing inert versus active ingredients in medicine. It would also be important to test predictions of whether behavioral and emotional effects achieved through priming in the physical world translate to effects achieved in a mentally simulated landscape.

A significant limitation in the literature review is the near exclusive focus on the potential benefits of mental simulation without exploring potential harm. Questions persist regarding the extent to which unwanted imagery contributes to psychopathology. And, the question of image-toxicity versus restorative-imagery looms large. It is essential for clinicians to know which class of images are inherently disturbing or unethical (e.g., images that cross the line from aversive to disturbing).

Conclusion

This paper seeks to identify the many different uses of HTI while also contrasting differences in conscious versus unconscious intelligence. For knowledge building intended to benefit conscious intelligence, we turn to semantic language and lexicogrammar. To elicit the involvement of unconscious intelligence, we turn to non-linear, multidimensional mediums of information, such as imagery, metaphor, and symbolic narratives. Of these three, imagery is the

irreducible factor. Its presence can be assumed in any configuration of emotion or cognition. Because hypnosis has historically aimed to influence unconscious processes, it is only logical that hypnosis researchers and practitioners would want to better understand the language of unconscious processing (Short, 2021).

To that end, I have used a variety of multidisciplinary conceptual data to identify and organize nine categories of multi-sensory imagery: scaling, thermal, temporal, perspective-taking, emotive, linguistic, synesthetic, mystical, and ultra-marginal imagery. This index can be used as a chorographical guide while strategically sculpting clinically relevant primes for the mental landscape. The overarching concept for HTI is that mental simulation mediates unconscious perception, memory, attitudes, emotions, and higher cognition (implicit learning), affecting the mind in much the same manner as physical experience.

For the product of suggested mental simulation to be considered clinical-grade, five procedural rules have been proposed: automaticity, imaginability, functional relevance, iterative processing, and congruency. This framework is meant to clarify the relations among mental simulations and other classical hypnotic devices such as verbal suggestion, eye-closure, and unique physical posturing. Mental simulation is hypnotic when the elemental qualities of the mental simulation form automatically and their semantics are processed outside of conscious awareness. In other words, after the mental image is created, the person both feels different and thinks differently but without being able to fully trace the development of the new knowledge.

Though common to everyday experience, much of the phenomenology utilized in hypnosis has remained detached from the bourgeoning fields of cognitive and social psychology, with only modest progress in neuropsychology. This study represents an attempt to bridge these gaps and to further our understanding of unconscious intelligence. More importantly, the data supporting the conclusions of this study come from the population at large so that principles of HTI can be generalized to any client seeking psychological care (not just high hypnotizables). As argued in this paper, HTI is more than a vehicle of suggestion. When used in a problem-solving context, HTI may play an important role in the focused activation of unconscious intelligence.

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