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The role of entrainment in ecstatic trance worship and healing: Lessons from the Gospel Church.

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Abstract:

Ecstatic trancing in spirit possession religions is a process of separating the spirit from the physical body, with the goal of making contact with the realm of the divine. In this article, the induction of trance is introduced as a disruption of the habitual pattern of the *ego self*. The ecstatic trajectory of the Judeo-Christian ecstatic service is described, evoking three discrete levels of altered state experience. The role of entrainment is suggested; and gospel choir's unique African-originated trance induction techniques are identified as entrainment tools. Unusual experiences reported in the gospel church (including glossolalia, automatisms, synesthesia, falling under the power, grace, faith healing, conversion, and prophecy) are examined with possible explanation for their occurrence.

If speech rhythms can entrain, if rhythmically flashing lights can entrain, if bodily gestures can entrain, how much more powerful is musical ritual entrainment with a pulse that penetrates to our bones, with melodies that thrill, and a cosmology that gives life meaning and purpose?

By Judith Becker, 2004, p. 129

Keywords: Music, Music Therapy, Entrainment, Trance

Introduction

In this paper, I will discuss the nature of the ego self, the neurophysiology of trance, trance induction, and the physics of entrainment. I will then explore the roles of music, emotion, rapport, social contagion, and catharsis in influencing the coupling of consciousness systems and the transcendent and healing phenomena associated with such coupling. It is not my intent to reduce the ecstatic spiritual experience to scientific explanation, but to provide an understanding of entrainment as an important element in the experience of extraordinary shifts in consciousness.

Ecstatic trancing

Ecstatic trancing is a process used in traditional communities to dissociate the consciousness from the physical body, with the primary goal of establishing direct contact with the spiritual realm of the divine (Ellis, 1923). The word *trance* comes from

the Latin, meaning “to cross over,” as in the experience of crossing over to other realms of information. Wulff (2000) described the condition as including the elements of fixed attention, internal preoccupation, and obliviousness to some stimuli (*cf.* Spiegel & Spiegel, 1978).

Spirit-possession religions, such as Haitian Vodou, Ethiopian Zara, and Javanese Jathilan, use trance to separate the spirit (alternatively known as the center of awareness) from the physical body of the host. Hypnotism expert Robert Baker referred to such dissociation as “depersonalization” (1990), meaning a detachment from the ego-identified self. As 19th Century Methodist minister and famed *magnetist* La Roy Sunderland described trance, it is a “state in which the soul seems to have passed out of the body into the celestial regions” (as quoted in Taves, 1999, p. 137); that is, according to Sufi mystic P.V.I. Khan, a shifting from our ordinary vantage point to that of the divine (as cited in Pattee, 1988). Occult understandings might describe ecstatic experience in terms of subtle bodies (Olcott, 1895), explaining ecstatic trance as a temporary disconnection of the astral body from the physical body.

The trance state may involve hallucinations and visions (Ehrenreich, 2006, 2007), and is “frequently accompanied by vocal and motor automatism, lack of reflective awareness, and amnesia,” according to psychologist and mystical experience researcher David M. Wulff (2000, p. 390). Most spectacularly, and to the point of this paper, we see published reports of unexplainable phenomena occurring under trance: exhibition of extraordinary physical or mental powers, endowment of new knowledge, miraculous healing. Even more strangely, how can reports of imperviousness to injury from fire and stabbing be explained? (Pearce, 1971/2002; 1977/1992; Khan 1991/2006; Groesbeck, 1997; and others). We will return to explore these phenomena later in our discussion.

Becker

University of Michigan ethnomusicologist Judith Becker, who wondered for years about the relationship between music, emotion, and trancing, wrote a book on the subject in 2004 entitled *Deep Listeners: Music, emotion, and trancing*. As a tenured academic, she allowed herself the latitude to explore this phenomenon that many of her colleagues might have chosen to keep at a distance. Becker defined trance as an experience associated with “sensations of no self, out-of-body sensations, closeness to forces that seem to be beyond ourselves, momentary feelings of eternity stimulated by some visual or aural perception” (p. 131).

Importantly, Becker suggested recognizing trancing as a *process* of experience rather than a state; a process of limited duration: “one is either entering, continuing, or coming out of a trance” (p. 8). Becker stressed that trancing is not a representation in the mind: “Like languaging, like emotion, like musicking, trancing is an enactment.... It is a way of being-in-the-world, not a way of thinking about the world” (*ibid.*, p. 127). One of the practices Becker examined is Christian Pentecostalism. I have found her work to parallel my own research on the ecstatic experience of gospel choir. Thus, I propose to use her work as a jumping off point to introduce my own.

My own research has been on the subject of the ecstatic experience of gospel choir. I here define ecstasy as rapturous delight, exaltation, bliss, a sense of being taken out of one’s *self* or one’s normal *state* of consciousness, and entering a state of intensified or heightened emotion, so powerful as to produce a trancelike dissociation from all but the single overpowering feeling. In this mystical self-transcendence, that sense of connectedness with a unified whole, one is said to *ascend* to ecstasy. Experiencers may describe a *spiritual conversion*.

The comparison between the states of ecstasy and trance is unavoidable, leading shamanism researcher Anna-Leena Siikala (1982) to assert that the terms *trance* and

ecstasy are synonymous, “except that the former term is favored primarily by anthropologists, the latter by students of comparative religion” (p. 104). Recent research has adopted consciousness researcher Charles Tart’s term *altered states of consciousness* to refer to both phenomena. While not all trance leads to ecstatic experience and not all ecstatic experience is trance-induced, characteristics of suggestibility, absorption, mental boundary thinness, emotional contagion, and self-transcendence are all relevant to the discussion of both altered states of consciousness (*cf.* Cardaña and Terhune, 2014). Thus, for the purposes of our discussion, we may consider musically-induced religious ecstatic experience and musically-induced religious trance as related and often synonymous.

Neurophysiology of trance

From the perspective of neurophysiology, trance may be recognized as “a reconfiguration of connectivity between brain regions,” a particular disruption of hemispheric integration that is noted to be “consistent across individuals” (Ives-Deliperi, *et al.*, 2011; as cited in Flor-Henry, *et al.*, 2017, p. 7). Psychobiological studies of shamanic trance indicate “a shift from the normally dominant left analytical [verbally processing mode] to the right experiential mode of self-experience, and from the normally dominant anterior prefrontal to the posterior somatosensory mode” (Flor-Henry, *et al.*, 2017, p. 21). More precisely, as epilepsy researcher Pierre Flor-Henry (2017) reported, trance represents:

[a shift from the left-hemispheric-dominant verbally-based ‘analytical self’ mode of] dual awareness [and] a sense of autobiographical self, extended in time, symbolic information processing, abstract capacity, and linear cause-effect attribution...to the right ‘experiential self’ mode [of] non-verbal timeless perception of reality,...associative awareness [experienced] in visual and somatosensory modalities [even archetypal imagery, as reported by shamanic trancers; an] uncoupling of the right hemispheric ‘holistic operator’ from the normally dominant left hemisphere [causing a shift from the prefrontal-dominant mode responsible for the] ‘me’—‘not-me’ distinction, the experience of separate self, possessing thoughts and emotions, interacting with separate others and larger independent reality...to the posterior ‘sensorimotor self’ mode [of] rich imagery, intense affective experiences, synesthesia, dissolution of ego boundaries, [depersonalization/derealization, self-dissolution] and cosmic feelings of oneness with the Universe (2017, pp. 19-22; *cf.* Cook & Persinger, 1997; Lehmann, *et al.*, 2001).

These distinctive experiences are associated with cortical hypercoherence (Stuckey, *et al.*, 2005).

The ego self

The more these altered patterns of consciousness are practiced, the more entrained they become via neuroplasticity, creating habitual persistent changes in cortical circuitry (Tei, *et al.* 2009). Such behavioral reinforcement of habitual patterns is also evidenced in worship trance practices (*cf.* Poloma, 1997, 2003).

Westerners tend to relate to the self or *personhood* as stable and bounded and independently developed. But Becker (2004) reminds us that the sense of self is culturally developed and culturally constrained. Certain learned conceptions of self lend

themselves better to trance than others. As anthropologist Erika Bourguignon (1968) observed, the occurrence of trance in societies is ubiquitous. But the stories our western culture tells us about our “bounded, unique, inviolate self” may actually get in the way of having the experience of surrendering the self (p. 89). We have been trained to accept only a certain notion of acceptable selves; that is, the rational self, the problem-solving mental governor of the body, and the disengaged self of personal will and control. Flor-Henry (2017) concluded that “trance states may be much more common than what is generally accepted, representing an underused potentiality rather than an exceptional gift or psychopathology” (p. 9).

I suggest that the ego is a habitual process of organizing experience that has been developed by our consciousness as we learn in infancy to associate with embodiment; a construct; a map or habit pattern of self-identification. The ego is a learned, conditioned phenomenon which is continually maintained through habit and reinforcement. This is an attachment remarkably easy to disrupt, as sensory deprivation studies have shown (Sacks, 2007/2008). The continuity of self actually requires constant sensory-motor feedback in order to be maintained. Indeed, research with infants who are deprived of touch will actually fail to thrive and will literally leave their physical bodies; that is, die (Spitz, 1945, 1946; Harlow & Zimmermann, 1958; Field, 2001/2003; Ardiel & Rankin, 2010; McGlone, Wessberg, & Olausson, 2014; and others).

Suggestibility and the permeability of the ego

The ego or self is shown to be an organized pattern, field, or system, with an *axis of identification and boundary*. The weaker the boundaries, the more susceptible the ego is to destabilization, and the more available and responsive to suggestion (Goodman, 1988). Under trance, the ego boundaries are weakened and the internal authority is immobilized, causing the subject to become highly suggestible. Trance scholar Ernst Arman (1963) called trance a state of *suggestive absorption* (p. XV). This shift to a more receptive mode is sometimes referred to as an increase in permeability of the ego structure. Both mind and body are highly susceptible to suggestion, according to Baker (1990). The importance of suggestion and community expectation in trance dissociation should not deny the reality of the experience, however. Human potential author Joseph Chilton Pearce wrote several books in the 1970s about the miraculous powers of suggestion alone in healing (1971/2002; 1977/1992). As humans, one could conclude, we are “susceptible” to the stories we are told.

Children, with weaker ego boundaries, seem to be much more in touch with the “angelic realm” and are reported to be much more suggestible than adults (Pearce, *ibid.*; Lipton, 2006; Shor 1969/1990), to the point of being able to defy the normal laws of science. Indeed, neurobiologist Bruce Lipton (2006) suggested that children are habitually in trance, as their EEG patterns show high levels of theta and delta waves. Developmental psychologist Heinz Werner suggested that indigenous peoples also have weaker ego boundaries and greater tendency toward trance because their group identity is stronger than their individual ego (Werner, 1948/1973; *cf.* Shor, 1969/1990). Other research has posited that women’s boundaries between self and other may be “thinner” than men’s, making them more receptive to others (Sered, 1994). I would note this tendency as well in bodyworkers, who purposely make their boundaries more permeable to messages from their clients’ bodies. I also wonder if, as we age, we begin the process of reverting back to a less boundaried and thus more suggestible ego organization—one reason why the elderly seem to be more easily duped by con-men!

Trance temporarily destabilizes the self

Trance temporarily destructures the pattern of the self. Trance makes the boundary of the self-construct permeable to the influence of any highly energized and organized thought form or system; whether created by oneself through absorption and self-suggestion, or by merging with another individual (*rapport*), or by pair or group merging (*bonding, one accord, mob-mind*). Trance is arguably evidence of a linking or merging with another system.

Ecstatic trance as learned sensate habit

Ecstatic trance is a learnable state. Techniques can be taught to enhance one's ability to focus and become absorbed, and to learn to exert control over autonomic processes. Shamanic traditions, yogic practices, and Eastern meditation practices are notable examples. Ecstatic experience is a learned response typically "practiced within a communal [religious] framework" (Becker, 2004, p. 1), typically tied to "institutionalized ritual" (Sarbin, 1968). The subjective content of the ecstatic experience is "culture dependent" (Siikala, 1982, p. 104). Religious trance ritual is thus, as Becker (2004) noted, an experience where the experimenter learns how to enter the trance and what the parameters of the altered state experience should be.

Becker recognized that trancing is a very physical event; a "sensate" mystical experience as meditation researcher Arthur Deikman (1990) called it. "Trancing is a learned bodily behavior acted out within a culturally pre-given religious narrative" (Becker, 2004, p. 42). And techniques to evoke such ecstatic experiences typically involve the emotional arousal of the sensory-motor nervous system and the endocrine system (*cf.* Wilber, 2006; Walsh, 2007). As Becker described: "[Ecstatic trance ritual] is usually accompanied by music and often involves strenuous activity on the part of the trancer. Institutionalized, religious trancing takes place within a context of sensual overstimulation" (2004, p. 1).

In trying to understand trance consciousness, Becker noted the importance of the lower brain, the home of the biological "proto-self" (as Damasio called it); the part of the brain engaged in "primitive intentionality," "action readiness," and the maintenance of the basic metabolic survival mechanisms of the body (*ibid.*, p. 134). This level of biological self is neither identified with the personal ego nor with autobiographical history. It is organism-centered (Friedson, 2006). Becker recognized the importance of the lower brain, both in the arousal of the autonomic nervous system, and in the stimulation of trance consciousness. Indeed, she suggested a correlation between "learning to control deep-brain...emotional responses, respiration, blood pressure, and skin temperature" and the learned ability to change consciousness (p. 146).

Induction

Trance (including ecstatic trance) consciousness is typically *induced*. I have never seen a good dictionary definition of trance induction; only that induction consists of any number of techniques that lead an individual to a state of higher suggestibility. However, psychiatrist Sidney Cohen (1971) suggested that trance induction can be understood as any process that disrupts one pattern (or cohesion) of cortical processing to create a new one (as cited in Winkelman, 2000). Tart (1969/1990) concurred, using the term "destabilizer." Trance induction is said to *excite, incite, arouse, or invoke* a dissociative change in consciousness. Typically, rhythmic entrainment is known to function as an inducer, but actually anything that introduces energy that disrupts the normal pattern or system of consciousness while promoting another one will do. Focused suggestive attention, pain stimulation, acoustic stimulation, hypoglycemia and dehydration, sensory over-stimulation, and hyperventilation are all techniques used to induce trance via

disruption of the nervous system, as reported by Tart (*ibid.*). Fasting, fatigue, and, of course, ingestion of hallucinogens may be added to this list.

Gospel choir is extremely sophisticated in its use of intensification and induction techniques, as we will discuss below. The response to the inducing stimuli is also variable depending on the “nervous sensitivity or reactionary susceptibility” of the experiencer (Siikala, 1982, p. 110). Higher susceptibility to induction is correlated with higher susceptibility to suggestion. Trance is inducible by another’s suggestion, and it is also auto-inducible. It can also be induced by being in the presence of someone already in trance. And one can increase one’s susceptibility to induction with practice

Botanist, anthropologist, and recorder of supernatural phenomena, Lyall Watson (1979/1987) suggested that the effect of the hypnotic induction procedure “is to weaken the boundaries we normally erect between ‘me’ and ‘not me’”; that is, the surrender of the *I* (pp.289-292). We can think of the methods of induction as tools to make the self more permeable, as we have discussed previously. As Becker notes, there are many sometimes surprising ways of creating a permeable self. “Situations of extreme stress, illness, or drug use....Living among people who hold very different senses of self may also precipitate a change in one’s own subjectivity” such as witnessing spirit possession happen (Becker, p. 106).

As trance appears to involve a destabilization of the ego habit pattern, I suggest that induction be considered any process that temporarily creates that destabilization. I suggest that we are “induced” as well, by repetition and reinforcement every day, into our own established ego habit patterns, the ones we have come to identify with as our sense of embodied self.

Possession of the self

To surrender to trance, one has to experience the self-identity as without firm form. If we recognize the “self” as a culturally-influenced concept, as malleable and fluid, we can understand that it can become the vehicle for transformational experience. Trance induction involves a willingness to surrender, to become permeable; to let go of ego control and social decorum, according to Becker (2004), who noted: “The price of ecstasy may be a loss of dignity” (p. 94). The reward, however, is a sense of merging with something greater than the individual self and potential accessibility to knowledge not available to normal consciousness (Bourguignon 1968, 2004; Goodman, 1988). The trancing self is available for suggestive *reprogramming* and even for *possession*, that is, being taken over by another source of consciousness; referred to in trancing traditions as *spirit possession*. The surrender of the self to forces beyond one’s control is a learned skill (Begelman, 1993). Rather than a neurosis or pathology, it should be recognized as a gift, according to the acknowledged father of psychology, William James (1902/1958).

As ecstatic music researcher Graham St. John (2011) suggested, *entrancement* “implies the relinquishment of individual will and autonomy to an external power, higher energy, or extraordinary life force” (p. 211). In spirit possession traditions, it is when this ego-self is disrupted that both miraculous healing and prophetic revelation are enabled. All that is required is an induction and the suggestion that such extraordinary reality is possible. Religious frameworks such as the Pentecostal church offer such cultural support. The worshipper expects to surrender a part of the self. It is in this surrender to something larger that *miraculous* healing occurs. “One must become a prepared, anticipatory, open, and empty vessel,” as Becker proposed, “submitting to the penetration of one’s bodily boundaries by a spirit more powerful than one’s own” (2004, pp. 99-100). In the Pentecostal community the trancer is culturally *prepared* through community narrative to receive the *Holy Spirit*.

As Becker noted: “Many trances involve the penetration or invasion of the body by another self, an alien spirit, the ‘Holy Spirit,’ a deity or a devil” (*ibid.*, p. 14). Possession trance may involve displacement of the primary soul or the cohabitation of two souls in one body. Possession involves the self becoming porous or permeable; a willingness to become dissociated (as in dis-association or withdrawal) from the identification with (or one might even call it “addiction” to) one vibrational pattern of self and the surrender to another pattern or vibrational system, an archetypal or ancestral or spirit world (Crabtree, 1985; Smith, 1997).

Indeed, as Becker declared, ritual possession requires “submitting to the penetration of one’s bodily boundaries by a spirit more powerful than one’s own” (2004, p. 100). Another way to put this is to think of the ego structure as an overlay, which may be “dropped” to allow access to altered states of consciousness. Indeed, as possession researcher Felicitas Goodman (1988) admonished, it is important to help the host rebuild the solidity of their ego structure afterwards, a boundary of protection.

The phenomenon of possession trance is a culturally suggested, culturally learned, culturally supported, and culturally habituated ability to detach from and surrender one’s personal ego identity, as a means of calling in otherwise inaccessible healing, guidance, and prophecy. One calls up what one expects or organizes oneself to call up. In the gospel church worship experience, the presence of the Holy Spirit is *invoked* to manifest throughout the church. When that Spirit descends into the congregation, various individuals may feel themselves “possessed” by that Spirit to become “an instrument of God’s spirit” (Hinson, 2000).

Possession, similarly to trance, must be induced. Possession is always associated with excitement, a high state of physiological arousal, energized through strong emotion (Goodman, 1888). Possession shares traits with histrionic personality disorder, epilepsy, and hypnotism in that all are evidence of a rhythmically hyper-excited and thus abnormally synchronized brain (Spanos, 1979; Lehnertz et al., 2009; Garcia-Hernandez, 2010; Baghdadi & Nasrabadi, 2012; Westerink, 2014; DeGiorgio, 2001-2014; and others). Sensory experiences reported in possession states, such as altered perception, uncontrolled motor activity, imperviousness to injury, shakes, sweats, and tremors, indicate a neurophysiological foundation.

The power of music in religious trance

The use of music is strongly correlated with the ecstatic experiences reported by religious trancers, including Pentecostal worshippers, as will be discussed below. We respond to music emotionally (Storr, 1992); we literally experience *emotion* via the *motion* induced in our bodies. The brain functions as an arousal-seeking system (Thaut, 2005); with rhythm having dramatic effects on arousal (Berlyne, 1971). Music is processed by the brain differently from other information; music activates the whole brain (Sacks, 2007/2008; Alluri, et al., 2011). Our nervous systems entrain to rhythmical music and to rhythmic drumming (Sacks, 2007/2008). That also makes music a powerful group synchronizer and unifier, as Becker and many others have noted. As Becker explained, the neurons in the brains of trancers fire synchronously with instrumental rhythms (2004, p. 142).

Singing and listening to music can also take us out of the physical body and into numinous experience. Music slows or even stops the processing of time (Luhmann, 2004). It is in this state, which Becker referred to as the “*musicked proto-self*,” that musicians report “becoming the music” (2004, p. 143). This is an experience during which inner dialogue and inner languaging stops; which explains why those who have ecstatic experiences find it so difficult to find the words to describe these experiences.

As one musician opined, without such inner speech, the “anchor” to the body is lost (Benzon, 2001, p. 155).

The physics of oscillation, synchronization, amplification, & entrainment

In order to understand the technology of musical trance religion induction, I have turned to the language and concepts of biophysics; particularly the concepts of oscillatory systems, synchronization and entrainment. Becker here has joined a select few of her ethnomusicology colleagues in using these terms to describe the effects of music on group dynamics (*cf.* Clayton, Sager, & Will, 2004; Will & Turow, 2011).

An oscillator is defined as anything that has a periodic motion or rhythm. We know that inanimate rhythmic vibratory systems, such as pendulum clocks—in fact all oscillators—have the tendency to synchronize (that is, to operate in unison) with other oscillators that are vibrating at similar frequencies. They do this by way of *entrainment*. Entrainment is described as when one vibratory source is pulled into synchrony with the rhythm of another vibratory source. Or, as ethnomusicologist Becker put it: “Rhythmic entrainment [occurs] when two or more seemingly independent processes mutually influence each other to converge in a common pattern” (2004, p. 127). I suggest that whenever synchronization occurs, entrainment is in play.

Theoretical biologist Arthur Winfree (1987) coined the term “frequency pulling” for this process. Winfree noted that any population of oscillators, if they have relatively similar frequencies of oscillation, will seek to reduce the differences in their individual frequencies. When a certain threshold is reached, the system undergoes an abrupt transition to a synchronized state, (also known as mutual “phase-locking”) where most individuals fall into lockstep and oscillate with the same period. Biophysicist Mae-Wan Ho (2005) recognized this locking-in process a “phase transition.” Such synchronization allows groups of oscillators to function as single units or single systems (Strogatz, 2003).

From the perspective of ethnomusicologist Becker, the body-mind is full of rhythmic systems, (such as the pulse, breathing rhythms, brainwaves) each subject to synchronous entrainment. The muscle actions of bodies can synchronize (as in group dance), brainwaves and heart rate variabilities between people can synchronize (Morris, 2010; McCraty, 2020; Ruiz-Blais et al., 2020), and people even tend to synchronize gestures when conversing (Condon 1971, 1986). Newborns demonstrate interactional synchronization with caregivers within the first half hour of life (Benzon, 2001).

Coupling in consciousness systems

From the study of physics, we know that oscillatory systems are subject to both intensification (i.e., amplification) and to frequency shifts (Oschman, 2000/2001; 2003/2005). It turns out that not only elements of the body but also elements of consciousness itself seem to be oscillatory in nature and thus subject to all the traits of any oscillating entity—including resonance, synchronization and entrainment (Hunt, 2018; Hunt & Schooler, 2020; Koch, 2004; Dohaene, 2014; Grossberg, 2017; Fries, 2005, 2015).

The brain can synchronize, as reported by various researchers, including Gellhorn (1969), Lex (1979), and Mandell (1980). Trance states involve an increase in synchronization of cortical rhythms. As Winkelman (1986) summarized, temporal lobe dysinhibitions result in synchronous slow wave EEG patterns originating in the limbic system and projecting into the frontal cortex of the brain.

Becker noted the role of synchronization in speech and somatic rhythms in cultural *group cohesion* (2004; *cf.* Erickson and Mohatt, 1982; Tannen, 1984; Collins, 2004). But I further suggest that we also witness the process of entrainment in such under-researched phenomena as the bonding between parent and child, and the relational

rapport that may occur between client and therapist (*cf.* Kestenberg, 1975). Becker (2004) posited that such structural coupling also occurs between the trance dancer and the ritual he or she is participating in.

Both the individual body-mind and the group body-mind of the congregation can be recognized as oscillatory systems. As such, they are subject to resonance, amplification, synchronization, and entrainment. Contagious synchronization and entrainment occur in the gospel church through the effects of rhythmic induction and intensification on the biological (perhaps water) systems of the bodies of the congregants, as well as the emotional techniques that pull the *heart fields* of the participants into one field.

As previously noted, when synchronization occurs, what has been functioning as separate systems is pulled into a single system. Becker called this “structural coupling.” We humans are indeed excitable, synchronizable, and ultimately entrainable. In a high arousal musical event, where rhythmic entrainment is at work, all involved become subject to this structural coupling, “becom[ing] one in a rhythmically coordinated domain” (2004, p. 141), creating a temporary identification with a group consciousness. Crowd mind expert Gustav Le Bon (1895) recognized this phenomenon, this tendency to develop a resonant *group mind field*. As he wrote: “The phenomenon of trancing is transpersonal, does not take place in one particular mind alone, though it also takes place there....The groups acts like a unit” (p. 124). In such a combined system, energy is shared throughout the system; borrowed so to speak. And when that happens, energy is actually freed up in the combined system, available to be used by the system (Strogatz, 2003). We generally find this synchronization energizing, harmonious, and joyful. I wonder if this freed energy may play a role in the healing and other unusual phenomena reported in group trance rituals.

Suggestibility as a reflection of entrainment

We have previously spoken of suggestibility. When we consider the issue of suggestibility, I wonder if we might consider suggestibility a factor of entrainment? Does dissociative trance itself reflect an entrainment process, explaining why those in dissociative trance are more suggestible? Does the fact of children’s weaker ego boundary correspond to greater ease in their entraining with other systems of organization? And can merged entrained group identity (i.e., group trance), such as the *one accord* (i.e., “one heart”) that is evoked in the gospel service, invite more individual and group suggestibility as individual ego boundaries are weakened?

Social contagion

We are all familiar with physical contagion, as in the transmission of disease; but there is also such a thing as emotional contagion and social contagion (Schoenewolf, 1990; Hatfield, Cacioppo, & Rapson, 1994). Behavior initiated by one person may be picked up and mimicked by others. Yawning, smiling, laughter, are all “contagious.” So are manias. So is mob mind! I suggest that the concept of social contagion should be recognized as an entrainment phenomenon; relevant whenever resonance is a factor. We all have the built-in ability to *catch* expressions, vocalizations, postures and movements (Hatfield, Rapson, & Le, 2009), and the emotions (Collins, 2004) of those around us through the process of resonant entrainment.

Ecstatic trance seems to be such a contagious resonant entrainment phenomenon. Spirit Possession is also highly contagious, according to possession researcher Felicitas Goodman (1988). Induction into trance is also subject to contagion, transmittable between one person to another. Experiencers can become habituated to induction, able to develop lasting reduced thresholds for such neural excitability and thus greater susceptibility to trance altered states (Winkelman, 2000).

Emotion as inducer, conveyor, and amplifier

The role of emotion is significant in human synchronization and entrainment. “Human emotions are highly contagious” according to Nummenmaa, *et al.*, who also found that “experiencing strong emotions synchronizes brain activity across individuals” (Aalto University, 2012; *cf.* Hatfield, Cacioppo, & Rapson, 1994). The heart is the major organ of emotional entrainment, bonding, and empathy (Maret, 2009). Certain emotions increase coherence in the heart’s electromagnetic field; such as gratitude and appreciation (McCraty *et al.*, 2009). When experienced in groups (such as congregations or concert attendees), such *coherent emotions* create maximum synchronization and coherence between the hearts of all group members; leading to a group field, a single pulsating system, as it were (McCraty, 1998).

As historian of religion Ernst Arman (1063-1970) noted, “profound emotionality” is an important element of communal religious trance (pp. 1-3). Emotional arousal combined with rhythmic entrainment can be a powerful inducer of trance.

According to hypnosis expert Dick Sutphen (2013), emotional charge is also a powerful conveyor of suggestion. Emotional arousal can create the groupthink that is commonly referred to as “*mob mind*,” according to Gustav LeBon (1895), who noted that when the public is aroused, suggestions can be easily implanted. (I thus suggest that mob mind be seen as an induced form of possession.)

Additionally, the arousal of emotion has powerful effects on the sensorimotor system. There is evidence of emotional charge being converted to physical symptoms. Emotional arousal can cause the muscles of the mouth, the tongue, and the arms, legs and torso of the body to move spontaneously, as in involuntary *automatisms* (as will be discussed below). It can also directly influence what we perceive sensorily.

Water as medium of communication

I wish to here remark on the possible role of water in our oscillatory bodymind systems. As noted by dancer and movement researcher Emilie Conrad (2007), our bodies are moving containers of water, fluid oscillators as it were, subject to the rules of fluid dynamics (*cf.* Lin. 1982/1997). Fluid waves have resonant properties and their energy can be amplified. Our bodies’ fluids carry rhythmic information and communicate resonantly with the fluids of other bodies (contagiously, I suggest). According to Conrad, sound, emotion, and subtle energy frequencies are all transferable from one water body to another through resonance. This resonance can induce a powerful group field, and induce a “mob mind” or a “holy hush.” Though singing and dancing both activate the water, the human voice is particularly powerful in contacting the water in the body and directing emotional messages through resonance (2007).

Neurobiology researchers have suggested that synchronization of fluid waves may, indeed, be central to the creation of trance. Psychobiologist and consciousness researcher Dieter Vaitl (2005) and his team found that the synchronization of blood pressure oscillations induced by body movement may be a factor in rhythm-induced trance.

Additionally, the molecular structure of the body’s water itself renders it an organizable, excitable, amplifiable, imprintable, and programmable medium, according to the groundbreaking research of bioengineer Gerald Pollack (2013). Water can be programmed to hold and transmit an emotional pattern, according to Emoto (2004), and it is a critical medium in the resonant communication and information exchange that occurs between the bodies of worshippers; able to exchange this communication at a distance.

Lessons from the ecstatic technology of the african-american gospel choir

I would suggest that the profound ecstatic power of the gospel service owes its origins to a unique blending of Judeo-Christian ecstatic ritual and African trance induction technology.

Pentecostals seek a direct, unmediated, personal, and deeply emotional experience of the divine” (Becker, p. 97) by practicing an ecstatic style of worship in which participants literally “sense the presence of the Holy Spirit with and in their bodies” (Meyer, 2010). Music plays a critical role in Pentecostal ecstatic worship. The Pentecostal service, particularly the gospel church, relies heavily upon music to structure its services, with the intention of provoking intense emotional reactions from worshippers. The goal is to transport the worshippers to an altered state experience of the divine. Music is literally the *locomotive*, the driving force.

Anthropologist Glenn Hinson, in his book *Fire in My Bones* (2000), viscerally described the energetic arc of the gospel service. As Becker (2004) summarized the process, the service begins with slow soothing music to set an “attitude of worship.” But then the pace picks up and becomes more rhythmic, more driving and more repetitive, propelling the congregation with its “hand-waving, hand-clapping, foot-stomping choruses of ‘Amen!’” (p. 99). Some members will be moved to tears, some to dance in the Spirit, some to quiver and jerk in trance, possessed by the Holy Ghost, some to *fall under the Spirit*, and some to be moved to *testify* the words they have received in “emotional revelation” from the divine. By the end, all are joyfully exhausted. This is known as “having church” (*ibid.*).

Becker described several phases in the Pentecostal transformative process: Salvation, Sanctification, and Baptism of [in/with] the Holy Spirit—this last a transpersonal shift also known as “*conversion*.” As one congregant was quoted:

Sanctification is just more of the same thing as being saved, but [Baptism in] the Holy Spirit is different—it knocks you about and you don’t know what is going on....When the Holy Spirit hits you it is like getting over your head in water....I felt, after the baptism of the Holy Spirit, that I loved everyone. I felt that God loved everyone—sinner as well as others....After one has had the baptism of the Holy Ghost one will never be satisfied with another religion (Wood, 1965, pp. 24-26).

The music used in the gospel church is particularly powerful in evoking such intense experiences in congregants. Gospel (“good news”) is a powerful African-American spiritual musical tradition. The soulful melodies and rhythmic beat of gospel seem to contain the remarkable ability to help people find joy, comfort, healing, and a sense of God’s personal love. Though gospel themes are traditionally Christian, the secrets to the musical techniques used in this musical form originate from the wisdom of African tradition, which invokes the power of rhythmic song to raise energy, build spiritual community, and affirm its goals. Gospel uses the conscious praising of God to help a congregation *ascend* upwards into personal conversation and communion with the divine, and then perhaps higher still, into a state of absolute ecstasy.

The black gospel church has successfully merged the ecstatic structure of the Judeo-Christian worship trajectory with spiritual technology largely traceable to West African “*danced religion*” practices, originally associated with trance, spirit possession, and *ring shout*(*cf.* Caponi, 1999). Both gospel church and African religious traditions are ecstatic paths that use the excitation of the nervous system to create an altered state of consciousness to invite spirit contact. In both traditions, ecstasy is defined in terms of “ascension” and involves the altering of perception. In both, the goal is to access the power of a greater Source, by *calling it down*.

Incorporating many of the unique ecstasy-inducing methods rooted in West African spiritual practice, gospel music techniques (including polyrhythmic percussion, the incorporation of the body into prayer, and dialogic participatory communal music making) can be recognized as tools, not only of arousal and incitement, but also of induction and entrancement.

As Becker remarked, in the gospel service there is an emphasis “on total participation, total commitment, and loud, strongly emotional delivery” (2004, p. 97). Specific to both African and gospel musical induction is the use of polyrhythm, the use of more than one rhythmic signature at a time. In African musical tradition, individual rhythms are each carried by a body part: the foot, head, pelvis, etc. Thus, I suggest that polyrhythm increases the engagement of the body; that the more rhythms involved in the music, the more parts of the body are mobilized and engaged. Gospel songs are polyrhythmic, repetitive, interactive, and driving. To maximally engage the body into prayer can be both propulsive and inductive. In gospel choir, the body is thus used as the vehicle to experience the divine through the senses.

Using specific musical amplification, synchronization, and entrainment techniques, combined with the emotive power of the personal *heartsong*, the musical style of the gospel service is designed to consciously induce the group resonant heart field of one accord (a term that literally means “one heart”), and, further, to invoke a higher power to accomplish healing and change. The congregation works together to *bring down the Holy Spirit*. The goal is to whip up the room into a collective emotional and physical experience, a *path of ascension* until the *anointing* falls. The combination of strong emotional arousal, use of praise and affirmation, heartsong, emotive soloists, and techniques of rhythmic entrainment and intensification, bring the hearts of the congregation into coherence, creating a palpable sense in the room; the group trance state of one accord, sometimes called the *holy hush*. The congregation, which has been working toward the creation of this group field, can sense when it arrives and the congregation enters trance together.

Gospel choir’s unique technology is designed to evoke emotional arousal and group field induction, offering a host of excellent destabilizing and entrainment techniques, particularly those with rhythmic influence; most notably the intensification sections of performance. Briefly, the techniques include:

- The African major pentatonic scale and its ability to offer easy harmonization (Work, 1940; Roberts, 1998)
- The incorporation of rhythm instruments that maximally engage the body in movement
- The polyrhythmic syncopation and clap on the off-beat which are the hallmarks of gospel; as well as the driving, forward-propelling 12/8 swing rhythm—to engage, arouse, and entrance the body, and to build group energy (Wilson, 1992/1999; Floyd, 1995; Darden, 2004/2006)
- The use of tools of intensification: repetition, tempo increase, key modulation, and utilization of the elements of *drive* and *overdrive* (Lovell 1972; Roberts, 1998; Allen, 1991; Hinson, 2000).

- The use of such traditional community-building techniques of call and response, a bottom anchor line, aural learning, and participatory responses from the community (Floyd, 1995; Barnwell, 1989; Darden, 2004/2006; Jackson, 1964).
- The role of the *anointed* soloist; using the voice as instrument of emotive invocation (Southern, 1983; Burnim, 2006).
- The use of simple heartfelt daily speech and *earworm* melodies to create memorable heartsongs; and a song structure that builds an upward trajectory (Ames, 1955/1990; Lovell, 1972; Cusic, 1990; Darden, 2004/2006; Hinson, 2000).
- Use of *Praise* (Grateful Hallelujahs) and *Affirmation* (the expression of intentional will; “Yes, God!”).

Praise and affirmation

Affirmation is the use of a positive present-tense statement encouraging the experience of a situation as if the desired outcome has already taken place. A variation of this concept is *expectant faith*, as in the faith patients may have in their doctor’s ability to cure them. Émile Coué (1923) used affirmation to help athletes improve their performance and O. Carl Simonton (1978/1992) used affirmation as a tool to heal patients. Praise and affirmation are powerful tools in increasing coherence of the heart rhythms of a group (McCraty 2002; 2020); and are thus useful in raising and organizing the emotional energy of the heart: both individually and of a whole group. Gospel uses this tool masterfully in organizing the hearts of the entire congregation.

As previously mentioned, high emotion increases suggestibility. I suggest that gospel music can be described in a two-word positive exclamation of affirmation: “Yes, God!” The message is a positive and emotional one, calling upon Jesus for help and acknowledging his constant presence, and suggesting that miraculous results may follow.

The ecstatic trajectory of the jewish/pentecostal/gospel services

Pentecostal minister Ruth Heflin, in her book *Gloria* (2000), described the trajectory of the Pentecostal service in a way that refreshingly explains the original ecstatic intention of the Jewish worship service. Pentecostal or gospel ecstatic services potentially take worshippers up through at least three different discrete levels of altered state experience. The first is the emotionally excited state of physiological arousal with associated loss of inhibitory sensorimotor controls. This state is driven by group intention and praises to God. The second level involves synchronization of group heart fields, enabling a group trance state of “one accord;” which brings the worshipper into an intimate rapport (Martin Buber’s *I-Thou* relationship) with the divine; that is, into the realm of worship. The third level of experience involves an *ascension* and surrender into merging with a coherent field of universal love and grace and miracle; a bliss state experienced as *gloria* (Heflin 1990/2000). This is surrender to a higher authority, as it were. It is in the field of “gloria” that worshippers report unusual sensory experiences they experience as divinely inspired. As we will explore below, these three levels of altered state experience each evoke particular phenomena.

Exploring the “miracles” reported in gospel services

Many of the techniques used by gospel choir are designed to excite the nervous systems or brains of the congregation. I would thus suggest that many of the unusual effects evoked in gospel services seem to be the result of an excited sensory motor nervous system or brain, in combination with suggestion, cultural expectation, and emotional contagion. Those phenomena would include glossolalia, automatism, and ecstatic synesthesia. While other unusual occurrences seem to be entrainment situations, the results of “induction through touch,” “faith,” suggestion, and “reprogramming.”

Glossolalia

Glossolalia, (or *speaking in tongues*), is a good example. Considered to be a *vocal automatism*, studies show that glossolalia is an activity that is a learned cultural response. It is “induced” by highly emotional rousing group activity and is likely the result of reduced cortical control and disorganization of functions that the brain has normally learned to integrate, and results from a rhythmic discharge pattern of the excited subcortical brain (Tinnin, 1990; Goodman, 1972; Goodman, 1988).

Automatizms

Other reported spontaneous motor behavior *automatizms* consist of involuntary movements varying from jerky to undulatory, including shaking, shivering, trembling, swooning, falling, jumping, dancing, running, twisting, writhing, bowing, or even seizure-like convulsion (Baker, 1990). Experiencers report the sense of the body being taken over.

Such activity may be the result of the arousal of excessive neuronal discharges, manifesting as waves of energy flowing through the body. These movements may be the result of hyperstimulation of the reptilian brain (Poloma, 1997, 2003; Oubré, 1997) and/or of the temporal lobe, the area of the brain involved in emotional response (Mallia & Mindruta, 2013). Or it may be that abnormal synchronization of neuronal discharges in the brain is responsible for these automatizms, (Goodman, 1972; Hunt, 1989/1996), similar to the physiology of epileptic seizure (Lehnertz *et al.*, 2009). Forcing energy into a system rhythmically at the right resonant frequency, (known as oscillatory driving), disrupts normal communication between parts of the brain. Anesthesia functions by a similar process of synchronizing oscillator-driving, according to anesthesiology researcher Emory Brown; blocking communication and causing the posterior brain to simply “go offline” (2015).

Research on the physiology of orgasm also points to excited synchronous activation of large numbers of brain neurons, leading to activation of high threshold discharge systems (Lin, 1982/1997; Komisaruk, 2006). The orgasmic response is not necessarily limited to the sexual organs. For instance, a sneeze may represent a similar charge-discharge response. Apparently, any part of the body can build up a synchronous or coherent charge, which is then discharged mechanically; for example, *overbreathing* (hyperventilation) can overcharge the physiological system (Grof, 1988) resulting in *tetany*, tremor, and what radical psychoanalyst Wilhelm Reich (1972) labeled “streaming.”

Such discharge may occasionally set off a *soliton* tsunami-like pulse or shock wave through the body; that is, a single undulation (Lin, 1982; Komisaruk, 2006). Reich (1972) and others argued that the entire cellular biological system can be charged up to the point that the body seems to be breathing itself in such longitudinal undulatory (orgasmic) waves. Such waves of movement can be seen in amoebic streaming patterns of movement. Movement researcher Conrad (2007) called it “reptilian motion.” Recent research in fluid dynamics and motion has shown that the resonantly undulating wave

motion of a fish (even a dead one) can actually generate enough energy to passively propel the fish upstream (Beal, *et al.*, 2006; Hook, 2018). Soliton waves, by the way, have unusual properties, according to biophysicist Oschman (2003/2005); they do not lose energy as they travel and are therefore very efficient means of transferring energy in living systems.

I suggest that the unusual bowing forward movement that occurs in the gospel church may be recognized as a modification of this undulatory wave experience (Murphy, 1994; Conrad, 2007; Poloma, 2003); a movement that physicist A.S. Davydov (1987) might recognize as an “asymmetrical soliton” (*cf.* Oschman, 2003/2005), and which also may be recognized as corresponding to Reich’s “orgasmic reflex” (1942/1960).

Synesthesia

Other phenomena reported in gospel services include synesthesia (a perceptual anomaly which occurs when stimulation of one sensory modality triggers a perception in another sensory modality), and other perceptual changes. As Becker reminded readers, all perception is subjective. It is learned via bodily interaction and past bodily experiences. In addition, our perception is habitual, a “vibratory habit pattern of perspective” (Satprem, 1981/1992, p. 21). Western conceptualization takes such habitual perception as factual and *correct*. But there is no proof that it is. According to psychiatrist and mysticism investigator Deikman (1969a/1990a), we can learn to “dishabituate” our usual organization of consciousness.

Some researchers suggest that we can imagine the brain as functioning with perceptual filters, controlling information flow, which under certain conditions can be disinhibited, allowing brain cross-talk (Cytowic & Eagleman, 2009). We can also imagine conditions creating a “retuning” of these brain filters (Jahn & Dunne, 2009; *cf.* Strassman, 2001); that is, change the frequencies we can recognize.

Our perceptual systems function generally in response to the excitement of our sensory organs and nervous system; that is, perception begins when a stimulus molecule sets a receptor molecule vibrating in resonance. Thus, it could be said that we literally sense via movement. All our sense organ receptors are responsive to only certain electromagnetic frequencies, limited by our sensory organs’ sensitivities. But adding excitation to the system may cause more receptors to fire, and increase nerve conduction (Schrödinger, 1959/1967).. And, importantly, even specialized receptors may be excited by more than one kind of stimulus, providing that the intensity of that stimulus is sufficiently high.

Synesthetic altered perception can be created when the body and its perceptual organs become highly aroused. Consciousness researcher Hunt (1989/1996) referred to this as “supercharging” the system. Reports of ecstatic shifts in consciousness that occur under such conditions of high emotional arousal point to a transcendent alteration of perception; that is, a heightened sensory experience, a level of awareness in which perception occurs at an acuity not normally accessible. Becker proposed that “[s]pecial neuronal connections have been established in relation to the ritual world that allows the trancer to see extraordinary sights, to hear more intensely than one normally would, and to experience emotions that stimulate feelings of closeness to the holy” (2004, pp. 116-117).

In addition to the receptors becoming more aroused, it is our brain which actually construct our perceptual images by creating coded wave interference patterns of information (Talbot, 1991/1992). When the brain becomes overexcited, areas responsible for registering one type of sensory message may register messages of a

different type, so that an auditory message triggers an odor or a kinesthetic message triggers a visual reaction. The result may be access to what is usually called extrasensory perception, which Hunt referred to as “supersensory” perception, or even perception from a new viewpoint, a new perspective. Another way to put it is to recognize this experience as a change in frame of reference. Such *ecstatic synesthesia* may explain stories of blind musicians jumping off the stage and running through the aisles of the church; becoming able to see through their skin. This hyperexcitation may also explain the descriptions of *glory* kinesthetically felt by worshippers as raining down upon them.

Slain in the Spirit

In addition to the automatism and perceptual changes discussed above, excitement of the nervous system may lead to other somatic experiences of *Divine Presence* often reported in Pentecostal or gospel worship events. *Being slain in the Spirit*, (alternatively expressed as *falling under the power*), is described as an event that happens typically when an excited spiritual leader touches the forehead of a congregant, who then falls backward rather than crumpling, hopefully to be caught by fellow congregants designated with such a role (Poloma, 2003). This is an example of induction through touch. Why do congregants fall in that way?

Consciousness researcher Valerie Hunt (1989/1996) examined the effects on the magnetic field that occur associated with changes in consciousness. Both transcranial electrical stimulation as well as transcranial magnetic stimulation will affect consciousness. If the normal flow of the brain and spinal cord-generated DC semiconducting current is disrupted, such as through rhythmic synchronization, “normal” intrabrain communication may be disrupted. Trance and even anesthesia can be induced (R. Becker, 1990). Hunt’s research found that either increasing or decreasing the magnetic field can have dramatic effects on balance, psi powers, healing abilities. Hunt reported that such an experience as “being slain in the Spirit,” involves a sudden disruption of the magnetic field of the body.

Laying on of hands

Group ritual, as in church practices, activates the power of the group mind, offering the resonant strength of such a larger field or system. *Laying on of hands* is one of the most common ways of promoting healing in the Pentecostal church. Biophysicist James Oschman (2000/2001) refers to this phenomenon as “therapeutic entrainment.” This is a case of using induction through touch, leading to body-to-body rapport; that is, a merging of fields. The power of the combined field, together with the intention of the group and the suggestion to heal, may achieve actual physical results.

Faith healing

Faith healing is one of the hallmarks of a Pentecostal service. Worshippers call upon Jesus for help, and may be *miraculously* healed of their infirmities. Sociologist and Pentecostal researcher Margaret Poloma considered this an act of “bonding” with a loving God. Others have suggested that miraculous healing is a physical response of the body to the felt presence of God (*cf.* Mullen, as quoted in Poloma, 2003).

Research has suggested that faith healing is largely the product of expectation and suggestion (Krippner & Achterberg, 2000). But we should not forget that suggestibility is likely a reflection of entrainability, and is also associated with weak ego structure (that is, weak identification with the body-associated self). Adding high emotional arousal to the suggestion of surrendering to a higher power will greatly increase the likelihood that a believer will indeed surrender the ego self to such a higher power.

Suggestibility and Imagination are highly correlated, according to hypnotism investigator Robert Baker (1990). The Sufis conclude “that imagination itself is a faculty of perception” (Talbot, p. 260); a corollary to the idea that changing perception alters reality. As we have seen, highly suggestible or imaginative subjects would be the best candidates for miraculous healing and other suggested effects. Some individuals are able to evoke the physiological changes they wish by imagining the feelings that are present when such a change occurs (Barber, 1984). Imagination has been reported to influence the actions of white blood cells (Smith *et al.*, 1981). Llinás (2001) and Pert (1997) both noted the possibility that cells receive and respond to emotionally charged information directly. Suggestions can be given to the body, as with autogenic training, even down to control of a single cell (Basmajian, 1963; as cited in Baker, 1990).

The healing power of expectant faith is about creating a belief pattern. Believing in a treatment will produce a better result (Frank, 1974, as quoted in Walsh, 2007; *cf.* Mehl-Madrona, 1997). Correlated to this is affective trust, the confidence a patient has in his or her doctor or healer (Sandner, 1979; McClelland, 1989, as quoted in Krippner & Achterberg, 2000). I suggest that affective trust might be understood as a variation of “rapport”, as discussed below.

Hypnosis research is helpful in understanding the ability of the mind to enter into the state known as *rapport*. I have previously suggested that trance makes the boundary of the self-construct permeable. In hypnotic trance, the subject may, through the suggestion of the hypnotist, give up his or her ego control and executive function to the higher authority of the hypnotist. The subject thus joins the therapist in a shared commonality of perspective; a “mutually-shared system” (Pearce, 1977/1992, p. 246); a single consciousness. This is a merging of systems via entrainment. In this shared system, the sense of separate self is temporarily disrupted. This may be recognized as a resonance phenomenon, a new frequency pattern; a shift in system of identification. (Pearce, 1977/1992; Dow, 1986; Tart, 1969b,c/1990b,c; Ludwig, 1969/1990).

“Calling upon a higher power” implies a willingness to surrender to, to be possessed by, or put differently, to become entrained to a *higher field*. Thus, calling upon a higher power may be framed as opening one’s field to the possibility of entrainment to such a higher field, or to a stronger resonant system. This is an example of induction into rapport. The resulting merging of consciousness with this larger, stronger, or more coherent [perhaps more resonant] system could be considered the establishment of a state of rapport with the divine.

Perhaps we could even call this a new domain of consciousness.

In this state of rapport, just as suggestions are known to be able to be “programmed” by hypnotists (Achterberg, 1985; Baker, 1990; Coué, 1923; Lipton, 2006; Pearce, 1971/2002), it may be possible for healing to occur via reprogramming (Sutphen, n.d.; 2013). Altered states of consciousness researcher Michael Winkelmann (2000) suggested that this reprogramming occurs in the limbic and reptilian nervous system. We typically refer to this as *state-dependent* learning, but I would suggest that we could also call it *system-dependent* learning.

Grace

Grace is the sensed experience of the gift of love descending from the divine; the sense of being filled by God’s compassionate presence and affection. This may be another example of ecstatic synesthesia, the perception of sensory information not normally available. But the emotional content of the perception points to involvement of the heart in the experience. Is this an indication of the heart’s emotional entrainment, or even “bonding,” to a “higher” or more “coherent” system of consciousness?

Physiological miracles: Healing of wounds, stopping of bleeding, lack of pain

One of the stranger aspects of trance is its analgesic effects, physical endurance capabilities, and other transcendence of normal bodily limitations (Becker, 2004, p. 147). Perhaps the most famous of these is the ability to walk on burning coals without pain or injury. But stories abound of other seemingly magical results. The release of opiates can only partially explain these effects. How can Balinese trance dancers dance for hours without fatigue and not only avoid the sensation of pain when stabbing themselves, but also avoid the physical damage of wounds and bleeding? (Becker, 2004; and others). Can physiology explain what is happening or is there actually a true connection with the spiritual world at work here?

Pearce (1977/1992) reported extensively on miraculous healing cases in which pain and bleeding may be stopped by a combination of the suggestibility of the experiencer, their strong bonding (entrainment) to a higher authority, their willingness to completely surrender to this higher authority, and their positive expectation—even absolute belief—that the healing suggestion will work. Can it be that possibilities programmed into a merged self are available that would not be available to the body-identified self we habitually inhabit?

Hawaiian shaman Serge Kahili King (1987, 1988) offered a similar explanation for successful fire-walking. He credited devotion, the total faith or belief in the presence and protection of a divinity. Another way to frame this is in terms of attachment and identification with a more powerful, more coherent system. To achieve this attachment requires intensely energetic motivation and a trancelike state of focused attention, with intention focused on oneness and harmony. Deikman (1982) referred to this as a shift to a “receptive” mode.

To understand the power of faith healing and associated miracles, some researchers have suggested thinking of both mind and body in terms of programmed recordings, codes, patterns of information (Llinás, 2001; Lipton, 2006; Sheldrake, 1981, 1988). Programming occurs below the level of the rational mind. Addictions, compulsions, indeed all habits, are programs. Trauma registers as a program as well, according to Conrad (2007, p. 265). Once a pattern has been imprinted into the system, it tends to replicate. The system can be helped to open, but it will tend to recoil, resisting repatterning (*ibid.*, p. 276).

Suggestion, (including autosuggestion), reprograms the pattern. In fact, anything implanted or programmed into the bodymind as possible becomes “part of our reality potential” and can be repeated successfully, according to human potential author Pearce (1997/2002, p. 110). Reprogramming can result in bloodless wounds, painless operations, enormous strength and ridiculous weakness. Pearce, himself, demonstrated before witnesses that he could place glowing cigarettes against his skin without pain or injury, receiving neither burns nor blister (1971/2002).

The sudden consciousness shift of conversion and the role of emotional catharsis

The most life-altering effect that can result from the visitation by the divine presence is the experience of *spiritual conversion*, an overwhelming transformational experience that occurs when an individual worshipper feels suddenly touched by God. The experience has been described as a sense of bursting open or breaking apart, as if a bolt of energy had been applied. Spiritual conversion is also known as being *born again*. This is a feeling of being reborn, fresh, washed clean; a state in which “all things [become] new” (Helland, 1996; as quoted in Taves, 1999). People who have experienced conversion often say that the transformative effects last for the rest of their lives. It is in the context of a conversion experience that possession by the Holy Spirit, healing miracles, and prophetic revelation become available in the Pentecostal church. Unsurprisingly, the

factors that favor such a conversion experience include: temperament, expectation, the tendency to experience automatism, and suggestibility (Coe, 1917; as cited in Taves, 1999, p. 268).

Conversion occurs in an atmosphere of high emotional tension and is associated with emotional *catharsis*. We have previously discussed the important role of emotion in consciousness. Catharsis is the emotional expression and release of strong repressed emotion. Catharsis is not just a powerful emotional release, but a temporary *disruption*, a detachment from or opening of the habitual ego construct; a possibility for disintegration and reorganization of identification. Any major shock to the system of the self may initiate spontaneous reorganization of the system.

Catharsis impairs judgment, leaving the subject open to suggestion and even the dramatic reprogramming I have described previously (Sutphen, n.d., 2013; cf. Tart, 1975). Conversion always indicates mental reprogramming, according to hypnotism expert Sutphen (n.d., 2013). All physical stressors and, indeed, many of the musical techniques utilized by gospel choirs can be used as reprogramming tools (Sutphen, n.d.; Combs & Holland, 1990).

I suggest that catharsis and conversion refer to the same sudden parasympathetic “collapse” as Davidson (1976) described occurring in altered states of consciousness: extensive ergotropic/sympathetic activation leading to trophotropic/parasympathetic collapse. Gellhorn (1969) noted that disruptive stimuli can evoke this collapse, including all those stimuli known as trance inducers; including auditory driving, ritual dancing, repetitive motor behavior, and hallucinogens (as cited in Winkelman, 1986, p. 179). Finally, Sargant (1974) noted that this action “can lead to erasure of previously conditioned responses, changes of beliefs, loss of memory, and increased suggestibility” (as cited in Winkelman, 1986, p. 177).

Faith healing makes use of this intense transformative process. Poloma suggested that the associated emotional catharsis is responsible for effecting a powerful healing. Indeed, catharsis may be at the base of all religious healing, according to philosopher René Girard (1977; as cited in Dow, 1986). Consciousness researcher Charles Tart (1969/1990) envisioned this as a “disruption and reorganization” of consciousness. I would suggest that this process actually represents a disruption of one’s habitual ego formation. Thus, the cathartic experience directly correlates to the shaman’s *initiation* experience of transformational death-and-rebirth; an experience of *reordering* of one’s life. As one shaman put it: “Healing always involves a death and transformation of some part of the person” (Mehl-Madrona, 1988, p. 133).

Bio-physicist Mae Wan Ho (1998/2005) described living systems as “organized by intrinsic electro-dynamical fields, capable of receiving, amplifying, and possibly transmitting electromagnetic information in a wide range of frequencies—rather like an extraordinarily efficient and sensitive, and extremely broadband radio receiver and transmitter” (p. 139).

Might such a consciousness shift as may occur in conversion be reframed as resulting from an electromagnetic field dis-integration and reintegration? Physician Rick Strassman, who researched the mind-altering drug DMT, reported a frequency “*threshold*” for psychedelic experience (2001, p. 5). Transpersonal psychologist Ken Wilber (1998) referred to this as a “switch point.” Physicist Claude Swanson (2003) explained this as a sudden “*voltage shift*” (p. 140). At this point, according to telemetry instrument measurements by Valerie Hunt (1989/1996), she interestingly observed a sudden “shift to high frequency, high amplitude vibrations,” which she concluded “move the consciousness higher and higher into the spiritual realm” (pp. 261-262).

Prophecy

The ability to prophesy is another important phenomenon known to occur in Pentecostal services. Indigenous religious systems worldwide utilize prophecy, often attributed to possession (Bourguignon, 1973). Though there is a strong element of cultural suggestion to prophecy, access to the *prophetic mind* is typically evoked in the Pentecostal church through excitation. Indeed, supernatural phenomenon author Lyall Watson (1983/1991) makes a direct connection between synesthetic ability (which we have discussed previously as stimulated by high excitement) and precognition.

Human potential author Pearce, in explaining the source of prophetic information, uses the analogy of lightning striking after a build-up of *resonant potential* (2002/2004, p. 192), perhaps as a resonant thoughtform response to a thoughtform question; the answer coming “through the neural circuitry of the brain but not from it” (p. 192). The lightning bolt metaphor is suggestive of Hunt’s reports of a sudden increase in amplitude of electromagnetic field in ecstatic consciousness; also referred to as a “*quantum leap*” (Forman, 1998) or “*phase transition*” (Leonard, 1978/2006). In resonance terms, the shift in consciousness can be recognized as a change in resonant exchange.

If prophecy is indeed the result of resonance to a new field of information not available under normal circumstances, it would be created through a process of vibratory entrainment. And answers might only come to minds that are organized, filtered, or attuned to be able to attract the answer resonantly. It is affirmational *intention* that organizes the heart and mind of the receiver enabling him or her to attract the answer. In other words, revelation might be a frequency synchronization phenomenon, of both reception (perception) and emanation (motor activity).

There is also evidence that sudden access to revelatory information in the Pentecostal church may have a correlation to the existence of the group field we have previously discussed as “one accord” (Poloma, 1997; 2003). Hunt (1989/1996) recognized the merged consciousness of one accord as a new field organization. It is in this merged field that prophetic revelation is reported to occur. Becker (2004) referred to it as a structurally-coupled “supra-individual domain,” in effect, a group nervous system, or even a group self (p. 129). This “expansion of self,” as human potential author Thaddeus Golas (1972/2008) put it, is experienced as a new state or even a new system of consciousness. This conversion to a new or *higher* state of consciousness seems to shift the frame of awareness and to bring with that shift unusual healing and revelation miracles, as well as unusual perceptual and kinesthetic powers.

Conclusion

The ego self is malleable and fluid; it is a culturally developed and culturally constrained habitual pattern of information processing. Induction destabilizes one pattern of cortical processing and promotes another. Induction weakens ego boundaries, making the self more permeable, more available and responsive to suggestion. Suggestibility is a reflection of entrainment. Musically-induced religious trance typically utilizes sensory overstimulation.

The self may be surrendered to (or coupled with) another source of consciousness. In this surrender, healing and revelation are enabled. Trance consciousness disrupts the habitual ego process and allows a subject to merge with another consciousness system. With practice, trancing can create new self-transcendent habit patterns of cortical processing. The trancing self is available for reprogramming.

Both the body and consciousness are subject to oscillatory processes, and thus follow the biophysical rules of synchronization, amplification, and entrainment. Under entrainment conditions, suggestibility is enhanced, as is social contagion.

Both music and emotion can be powerful enhancers of entrancement. And coherent group emotion is particularly effective in amplifying entrainment. The gospel church uses

a set of induction techniques that are particularly effective in evoking trance and in coupling consciousness. I suggest that it is the merging with this new stronger (perhaps more coherent) system of consciousness that enables the mystical, prophetic, and even miraculous healing and psi experiences that happen in Pentecostal churches. That said, this article does not claim to have all the answers. There is more to spiritual phenomena than our “scientific explanations.”

I suggest that the elements involved in miracles experienced in the gospel church are the techniques used to give access to the spirit world: trance induction, a cathartic death-rebirth purification ritual which may shock an individual out of a habitual organization of experience, as well as the surrender of the ego to a higher authority.

In corroboration, I offer a piece of research I came across from the Qigong healing modality. Qigong master Luke Chan created a video in 1995 at Huaxia Zhineng Qigong Clinic & Training Center (the world’s largest Chinese medicineless hospital, founded by qigong grandmaster and doctor Ming Pang) ([Munay79], 2011; [nembokidde], 2014; cf. [woodveryimportant], 2010). In this video, four qigong healers used forceful rhythmic mantra chanting, while focusing attention together on a feeling of gratitude and appreciation in their hearts as if the healing had already taken place, as if the patient were already healed. A sonogram featured in the video showed the tumor disappearing in less than three minutes.

This qigong healing modality interestingly features important elements that I have suggested are key to the ecstatic effects of gospel church experience. They are key to shamanic group healing practices as well:

- sharply focusing attention on the body part needing healing, creating a “somatic consciousness”;
- programming the body to heal through suggestion, affirmation, and imagination;
- using vocal repetitive rhythmic resonant entrancing/entraining “induction” such as chanting;
- focusing intention with absolute belief and expectation on the result wanted as if it has already happened, which we can call “affirmation” or “expectant faith”;
- using the heart, the strongest generating organ of electromagnetic fields in the body and focusing on the emotions that create the greatest rhythmic coherence of the heart field—forgiveness, appreciation, gratitude—to build the strongest coherent electromagnetic field possible in each healer;
- establishing, through resonant entrainment (synchronization), a coherent combined group resonant field of “one accord,” which involves, by definition a frequency shift;
- thus entraining the field of the patient into the larger, more coherent group field of the healers; and
- facilitating the surrender of the ego to a source of higher authority; thus creating a larger, stronger field (or pattern) of healing and grace.

In summary: these Chinese healers used powerful elements that reflect those I have outlined in my research of gospel choir: repetitive, excited group chanting and a combination of total faith, directed intention, and verbalized affirmation. One could say that the hearts of this healing group have come into one accord, a group-rapport trance state functioning as one organism. The result of this group rapport trance state, I suggest, is the creation of an unusually powerful, coherent, synchronized group field, system, pattern, (or even thought form) of healing and spiritual community. This single-entity group-state of rapport facilitates the surrender of the individual egos of the healers to a higher (that is, more coherent) system of authority, thus enhancing the possibility for

healing, miracles, and grace to come through. In the case of the gospel church this higher system of authority is, of course, recognized as Jesus.

Whether one uses the terminology of *quantum physics* and *entanglement* or rather refers to *linked*, *entrained*, or *combined* consciousness domains, there is, a “phase transition,” “phase shift” (Leonard, 1978/2006) or as religious scholar Robert K. C. Forman (1998) has posited, a “quantum leap” a shift to a new structure (or dimension, or system); a shift to a new domain of consciousness. This is, as Forman has suggested “a deep shift in epistemological structure [in which] the experienced relationship between the self and one’s perceptual objects changes profoundly;” and this “new structure [may] become...permanent” (*ibid.*, p. 186). I suggest that the above authors and I have all come to similar conclusions about the transpersonal nature of the conversionary experience. I hope this article has added substance to the conversation.

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Bio

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