

Correlative Thinking in Pacific Island (Micronesian) Cultural Philosophies

James D. Sellmann
University of Guam

Abstract

To continue the project of explicating Pacific values and worldviews, this paper focuses on correlative thinking in some of the cultural philosophies of the Pacific islands, especially Micronesia. Correlative thinking differs, in degree, from scientific and academic logic that emphasize the truth-value of statements. After examining aspects of correlative thinking in Bali and the Philippines, I extract some characteristics of Pacific philosophies from cultural practices, myths, and beliefs. Unlike William Alkire (Alkire, 1972), I find that Pacific islanders use correlative thinking, not dualism, to fill their canoes and baskets of wisdom, so that they can navigate between contemporary logic or scientific thinking, and their cultural knowledge systems and ways of reasoning.

Key words: correlative thinking, philosophy, Pacific and Micronesian cultures; ways of reasoning.

Introduction

Is there a universal form of human cognition? If there is a universal form of reasoning, is it based on correlative nondual thinking, monism, or dualism? Or are there significant cultural differences in the way people think, reason, and describe the world? If there are differences in reasoning, then are they differences in kind or degree? More specifically, do indigenous reasoning approaches differ from academic or scientific reasoning? If they do, then in what ways do they differ? These questions are crucial for understanding human nature, culture, and the crux of the issues concerning cultural essentialism, cultural incommensurability, and cultural assimilation.

By further developing some of my earlier work, I explicate some of the ways that nondual correlative thinking appears in the Pacific, especially in respective Micronesian cultural philosophies (Sellmann, 2006, pp. 30-37)—see Appendix I for a map of Micronesia. I extract the correlative worldview of indigenous Pacific islanders from various cultural practices, rituals, beliefs, and mythology—see Appendix II for a graphic depiction of the Sky-World in Chuukese Cosmology. In particular the paper studies islander visions concerning the afterlife, the sky-world, cosmology, navigation, social-political order, cultural persistence and assimilation. Pacific philosophies can help maintain people's awareness of correlative thinking in the face of scientific and electronic technological practices. Correlative thinking allows anyone access to the canoes and baskets of islander wisdom, allowing us to better navigate our ways between and among scientific reasoning, and various Pacific ways of reasoning. As the wave of computer science and artificial intelligence continue to break on the reef line, correlative think offers an enticing method of reasoning.

Pacific, Micronesian, islander worldviews differ, in degree, although not in kind, from modern logic; scientific; and also, religious perspectives. They offer provocative alternative ways of thinking about the world and our place in it—see Appendix III: Conceptual Outline of Correlative Nondual, Dual, and Monist Philosophies. As will be shown below, cultural misunderstanding is often due to people’s inability to navigate between correlative nondual worldviews and ways of knowing, versus modern logic and scientific thinking. Logic, as a branch of Philosophy, studies the processes of reasoning; that is, the means by which evidence is used to make claims or draw conclusions. Academic logicians emphasize that statements are either true or false. A statement’s truth-value is founded on three principles of logical reasoning, namely: identity (true is true), the excluded middle (true or false), and noncontradiction (not, both true and false). In academic and scientific thinking, the contextual situation and the subjects’ experiences are important only to the extent that they impact, influence, and effect how a person determines the truth-value of the premises and conclusion of an argument. The enigma of the external world is never fully decoded by linguistic expressions. In Pacific correlative thinking, knowledge based on statements is only a minor part of a complex truth-reality perspective that must be manifested in the way the knower exhibits and lives, the aesthetic, moral, and intellectual virtues in everyday life. The community of knowers maintain the knowledge base in the cultural practices and beliefs, such as their rituals and moral practices of prohibition, beliefs regarding the interplay between cosmic-order and social-order, and their ontological worldview impacting beliefs in the sky-world, afterlife, spirit-body relation, how their cosmology influences navigation, and so on.

Correlative Thinking

By “correlative” I mean *consisting of two parts, traits, or aspects that are interdependent, inseparable in thought, or always mixed-together in relationship to each other in the world like light and shadow. The correlated concepts may be thought of as bipolar extremes, positive and negative, like a magnet’s poles, as binary interrelated pairs of opposites, or even negative correlations.* In correlative thinking, binary pairs of opposites, such as day/night, male/female, sky/ocean, life/death, lucky/unlucky, pure/impure, good/bad, right/wrong, guilty/innocent, spirit/human, superior/inferior, east/west, left/right, up/down, head/feet, and so on are mediated by a balancing principle as an organizing function. The balancing principle provides a center or centralizing middle area that allows the binary opposites to correlate with each other, thus interconnecting correlative pairs. The terms of each pair revert into and through each other such that, for example, humans become spirits; spirits become humans; life turns to death, and death returns to life just as day-and-night, east-and-west, good-and-bad intertwine and revert into each other. The correlative pairs are both-this-and-that; both-alive-and-dead; both-spirit-and-human; both-east-and-west, and so on.

Correlative thinking offers an alternative to monist and dualist metaphysics. Metaphysics is a branch of philosophy that studies the nature of reality. Ontology is a

subfield of metaphysics, studying the nature of existence. Monism refers to metaphysical theories that propose reality is One—one form of existence, one substance, or one process. Monistic materialists, for example, argue that only physical substances or processes exist. Modern science is a type of monism because it proposes that only energy-matter exists, which is depicted in the famous formula $E = MC^2$. Some forms of Hinduism represent monism by proposing that the true nature of reality is the God-soul (*Brahman-atman*), while everything else is mere illusion (*maya*). In contrast, dualists argue that reality is composed of two distinctly fundamental processes or substances. Many dualists argue that one part of reality is material and the other is immaterial or spiritual. The philosophies of Plato, Descartes and Samkhya are examples of dualism. Dualism has ancient roots that continue to impact certain theologians and philosophers. Dualists, especially Plato and Descartes, and in the religious theologies of Manicheanism, Christianity, Judaism, and Islam, separate reality into two opposite, opposing and mutually exclusive forces: for example, good versus evil; heaven versus hell, or heaven versus earth; God versus humans; body versus soul; true versus false; right versus wrong; guilty versus innocent and so on. The standard interpretations of the monotheistic religions are dualisms in which the immaterial spiritual realm of God, soul and heaven stand apart from the material physical world of nature and the body. Because people do not experience this kind of a divided world, dualism has had the problem of explaining how reality fits back together after it has been split into two parts; how the two worlds connect; how the spiritual soul interacts with the material body; how the soul leaves the body and lives in another world (heaven or paradise) in an afterlife; how good and evil divide; why good people perform evil or sinful acts; how or why the good God allows evil to occur (the problem of theodicy), and so on.

Both monism and dualism are based on the principle of the excluded middle, that is, “either/or” thinking. Correlative thinking embraces a “both-and” approach. In correlative thinking reality and reasoning are interrelated, but not simply as one unity, nor merely as two separate processes or substances. Correlative thinking, as a type of nondualism, proposes that such dichotomies as unity/difference, monism/dualism are interconnected, that the nature of reality is not adequately describe by monism or dualism because reality is not One, not Two, not one or the other. Rather reality is complex and dynamic; it is experienced as exhibiting the inclusivity of a “both-and-other-aspects” or an inclusive middle, not an exclusive one—see Appendix III. In correlative thinking, it is possible that the processes of reality can be interpreted, at the same time, as a unity (monism), as two separate forces (dualism) and as something else. In correlative thinking, it is also possible that the description of reality is neither a monism nor a dualism but a dynamic diversity of both of those theories and many other perspectives.

The ancient Pacific islanders’ worldviews do not fit a definition of monism or dualism. As argued above and below, they are best described as correlative nondualism. In the Pacific worldview opposites interact, interconnect, and interpenetrate into and through each other. The root of the correlative worldviews of the Pacific islanders (of Micronesia) is grounded in human embodied cognition.

Historically they originated in the cultures of South, Southeast, and East Asia when ancient mariners navigated into the Pacific.

The Pacific island, Micronesian, cultural philosophies are forms of environmental philosophy rooted in natural processes grounded in naïve realism. In this context naïve realism means that people accept the world as they experience it. Pacific cultural ways of thinking are intimately tied to the ongoing radical change and transformation of the ocean (Ingersoll, 2016). In the processes of transformation, the identity of things can change; gods become human, and humans become powerful ancestor spirits and even gods such as the demigod Māui in Polynesia, or Marespa in Ulithi. Values and knowledge are in flux as well. In a world of ongoing transmutations, rarely are linguistic expressions exclusively “this or that,” “true or false.” In these cultural philosophies, language, logic, and ontology are interwoven. Unlike modern linguistics, which proposes that statements are only symbolic representations, in the Pacific context words are understood to be “... really connected to their referents rather than merely arbitrary” symbols (Charlot, 1999a, p. 51). For correlative thinking the truth-value of statements is itself fluid. With correlative thinking, the three principles of logic noted above have limited application with respect to statements about reality. Shay Welch claims that “[t]he [Indigenous] Native American system of logic is non-dualistic and therefore does not contain nor need the law of non-contradiction” (Welch, 2019, p. 94 note 30). Truth is not simply a matter of a statement being true at one time and no longer true later, nor is it a matter of probability that a statement may be true with a degree of possible certainty. Simply said, truth does not rely on the accepted truth-value of a statement at all. Rather the focus is on the inter-subjective cognition of the members of the community considered in relation to the way they live in a dynamic environment. In this sense, a statement’s truth-value always includes both its truth and its falsity, allowing for contradictions to be inevitable and understandable. Islanders embrace an inclusive middle reflected in the transformative processes in which statements are true-and-false simultaneously. In such a context, ultimately silence is best. The focus is on the value of the existential experience of the community in a changing environment more than the mere truth-value of statements.

Is there a universal form of human cognition? Some academic philosophers, especially Postmodernists, embrace relativism. However, there is a growing body of scientific neurobiological evidence that all human brains have a correlative structure. The sensory-motor experience and human languages operate on a two-part correlative relationship. The scientific evidence helps explain the universal use of correlative thinking in human cognition. Some of that scientific evidence is briefly reviewed to show that there is a universal basis to all human cognition—see Appendix IV: The Correlative Character of Human Cognition.

Before launching into the greater Pacific, I review some of the historical and cultural trends of correlative thinking in Indonesia and the Philippines that were brought into the greater Pacific Ocean.

Indonesian and Filipino Correlative Thinking

The correlative form of human cognition impacts various forms of thought, cultural practices, and worldviews. Because the peoples of the Pacific came out of the islands of East and Southeast Asia, allow me to briefly set the context for Pacific correlative thinking in Bali, Indonesia, and the Philippines. While undoubtedly some of the myths and worldviews in Indonesia and the Philippines are due to historical and cultural influences from India and China, I propose that there was a tendency to think in terms of correlative, nondual, interrelated opposites throughout East and Southeast Asia before the development of the formal philosophies of Hindu Advaita (nondual) Vedanta, Advaita Buddhism, and Chinese Yin-yang philosophy. Fred B. Eiseman (1990) begins his book, *Bali sekala and niskala*, by pointing out the nondual correlative orientation of Balinese Hinduism.

In the West one is accustomed to a world built upon opposites: sacred and profane, positive and negative, constructive and destructive, male and female. The Balinese also recognize this polarity, which they call *rwa bineda*. But in the Judeo-Christian tradition, these opposites are presented as mutually exclusive choices: either one does/is good, or one does/is evil. In the Hindu-Balinese scheme, this division is neither so stark, nor all exclusive. And it includes what can be considered a third position, "center," which balances the other two (Eiseman, 1990, p. 2).

The contrast he depicts is clear, although it would be even clearer if he employed a correlative vocabulary by noting that "this polarity" represents an interconnected binary of positive and negative poles on a continuum. The contrast is between dualism and correlative nondualism. He also seems to fall into a trap of cultural essentialism and incommensurability in his own dualist contrast of the Judeo-Christian versus Hindu-Balinese worldviews. As shown below, the concept of a balancing center, noted by Eiseman, plays an important role in nondual correlative reasoning in Pacific philosophies. Charlot notes the importance of balance in Hawaiian-Polynesian thinking (Charlot, 1999a, p. 51).

Filipino creation myths share some elements of the South Asian, Indian, Vedic creation myths and also the Hindu Churning of the Ocean of Milk story popular throughout Southeast Asia. One version of a Filipino creation myth describes the ongoing battle between the male sky god, Bathala, and the female sea goddess, Aman Sinaya. One day Aman Sinaya whips up a tremendous wind and wave storm to batter the sky. Bathala retaliates with thunderbolts, throwing down boulders from mountaintops that become the Philippine archipelago. The god of the northeast wind, Amihan, becomes frustrated with and tired of the ongoing battle, so he transforms into a bird, flying back and forth between them, bringing them closer and closer together. In this story Amihan acts as a balancing, mediating principle. Finally, when the sky and sea meet, they become friends and stop the battle. Bathala plants a seed in the ocean and a huge bamboo grows. As a bird Amihan pecks open the bamboo, and a man and

woman emerge who populate the earth. The children are disobedient, and when the primal parents are about to spank them with a wooden spoon, the children disperse and their offspring generate the various castes and classes of people such as village leaders, commoners, hunters, fishermen, and so on. Other versions of Philippine creation myths begin with the separation of a cosmic egg composed of a male sky and a female ocean interacting to generate the forms and forces of the universe, and social order. In these myths we see the correlative dichotomies, above/below, sky/earth, male/female, as energy-forces in dynamic opposition being mediated by a centralizing, third, inclusive, balancing force that results in the multitude of existence, the pro-creation of humanity, and social stratification. The correlative cosmology justifies the social-order; the sky is to the earth as male is to female as the chief is to the subjects. These ancient stories depict correlative thinking with the transformation of identity, a balancing inclusive middle and the acceptance and reconciliation of contradictions.

Leonardo N. Mercado, in his groundbreaking study of Filipino philosophy, proposes that: "Whereas the Western mind is dualistic, the Oriental mind is non-dualistic" (Mercado, 1976, p. 122). Mercado is straddling the fence of cultural essentialism, and the possibility of cultural incommensurability that could lead to an allegation of cultural untranslatability. However, he has discovered an important trait of Filipino nondual correlative philosophy and culture. When the peoples of South, Southeast, and East Asia ventured into the Pacific, they carried their embodied folk psychology and cultural nondual correlative philosophies with them. The correlative thinking filled the canoes of the ancient mariners as they sailed into and settled down in the expansive Pacific Ocean.

Pacific Island Philosophy

Because the geographic labels Polynesia, Melanesia, and Micronesia are problematic, I prefer to refer to the Pacific islands. The Pacific encompasses one-third of the Earth's surface. It is a large and complex cultural area. I only tentatively use the dated label "Micronesia" to refer to the island cultures and peoples located in the central to Western Pacific Ocean between 2° 30' S to 20° N latitude, and 133° 30' E to 176° 54' E longitude—see Appendix I: A Map of Micronesia). We should take care not to mistakenly think that there is only one uniform culture across the diverse islands just because there is a general geographical label. The islands were settled by different navigation-cultures, at different times, by peoples who spoke different dialects or different languages altogether. The linguistic evidence supports this diversity of cultural migration into Micronesia (Linnekin and Power, 1990, pp. 1-16). "No fewer than ten distinct languages were spoken within Micronesia by the time of Magellan's arrival" (Hazel, 1983, p. 3). Generally speaking, Micronesia is a nexus where at least three geographical-cultural areas overlap. From the southwest to the northwest, the Palau-Yap-Mariana islands form one area which has important material and spiritual exchanges with, the east to west, Caroline atolls and the Chuuk-Pohnpei-Kosrae islands that also share important cultural interrelations with the, southeast to northeast, Gilbert-Marshall cultural areas (Osborne, 1961).

To explicate some of the aspects of correlative thinking in the Pacific, I focus on interpretations and characteristics of the afterlife, cultural persistence while undergoing cultural assimilation, the interrelationship between Pacific cosmology and social order, and the critical balancing-directional role that the concept of the center plays in navigation.

The Afterlife

A people's vision of the afterlife provides a portal to enter their metaphysical views regarding the spirit and body. In the Pacific worldview, life and death are intimately interconnected, and humans may become powerful ancestor spirits or even undergo deification and become gods or demigods (Lessa, 1979, pp. 189-90). Moreover, the dearly departed persist in other ways, such as in the blood, in the cultural ways of thinking of their descendants, and in the way that the ancestors altered the society and environment. The ancestors laid down the rules of social-order, and they are attributed with shaping the world. The embodied experience of being a thinking creature, as opposed to a mere object, that is derived from human cognition and the folk psychology theory of mind (TOM), creates the hope and expectation that consciousness can and will survive the death of the body-of-flesh, continuing in a body-of-spirit (*soma pneumatikon*). In dualistic fashion, some educated modern people, if they believe in an afterlife at all, follow monotheistic theology, expecting the afterlife to be transcendent, in a different (heavenly) realm. The correlative worldview explains why for traditional islanders, that is, before the missionary-encounter, the deceased ancestors were, and in some places still are, considered to survive as members of the living community. The spirits of the dead do not leave this world for another transcendent world beyond this one. This is the case for the ancient CHamorus who kept the skulls of the ancestors in their homes and made offerings to them at certain auspicious occasions, such as traveling, fishing, harvesting and so on. They also carried their skulls into battle for added protection and guidance (Sellmann, 2016, p. 127, citing Garcia, 2004, pp. 240 and 242-43). Other island cultures believe that the dearly departed inhabit underworld realms, haunt specific places where they died, or they live in the clouds or stars in the sky-world (*kachaw*). They are never far away and can be summoned. They possess mediums. They are revered for assisting the community, or they are feared for possible retribution either because they were not treated properly while alive, or they may punish those who break clan taboos or misbehave in other ways.

Generally speaking, the ancestor spirits are temporal-spatial beings. They are believed to have a type of spiritual body that can employ special powers, and they can shapeshift. They may change, even grow, or mature over time, and they dwell in specific places on the island such as at the place where their flesh-and-bones died, on the reef, in a shrine, or in the sky-world. It is also believed that they may traverse the universe and all of its seen and unseen realms. The ancestor spirits or ghosts can undergo a process of deification or apotheosis. For example, consider the case of the

apotheosis of Marespa. A baby boy, named, Marespa was born on Ulithi atoll around 1839 and died shortly after birth.

His ghost went to live inside [the hollow of] a *töth* or taro leaf. A *tàlus* or spirit called Mirrou, who used to catch the souls of living people to make them die, came to Marespa. He made him his friend and Marespa did what he said. They used a net, and starting in the east, they would try to catch the souls of all the people as far west as the Philippine Islands. They did this only at the full moon (Lessa, 1976, p. 171, and Lessa, 1980, p. 103).

Another spirit, named Sathawolemethau, tells Marespa that he was born a human being, and as Marespa matures, he feels remorse, and begins to release the souls from the net without Mirrou realizing it. Later when Marespa was dwelling in Lang, the sky-world, another spirit, named Ilurang, tells him that he was born on Ulithi. They go there, and Marespa begins to possess family mediums and the mediums of other villages. So, the people build a shrine for Marespa (*fangelmarespa*). The information he shares with the possessed mediums is believed to be accurate and respect for his name spreads to other villages and eventually to neighboring atolls. Marespa's ghost is deified as an important god (Lessa, 1976 and 1980). The apotheosis of humans is a form of identity transformation. Gods also become human, so that the inclusive middle of both god and human is at work in their way of thinking.

The story of Marespa is fairly typical of the way that other Pacific stories about the ancestor spirits and the gods are told in that they dwell in specific places; they possess mediums and convey useful information. They use tools to achieve auspicious or inauspicious deeds. They operate in a seasonal or timely manner. The gods undergo transformations, grow, or shapeshift. Because Pacific philosophical interpretations do not think in an "either/or" manner, they are able to interpret the world in an inclusive, balanced, "both-and," physical-spiritual, seen-unseen dynamic world of transformation.

Chuuk beliefs elaborate correlative thinking in their views of the afterlife and the spirit. An afterlife in paradise was lived either in the sky-world, among the clouds and stars, in the vault of the great cosmic meetinghouse, or in an underworld. For the Chuukese, wrongdoers went into a place of damnation (Chuuk: *Leenchichi*, derived from "*chichi*" the name of a tree whose sap causes intense burning skin irritation), called the "Sea of Muck" in which they cannot move (Goodenough, 2002, 150). There are "currents" or passageways that connect the underworld, this world, and the sky-world. All the realms interpenetrate and co-mingle in an inclusive this-worldly correlative manner (Goodenough, 2002, pp. 85, 150, 156)—see Appendix II: The Sky World in Chuukese Cosmology. Ward Goodenough notes the importance of ancestor ghosts that obtain access to "the lore of the gods in the sky-world" (*nááng*) to become "effecting spirits" (*énuúsor*). These effecting spirits possess mediums and transmit *roong* or knowledge and spells for "... the effective performance across the entire range of arts and crafts, such as healing, weaving, house building, and canoe making" (Goodenough, 2002, p. 156). In Chuuk theology humans have two souls; one is good and the other evil (Goodenough, 2002, pp. 63-64). When family members are ill and

about to die, relatives tend to the sick with tender loving care to attempt to ensure that the relative's good soul protects the clan from the afterlife, while attempting to ensure that the evil soul does not return to haunt or make them sick. The Chuuk goddesses, gods and ancestor spirits also shapeshift (Goodenough, 2002, pp. 94-99). The spirits of Chuuk likewise dwell in specific places, possess mediums, transmit knowledge, and engage in physical activities, depicting the transformation of identity and the inclusive middle.

Ancient, ingrained visions of the afterlife persist in many cultures evidenced in the ever-popular ghost stories. As cultural encounter was stimulated by European and Asian capitalistic-imperialism, colonization imposed cultural assimilation with scientific and religious education. Indigenous correlative thinking, languages, and cultures persist in the process of assimilation.

Cultural Persistence and Assimilation

In this section I delve further in the manner in which Pacific cultural ways of correlative thinking are maintained under colonial assimilation. I use the term "ancient CHamoru" (previously spelled Chamorro) to refer to the original inhabitants (*taotao tano* people of the land or *nusantao* new homeland peoples) of the Mariana Islands; their culture was somewhat different from the modern CHamoru, who are mostly Christian and trained in science or theology. There are linguistic and genetic traits that endure from the past among the modern CHamoru. An important difference between the post-enlightenment, missionary-influenced, modern peoples' ways of thinking and the pre-encounter, ancient (traditional) ways, including the ancient CHamoru vs. the modern CHamoru worldviews, is that the modern people's tendency, at least in certain contexts such as in an academic setting, court, government office, or at church, is to split the world into dualistic opposites or collapse the opposites into an overriding monism. While the ancient, pre-encounter worldview, like most Pacific-Asian cultures, especially Indonesian, Malaysian, Filipino, Chinese, and Japanese, is constructed on a correlative nondual relationship obtaining between pairs of opposites. In other contemporary CHamoru cultural contexts, such as at home, people are more likely to employ a traditional, correlative understanding of the world (Santos-Bamba, 2020). Charlot supports this persistence of traditional thinking by noting that many indigenous cultures "... seemingly overwhelmed by larger cultures—endure" (Charlot, 1999b, p. 542). While indigenous culture and patterns of reasoning persist, people are able to negotiate with contemporary socio-economic needs. For example, in any culture students preparing for the Bar Exam will muster their best inductive and deductive logic. However, they will not be well received at many a family dinner table, if they insist that every conversation requires those forms of reasoning.

The contrast between the European and CHamoru perspectives is further illustrated in the journal of the Spaniard, Fray Juan Pobre de Zamora, who visited Rota in 1602. He relates an exchange between his Spanish friend, Sancho, and some CHamoru elders. Sancho asks the CHamorus about the world's creation, who made the heavens, the earth, and the ocean (Driver, 1989, p. 23). From a European, Roman

Catholic, perspective Sancho is expecting them to say that God, the First Cause and Prime Mover, created the world. But the CHamorus think the questions are foolish and report that they themselves make the heavens by looking at them. They make the earth by tilling the fields and the ocean by fishing and sailing on it. Sancho thinks their answers are foolish; he is expecting a causal answer. The Seventeenth Century CHamoru worldview differed from the Spaniard's dualistic worldview. In part, Sancho and the CHamoru elders misunderstand each other because neither can navigate between the nondual and dual epistemologies. The CHamorus understand that things have value and meaning when humans engage and work them, whereas Sancho understands things based on "either/or thinking about independent essences or substances. Pacific islander correlative thinking concerning the inclusivity of relationships, especially family-clan relationships, creates a personal identity derived from relatedness, rather than abstract ideological thinking.

The modern cultural and religious tendency to accept dualism places value in abstraction, in higher ordered, structured systems of belief. This has led many modern people to identify with abstract belief systems rather than localized social interactions. Many modern people's identity is rooted in a religious dogma, a political ideology, or a scientific methodology. The islanders' identity is rooted in their lineage; it is through the ancestors that people are related to the environment. The lineage establishes people's totem relation to the fish in the ocean, the land, the creatures on the island, and the stars in the sky. Hence family and clan relationships are essential. The world is living, and humans share kinship relations with natural objects, or animals—totem practices regulate behavior (Fischer, 1957). Instead of rigid, structured belief systems, the (Micronesian) islanders' world is based on a rigid, structured extended family-clan-social system. Relationships of interdependency and exchange define who and what a person is—not a person's abstract beliefs about the world, the state, or God. The this-worldly character of the Micronesian worldview is a corollary of their correlative understanding of the world. The sky-world is a continuation of this world. There are correlations between the gods and the forces of nature. There is an exchange system between humans and the gods, nature spirits, and ancestor spirits. The afterlife is a continuation of this life in many ways, which stands in contrast to most Monotheistic theology. The worldview or cosmology is tied to the moral and social-political structure. Based on correlative logic, things and people are not always what they appear to be, so one should be wary of passing judgment on them too hastily. The outcast or disfigured person may be a goddess who could shed money on you. The apparent fool may be a wise ancestor spirit; an evil criminal may save your clan. Insightful mercy should override blind justice. Pacific islander ways of organizing society are connected to and derived from their cosmologies.

Cosmology and Social Order

In this section, I discuss some of the CHamoru, Palauan, and Yapese myths and beliefs to show that their cosmology impacts their understanding of cosmic and social order. An ancient South Asian, Vedic, story, the swan-maiden tale, popular in the Pacific,

depicts a correlative thinking principle of identity transformation as do other myths from the islands.

The ancient CHamorus most likely thought that Guåhan (Guam) was the center of the world, and Fouha rock (Puntan's phallus) was their *axis mundi* (world center). Most likely, they viewed the world as a flat disk covered by the vaulted sky-world as an upside-down bowl or half of a coconut shell, that is, similar to Chuuk cosmology (Goodenough, 2002, p. 85)—See Appendix II. Indigenous Pacific islanders recognized that the islands are, in a sense alive, developing and growing either by volcanic activity on the high islands or the growth of coral on the atolls. The creative and generative forces (Chuukese: *manaman*; Polynesian: *mana*) constitute a hylozoistic world. Ancestor spirits, *anu* (CHamoru: *aniti*), carry on the creative life force. Similar to the stories from South, Southeast, East Asia, Indonesia and the Philippines, the cosmic generative and creative force splits-in-half (sky above ocean), and it generates the female-male procreative energy. In one CHamoru myth the primordial male, Puntan, and the female, Fu'una, live in a void. Puntan dies, and Fu'una "creates" the sun, moon, stars, islands, ocean and so on by dismembering Puntan's deceased body. The generative forces procreate all things and people. The cosmic male and female energies commingle and generate the sky-world above and the island-sea-world below. These are not two separate worlds; they intermingle in a correlative nondual fashion like male and female. In traditional Pacific (Micronesian) beliefs, the ultimate powers are either distant sky gods, or forces of nature. The ancestral spirit powers are localized with limited powers. They control and transmit good or bad medicine (sometimes called magic) by possessing people, or by visiting them in their sleep-dreams. In correlative nondual thinking, the various "realms" or "worlds" interact, commingle, align in balance, or fall out of balance.

The correlative thinking ideas that are exhibited in Palauan myths also have ancient connections to the Hindu Vedas. Hisakatsu Hijikata collected a trove of myths and legends from Palau (Belau) from 1929 to 1938. An early version of the swan-maiden tale is recorded in the Hindu *Vedas*, and it spread widely. Versions of the swan-maiden tale are found across Europe up to Ireland and across the Pacific, with the exception that for island peoples the swan or bird is depicted as a sea creature, a seal in Ireland, or a fish in the Pacific (Hijikata, 1941, p. 276). The swan-maiden tale is a classic example of a transformation of identity in which an aerial or aquatic creature transforms into a human figure. Hijikata's study displays many examples of identity transformation in the Palauan myths. Gods and goddesses in particular are shapeshifters, or they may undergo transformations. In one Palauan creation myth the goddess Chuab transforms into Latmikaik, creating humans and all of life. The goddess Obechad creates pigeons and earthenware cooking pots, travels to various villages, and eventually changes into a stone (Hijikata, 1941, p. 11). In another creation myth Chuab is born as a human baby and grows into a huge giant that the people can no longer feed, so they trick and kill her. When her body falls into the sea, it becomes the islands of Palau (Hijikata, 1941, pp. 11-12). In Palauan mythology, the soul (*reng*) can be both visible and invisible; the goddess Bilmemui is both a male war god, and a female priestess (Hijikata, 1941, p. 13). The Palauan myths and legends depict a world

Correlative Thinking in Pacific Island (Micronesian) Cultural Philosophies

of radical change and transformation where fish become birds, mere stones become treasured money (*udoud*), or an apparent skin disease on a young woman becomes *udoud* (Hijikata, 1941, pp. 86-89). The examples of identity transformation and the inclusive middle abound in Palauan cosmology.

Pacific island peoples attempt to live in harmony and balance between the interactions of the opposing forces of nature. In Polynesian-Hawaiian cosmology, Charlot (1999a) references some of “the most important [pairs of opposites] ... were up/down, land/sea, male/female, and night/day” (p.52). Similar interacting opposing forces, such as the high-up-right-east-south-male, and the low-down-left-west-north-female are identified in Micronesia (Alkire, 1972). Correlative thinking is also found in Yap. Yapese cosmology, ritual and social-order are intertwined in correlative thinking concepts. Based on previous ethnographic work, Jay Dobbin (2011) notes that there were traditional ritual calendars in Yap that reconciled the natural and social opposites. Dobbin lists some of the Yapese correlative opposites:

| | | |
|---------------------------------|--------|------------------------------------|
| the superior | versus | the inferior |
| <i>tabgal</i> (purity) | | <i>ta'ay</i> (pollution) |
| <i>kan</i> (spirits) | | <i>girdi</i> (humans) |
| <i>pum'on</i> (male) | | <i>pin</i> (female) |
| <i>pum'on</i> (mature male) | | <i>pagael</i> (young male) |
| <i>pilong</i> (those who speak) | | <i>pimilangay</i> (those who obey) |

Typically, the lower castes should serve the upper castes. In correlative fashion some of the practices are “something of a rite of reversal” where the upper castes assist the lower castes (Dobbin, 2011, pp. 160-61). Notice that the Pacific (Micronesian) model differs from the Chinese system in which the left-hand and east are associated with the male, light, and life (yang 陽), while the right-hand and west are correlated with the female, dark, setting-sun, and death (yin 陰), because the orientation is based on the emperor sitting in the north facing south, putting the east-and-rising-sun on his left. In South and Southeast Asia, as well as most of the Pacific, the male is usually associated with the right-hand or east side because the orientation is viewed from the perspective of standing in the south looking north, putting the west, the setting-sun, and death on the left.

Correlative thinking is used to describe every aspect of Pacific life from the spiritual realm of the gods, the cosmogony and cosmology of the universe, ways of knowing, social-moral ethical relationships, and social-political order. Simon S. Maluwelmeng (2002) describes the impact of correlative thinking on social order in the coral atoll of Woleai. Fish are the main source of protein and are highly valued. The head of the fish is very tasty; so, it is valued the most. The upper class, males and elders are associated with and primarily given the fish-head, while the lower class, women, and youth are given and associated with the fishtail. The tail provides the power to swim and is correlated with the lowest authority, who provide powerful and influential support for the chiefs (Maluwelmeng, 2002, p. 67). “In Woleai, this concept is known as *schimwel me pascshal iig* (head-tail concept). This concept establishes the status as

members within a clan directly based on their ancestors' order of birth" (Maluwelmeng, 2002, p. 64). Because Woleai society is matrilineal, "[t]he female members of the clan are the decision makers behind the scenes" (Maluwelmeng, 2002, p. 68). At certain ceremonies, a correlative reversal occurs where the women are given the fish-head, the portion usually reserved to the male-chief, or in some contexts, based on the "head-tail fish concept," a youth may have a higher status than some elders (Maluwelmeng, 2002, p. 63). Maluwelmeng describes the reversal in the following:

In contrast to what has been said about the head of fish as a symbol of the highest, the head-tail concept can sometimes be reversed. In correlative thinking, a non-dual system operates or a bipolar relationship [exists]. It is the union of the two opposites that makes the system work ([citing] Sellmann, lecture notes, February 2001). The concept of the reversible fish can be illustrated through sibling relationships. Because Woleai is a matrilineal society, the power of the clan is with the female members of the clan. The paring of opposites in correlative thinking allows members to be associated with physical strength and aggressive actions and therefore men are usually the chiefs and spokesmen of the family but the power rests with the female members (Maluwelmeng, 2002, p. 67).

His interpretation of the Woleai worldview and correlative thinking is expressed in their social arrangements and rituals. The great technological advancement of the art and science of Pacific open ocean navigation is a hallmark of ancient human achievement. The position of the balancing center is critical to Pacific islander correlative thinking and their methods of navigation.

Navigation and the Center

As noted above, the balancing concept of a "center" plays a crucial role in the (Micronesian) islanders' worldview. The "center" as a directional compass point is essential to their methods of open ocean navigation. As we saw above, the interaction and interpenetration of the bipolar, correlative pairs of opposites are maintained and harmonized by balancing at the center. Pacific island (Micronesian) cosmology is organized around the focal point of a center. This is especially true of navigation techniques, where the navigator (Chuuk: *pelu*) must continually negotiate his course from the center of the star compass as his position changes (Alkire, 1972, p. 489). In their understanding of navigation, the islands are also moving, and in an inclusive middle fashion, the island finds the *pelu* by means of his navigation skills. Vicente M. Diaz notes that: "[i]n the logic of this non-Cartesian cartographic time piece of a sensual computation you will notice that, sure as the canoe makes progress accordingly, such a movement is also made possible by tracking the rate at which the three reference islands move about as if the canoe were stationary" (Diaz, 2019, pp. 5-6). Diaz (2019) continues, describing how indigenous islanders are "rooted in rootedness, deep ties to place and mobility are not only not incompatible; they are mutually constitutive and

culturally generative" (p. 6). This kind of Pacific thinking is a type of "cosmic cognition" in which things and processes are understood based on their inclusive relationships with other things and processes. Any kind of "... Cartesian exclusion of everything 'extraneous' ..." was not considered possible (Charlot, 1099a, p. 52). This illustrates how the *inclusive* middle of Pacific nondual correlative logic is at work in the navigation skills and ordering of the cosmos. Charlot and Diaz criticize Cartesian reductionism and dualistic "either/or" thinking. Problematically, Cartesian dualism influenced many early anthropologists who studied the Pacific.

For example, William Alkire (1972) describes the Micronesian and Southeast Asian systems of order as "dualistic" (p. 491). Based on my research, the description of Carolinian systems of ordering presented by Alkire describe a correlative nondual worldview, not a dualism. If we replace his term "dualistic" with "nondualistic or correlative," the point of comparison between the systems of order in Southeast Asia and Micronesia becomes much sharper, and the contrast or differences in degree between nondualism, monism and dualism come to light. This is illustrated in his summary:

. . . [T]he comparison presented of Pacific islanders and Southeast Asians indicates a genetic relationship, since the complex of traits compared most likely could not have diffused as a whole from one area to the other. The basic principles of this cosmological order are the square, units of four, the center, and if one prefers, dualistic divisions.

In the Carolinian case *twos* and *fours* and multiples thereof, are basic to most ceremonial events and specialists' activities: twos in halving of measurements, right and left, and divination pairs; fours in navigation directions, square form of the compass, taboos, and divination; eights in specialized counting techniques of both navigation and coconut distribution; sixteen when referring to divination spirits; and twenty-eight and thirty-two as the basis of the navigator's celestial compass. In Southeast Asia dualistic oppositions are emphasized between right and left, major and minor etc.; fours, eights, and twelves are involved in determining political divisions, ministries, sub and assistant ministers; and twenty-four, twenty-eight, or thirty-two define districts, provinces, celestial or political divisions and important spirits. In both areas the midpoint and center play major roles in conceptual order (Alkire, 1972, p. 491).

Alkire mistakes the correlative character of Pacific ways of ordering as a dualism because he overlooked the codependent interpenetration of the dynamic pairs of opposites. That is to say, he misinterprets their inclusive, correlative attributes that are not based on dualistic separation.

In addition to the list given by Alkire, the following is a summary of examples of nondual correlative thinking in Micronesian, that is, Palauan, CHamoru, Carolinian, Chuuk, Pohnpei, Kosrae, Marshallese, and other, philosophies:

- male and female creative powers interact to generate the living-world and social order.
- the totem sibling relations between humans and the natural environment are interrelated, genetically inclusive.
- the correlative continuum between the sky-world and the ocean-island-world is inclusive.
- the correlative relationship obtaining between the compass directions—the horizon points of rising and setting stars.
- the correlative relation between inland and ocean-side orientations.
- the correlations of right/left, east/west, north/south directions, and male/female orientations.
- the interaction of life, death, and the afterlife; the exchange from spirits to humans, and humans to spirits.
- the alterations between good and bad behavior.
- the alterations between good and bad luck.
- and the diviner's perceived ability to predict the future exhibits a nondual correlative interaction between the present and the future.

Correlative thinking influences Pacific ways of reasoning and ordering the world. Its concept of the balancing center is crucial to navigation. As show above correlative think is used to interpret the cosmos, nature, ritual, social order, cultural persistence, and traditional understandings of the afterlife.

Conclusion

Correlative thinking differs in degree from modern deductive and inductive logic, science, and theology. The correlative nondual worldview is not beyond reproach. Like monism and dualism there are problems with nondualism. Criticisms can be leveled against it. Correlative thinking is not only based on neurobiological brain structures, but also it is created by human speculation and folk psychology. Folk psychology is not independently verified, and so it lacks soundness. The counter claim is that the legitimacy of correlative thinking rests on the fact that it has been verified by the ancestors as an art of living-well. Monists might criticize it for denying an underlying unity, or they may attempt to impose unity on correlative thinking by focusing only on the concept of the center. Dualists criticize correlative thinking for ameliorating the differences between opposites. Correlative thinkers reply that the monists and dualists only exhibit one-side of reality. The monists focus on the One, while the dualists focus on the alleged and equally unvalidated existence of a higher (transcendent, spiritual, or supernatural) form of the two aspects of reality. Correlative thinkers point out that all the metaphysical and epistemological systems are founded on human speculation, not verified facts. For correlative thinkers, the value and importance of the belief system is found in its ability to make life meaningful. It helps people forge a path to live with wisdom. Correlative thinking helps people navigate a centered inclusive way to live in harmony with others and the environment.

Correlative thinking has been an important aspect of embodied human cognition, and folk psychology's theory of mind. It has served humanity well for millennium as a resource for embracing the changing environment, maintaining social order, and for understanding the need to respond to contingencies. Correlative thinkers' use of an inclusive middle or central balancing focal-point provides important insights for applying mercy when blind justice becomes unnecessarily severe. Correlative thinking can help, and has helped, humans cope with inconsistencies and outright contradictions encountered in social life. Rites of reversal help maintain social order. Because knowledge based on statements is only a part of a complex truth-reality matrix, Pacific islander philosophies concentrate on the way the knower exhibits and lives the aesthetic, moral, and intellectual virtues in everyday life. To survive and thrive in the modern world, correlative thinkers must, also, be able to understand, discuss, and apply scientific and technical knowledge. Computer science is rapidly improving artificial intelligence (AI). It is questionable whether or not autonomous AI will be able to deal with inconsistent, contradictory contingencies, change, anomalies, or felicity conditions given its true versus false, or 0/1 programming. Until AI can learn to understand the need for mercy, then correlative thinking will continue to offer humans a sustaining value. If AI is going to serve humanity well, then it will have to be programmed with correlative thinking skills. In today's world we must master various types of monistic and dualistic scientific thinking, electronic and computer technology. If we seek to maintain and continue to develop the traditional forms of culture, reasoning, and philosophy, if we are to navigate our way into a prosperous future, then correlative nondual philosophies must continue to fill our wisdom baskets, our canoes, lodges, and our lives.

Acknowledgments: A special "thank you" is owed to Mary L. Spencer, Sharon Rowe, Harley I. Manner, Sharleen Santos-Bamba, Michael Hemmingsen, and the blind referees for their insightful comments on earlier drafts.

References

- Alkire, W.H. (1972). "Concepts of order in Southeast Asia and Micronesia," *Comparative Studies in Society and History*, 14/4, September, 484-493.
- Charlot, J. (1999a). "Classical Polynesian thinking." In *A Companion to World Philosophies*. Edited by Eliot Deutsch and Ron Bontekoe. Blackwell Companions to Philosophy Series. Cambridge: Blackwell, 49-62.
- Charlot, J. (1999b). "Contemporary Polynesian thinking." In *A Companion to World Philosophies*. Edited by Eliot Deutsch and Ron Bontekoe. Blackwell Companions to Philosophy Series. Cambridge: Blackwell, 542-547.
- Diaz, V. M. (2019). "Movement in the flow of seafaring's intangible cultural heritage," unpublished manuscript.
- Dobbin, J. (2011). *Summoning the powers beyond: Traditional religions in Micronesia*. Honolulu: University of Hawai'i Press.

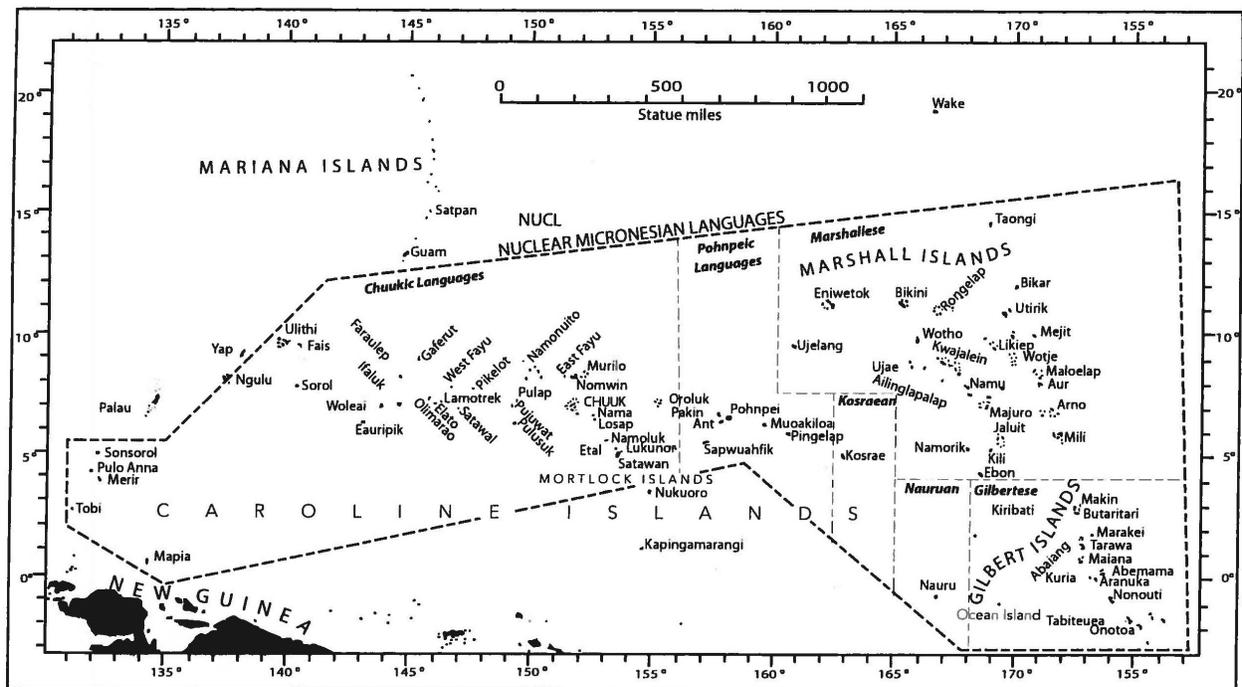
- Driver, M. G. (1989). *The account of Fray Juan Pobre's residence in the Marianas 1602*. Mangilao: Micronesian Area Research Center University of Guam (MARC).
- Eiseman, Jr., F. B. (1990). *Bali sekala and niskala volume I: Essays on religion, ritual, and art*. Hong Kong: Periplus Editions.
- Farmer, S., Henderson, J., and Witzel, M. (2000). "Neurobiology, layered texts, and correlative cosmologies: A cross-cultural framework for premodern history," *Bulletin of the Museum of Far Eastern Antiquities*, 72, 48-90.
- Fischer, J. L. (1957). "Totemism on Truk and Ponape," *American Anthropologist*, 59, 250-265.
- Garcia, F., S.J. (2004). *The life and martyrdom of the venerable Father Diego Luis de San Vitores, S.J.* Edited by James A. McDonough, S.J. Mangilao: University of Guam, Micronesian Area Research Center Monograph Series, No.3.
- Goodenough, W. H. (1986). "Sky world and this world: The place of *kachaw* in Micronesian cosmology." *American Anthropologist*, 88:551-568.
- Goodenough, W. H. (2002). *Under heaven's brow: Pre-Christian religious tradition in Chuuk*. Philadelphia: American Philosophical Society.
- Graham, A. C. (1986). *Yin-Yang and the nature of correlative thinking*. Occasional Papers and Monograph Series No. 6. Singapore: The Institute of East Asian Philosophies.
- Hezel, F. (1983). *The first taint of civilization: A history of the Caroline and Marshall Islands in pre-colonial days, 1521-1885*. Honolulu: University of Hawai'i Press.
- Hijikata, H. (1941). *Collective works of Hijikata Hisakatsu: Myths and legends of Palau*. Edited by Endo, Hisashi. Tokyo: The Sasakawa Peace Foundation.
- Ingersoll, K.A. (2016). *Waves of knowing: A seascape epistemology*. Durham: Duke University Press.
- Lessa, W. A. (1980). *More tales for Ulithi Atoll: A content analysis*. Los Angeles: University of California Press.
- Lessa, W. A. (1979). "The apotheosis of Marespa," 189-173. In *Reader in comparative religion: An anthropological approach*, 4th edition. Edited by William A. Lessa, and Evon Z. Vogt. New York: Harper & Row Publishers. Reprinted and abridged from. 1976. *Directions in Pacific traditional literature*. Edited by A.L. Kaeppler and H. A. Nimmo. Honolulu: Bishop Museum Press.
- Linnekin, J. and Power, L. (1990). *Cultural identity and ethnicity in the Pacific*. Honolulu: University of Hawai'i Press.
- Maluwelmeng, S. S. (2002). *Cultural significance of fish on Woleai: A symbolic code for social order on a small coral atoll*. M.A. Thesis. Mangilao: University of Guam, April.
- Mercado, L. N. (1976). *Elements of Filipino philosophy*. Tacloban City, Philippines: Divine Word University Publications.
- Osborne, D. (1961). "Archaeology in Micronesia: Background, Palau studies and suggestions for the future," *Asian Perspectives the Bulletin of the Far-Eastern Prehistory Association*, V/2, 156-163.
- Santos-Bamba, S. (2020). Email correspondence comments on an earlier draft of this paper, February 2.

Correlative Thinking in Pacific Island (Micronesian) Cultural Philosophies

- Sellmann, J. D. (2019). "Beyond dualism: A review of mind and body in early China," *Journal of World Philosophies*, 4, Winter 2019, 166-172.
- Sellmann, J. D. (2001). "Micronesian philosophy: Lecture notes," unpublished. Mangilao: University of Guam.
- Sellmann, J. D. (2006). "Non-dual philosophy in Micronesia," *Dreadlocks Vaka Vuku Special Issue: Proceedings for the Pacific Epistemologies Conference 2006*, Suva, Fiji: University of the South Pacific Press, 30-37.
- Sellmann, J. D. (2016). "War magic among the ancient Chamorro," *Pacific Asia Inquiry*, vol. 6, 123-129. www.uog.edu/pai
- Slingerland, E. (2019). *Mind and body in early China: Beyond orientalism and the myth of holism*. Oxford: Oxford University Press.
- Welch, S. (2019). "The cognitive unconscious and embodied implicit ways of native knowing," *Philosophy in the Contemporary World*, 25:1, Spring.

Appendix I

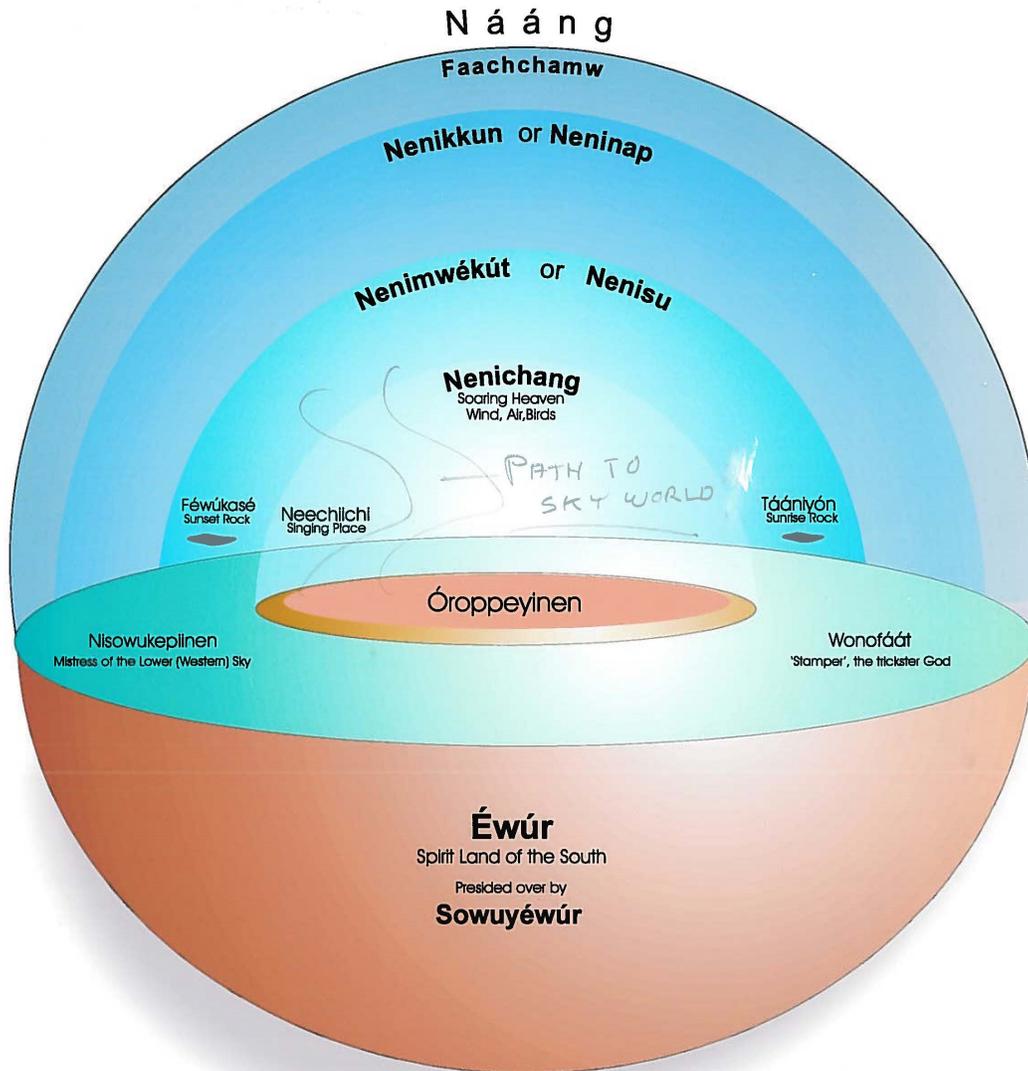
A Map of Micronesia



In, Goodenough, W. H. (2002). *Under heaven's brow: Pre-Christian religious tradition in Chuuk*. Philadelphia: American Philosophical Society, p. xiv.

Appendix II

The Sky-World in Chuukese Cosmology



The Sky World in Chuukese Cosmology

From Ward H. Goodenough

Drawn by Phillip Nobel. (2001). For a course on Micronesian Philosophy. Mangilao. University of Guam. Based on the description in Goodenough, W. H. (1986). "Sky world and this world: The place of *kachaw* in Micronesian cosmology," *American Anthropologist*, 88:551-568.

Appendix III

Conceptual Outline of Correlative Nondual, Dual, and Monist Philosophies

| Correlative Nondualism | Dualism | Monist |
|-------------------------------|--------------------|----------------|
| correlative forces | two distinct types | one type |
| interaction | separation | unity |
| interpenetration | different natures | one nature |
| dynamic | static or dynamic | static |
| process | substance | substance |
| syncretic | exclusive | very exclusive |
| multivalued | two values | one value |

Appendix IV

The Correlative Character of Human Cognition

The purpose of this appendix is to show that there are neurobiological, linguistic, and sensory-motor aspects supporting the claim that correlative thinking is a universal form of human cognition. Human cognition is rooted in the neurobiological brain structures that are themselves correlative, forming the character of both pre-linguistic and linguistic correlative thinking. As noted above in this paper, "correlative thinking" means *consisting of two parts, traits, or aspects that are interdependent, inseparable in thought or always mixed-together in relationship to each other. The correlated concepts maybe thought of as bipolar extremes, like positive and negative, or as binary interrelated pairs of opposites or even negative correlations.* Angus C. Graham has

argued that correlative, so-called yin-yang, thinking was not unique to ancient China, but common to all cognition (Graham, 1986). John Charlot also argues that the correlative, binary, pairs of opposites, such as day/night, male/female, sky/ocean, "... are found worldwide" in mythology (Charlot, 1999a, p.52). More recently, Steven Farmer, *et. al*, offer evidence from their study of neurobiology, which shows that the brain's neuron structures are themselves correlative and underlie "primitive" thinking globally (Farmer, 2000, pp. 56-64).

Based on folk psychology and Farmer's findings, Edward Slingerland (2019) builds a case that all humans share innate universal forms of cognition. He praises Graham's work for noting that correlative thinking is part and parcel of all human proto-scientific thinking (Slingerland, 2019, pp. 282-283). Slingerland argues that a primary mode of human cognition is derived from folk psychology's theory of mind (TOM), namely that embodied humans are genetically and socio-biologically disposed to hold very similar ideas about themselves and the objects in the world. The most basic form of human cognition distinguishes thinking creatures with internal states of awareness from mere physical objects. Modern cultures, on the other hand, are influenced by an education in the sciences that obstructs and changes the innate socio-biological form of cognition by emphasizing sophisticated causal explanations. Currently, the innate socio-biological cognition is more commonly found in children and undereducated people (Slingerland, 2019, p. 79). An inconsistency in Slingerland's work is his argument that the folk TOM is a form of weak dualism. He claims that mind and body are distinct. At the same time, he says that correlative thinking, with its binary, interdependent pairs of opposites, is a major part of that same folk psychology (Sellmann, 2019, p. 170). If correlative thinking is indeed the way human cognition orders, conceptualizes and describes the world, then it would make better sense to draw the correlative, interrelated, co-dependent, character of the mind/body relationship into the foreground. An example, as shown below, is illustrated in Pacific islanders' descriptions of the conscious-spirit, which after leaving the body-of-flesh, lives on as a rarified-body. The ancestors' spirits continue to physically interact with the material world, and they may shape-shift, manifesting as animals, humans, or natural objects. This example shows that correlative, not dualistic, thinking is at work.

The folk TOM is based on the socio-biological and genetic character of embodied human cognition. An embodied consciousness experiences the world through the sense organs and consciousness. The correlativity of human thought is, at least in part, derived from human embodied sensation and the structures of the brain. The correlativity of sensory data-experience derives, in turn, from the correlative character of the nervous system. For example, consider the correlative character of sensation. To hear a sound, there must also be silence. The tactile sensation must be preceded and succeeded by less or no pressure. To taste, first there must be no flavor. To visually perceive an object in the foreground, there must be a background. Contrast is operative in all sensory experience. A sensory experience of an object or sound entails blocking out or limiting focus on selected experiences. On a neurological level, sensation derives from the integrated-binary operation of the neurons firing and being at rest. The nervous system operates on a type of correlative code such that the neuron

is stable, at rest, inactive. Then, there is an electrical-chemical charge. The neuron "fires," releasing neural transmitters that trigger the next neuron, and so on, until the brain is stimulated. Therefore, sensory experience and the nervous system operate in an integrated-correlative process. The correlativity of sensory experience forms the basis of pre-linguistic thought in other animals and humans and it helps form linguistic thought in especially pre-scientific or proto-scientific cognition. Linguistic thinking, especially, displays a basic correlative characteristic (Graham, 1986, p. 1-5).

Thoughts, especially linguistic concepts expressed in spoken and written language, entail correlative aspects. The correlative character of linguistic cognition is derived from the experience of embodied consciousness. Consider the correlativity of our bodily parts: the head entails the feet; one foot entails the other; one hand works with the other; one eye sees with the other; one ear hears with the other; taste and smell function together. From the correlative nature of sensory experience and our bodily parts, cognition, especially linguistic conceptual thought, is generated in correlative patterns. Consider these relationships: head : feet :: up : down :: ruler : subject :: good : bad; or hand : hand :: right : left :: east : west :: good : bad :: life : death. This model of correlative thinking is also at work in philosophical, scientific, and theoretical thinking. Scientific statistical correlations and analogies are based on correlative thinking. Graham (1986) contends that correlative thinking is at the root of analytic reasoning. He exposes the structuralist form of correlative thinking that underlies the analytic approaches of Gilbert Ryle's *Concept of Mind*, and Thomas Kuhn's *Structure of Scientific Revolutions*. He shows, for example, that Ryle's analytic dissolution of the mind/body problem is based on substituting old correlations of mind : body :: ruler : subject with new ones such as mind : hands, and other body parts :: university : colleges, and other departments. For Ryle, "mind" is not a hidden controlling substance in the body, but an organizing function. In a sense correlative thinking focuses on the organizing function of concepts by embracing a "both-and" perspective, rather than a dichotomous "either/or" view of disconnected substances. Correlative thinking, Graham argues, is at the root of both linguistic and pre-linguistic thinking, and it has ". . . nothing whatever to do with the level of sophistication of thought in general" (Graham, 1986, p. 6). He contends that until a clear line is drawn between testing a law and the creative thinking behind it, there is ". . . no prospect of rejecting correlative systems as unscientific in principle" (Graham, 1986, p. 7).

Notice that statements, or sentences are composed of two fundamental parts—the topic and the comment, or the subject and the predicate. Graham lays out "the principles of a structuralist approach." He draws upon Ferdinand de Saussure's linguistics to suggest a "perfect fit" between correlative thinking and the function of language. Employing Saussure's distinction between *langue* and *parole*, Graham analyzes at length the latter's application of paradigm/syntagm and metaphor/metonym. Although Graham starts off with what he considers to be a truism—that thinking is conducted in sentences, nevertheless, he also wants to account for a broader pre-linguistic form of thinking that roots correlative thinking deep within all animal experience. Graham contends, contra the "black box" of early behaviorism, that: "Pavlov's dog expects dinner as he hears the bell" (Graham, 1986, p. 21, italics added).

Another way to approach the correlative nature of thinking is to consider the importance of comparison or analogical reasoning as it occurs in everyday thinking, and in scientific or academic philosophical reasoning. In everyday thinking, a person makes sense out of new experiences, and unknown things by comparing them, by correlating them to previous experiences or known things that appear to bear some similarities. Analogical thinking also represents a "both-and" not an "either/or" point of view. Categorizing items by their functional-organizing attributes reinforces the tendency to emphasize similarities over differences (Charlot, 1999a, p. 51). This approach of using "both-and" organizing functions for making comparisons in everyday thinking is raised to formal precision with the inductive argument by analogy.

The correlative nature of human cognition, which is also found in folk psychology, is probably the wellspring from which philosophical systems, especially monism, dualism and nondualism develop. If human cognition is correlative thinking, then how is it that our innate form of thinking is different in degree from academic logical and scientific reasoning? First, note that following Slingerland, through the processes of enculturation and socialization, scientific education has obstructed or disengaged modern educated people from our innate universal form of correlative thinking. Second, what I am proposing is that it is the degree of emphasis that a community of knowers places on the truth-value of statements that marks the degrees of difference between correlative thinking, versus formal logic and scientific thinking.