

Trance:  
A Biocultural and Psychophysiological  
Analysis Applied to the Haitian *Vodouisant*

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## **Introduction to Terminology**

Lewis (1983:412) distinguishes between “trance” and “possession” by characterizing “trance” as “a cross-culturally recognizable state, whereas ‘possession’ is a cultural *theory* applied to interpret a wide spectrum of states of feeling and behavior which *include* trance but do not require it.” Conversely, Winkleman (1986:174) uses the term “possession” along with “soul journey” as examples of the larger category of “trance.” Following Ludwig, Winkleman (1986:174) uses the terms “trance states” and “altered states of consciousness (ASCs)” interchangeably. Winkleman (1986:175) points out that the following are “share[d] features” of trance: “listing alterations in thinking, change in sense of time and body image, loss of control, change in emotional expression, perceptual distortion, change in meaning and significance, a sense of ineffability, feelings of rejuvenation, and hypersuggestibility.” Kehoe provides yet another conceptualization of “trance” and “possession” by following “Murdock’s” differentiation between societies that have “possession” and those that have “possession-trance” (Lewis, 1983:412). This third account views “possession” societies to be induced into action via involuntary mechanisms, while “possession-trance” societies can “voluntarily induce” this action (Kehoe,1981:550). Interestingly, Wallace’s (1961:264) seminal use of the term “arctic hysteria” or “*pibloktoq*” two decades prior has been dropped completely. While the variety of these usages informs the conceptualization of each theorist, for our purposes the term “trance” will be imposed on the literature to create a common discourse and to avoid the emic connotations of internalized “Otherness” inherent in the term “possession.” Despite the discordant vocabulary employed by this group of anthropologists, these authors agree that a cross-cultural phenomenon exists that is markedly limited in its expression, has biocultural and psychophysiological determinates, and is primarily found in or employed by women, especially pregnant and lactating

women. The purpose of this paper is to explore the disproportionate participation of women in the trance states of the Haitian *vodouisant* through the etic biocultural and psychophysiological perspectives of kinship, calcium-deficiency, stress, and voluntary dietary constriction.

## **Kinship**

Feeley-Harnick (1995) surveys the wide range of overlapping language and social functions found between the discourses of nutritional anthropology and religion. She first introduces her reader to concepts of fasting and the initiation rituals in which food is of primary significance before exploring systems of reckoning kinship not through typical “blood lines” but through the Islamic and Sufic conceptualization of milk as the primary medium of transferring kinship and consanguinity or what she might have called “conlactinity.” Feeley-Harnick (1995) sets these discourses within a codependent relationship by alluding to the intersection of the seemingly disparate categories of biology, culture, and religion. A kinship of milk, therefore, is proposed by Feeley-Harnick to explore how far an analysis of breast milk can inform the anthropologist’s conceptualization of social structure. While she never breaches the topic of trance, her various applications of the role of breast milk in society serve as an introduction to the discipline of biocultural anthropology by exposing how contingent social systems are frequently seen as “natural symbol[s]” (Feeley-Harnink,1995,565). To understand how religion, nutritional anthropology, and socio-cultural analysis all converge into Feeley-Harnick’s questions about the role of breast milk in the social phenomenon of trance, however, we must begin in earnest with Wallace’s (1961) seminal text entitled “Mental Illness, Biology, and Culture.”

### **Calcium-Deficiency (Hypocalcemia)**

Wallace's (1961:258) appeals for an increased "physical-anthropological" or "organic" understanding of the previously conceived "psychological" domain of mental health unites the seemingly distinct fields of biology and anthropology. He achieves this by placing the psychological and psychoanalytic analysis of "hysteria" within the contested historical context of its formulation and adaptation. He then exposes the weaknesses of the "pseudophysiological" approach by demonstrating the frequent confusion among mentalists and practitioners of psychoanalytics such as Brill in distinguishing between "hysteria" and "*pibloktoq*" or "hypocalcemic tetany" (Wallace, 1961:258, 266). Unlike the largely arbitrary dissonance between the terms "possession" and "trance," the prognosis of "hysteria," according to Wallace (1961:265), "is not entirely satisfying" when applied to the Eskimo's episodic practices of nudity or glossolalia because "the Eskimo are not reported to explain these fits, [...] but regard them as natural ailments [...] comparable to the common cold." Through his critical reading of the psychoanalytic understanding of hysteria, Wallace (1961:258-260) is able to place the concept of tetany and calcium-deficiency at the forefront of the joint analysis of biology, society, nutrition and religion as well as affirm the weaknesses of the work of "Sapir, Benedict, Mead [and] other pioneer scholars" by explaining that "the absence of any competing body of thought" limited their work to a single "paradigm."

Wallace (1961:266) defines the "*pibloktoq*" of the Eskimo as a result of "low concentrations of ionized calcium in the blood (hypocalcemia) [that] produces a neuromuscular syndrome known as tetany which is often complicated by emotional and cognitive disorganization." He then points out that the "high arctic environment does not provide rich resources of nutritionally available calcium during all seasons of the year" (Wallace, 1961:267). Dried capelin, therefore,

is consumed to meet basic nutritional needs for calcium consumption, according to Wallace (1961:267-268), but the Vitamin D necessary to synthesize this calcium is “chronically low in the arctic environment.” “Eskimo physiology,” continues Wallace (1961:268) is “forced to ‘choose’ between tetany or rickets” and has historically chosen tetany. As a consequence of this choice, the symptomatic results of tetany have become prevalent and normalized throughout the society as a topic of “good-humored joking” and those affected receive “little or no stigma” (Wallace,1961:270). An analysis of the nearly fifty years of critical acceptance of Wallace’s calcium-deficiency hypothesis will hence be employed and ultimately applied to the Haitian *vodouisant* in an effort to discern if the paradigmatic axis has shifted once again.

Twenty years after the publication of Wallace’s “Mental Illness, Biology, and Culture,” Kehoe and Giletti (1981:550-551) “extend” Wallace’s calcium-deficiency hypothesis by applying Wallace’s results cross-culturally in an effort to account for the “preponderance of women” in trance cults. Following Wallace (1961), Kehoe and Giletti (1981:550) inform their readers that “anthropological literature” primarily views the trance state as a result of “psychological disturbances.” They amend Wallace (1961) conception of “*pibloktoq*” by asserting that another prevalent, “quasi-political” explanation exists, which states that “overtly powerless people [voluntarily employ trance states in order to] gain otherwise obtainable goods or attention” (Kehoe, 1981:550). Lewis (1983:412) responds to this elaboration of Wallace’s calcium-deficiency hypothesis by asserting that “Wallace ignores variations by sex in the incidence of arctic hysteria and diet.” Lewis’s (1983) assessment, however, is not accurate. In fact, Wallace (1961) explicitly utilizes the differences of sex in his conceptualization of “*pibloktoq*.” The first such instance might be discounted because of its role in discounting the

outmoded claims for hysteria against which Wallace petitions. The second such instance, however, is unmistakable.

One fact, however, militates against a simple dietary calcium deficiency hypothesis: the reported extreme rarity of rickets in Eskimo infants and osteomalacia in Eskimo adults (*for example, in pregnant and lactating women*). (Wallace, 1961: 268, emphasis added)

While Wallace (1961) initially sees the Eskimo's lack of osteomalacia and rickets as counter-intuitive to his conceptualization of the calcium-deficiency hypothesis, this observation plays an important role in his conclusion that tetany has been normalized throughout the Eskimo society because of its biologically adaptive role in the developmental avoidance of fatal effects of rickets. Thus, Lewis (1983) fails to recognize a fundamental facet of Wallace's original calcium-deficiency hypothesis.

Kehoe and Giletti (1981) avoid this oversight, however, and extend Wallace's brief, yet essential example of the role of sex in normalizing tetany and potentially creating the emic category of trance states. Stated most broadly, Kehoe and Giletti (1981:552) assert "that where sumptuary rules and economic patterns place certain portions of the population at higher risk of nutritional deficiencies, a syndrome of deficiency symptoms may be recognized and institutionalized." Their advocacy of social perceptions and prescriptions of sex as a determining factor in the creation of trance cults, however, is most clearly demonstrated in their analysis of pregnant and lactating women. According to Kehoe and Giletti (1981:553), "pregnancy and lactation raise women's needs for a number of nutrients," despite the fact that "sexual dimorphism [typically] results in the lesser caloric need for women in general." After pointing to numerous cross-cultural examples of calcium deficient women and the social practices that at times severely constrict a woman's diet during pregnancy and child-rearing, Kehoe and Giletti

(1981:553) point to a study by Gussler in which he concluded that the pregnant and lactating women of the Nguni Bantu are the “most likely to be possessed” or in a trance state.

Citing Bourguignon (1973), Kehoe and Giletti (1981:554) extend their gender-based hypothesis to include the larger societal issues of stratification versus egalitarianism. This seemingly simple positive correlation between highly stratified societies and the expression of trance states proves just the opposite when a deeper look into Bourguignon’s (1973) text is undertaken. While the term “trance” has been gainfully employed for the majority of this text, Kehoe and Giletti (1981) prefer the term “possession.” This seemingly innocent preference, however, misleads these anthropologists to understand Bourguignon’s (1973) usage of the term “possession” as synonymous with their usage. Instead, Bourguignon (1973), like Lewis (1983) employs the term “trance” during her critical etic conceptualization various cross-culturally shared phenomena, but employed the term “possession” refer exclusively to emic concepts of their own self-reporting beliefs and practices. In other words, if the society under question identified itself as being a “spirit possession” society, then they are recorded as “trance and/or possession/trance,” which is later refined by the anthropologist to distinguish between the two (Bourguignon 1983). See Bourguignon’s (1983:16) “distribution of major ethnographic regions” in Table 1. In her response to Kehoe and Giletti’s (1981) analysis, Bourguignon (1983:414) sums up the confusion with these words, “what is at issue here is a confusion between etic and emic levels of analysis, as well as between behavior and belief.” While our analysis uses the terms “possession” and “trance” pragmatically, one should not fail to recognize and respond to alternative usages of the term or terms. Thus, while Kehoe and Giletti (1981) correctly identify Wallace’s allusions of sex’s role in determining the frequency and social perception of *pibloktoq*, they fail to create a consistent and compelling relationship between the nutritional demands of

pregnant and lactating women, the preponderance of women in trance cults, nor do they provide a sound theoretical basis from which to apply an analysis of trance states among the *vodouisant*. Other, more consistent and thorough if less controversial works create more compelling examples. These include another adaptation of Wallace's (1961) calcium deficiency hypothesis as approached through the effects of stress and a psychobiocultural perspective of stigmata that analyzes the effects of voluntary or artificial dietary restriction on the body's production of serotonin.

BELIEF IN POSSESSION BY SPIRITS (P AND/OR PT):  
DISTRIBUTION BY MAJOR ETHNOGRAPHIC REGIONS

	TOTAL		SUB-SAHARAN AFRICA		CIRCUM-MEDITERRANEAN		EAST EURASIA		INSULAR PACIFIC		NORTH AMERICA		SOUTH AMERICA	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Societies Coded .....	488	100	114	100	44	100	65	100	86	100	120	100	59	100
Possession Belief Present .....	360	74	92	81	35	77	57	87	76	88	62	52	38	64
Possession Belief Absent .....	128	26	22	19	9	23	8	13	10	12	58	48	21	36

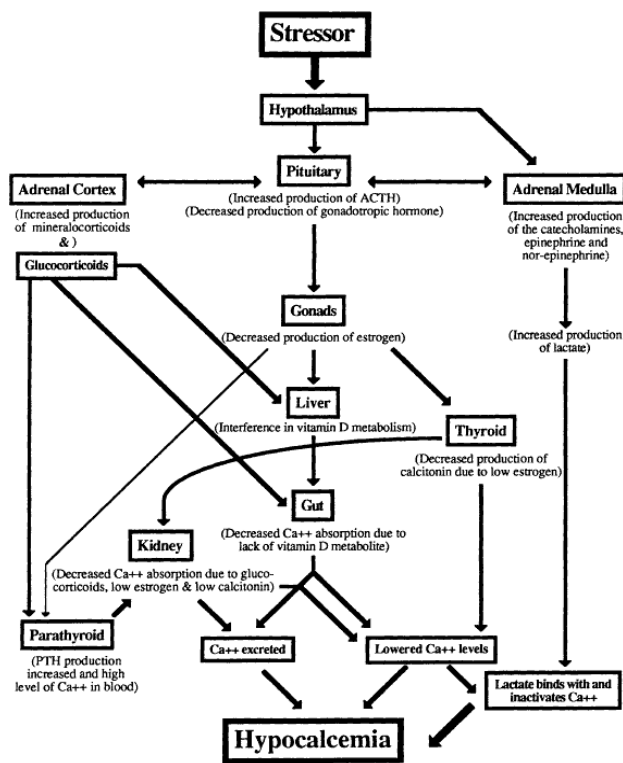
Table 1 (Bourguignon, 1983:16)

## Stress

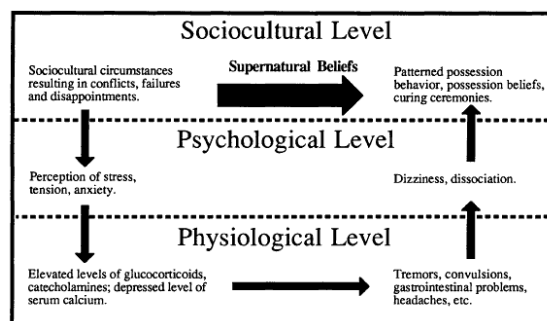
While Raybeck, Shoobe, and Grauberger (1989:139), like Kehoe and Giletti (1981) “accept the probable influence of calcium levels of the manifestation of certain [trance] symptoms,” they also look at the “role of physiological, psychological, and sociocultural variables” that account for stress. Instead of discounting Wallace's (1961) warnings of oversimplifying the concept of trance to sexual-determinism, Raybeck, Shoobe, and Grauberger (1989) add a layer to the calcium-deficiency hypothesis that Kehoe and Giletti (1981) leave out. While Kehoe and Giletti (1981) analyze various aspects of calcium intake, synthesis, and the level of demands for ingested calcium, magnesium, Vitamin D as well as sunlight-synthesized Vitamin D, they fail to



account for what Raybeck, Shoobe, and Grauberger (1989:139) call the “attendant changes in epinephrine and glucorticoid levels [that] significantly reduce the body’s ability to retain calcium, irrespective of diet.” Once again complicating Wallace’s (1961) seemingly simple paradigm shift from a discussion of “hysteria” to one of calcium deficiency, tetany, and *pibloktoq*, Raybeck, Shoobe, and Grauberger (1989) demonstrate the variety of interrelated effects that a single “stressor” stimulus can have on the body’s processes of calcium absorption and retention. See the process in Figure 1. This single “stressor” if maintained “would tend to deplete calcium levels,” according to Raybeck, Shoobe, and Grauberger (1989:145), “and this depletion may occur regardless of diet.” In their final act of dissent from the analysis of Kehoe and Giletti (1981), these proponents of the stress model suggest “that for both sexes prolonged stress can maintain a high level of glucocorticoids which, through a series of complex processes, acts gradually to lower the body’s reserve of calcium, even if there is an adequate intake of calcium” (Raybeck et al., 1989:145-146). See Figure 2 for Raybeck’s (1989) interdisciplinary divisions of labour. This analysis corresponds more with Wallace’s (1961) observation that even if the Eskimo were consuming enough dried capelin to meet basic dietary standards, they are unable to synthesize enough of this calcium to meet their biological demands. Thus, Raybeck, Shoobe and Graueberger (1989) contribute to the calcium-deficiency hypothesis by justifying the primacy of stress over diet in cross-cultural phenomena of hypocalcemia and possibly trance states, themselves. This model certainly lends credence to the argument that the Haitian *vodouisant* may be reacting to a stress-induced hypocalcemia as opposed to the unlikely expression of a dietary hypocalcemia in an area abundant in sunlight-produced Vitamin D and with marginal to adequate access to dietary calcium and magnesium.



**Figure 1: Stress and Calcium-Deficiency**  
(Raybeck, 1989:142)



**Figure 2: Cross-Level Relationships**  
(Raybeck, 1989:156)

### Voluntary Dietary Constriction

While Fessler’s (2002) analysis of stigmata is the seemingly the most tangentially related account of the social structure that forms, maintains, and replicates the phenomenon of trance states of the Haitian *vodouisant*, it ceases to appear out of place when combined with the findings of Raybeck, Shoobe, and Grauberger (1989). See Figure 3 for modern geopolitical map of Haiti. Sustained voluntary or “artificial dietary restriction” results in the kind of “indifference to harm that” that one readily observes in trance state of the *vodouisant* (Fessler, 2002:81). While Kehoe and Giletti’s (1981) observation that a popular quasi-political perspective of trance states exists can account for the rebellious and fearless actions of trance participant, Fessler’s (2002) argument establishes yet another predisposition towards a prescribed behavior.



Figure 3 (Encyclopædia Britannica Online, 2008)

## Conclusion

A combination of stress, pregnancy and lactation, voluntary dietary constriction, knowingly subjugated status, and a marginal environment with little access to sunlight, calcium, and magnesium can facilitate the expression of the etic category of trance states, but these determining factors are highly systematic and contingent of yet other environmental factors unexplored through these pages. Therefore, for Kehoe and Giletti (1981) to create a one-to-one relationship between the female sex and spirit possession is grossly reductionistic, though not to be discounted as a contributing factor. Similarly, while Raybeck, Shoobe, and Grauberger's (1989) emphasis on stress may be overstated, one can hardly deny that stress is interwoven in the complex relational framework between the seemingly disparate domains of nutritional anthropology, religion, and psychology.

## References Cited

- Bourguignon E. 1973. Introduction: A Framework for the Comparative Study of Altered States of Consciousness. In Bourguignon E, editor. *Religion, Altered States of Consciousness, and Social Change*. Columbus, OH: Ohio State UP. p. 3-35.
- Bourguignon E, Bellisari A, and McCabe S. 1983. Women, Possession Trance Cults, and the Extended Nutrient-Deficiency Hypothesis. *American Anthropologist, New Series*, 85(2):413-416.
- Feeley-Harnick G. 1995. Religion and Food: An Anthropological Perspective. *Journal of the American Academy of Religion*, 63:565-582.
- Fessler DM. 2002. Starvation, serotonin, and symbolism. A psychobiocultural perspective on stigmata. *Mind and Society*, 3(2):81-96.
- Haiti*. [Map/Still]. Retrieved March 3, 2008, from Encyclopædia Britannica Online: <http://search.eb.com/eb/art-52639>
- Kehoe AB, and Giletti DH. 1981. Women's Preponderance in Possession Cults: The Calcium-Deficiency Hypothesis Extended. *American Anthropologist, New Series*, 83(3):549-561.
- Kehoe, AB. 1983 Reply to Lewis and to Bourguignon, Bellisari and McCabe. *American Anthropologist, New Series*, 85(2):416-417.
- Lewis I. 1983. Spirit Possession and Biological Reductionism: A Rejoinder to Kehoe and Giletti. *American Anthropologist, New Series*, 85(2):412-413.
- Raybeck D, Shoobe J, and Grauberger J. 1989. Women, Stress, and Participation in Possession Cults: A Reexamination of the Calcium Deficiency Hypothesis.

Med. Anthropol. Quarterly, New Series, 3(2):139-161.

Wallace AFC. 1961. Mental Illness, Biology, and Culture. In Hsu F, editor. Psychological Anthropology: Approaches to Culture and Personality. Homewood, IL: Dorsey, p 255-295.

Winkelman M. 1986. Trance States: A Theoretical Model and Cross-Cultural Analysis. Ethos, 14(2):174-203.