

SATORI, KOAN AND AESTHETIC EXPERIENCE:  
EXPLORING THE “REALIZATION OF EMPTINESS” IN BUDDHIST  
ENLIGHTENMENT VIA AN EMPIRICAL STUDY OF MODERN ART

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*We compare the cognitive basis of satori, or the “realization of emptiness” at the heart of Zen Buddhist enlightenment, and with the mechanism whereby satori is most often evoked – a pedagogical relationship between master and student called “koan” – to modern artworks and the conception of aesthetic experience, noting structural and psychological similarity. Based on our previous work on this topic in art-perception (Pelowski & Akiba, 2011), we offer a cognitive model for satori’s consideration. We then discuss empirical evidence for art-induced satori, noting a correlation with a progression of cognitive and emotional factors suggesting a movement through all posited model stages and a major distinction from non-satori outcomes. We also note a positive correlation between satori and hedonic evaluations of beauty, art potency and importance, understanding of art and artist’s intention, change in subject self image and a fundamental shift in meaning analysis from a mimetic to an experience-based interpretation. This study, through the exploration of the underlying satori mechanism made explicit in the Zen koan and duplicated in modern art, suggests a universal nature to and means of exploring the insight underlying the satori phenomenon and opens a new avenue for cross-disciplinary/cross-cultural study of enlightenment.*

## 1. Introduction

Satori presents a unique challenge to those who would seek it. The term itself is a Japanese word corresponding to the English concept of epiphany or “aha” moments of insight and enlightenment (Torrance, 1979). Just as with the English term, it is used in a wide range of contexts, designating, as noted

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by Watts (1957, p. 161), “the sudden and intuitive way of seeing into anything, whether it be remembering a forgotten name or seeing into the deepest principle of Buddhism.” However, it is this latter religious satori at the center of spiritual breakthrough within the practice of Zen that gives the term its notoriety. Extending from concepts in the Mahayana Buddhist tradition, which originated in India in the first century B.C.E., moving through China to Korea and Japan, satori signifies the realization of “no-self” or “emptiness” (‘*sūnyatā*’ in original Sanskrit (Moore, 1995)). As Moore (p. 704) explains, within this tradition “not only is the self [considered to be] an illusion, so is every discrete phenomenon, and therefore, there are no real objects to become attached to in the first place and there is no real self to do the grasping. Thus, while ordinary consciousness of the normally socialized individual is in a state of ‘ignorance’ (avidya) of [this] truth,” satori, the fundament of Buddhism and paragon of Buddhist enlightenment, “consists of the realization of emptiness.”

“Emptiness” and enlightenment in general, however, do not make for an easy target. It has been the typical conception of both Western and Eastern researchers that this phenomenon is unique to some combination of “Asian” or Buddhist thought. Given the positivistic tradition of enlightenment in the West, which appears to be diametrically opposed to satori’s “negative” nature, Rosemont (1970, p. 111) states that this concept has “no direct Western counterpart.” Because of its importance in the Zen religious tradition, satori’s scientific study both in the East and the West has not been seriously considered, to the extent that the subject itself remains rather taboo. Even satori’s physical location, the confidential “*dokusan*” (literally, 独 ‘private’ 参 ‘meeting’) of pupil and master, is expressly opposed to observation. And the researcher is left, just as the novice student of Zen, with only intriguing but ultimately impenetrable riddles – “emptiness is form; form is emptiness” runs the famous explanation of satori’s realization in the Heart Sutra (Garfield, 1995) – or *a-social* actions, nonsensical shouts and violence of the Buddhist masters to understand and convey this state. While we can wonder at, and numerous writers (e.g., Suzuki, 1950; Warner, 2003) have attempted to relate, the psychological significance that the realization of emptiness might have, this leaves, it would seem, little avenue for psychological or empirical investigation.

However if we look away from religion or philosophy and focus, as does Zen itself, specifically on satori’s cognitive basis and the formal mechanism whereby it is most often evoked – a pedagogical relationship between master and student called “*koan*” training used in China, Korea and Japan – we can find an intriguing means of psychological consideration. As Zen would argue, it is precisely the riddles and confusing behavior, when coupled with the generation of insight through manipulation of the student’s schema or conception of self, that are themselves inseparable from the end satori state. More importantly, this also suggests a striking similarity to an existing West-

ern tradition that may provide a compelling point of theoretical and empirical comparison.

Not only does Western art, in its contemporary philosophy and specifically in its design, often mimic Zen's means of creating an enlightenment that may correspond to the satori state, but this outcome and the "realization of emptiness," under different names, are major components in many discussions of "aesthetic" or insightful art experience. In fact this process and outcome even in mundane contexts is often given as the goal for viewing art. Therefore, by considering the koan mechanism and its cognitive pursuit through the parallel lens of art interaction and artwork design, we may find a means of psychologically demystifying this heretofore unexamined form of enlightenment. The Buddha was after all, as put by Larson (2004, p. 64), "the world's first" contemporary artist.

In this paper we offer such a psychological exploration of the Zen conception of satori and the koan mechanism via their parallel to contemporary art. This is accomplished by a cross-disciplinary analysis in which we first offer a review of satori/koan, pointing out structural and theoretical connections to contemporary examples of art and showing a theoretical parallel between Zen and art-philosophical conceptions of insight. We then consider the potential cognitive underpinnings of the satori process, based upon our team's recently published model of aesthetic experience (Pelowski & Akiba, 2011), which addresses the movement to insight via interaction with a koan-like art. Finally we discuss empirical evidence from an art-induced satori, recorded with Japanese viewers amid Western art.

## **2. Review: Satori, emptiness and the koan in zen**

First, let us review satori and koan. As noted above, satori is the Buddhist conception of enlightenment or worldly transcendence, and is grounded in the essential realization of the inherent transience of our perceptions, our things, and the core self that does the perceiving. However, what seems to lead to the dual mysticality and confusion surrounding satori is the tendency to extract it from its pedagogical frame and jump to the philosophical end-state. As Garfield (1995) has claimed, without this grounding, the realization of emptiness becomes hopelessly nihilistic, or alternatively, unfathomably transcendental. While everything is inherently empty, Zen argues, so too is emptiness itself, leaving one in a state when satori is achieved by apparent non-existence where nothing can be said to exist, nothing ever has or ever will exist and nothing appears to have any consequence. Or to circle back to the same conclusion, itself close to the conception of enlightenment in the West, all things being "empty" become one. For Western researchers, he (2003, p. 6) notes it is very tempting to adopt this Kantian understanding, identifying "conventional reality with the phenomenal realm, and ultimate

reality with the noumenal, and there you have it.” Rather, the noumenal realm of satori is beyond thought (Garfield & Priest, 2003), observation or expression, its achievement requiring James’ (1958, p. 158) “instantaneous conversion” to a plane off the map of normal human experience, and just as is often the case with Western enlightenment we have no means of consideration.

This, however, misses the most important point of the satori discussion – the experiential frame in which enlightenment is placed. Those who have had some exposure to Zen practice would argue that satori is much more deeply pragmatic; and advocates of Zen have taken great pains to explain that this realization of “emptiness” should not be thought of as a sudden, selfless void absent of any thought or meaning (Suzuki, 1950). Rather, satori is deeply grounded in the cognition of everyday life.

Zen essentially argues that an individual engages with their environment via pre-expectations and perceptual schema, which are then matched to the perceived “reality” allowing an individual to successfully interpret and navigate their surroundings. However, while useful in everyday life, successful matching of schema to perception signifies a facile or naïve assimilation of the world to one’s pre-existing cultural and self expectations. Satori transversely signifies those rare moments when an individual has overcome perceptual assimilation, confronting and re-thinking their concepts and eventually acknowledging their inherent “emptiness.” According to Moore (1995, p. 700), satori signifies “the unlearning or elimination of habitual and problematic ways of feeling, acting, perceiving and thinking,” and thereby the completion of what psychology would call a “schema change” (e.g., Rothbaum et al., 1982; Pelowski & Akiba, 2011 for review) allowing a better insightful perception and interaction.

While there are sects that do argue that satori can be achieved via meditation alone, e.g., the Soto sect in Japan (Kitagawa & Cummings, 1989 for review), most contemporary Zen in turn places satori within the “koan” frame designed to systematically bring about these realization moments. This takes the form of meetings between master and student concerning a series of specific problems, originally invented by masters throughout China, Korea and Japan, and collected and organized in the Rinzai sect (Ningen Zen Kyoudan, 2006), each designed to systematically reject a specific concept or perceptual schema (Sogen Hori, 2000). This can be further achieved in one of two ways: either a “direct method” (Suzuki, 1951; Moore, 1995) via masters’ nonsensical gesture, striking and sudden exclamation (Mohr, 2000); or more often, a “verbal method” whereby the master presents the student with a seemingly illogical riddle – such as a classic first koan, “what was your original face before you were born?” (Ningen Zen Kyoudan). In both cases the combination of these actions or question are coupled with a demand that the student provide a suitable “answer,” which when interpreted logically can only be meaningless or farce (Moore). This is designed ex-

pressly to trap a student in an intractable duality, where they can neither answer correctly nor disengage from the demand, forcing the student into a peak level of anxiety until they switch from a direct attempt at resolution to a metacognitive approach, re-assessing their previous actions and expectations and realizing the artificiality of the problem itself.

Eventually, according to Sogen Hori (2000, p. 307), “one realizes that one’s own seeking to answer the koan is itself the [koan] activity... and also that this seeking both hindered their realization and yet made it possible at the same time.” Only after this perceptual change, whereby the “meaning” of the koan comes to be equated to the student’s own experience, can the riddle be resolved. With this realization, a student is said to be sharing the same original experience as that of the master. While the koan is merely a means of providing this experience and thereby transmitting this local realization of emptiness via embodiment in the student’s own life. “What is desired,” according to Rosemont Jr. (1970, p. 112), “is that the pupil take on a whole new perspective; such a task, however... can only be accomplished if the entire logical and linguistic framework of the old is somehow radically altered.”

This outcome then returns to the ultimate philosophical argument of “emptiness”. With each local satori – which are often distinguished from the ‘ultimate’ satori realization by the alternative term “kenshou” (Heine & Wright, 2000) – and each new koan, one develops a new conceptual or perceptual schema, that, although relatively more enlightened than the previous, also relies on preconceived conceptions and therefore must itself be overcome. These local satoris then eventually build to the goal of Zen: the realization, as noted by Garfield (2003, p. 11), that “there is no such thing as the ultimate nature of reality.” “Penetrating to the depths of being,” he concludes, “we find ourselves back on the surface... and so discover that there is nothing, after all, beneath.... That is what it is for all phenomena to be empty.” This immediately brings discussion close to art.

### **3. The parallel between koan structure and contemporary art**

Numerous scholars have argued that the explicit goal of art, and the implicit duty of a successful artist, just as with a Zen master, is to achieve this same adjustment in a viewer by disrupting their pre-expectations and forcing upon them a new means of perception or insight. Becker (1982, p. 204) notes, “to produce unique works of art, artists must unlearn a little of the conventionally right way of doing things.” Artists, when making art, and viewers when experiencing art, “must violate standards more or less deeply internalized.” This is achieved, just as in the Zen koan, by rejecting a viewer’s interpretation within the act of art-viewing, forcing the viewer to revise their expecta-

tions and construct a new manner of interpretation, both for artwork, the world in general, and therefore their for own self-expectations (e.g., Dewey, 1980). In tandem with this is the argument that the artwork, just as a koan, can be thought of as a vehicle for the embodied transmission of this experience (Silvers, 1976). This parallel is explicitly noted by Lasher, Carroll and Bever (1983). And if we return to a consideration of the koan design, we find striking parallels between koan construction and interaction with “Modern” or contemporary art.

A structural consideration reveals four important elements (see also Moore, 1995): 1) First, according to Suzuki (1950, p. 67), a koan must be “a question which is vital and on which depends the destiny of the questioner.” There must be a strong tie between expectations and the image of oneself, and it is the master’s responsibility to carefully select a specific koan to affect a specific individual. In the koan design, this is also addressed by setting the interaction between student and master within a “dokusan,” a one-to-one dialogue inspiring great reverence by the student for the master. Foulk (2000, p. 41) notes that the very design of this meeting, including the manner and clothing of the master, are designed to draw in students by the promise of “profound meaning hidden in the [words or actions] which are taken to be direct manifestations of a patriarch’s awakened state of mind.”

2) This is then matched with the riddle, introduced by the master into this dialogue, itself designed to violate these very expectations. Moore (1995, p. 713) explains, the actions of the master breaking the “basic rules” of dialogue by “fail[ing] to produce” a suitable answer to meet the student’s anticipation, and further, by not “provid[ing] an account for the absence of the answer.” Yet a master’s response cannot be dismissed as unimportant because, as it occurs within the koan frame, “whatever a master says or does in that context is always about awakening, so the more mundane it looks, the more profound it must be” (Foulk, 200, p. 39).

3) This leads the student to the third element, what Suzuki (1950) has called a “psychological impasse,” whereby they are trapped between these two irreconcilable cognitions or perceptual states, signifying their expectations and the reality presented to them. At this point, it is the master’s duty to simultaneously increase anxiety and frustration, while encouraging the student to persist.

4) Finally, when the master feels that the previous stage has built to a sufficient climax, they may force a resolution by introducing what, in psychology, has been called a “trigger” (e.g., Efran & Spangler, 1979), shocking the student into self-awareness and realization. Zug III (1967, p. 86) concludes, “just such shouts, blows, or antics” introduced at this stage, “may provide the final shock that releases the mind and leads to satori.”

To take one example (adapted from Suzuki, 1950): *The monk Ting came to Lin-chi and asked, “What is the essence of Buddhism?” Chi seized the*

*monk, gave him a slap, and let him go. Ting stood still. A monk nearby said, "O Ting, why don't you bow," in reverence? Ting was about to bow when he experienced satori.*

In this case, we can trace this meeting of 1) pre-expectations for an enlightening answer with 2) an un-interpretable/discrepant response – a slap – by the master; followed by 3) the monk, confronted and trapped by this confusion, and 4) a trigger introduced via a bow of reverence, leading the monk to appreciate the emptiness of the master's response and therefore the emptiness of his own expectations and question. In modern art, we can readily find correspondence. This "direct method" in the example above is quite similar to Western performance art. A notorious example by Chris Burden (in Danto, 1986) seems an exact copy: an audience is invited to a gallery for an art opening, its anticipation growing until the time of the unveiling, when the artist walks out before the collected onlookers and is promptly shot by an assistant. With this shock, viewers are left to contemplate the fact that this action was in fact *the* artwork – or rather the idea of an artwork, a gallery opening and the viewer's expectations are "empty" concepts.

Of course, both Zen and modern art have much more subtle examples, as in the classic koan experience adapted here from a version in Blyth (1992, p. 168): *Tokusan was sitting outside... Ryutan asked him why he didn't go back home. Tokusan answered, "Because it's dark." Ryutan then lit a candle and handed it to him. When Tokusan was about to take it, Ryutan blew it out, and Tokusan experienced satori.*

The experience of sudden aloneness and loss of expectations, delivered by an artist's refusal to deliver a promised insight, is a powerful theme in modern art. The work 4'33 by John Cage, where a pianist sits before a piano and a waiting audience but never touches the keys, and Nam Jun Paik's films consisting of empty white noise have often been noted as providing extremely moving or epiphanic experiences. Belting (2002), considering these works, called their resulting epiphany a "Zen Gaze."

The parallel between koan and modern art can also be traced in "verbal examples" and static art. Perhaps the most famous example of transformative experience with modern art, and incidentally the ur-moment for the switch from modern to post-modern art philosophy was a meeting between Arthur Danto and Andy Warhol's "Brillo Box," consisting of an artwork designed as an exact copy of a commercial shipping container for soap. Danto, in his extensive account of this meeting, recalled being "struck by the question of how it was possible" for the Brillo Box to be a work of art (1992, p. 3). He recalled that this placed him in a difficult position where either the work was not art, which, because it was placed in an art gallery, inspiring the same reverence as the dokusan of Zen, called into question the very existence of art itself; or it was art, but because it was designed to not be beautiful or meaningful was un-interpretable. This in turn called into question his

previous philosophical basis for interpreting art, and therefore his self-identity as a philosopher. We “had always supposed” he noted, that one could understand the difference between art and reality in purely visual terms, “so [that artwork] rendered almost worthless everything written by philosophers on art” (1998, p. 177). His resulting epiphany, “a philosophy of the philosophy of art” (1986), was quite literally a reflection of his cognitive switch to a meta-evaluation of the ultimate “emptiness” of the institution of interpreting art. “The moment something is considered an artwork,” he concluded, “it becomes subject to an interpretation. It owes its existence as an artwork to this, and when its claim to art is defeated, it loses its interpretation and becomes a mere thing” (in Silvers, 1976, p. 444).

This experience has a close parallel to the spoken koan. Looking back to the riddle – “what was your original face?” – whether one answers affirmatively or negatively regarding the nature of their own existence, one has committed themselves to the idea of inherent existence itself, and it is this conception that the koan is designed to call into question (see also Garfield, 1995). Similarly, Dezeuze (2005) notes that Danto became caught in the trap posed by the Brillo box, where in his case the idea of distinguishing between “artworks” and “mere things” was based on the incorrect assumption of the immutability of both. Stoichita (1997, p. 275) claims that it is actually the manipulation of this “superparadox” – the realization that “to discourse on nothing,” i.e., not-art, “is to accept that nothing is something” – that is the definition and *raison d’être* of a postmodern approach. And it is only by breaking out of the false dialectic between “emptiness” and “form” that the student of both Zen and art, in whatever context, finds positive resolution. Mohr (2000, p. 246) has made this link between art and koan explicit, arguing that the koan phrase itself should be considered as a “screen,” i.e., not unlike a plastic work of art, “on which students can focus their mind.”

Rather than standing far outside Western religious/philosophical concepts, *satori*, when considered as a cognitive process in relation to some external stimulus through which one can reach a metacognitive mode of interpretation, has been an oft-mentioned element of perceptual or conceptual insight, given many names in present psychology. Gadamer (1984, p. 317), for example, used the term “real experience,” whereby “we gain through it better knowledge, not only of itself, but of what we thought we knew before.” More recently this was noted in general psychology by Rothbaum et al. (1982). Torrance (1979) focused on these same events in review of “aha” moments with thought problems in education. This was recently reiterated in a review of cognitive/neural discussions of insight by Sandkühler and Bhattacharya (2008). And in discussion of art, it is this outcome which we (Pelowski & Akiba, 2011; also Dewey, 1980) termed an “aesthetic,” and similarly Adorno (1984, p. 25) a “metaphysical,” art experience. Adorno’s description is a basic reappraisal of above. He (p. 8) notes, just as in *satori*, that this basic outcome represents moments where the viewer “affixes his



identification with art, not by assimilating the work to himself, but by assimilating himself to the work.” Concluding, much as a koan, that art “partakes of enlightenment, but in a different way: works of art do not lie.... Their reality lies in the fact that they are answers to questions brought before them from outside” – i.e., via a viewer’s own psychology.

#### 4. A cognitive model for satori in art/koan interaction

It is from this point that we can make a new contribution. As noted above, our team (Pelowski & Akiba, 2009, 2011) recently considered the progression to insight or schema change via the interaction with art, putting forth a cognitive model, which might simultaneously serve as a frame for discussing satori. This progression, which we have adapted for this discussion and which we will review here, is shown as a flow model in Figure 1, highlighting the major structural satori elements, and as a side by side comparison of key elements in Table 1. As can be seen, this model divides the cognitive schema change process into five stages with three potential outcomes in the processing of information, koan or art.

*Stage 1, self image:* Before a perceptual activity, viewers already hold a set of postulates directing behavior, perception, expectations for interaction, and a viewer’s likely response to the outcomes of action. Following an earlier cognitive discussion of Carver (1996; see also Epstein, 1973), these postulates collectively combine to form an individual’s “ideal self-image,” and can be considered in a hierarchical arrangement with a collection of ideal concepts that the individual aspires to forming the core of the self image, branching off into goals for their pursuit and reinforcement and further divided into schema for specific behaviors and perception (see Figure 1’s top-right inset). In this way, all perceptual tasks, such as art/ koan perception, through this attachment between low-level schema for perception and behavior and the core self-image, entails the application of some of these prior, hypothetical “ideal” self-postulates, to the reality or scrutiny of the environment. It is by looking at the tension between the viewer’s need to protect the self-image, especially in cases where low-level actions have strong ties to a viewer’s core self, and perception that allows us to consider the movement to satori.

*Cognitive mastery:* Upon encountering a stimulus, such as koan or artwork, viewers first attempt to directly control their interaction by classifying, understanding, evaluating, and formulating a response based upon these concepts and pre-expectations, and in such a way as to reinforce existing schema and the self image. In practice, just as students of Zen first attempt to directly interpret a koan based upon their pre-conceived expectations for the

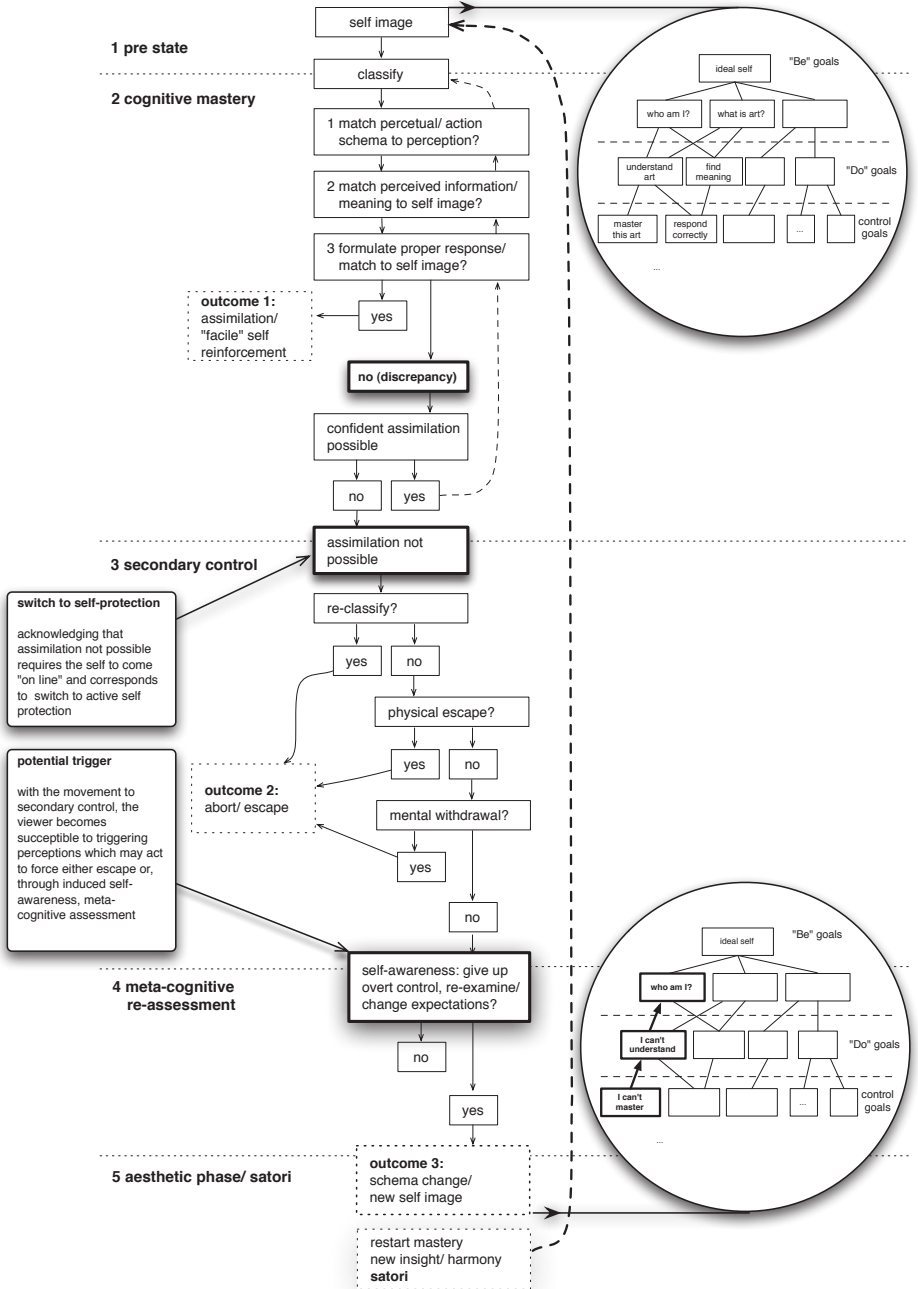


Figure 1: Cognitive flow model of schema-change in satori/ insightful art experience, with key elements highlighted (adapted from Pelowski & Akiba, 2011). Top and bottom-right inset: hierarchical model of "ideal self image" (adapted from Carver, 2006).

type of answer the situation seems to demand, as we noted, viewers of art typically evaluate an artwork for its semiotic or conceptual meaning, showing a preponderance of appraisals of the formal or surface elements it depicts and evaluating its conceptual meaning based upon their prior knowledge about art.

However, as suggested in the introduction, this process, recently called “cognitive mastery” by Leder, Belke, Oeberst and Augustin (2004), is essentially the result of an act of circularity, requiring viewers to assimilate any perceived novel or discrepant elements into their existing schema by expanding the schema themselves. This is coupled with the employment of a series of perceptual filters meant to ensure this success by obscuring or diminishing any novel or discrepant elements which may impede assimilation (reviewed in Pelowski & Akiba, 2011; see also Swann & Read 1981), and the employment of pre-attitudes – i.e., a stimulus is “not important,” and one is not an expert – that aid in ignoring discrepancy, diminishing the *potential* for threat to the individual by reducing the potential for meaningfulness and importance of the stimulus itself (also Garfinkel, 1967; Goffman, 1974; Rothbaum, Weisz, & Snyder, 1982). In turn, both theorists of art and Zen (e.g., Rosemont Jr., 1970) argue that experience that ends in this stage becomes a self-protective act of “facile” interpretation, what Dewey (1980, p. 24) has called “a dead spot in experience that is merely filled in.” Again it is essentially this assimilation and these self-protective filters that both koan and art, through discrepancy, are designed to overcome.

*Secondary control:* When discrepancy does occur, and cannot be assimilated, viewers enter what Rothbaum et al. (1982) have called a “secondary control” phase of experience, in which they switch from self-reinforcement to active self-protection, attempting to reduce the importance of their own failed involvement through covertly changing the environment. Viewers typically attempt: 1.) re-classification – i.e., the stimulus becomes interpreted as meaningless, and the artist/ master is evaluated as esoteric or “stupid”; the artwork becomes ‘not art’ (e.g., From, 1971); followed by 2.) physical escape; and finally 3.) mental withdrawal – in an art situation one might conclude ‘it’s only art’ (From; Rothbaum et al; Steele, Spencer, & Lynch, 1993). This stage is also accompanied by feelings of confusion, anxiety and tension (Epstein, 1973; Steele et al., 1993), and a sense of loss, failure and threat (Efran & Spangler, 1979). Becker (1974, p. 773) also notes that individuals often show negative hedonic assessment, evaluating a stimulus as “distasteful,” “ugly” and bad, thereby reducing its importance to the self.

It is at this point that the respect for a Zen master or respect for the situation plays an important role. Those who have a strong relationship to a stimuli, or high expectations for success, where this relationship plays an integral part of the self, are likely to find themselves in the intractable position noted above, where they cannot successfully downplay either the impor-

tance of the stimulus or the importance of mastery success (see also Festinger, 1973; Rothbaum et al., 1982). In a similar vein, Zen has long stressed the importance of “great faith,” “great doubt” and “great indomitable courage” as necessary psychological components for moving past escape (Nin-gen Zen Kyoudan, 2006). Moore (1995, p. 714) notes that without this tie to the self-image, “those who are unfamiliar with Zen... would attempt to repair the deviation and pursue the overdue answer, or they might take the absence of an answer as intentional and, therefore, as a display of ‘rudeness,’ ‘disrespect,’ or some other such attitude,” thereby absolving their need for continuation. We can also find this assignment of blame to an external source and reduction of potency or seriousness in Danto’s discussion above. As he (1992, p. 37) noted, many of his colleagues “felt absolutely betrayed by the Brillo Box. [They] hated them... [they were] livid at the opening... People laughed. An artist friend of mine wrote SHIT across the guest book... Artists were clearly not ready for a philosophy of art which put no premium whatever on the [previous] imperatives that defined painting.”

*Self-aware/ metacognitive reflection:* When viewers do not abort however, they may eventually enter the metacognitive period of re-assessment of actions, motives and expectations that is linked to satori and aesthetic experience. As noted above, Zen masters often induce this outcome via a sudden and shocking movement or actions (e.g., blowing out a candle) presenting a climactic point at which expectations or assimilation can no longer be sustained. Triggering elements/ climax can also be found in art media that employ a temporal element, such as movies and theater (e.g., Efran & Spangler 1979; Sloboda, 1991). However, in all cases, the purpose of this trigger, within this cognitive progression, is to induce acute self-awareness in the viewer. Steele et al. (1993) note that this self-awareness, introduced in moments of “psychological impasse,” serves as a catalyst for inducing an outcome in a discrepant encounter, forcing individuals to either escape through secondary control, or to pursue metacognitive re-assessment (also Duval & Wicklund, 1972). In static media as well there is evidence of triggers from the presence of a mirror, camera, audience, or the sound of ones own voice (Rothbaum et al, 1982), even a painting watching you (Duval & Wicklund).

Self-focus leads to a feeling of “increased submissiveness and individuation,” causes the individual to “focus attention on personal limitations and to increase perceived uncontrollability” (Rothbaum et al., 1982) and induces expectational re-assessment (Ingram, 1990). It is this re-assessment, and resulting fundamental shift in viewer approach to interpretation, what Torrance (1979, p. 182) has called a “second-order change,” whereby the viewer looks “outside of the problem situation to the system” itself, reframing the problem of the stimulus, and the means of addressing its question that corresponds satori. This requires the viewer to accept failure, give up attempts

at direct control (Miceli & Castelfranchi, 2003), and discard or change their very expectations or schema, thereby altering their own ideal self.

*“Aesthetic” insight, or satori, experience:* Finally, schema-change, essentially an act of “self-transformation” (e.g., Rothbaum et al., 1982), allows a viewer to reset their interaction and re-engage from the beginning of this model (see the bottom of Figure 1), employing a new set of schema that may allow for a more harmonious interaction, improved or deepened engagement, as well as the ability to attend to or process previously overlooked or discrepant ideas or elements. In this way, viewers can be said to learn via their interaction or to experience novelty and growth (e.g., Torrance, 1983; Gadamer, 1984), experience possible harmonious interaction (Steele et al., 1993) and achieve new understanding or insight (see also Sandkühler & Bhattacharya, 2008). And therefore, in the domain of art, it is this outcome which Dewey (1951) originally called the “aesthetic phase” of experience. It is also this outcome that would be argued to correspond to satori (see also Torrance, 1979 for a similar conclusion).

## 5. Considering satori within the art/koan model

The grounding of satori within this cognitive/aesthetic frame allows for the clarification of many of its previously confounding aspects. First, it is this metacognitive nature of satori and its tie to the overcoming of self-protection through self/schema-change that allows us to explain the “emptiness” inherent in this outcome itself. Just as noted in Zen, which frames satori in a “negative” manner, involving the loss or cessation of artificial views (Kitagawa & Cummings, 1989), in all cases this outcome requires a viewer to “give up” a previous expectation, and therefore an important component of the self-image (e.g., Miceli & Castelfranchi, 2003). May (as discussed in Funch, 1997, p. 208) has made this tie between self-conception and emptiness explicit, arguing that “the anxiety accompanying [schema-change] is an anxiety of nothingness, manifesting a feeling of temporary rootlessness and disorientation,” concluding that “this feeling stems from the questioning or breaking down of conceptions and values of the present self-world relationship.” Kierkegaard (in Walsh, 1992, p. 7), summing up all religious or transcendent experience (see also James, 1958) notes in fact that this progression is a basic feature that enlightening encounters might all share. “The religious always uses the negative as its own essential form,” arguing that through initial negative self-involvement we may create a ground for positive revelation. That is, as opposed to both a nihilistic and positivistic analysis, insight/ satori/ transformation are not the gain of something new (whether nothingness or transcendence), but the loss of something that had previously been hindering one’s processing or development.

This can also be seen in the specific processing of koan or artwork. While the questioning of the self is perceived as a threat in secondary control, with satori it is precisely this denial, and the resulting viewer experience itself, that is often perceived to be the artist's, or Zen master's, ultimate *intention* for the work (e.g., Suzuki, 1950). In this way the artwork itself may come to "die," just as commentators note that, with a successful answer, the koan becomes empty. More pragmatically, in actual individual processing, what would be expected is a fundamental change in viewer-stimuli relation. Through the switch to metacognitive assessment, viewers switch from positive mimetic to *aniconic* assessment whereby the stimuli is evaluated not for its explicit "meaning," but by what it *denies* the viewer, or essentially the experience itself. Levi-Strauss (1982) has previously argued that when considering something such as koan or art it is this shift that lies at the heart of transformation in human-environment interaction. In turn, it is such an "experience-based" reading of art, whereby one moves from mimetic or otherwise formal interpretation to an equation of art meaning to its engendered experience that Dewey (1980) gives as the essential goal of art viewing or education.

The underlying cognitive interaction, when we do look back at Zen, also suggests a potential fundamental equivalence of "satoris"/ insights, whether small or profound. As Carver (1996; also Festinger, 1957) has argued, the more fundamental a schema is to the core self-image, the greater the magnitude of potential dissonance, the greater the difficulty in overcoming self protection and therefore the greater the magnitude of final transformation.

## **6. The cognitive satori process and relation to contextual factors in an empirical study**

While the above model affords a theoretical basis for considering satori, potentially its greatest contribution is in applicability to the empirical study of satori or insight via the consideration of individual processing of a koan or art. By grounding this phenomenon in the cognitive progression of schema-change and its equivalence to art experience, we can make numerous hypotheses about contextual factors that might arise, evolve and be empirically recordable in an interaction with a (art or, presumably similar, koan) stimulus. These elements have been adapted to this satori discussion and laid out in Table 1.

First, when looking to this cognitive end "satori" state, we would expect to find evidence for a full progression of emotions and experiential factors corresponding to each preceding model stage. Notably, individuals should progress through: 1) anxiety and confusion arising from discrepancy in initial cognitive mastery; followed by 2) need to escape or stop in secondary con-

Table 1

*Comparison of major stages in "satori" and "aesthetic"/insightful experience, and suggested correlates of emotion, cognition, appraisal and self-response*

Satori progression	Aesthetic/insight experience model Stages <sup>a</sup>	accumulate throughout experience <sup>b</sup>			based on stage where experience ends <sup>c</sup>	
		Physiological Response	Emotion/Affect	Cognitive Activity	Self-image involvement	Stimulus Appraisal/Evaluation
<b>Initial anticipation of meaning + introduction of riddle</b>	<b>Cognitive Mastery</b>	sympathetic arousal. If discrepancy is present: heightened electrodermal response/ heart rate, decreased peripheral temperature.	<b>success:</b> pleasure, anticipation, excitement, tension  <b>failure:</b> confusion, anxiety, tension, threat.	semiotic or informational/ historical/ syntactic assessment, attempted assimilation into pre-existing schema/ classification, assessment of motive, evaluation.	self-protectory/ self-reinforcing cognitive and social filters.	Assessment of motive and meaning based on informational/ formal/ historical elements. High understanding leads to positive aesthetic evaluation.
<b>Psychological impasse</b>	<b>Secondary Control</b>	heightened sympathetic arousal.	need to leave or abort, anger, sadness.	self-focused attention, maintain semiotic/ informational assessment. Stimulus is meaningless.	devaluation of stimulus/ context. Increased valuation of self/ alternative activities.	accusatory devaluation of stimulus/ creator, or situational context. Evaluation that reduces potency, seriousness. Negative hedonic evaluation.
<b>Trigger</b>	<b>Meta-cognitive Assessment</b>	both sympathetic and parasympathetic arousal: increased heart rate/ electrodermal response, decreased finger temperature/ respiration.	temporary intensification of tension /anxiety, self-awareness  <b>Unsuccessful schema change:</b> depression.	meta-cognitive analysis of viewer's own activity, expectations. Acknowledgement and acceptance of failure, examination of motives. Schema-change.		awareness of external triggers: being watched, other individuals, artist/ painting presence
<b>Satori</b>	<b>Schema-change/ insightful Outcome</b>	parasympathetic latency period, crying	relief, pleasure, happiness, epiphany.	new cognitive mastery, reingage perceptual task.	self evaluation as less potent	evaluation of meaning/ motive in terms of previous meta-cognitive experience/ induced self-reflection. Positive hedonic evaluation and heightened potency.

<sup>a</sup> Aesthetic experience model based on Pelowski and Akiba (2011).

<sup>b</sup> elements within these categories are expected to accumulate throughout each stage of experience and reflect a historical progression in post experience questionnaires. <sup>c</sup> elements in these categories expected to change with each stage of experience. Viewer questionnaire should reflect only those elements within the stage at which experience ends.

trol. For individuals who do continue on to process a koan/artwork, this would then be followed by 3) self-awareness, metacognitive re-assessment and potential awareness of triggering elements, ending in 4) insight or schema change. This final outcome, in turn, is specifically linked in the literature to numerous emotional responses. The moment of schema-change results in both sympathetic and parasympathetic response – increased heart rate and electrodermal activity; decreased respiration (Gross, Frederickson & Levenson, 1994), feelings of enlightenment and epiphany (Pelowski & Akiba, 2011 for review). Gross et al. (p. 466) conclude, “it may be precisely this coordinated activation of parasympathetic and sympathetic [response] that [can make it] such a potent physiological state.” As the individual moves past the height of schema change into a period of latency, this is followed by relief as well as pleasure and potentially crying (Pelowski & Akiba, 2008).

On the other hand, clustering of emotional responses would also be argued to mark key distinctions from the other potential outcomes of interpretive experience. Those who do not experience initial confusion – suggesting no discrepancy and initially successful “facile” mastery – would be expected to lack this complete chain of response. While those who do encounter discrepancy, but stop in secondary control, would be expected to show confusion and anxiety, but lack self awareness and latter responses from the concluding schema-change.

We would also expect a tie between satori and stimuli understanding and evaluation. As suggested above, experience that ends in initial mastery would be expected to also coincide with direct mimetic meaning evaluation involving, in the case of art, appraisals of signs or formal elements. Conclusion in secondary control would in turn be expected to show inability to understand. This would also be coupled with pronounced stimuli devaluation. As noted by Pelowski & Akiba (2011), this would likely coincide with specific devaluation of artwork “potency” and “activity,” using a semantic differential technique common to art or environmental appraisal testing (e.g., Osgood, Suci & Tannenbaum, 1961). Carroll (1959, p. 113) notes that the use of these factors in appraisal suggests the amount of adjustment made or that “must be made” to a stimulus and therefore the relative importance or danger to the self. We would expect experience ending in secondary control, without satori resolution, to show a correlation to negative evaluations, reducing need for active involvement. This would also likely be accompanied by negative hedonic evaluations (e.g., beauty or stimuli worth), which also serve as a self defense (Becker, 1983; also Jacobsen, Schubotz, Höfel & Cramon, 2006). We might also expect similar negative evaluations of master or artist.

Finally, insightful outcome would be expected to coincide with final positive hedonic assessment as well as heightened potency, activity and seriousness, and a switch from formal/mimetic to “experiential” meaning assessment. While this has been noted in art – i.e., a powerful, often emotional and insightful outcome has been shown to have tie to positive hedonic appraisal (Pelowski & Akiba, 2008) – this is also noted with Zen (Suzuki, 1950, p. 89). We would also expect to find specific evidence for self change. Miceli and Castelfranchi (2003; Bem, 1967) argue that self/ schema transformation, might be specifically reflected in a reduction of personal potency (again using semantic differential) in viewer self evaluation.). Those who do not experience satori should show no self change. We might also expect a positive adjustment in the individual’s general relationship to artists and art. Importantly, just as this basic cognitive progression itself is argued to be constant in multiple contexts, Ellsworth and Scherer (2003, p. 584) have argued that the relationship between these emotional and evaluative factors too, considering their tie to self-adjustment and/or self-protection, should be “culturally general, perhaps even universal.”



## 7. An empirical study of satori with art

What then would this look like in real life? To explore the incidence of satori via art, an empirical study was conducted at the Kawamura Memorial DIC Museum in Chiba, Japan. The selected artist, Mark Rothko, is an important representative of “Modern” mid 20<sup>th</sup> century American Abstract Expressionism, and the paintings in the Rothko room are consummate examples of his work. Rothko is also notable for providing, however, through his art, experiences of epiphany and self-assessment. The critic Elkins (2001) has noted that of all 20<sup>th</sup> century art, Rothko’s work may be most successful in creating this outcome.

This is also done with quite ‘simple’ works. There are three rooms in the world dedicated to showcasing Rothko art – the Kawamura room, and similar spaces in Houston, Texas and London’s Tate Modern – each quite similar in design and art. The room in Kawamura at the time of this study<sup>2</sup> consisted of a rectangular space with a bench located in the center, a docent in the back corner and seven paintings arranged on its four walls. The paintings, which range from ~1m x 1m to 3m x 2m, consist of either black or red-orange rectangular color fields set against an alternate colored ground. While varying in pattern, the works are truly abstract and cannot be said to depict any recognizable mimetic scenes. Critics argue, in fact, that often they lose any semblance of visual meaning, eventually coming to be viewed not as pictures, but as ‘just’ two-dimensional fields of paint (Jones, 2002). This reaction, however, may represent a quite compelling koan experience.

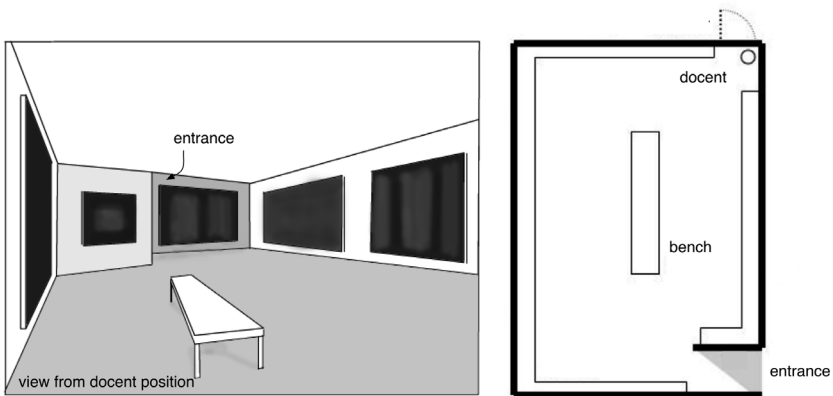


Figure 2: Top: The Rothko Room, Kawamura Memorial DIC Museum of Art, Chiba, Japan before summer 2009.

<sup>2</sup> The room itself, keeping the same artworks, was remodeled in the summer of 2009.

According to critics and our own interviews at this and the Houston space, a typical viewing progression might be summarized as follows. Viewers, in the Kawamura room, first enter through a short hallway. This serves to both spatially separate the room from the rest of the museum, and causes the viewer to be suddenly confronted by the entire space and six of the seven paintings. Upon entering, because of the paintings' monumental quality and minute brushstrokes, critics argue that viewers have a sense of profound significance or meaningfulness. Elkins (2001, p. 16), paralleling the initial attitude of a Zen student above, notes a "transcendental promise" of revelation from the artist or artwork. Viewers also described a surprising experience of turning the corner and being confronted with a sense of meaning and presence.

Interviews with the docents (see also Nodelman, 1997 for similar review) note that viewers commonly give a mimetic interpretation upon first perceiving Rothko works, detailing discovered images in the brushstrokes. However, upon further looking or moving to a subsequent work, the second koan element appears to occur. Critics note that as a viewer attempts to fit a second painting together with the first, the redundancy between the works tends to call into question the sense of meaningfulness (Elkins, 2001; Phillips & Crow, 2005). Viewers accumulate irresolvable interpretations moving from painting to painting. This may create the "psychological impasse" noted as the third koan element, building until, according to Elkins (p. 11), viewers find themselves at a turning point; "the moment when they have seen everything they can, and they sense its time to look away."

This is then argued to cause one of two outcomes. Viewers may stop, turn their back to the art and leave. On the other hand, viewers who do not abort, but continue from this point, Elkins (2001) notes, are likely to have a "moving" experience. Nodelman's (1997, p. 330, 342) description in turn comes to closely follow satori. Eventually, "frustrated and thrown back to yourself," he notes, "you become the center of the room. You think about your conduct, your body." The art "forces disturbing questions about the nature of the self and its relation to the world." One realizes that the real is only "a system of signs constructed continuously by and for the viewer." And this self-confrontation and metacognitive assessment induces an expectational change in the individual who "may emerge on a new plateau" of understanding, whereby – just as is argued for a koan – "the experiential structure of the installation" itself is "transformed."

Despite the critical discussion, it should be noted that the sparse abstract nature of this art and art room also makes it specifically suited for psychological study. The room is a closed space, containing no extraneous information – no labels, audio guide, or windows/ doorway with views into other rooms. The artworks, because of absence of mimetic content, are unlikely to evoke highly personal associations that might cloud between-subject analysis, paralleling the previously noted ideal stimuli for testing of basic cogni-

tive experience (Jacobsen et al., 2006). Their location, in a rural art museum, situated as just one room of abstract art among many within the larger building, left no reason to expect an outcome involving satori or insight.

## 8. Method

### 8.1. Participants

Questionnaires were administered to 30 native Japanese subjects ( $M$  age = 42; 21f), recruited at the museum site and constituting all patrons who consented to the study from among all those who visited within the testing period (~60% acceptance) with no offer of compensation (museum access was not free).

### 8.2. Procedure

Subjects were approached by a researcher upon entering the museum foyer, before engaging any art, and asked to participate. Those who agreed were given a pre-test, completed at a nearby bench. After completion, subjects were shown a map and asked to proceed directly to the target space, spending as much time and looking in whatever way that they wished. When finished looking, they were asked to approach the docent in the room's back corner and told that they would be allowed to exit through a hidden doorway leading directly back to the foyer. Therefore, Rothko's art was presumably the first and only stimuli seriously encountered. Upon exiting, viewers were immediately administered a post-test and finally given a short exit interview to assess prior knowledge of art or artist. The in-room docent had the responsibility of discretely timing viewers, identified by a number badge, while inside.

### 8.3. Materials and measures

In this study, we were looking for evidence of two factors pertaining to the above discussion: basic evidence for satori and evidence for a correlation with other experiential/ interpretive factors that might accompany the satori/ art progression. To this end, we utilized a wide range of questions broken into the following categories:

*Pre-expectations:* The pre-viewing questionnaire consisted of a series of 5-point Likert scales ('1'= strongly disagree, '2'=disagree, '3'= neither agree nor disagree, etc.) addressing expectations for viewing art, general understanding/ art comfort, and relationship between art and self, based on those previously used by Parsons (1987) and reviewed in Pelowski and Akiba (2011), listed in Table 2.

*Artwork appraisal, self appraisal, self-change:* The pre-test also asked viewers to evaluate the term "yourself," as well as the general categories "art" and "artists" via 14 adjectival pairs separated by 7-point scale, based

on Osgood et al.'s (1961) semantic differential. Upon viewing the artworks, viewers were then asked to once again evaluate these terms, as well as the specific items "the artwork" and "the room's artist" in the post-test using the same pairs. This technique was selected, in the specific evaluations of artworks and artist, because of widespread cross-cultural/ cross-topic use (Tanaka, Oyama & Osgood, 1963), noted efficacy for evaluating art (Berlyne, 1974) and specific applicability in interpreting the relative level of self-protection utilized (Carroll, 1959). In turn, when looking to the paired evaluation of "yourself," Bem (1967; Miceli and Castelfranchi, 2003) again has argued that recorded changes after a task would serve as a specific indicator of self change. Pre- and post-evaluation of general categories "art" and "artist" were included to capture another possible strategy for self-protection, or potential impact of the experience on art in general. Terms were selected for even distribution of terms reflecting high loadings among hedonic and activity/ potency regions (from Osgood et al., 1961). See Table 4 for full list.

*Emotional/experiential factors and satori:* The post-test also included unipolar 9-point scales eliciting self-report on emotional and experiential factors (Table 2) mentioned as potential components in aesthetic experience (i.e., "while I was inside the room, I experienced (factor)"). In this case, an answer of '0' corresponded to "no such feeling"; answers from '1' to '8' corresponded to some incidence, as well as relative magnitude, '8' signifying "the most intense such feeling in my life." Previous studies have been found, such as Likert testing, to be particularly sensitive to recording emotional/ experiential reaction (Ekman, Friesen & Ancoli, 1980). This section also included the specific measure "I experienced satori."

*Meaning assessment:* Finally, the post-test included a section asking viewers to write a short answer to the question "what did the art mean?" in order to ascertain mode of meaning analysis. All testing materials, including the specific term 'satori,' were written in Japanese and independently checked by two bilingual speakers for compatibility. Adjective pairs were based on previous translation from the English (Tanaka et al., 1963). Due to the exploratory nature of this study, an alpha of .10 was set for all results.

## 9. Results

*Satori and other experiential factors:* Overall, 57% ( $n = 17$ ) of viewers did report experiencing some magnitude ( $M = 2.37$ ,  $SD = 2.63$ ) of satori. Looking to the relation between reported satori and other emotional or descriptive measures (Table 2), we find a significant correlation between satori and "happiness," as well as "self-awareness" and "awareness of others." Satori was also correlated with understanding the artist's intention and finding the art meaningful. We also found a significant correlation between satori and

time spent inside the room, with comparison of means also showing that satori viewers spent higher times ( $M = 6:00$  min.,  $SD = 5:01$ ) than those who did not experience satori ( $M = 3:45$ ,  $SD = 3.05$ ; *ns*). Due to the ordinal nature of the data and in order to confront the possible error of a few individuals' scores driving the correlations, the non-parametric test Kendall tau-b was also performed. These results are included in the correlation tables. However, again they confirm the relationships above, additionally showing a significant correlation between satori and "feeling like crying."

Table 2

*Correlation of satori, pre-expectations and experiential terms reported post-viewing: Rothko Room, Kawamura, Japan (n = 30)*

	Pearson	Kendall tau b
<b>Pre-expectations (reported pre-viewing)</b>		
I usually understand art	.227	
I don't like situations that I can't understand	-.117	
I am comfortable looking at and discussing art	.269	
it is important to have control	-.421**	
I am knowledgeable about art	.385**	
I enjoy situations I can't control	.308*	
it is important to understand art	.028	
art has meaning	.300*	
art is important	.356*	
<b>Experiential factors (reported post-viewing)</b>		
anxiety	-.074	(-.008)
confusion	-.172	(-.139)
need to leave	.170	(.225)
aware of others	.336**	(.280)
self-aware	.746***	(.685***)
happy	.531***	(.384***)
sad	-.042	(.038)
epiphany (satori)	-----	-----
aware of artist existence	-.028	(-.009)
understood artist intention	.546***	(.426***)
art was meaningful	.471***	(.373**)
felt like crying	.256	(.339**)
time spent inside room	.382**	

\* significant at the 0.10 level (2-tailed). \*\*significant at the 0.05 level. \*\*\*significant at the 0.01 level.

In order to better clarify the divisions and potential sequence of experiential response, viewers were then divided based upon the presence or absence of the two factors – “confusion” and “satori” – argued above to play a key demarcative role in koan/art experience, resulting in four sub-populations: those who reported no confusion and no satori ( $n = 3$ , 10%), argued to coincide with those lacking an initial discrepancy and therefore suggesting a facile engagement; those reporting confusion without satori ( $n = 10$ , 33%), argued to represent an abortive or non-resolution group; those reporting both confusion and satori ( $n = 15$ , 50%), the main target demographic in this paper; and those reporting satori without confusion, argued to be unlikely due to the theoretical need for discrepancy, here with only two individuals.

Looking to the three main outcomes, it appeared that satori required confusion. Secondly, results essentially followed the critical review of the art above, with a high total number of individuals (83%) reporting this confusion and a general split between those who either did or did not then report satori (also accounting for the above lack of an initial correlation between satori and confusion themselves). One-way ANOVA comparing the three main groups (see Table 3 for all Means, *SDs* and statistical information) further showed that while the “no-confusion + no-satori” group showed zero incidence of confusion, as well as “anxiety,” the “confusion + no-satori” and “confusion + satori” groups showed an equally high incidence of these responses, with Tukey HSD showing significant difference between the facile and both latter groups.

ANOVA also showed significant differences in factors argued to occur at later stages of the satori process. We found a significant difference in reported means for “need to leave,” increasing from zero in the first facile group, to a moderate amount in the abort group and reaching its highest level in the satori outcome. We further found a significant result in the incidence of “self-awareness,” argued to play the second demarcative role between abort and metacognitive/satori outcomes. The first facile group showed a moderate response, the abort group showed no such feeling and as hypothesized the satori group showed the highest outcome, with Tukey HSD showing a significant difference between the second (abort) and third (satori) groups. This also held true for “awareness of others,” a potential triggering factor for inducing self-awareness, which showed zero incidence in the facile group, a low incidence in the abort group and the highest response in the satori outcome, again with Tukey HSD showing significant differences between the latter and two former groups.

Table 3

*Comparison of means of reported experiential terms in confusion + satori sub-groups: Rothko Room, Kawamura Japan*

reported emotion	sub-group	<i>M</i>	<i>SD</i>	$\eta^2$	<i>F</i> (2, 25) <sup>a</sup>
<b>confusion</b>	no confusion + no satori (n = 3)	0.0 <sub>ab</sub>	0.0		
	confusion + no satori (n = 10)	5.40 <sub>a</sub>	2.27	.46	10.86***
	confusion + satori (n = 15)	4.33 <sub>b</sub>	1.50		
<b>anxiety</b>	no confusion + no satori	0.0 <sub>a</sub>	0.0		
	confusion + no satori	3.80 <sub>a</sub>	3.05	.18	2.70*
	confusion + satori	3.33	2.35		
<b>need to leave</b>	no confusion + no satori	0.0	0.0		
	confusion + no satori	1.40	2.50	.18	2.66*
	confusion + satori	3.20	2.83		
<b>self awareness</b>	no confusion + no satori	2.67	4.62		
	confusion + no satori	0.70 <sub>a</sub>	1.49	.33	6.29***
	confusion + satori	4.13 <sub>a</sub>	2.36		
<b>aware of others</b>	no confusion + no satori	0.0 <sub>a</sub>	0.0		
	confusion + no satori	1.70 <sub>b</sub>	1.57	.25	4.09**
	confusion + satori	3.82 <sub>ab</sub>	3.05		

Note: Judgments were made on 9-point scale (0= no such feeling, 8= the highest such feeling in my life). Means with the same subscripts differ significantly at  $p < .10$  by the Tukey honestly significant difference comparison. \*\* Significant at .10, \*\* Significant at .05, \*\*\* Significant at .01

*Satori and artwork/artist appraisal:* Moving to the relation between satori and the evaluation of the specific artworks, as well as the artist (Table 4), satori was positively correlated with evaluation of the viewed art as “beautiful” and “meaningful,” as well as “strong.” Satori was also significantly correlated with an evaluation of the artist as “good,” “meaningful,” “deep,” “intimate,” “complex,” “controlled” and “active.”

Table 4

*Correlation between satori and evaluation of artwork and artist; Rothko Room, Kawamura Japan (n = 30)*

	<b>artwork evaluation<sup>a</sup></b>	<b>artist evaluation</b>
good : bad	-.257	-.407*
meaningful : meaningless	-.376*	-.480**
beautiful : ugly	-.498**	-.330
strong : weak	-.432*	-.265
deep : shallow	-.240	-.407*
intimate : remote	-.284	-.419*
fast : slow	-.002	-.296
vague : precise	.344	.222
relaxed : tense	.033	-.054
vibrant : still	-.227	-.311
unique : commonplace	.199	-.111
simple : complex	.132	.570**
controlled : accidental	.014	-.478**
active : passive	-.182	-.548**

\* Correlation is significant at the 0.10 level (2-tailed). \*\*Correlation is significant at the 0.05 level. \*\*\*Correlation is significant at the 0.01 level. <sup>a</sup> negative correlation refers to leftward term, positive to rightward term on adjectival scale.

We also found significant differences in viewer re-appraisal of the general terms “art” and “artist.” In the two main sub-groups found in this study, we find several significant changes. Viewers who reported confusion and satori showed a re-evaluation of art as more “controlled” and more “active” (see Table 5 for all statistical information), and “artists” were evaluated as more “intimate”. On the other hand, viewers who reported confusion without satori, evaluated art as significantly more “remote” and more “vague.” In turn, artists were re-evaluated as more “meaningless,” “accidental” and “ugly.” Finally, in the small category of viewers who reported no confusion and no satori, we also find one significant outcome. These viewers deemed “art” as more “repetitive” after viewing ( $M=5.3$ ,  $SD=5.58$ ) than before ( $M=7.0$ ,  $SD=0.0$ ,  $t(2)=5.0$ ,  $p=.04$ ,  $d=4.09$ ). There was no change in evaluation of artists.



Table 5

*Paired-sample before and after art-viewing comparison in general categories 'art' and 'artists' evaluation in "confusion+no-satori" and "confusion+satori" subjects, Rothko Room, Kawamura Japan*

confusion + no satori (n = 10)					confusion + satori (n = 15)				
scale	M <sup>a</sup>	Mean change (SD)	t <sup>b</sup>	d	scale	M	Mean change (SD)	t	d
<b>art evaluation</b>					<b>art evaluation</b>				
intimate : remote					controlled : accidental				
pre-viewing	3.8				pre-viewing	4.47			
post-viewing	4.5	+0.70 (0.95)	2.33**	-0.48	post-viewing	3.8	-0.67 (1.35)	1.91*	0.39
vague : precise					active : passive				
pre-viewing	3.5				pre-viewing	2.6			
post-viewing	3.1	-0.40 (0.70)	1.81*	0.30	post-viewing	2.07	-0.53 (0.74)	2.78***	0.48
lively : still									
pre-viewing	5.1								
post-viewing	4.3	-0.80 (1.23)	2.06*	0.54					
<b>artists evaluation</b>					<b>artists evaluation</b>				
meaningful : meaningless					intimate : remote				
pre-viewing	2.2				pre-viewing	4.4			
post-viewing	3.1	+0.90 (1.29)	2.21**	-0.76	post-viewing	3.8	-0.60 (0.83)	2.81**	0.41
controlled : accidental									
pre-viewing	3.7								
post-viewing	4.5	+0.80 (1.32)	1.92**	-0.63					
beautiful : ugly									
pre-viewing	2.4								
post-viewing	3.1	+0.70 (0.95)	2.33**	-0.59					

<sup>a</sup> Judgments were made on 7-point scale (1 = leftward term on scale, 7 = rightward term, 4 = neutral). <sup>b</sup> \* Result is significant at .10 level. \*\* Significant at .05. \*\*\* Significant at .01.

*Satori and self evaluation/self change:* Paired sample *t* tests comparing pre- and post-viewing evaluation of the term “yourself,” again argued to offer a potential indicator of schema or self change, showed one significant. Viewers who reported satori showed a change in their self appraisal as more “quiet,” a typical indicator of relative potency (Osgood et al., 1961), after viewing the art compared to before (*M change* = 0.41, *SD* = 1.3 on 7 point scale,  $t(16) = 1.95$ ,  $p = .06$ ,  $d = -.31$ ). We found no significant changes in viewers not reporting satori.

*Artwork meaning:* Finally, written answers regarding the meaning of the art were divided into the three categories “semiotic/ formal” (i.e., answers which referenced physical, historical or mimetic qualities of the art), “no understanding/meaningless,” and “experiential” (answers which in some way referenced viewer experience or art-derived effect). Fisher’s Exact test (comparing these three meaning categories versus the four confusion/satori groups) did reveal a significant difference ( $p = .05$ ) in distribution of results.

Table 6

Viewer answers to “What was the meaning of the Rothko Room?”: Distribution based on absence or presence of satori + confusion and mode of meaning evaluation.

	Experiential meaning	Semiotic/ formal meaning	No meaning/ meaningless
<b>no confusion + no satori</b>	n = 1 (50%) • Depends on the person	n = 0 (0%)	n = 1 (50%) • ?*
<b>confusion + no satori</b>	n = 3 (43%) • For me, it depends on the time of day and your own status. Everytime I enter, the painting to which I attend changes. • Intense thinking in this (different, or ‘outer’) space • Imagination	n = 1 (14%) • Whatever the artist wanted the meaning to be.	n = 3 (43%) • I don’t know. • I don’t think they have a particular meaning. • ?*
<b>confusion + satori</b>	n = 11 (92%) • A feeling of being sandwiched and embraced between many paintings. • Make the fine arts familiar. • (The room) reduces you back to neutral (state). • The slow experience of a movement of feeling. • Intuition... (after that) looking into my inner self from the effect of time. • A feeling of searching for (the essence) of art. • Soak in the art and look into your own mind. • Assimilation of the space and your consciousness, and a deepening. • Face yourself...space... it’s difficult. • To make you think. • At that time, your thoughts change.	n = 0 (0%)	n = 1 (8%) • The meaning was so deep I couldn’t understand.
<b>no confusion + satori</b>	n = 1 (50%) • Room for easing.	n = 1 (50%) • I understand the (historical) meaning, but I don’t like it.	n = 0 (0%)

Note: table based on 23 viewers. 7 viewers did not respond to this question. Statements are translated from original Japanese by the authors. Fisher’s exact test for significance of distribution of results,  $p = .05$ . \* Subject literally wrote a question mark (“?”) as a response.

As shown in Table 6, while viewers lacking confusion and/or satori reported experiential evaluation approximately 50% of the time, 92% ( $n = 11$ ) of those who did report both confusion and satori showed experiential analysis.

*Pre-expectations:* No significant findings were found between satori and any demographic measures, and no viewers mentioned any prior knowledge about the artist or art. However, we did find a significant relation in viewer pre-expectations (Table 2) with a correlation between reported satori and agreement with the pre-expectations that one was knowledgeable about art ( $r = .39, p < .05$ ), that art has a meaning ( $r = .30, p < .10$ ) and that art itself was important ( $r = .36, p < .10$ ), and disagreement with the general statement that it was important to maintain control ( $r = -.42, p < .05$ ).

## 10. Discussion and conclusion

This paper considered a parallel between the phenomenon of satori, or Zen Buddhist enlightenment and the koan mechanism whereby it is most often brought about, and the phenomenon of “aesthetic” or insightful experience with contemporary works of art. Both of which were argued to be functionally similar. Based on this, we introduced a cognitive model for assessing the satori progression adapted from earlier work considering interaction with art, finally introducing evidence from an empirical study of a work of art which had been argued to provide a particularly compelling koan-like experience. Specifically, it was argued that interaction with this work would entail a sequence involving an initial sense of meaning followed by discrepancy, potentially regarding viewer inability to successfully resolve a mimetic or formal analysis, leading to a peak level of anxiety or, in Zen parlance, “psychological impasse.” This was then argued to be followed by either escape/ disengagement in a self-protective period of secondary control or, in the case of a satori/insight, a switch from direct informational assessment to self-aware metacognitive assessment of viewer expectations and previous interaction themselves, leading to an acknowledgement of the inherent “emptiness” of the artworks as vessels for meaning, but coupled with a new interpretation involving their engendered experience itself, ending with a final “satori” transformation of viewer perceptual schema (i.e., approach to interpreting this particular art) and therefore their image of self.

Testing showed that 57% of viewers reported specifically experiencing “satori” while viewing the art. While this finding itself is intriguing and somewhat surprising given the noted esoteric nature of the satori phenomenon, as well as the basic abstract nature of the art, more important is the connection of this finding to almost all of the arguments made regarding this paper’s model and the structural components of a koan.

As hypothesized, a correlation analysis and comparison of means did show that the reported satori was coupled with experiential terms suggesting a full progression through each of the posited stages of the satori/insight process. Satori showed significant connections with a sense of “confusion” and “anxiety,” posited again to accompany the arousal of a discrepancy in the initial cognitive mastery stage of evaluation, as well as “need to escape,” suggesting a movement from attempts at assimilation to secondary control. This was accompanied by “self-awareness,” noted as the second key demarcative point in the satori process, heralding a switch from direct processing to metacognitive reflection, as well as “awareness of others,” specifically hypothesized as a potential self-awareness-inducing “triggering” element. And finally, satori showed correlation with happiness, as well as understanding the artist’s intention and finding meaning in the work.

On the other hand, those without reported satori either did not experience confusion and anxiety, or in this case, also did not show any of the subse-

quent emotions (self awareness, etc.) posited for later model stages, potentially representing a facile outcome ending in the first stage of cognitive mastery. Or, for those who experienced confusion and anxiety without satori, lacked subsequent self awareness, other awareness and final emotions tied to resolution, and suggesting instead an aborted conclusion in secondary control. Both satori-free groups also lacked a final sense of artwork meaningfulness or an understanding of artist intention for the work.

This satori progression is further supported when we look to the actual appraisal of the meaning for the art, as well as evidence for self or schema change. Those lacking satori either gave dismissive remarks – “they are pictures;” “whatever the artist wanted them to mean” – stated that they could not understand, or showed evaluations suggesting that they had not moved beyond a direct formal or mimetic analysis. While, as hypothesized, a large majority of those reporting satori showed an alternative interpretation of the art, tied to personal experience and specifically suggesting a metacognitive reassessment of their previous engagement – i.e., “Face yourself” – which might correspond to the essential goal and outcome of a koan in Zen.

Satori did also correlate to a specific change in the viewer self image as more “quiet”. While we make no attempt to parse the exact meaning of this term, the key point is that this term is commonly shown to correlate to relative potency within the semantic differential technique (Osgood et al., 1961). Again, it was specifically this devaluation of personal potency that was hypothesized to reflect self/schema change (Bem, 1967; Miceli & Castelfranch, 2003). This was also coupled with a tie between satori and feeling like crying, itself previously shown to be an indicator for schema-change (Pelowski & Akiba, 2008). On the other hand, again, without satori there were no changes in one’s interpretation of the self.

Distinction between outcomes was further supported in viewer appraisals of the artist and artworks themselves. As hypothesized, subjects reporting satori showed significant correlations with evaluation of the artworks as beautiful, as well as strong. While the first evaluation is a classic hedonic term often tied to direct appraisal and previously hypothesized (e.g., Becker, 1983) to coincide with a positive or insightful outcome, the latter term, again without attempting to parse exact meaning, is most often tied to assessed potency (Osgood et al., 1961), suggesting, as hypothesized above, the need for viewer adjustment (Carroll, 1959). Similarly, the artist himself was also found as hedonically good and meaningful, as well as deep, intimate, controlled, active and complex – again a collection of terms suggesting relative stimulus activity and potency.

These findings can perhaps be more meaningfully read in the opposite direction, with lack of satori correlating to finding the stimuli ugly and weak, and the artist shallow, remote, passive, simple and bad – suggesting a reduction of worth and relative potency and therefore, as was previously noted in both psychological discussion and literature on Zen, aiding escape in

initial or secondary control via a self-protective post-hoc devaluation of need and importance of engagement. This distinction could also be found in viewer re-evaluation of the general categories of “art” and “artists” as well, which became either more controlled and active in the case of satori, or meaningless, accidental and ugly among those experiencing confusion without a final satori state.

There was also evidence for the importance of pre-expectations. Those viewers who did not escape, but instead continued on to satori, reported that they considered themselves “knowledgeable about art,” that they felt “art was important,” while at the same time indicating that it was not overly important to have control in a situation. We might argue that this corresponds to the “great faith” and “great doubt,” or rather the important tie between a perceptual task and the core self and the willingness to allow oneself to fail noted as key hallmarks in a student of Zen.

These findings do appear to support the two claims made in this paper: 1) satori in some form may be a key component of art experience and therefore interaction with art may provide a compelling forum for its investigation; and 2) by looking at a subject’s engagement with a cognitive task such as interpreting art, as a proxy for the koan in Zen, considering such interpretation as a sequential process and interpreting the resulting emotions and evaluations that arise, we might make new insights into understanding human insight or enlightenment, without the ontological ambiguity that can come from a religious or spiritual context.

This paper was meant as an initial exploration of this satori experience, applying discussion from the study of art to a phenomenon previously considered to be either so esoteric as to reject scientific consideration or taboo. While the results are intriguing, they of course must also be accompanied by a number of caveats. The small sample size and unique artwork necessitate that results should be viewed as an indication of the potential that this discussion may have for future, in-depth work. However, it is important to reiterate that the progression observed is not unique to Japan or to this work. Pelowski and Akiba (2008) have found the same pattern of responses, using the English term “epiphany” in testing involving American, as well as European viewers and similar art, and with the same necessity of antecedent discrepancy, self-focus and the other noted correlations. Nor is this parallel confined to Western art. Saito (2007) has made the same link, although only theoretically, with traditional Japanese works. What these findings and parallels do, again stepping away from specific cultural discussions, is presumably fit the general argument of this paper suggesting universality of the cognitive process leading to satori-like insight. This in turn suggests that future research looking for this collection and interrelation of events in other areas of perception – such as in education (Gadamer, 1984; Torrance, 1979), and other conceptions of religious encounters (e.g., James, 1958; Pattison,

1992; Stoudenmire, 1971) – may prove a rewarding cross-cultural basis for consideration of enlightenment.

The measure of satori itself also raises the question of what individuals may have actually meant. It has been noted that just as Westerners might often misinterpret satori's significance, lay-Japanese do as well, with both groups considering it a selfless, harmonious void (Suzuki, 1950). It could be argued that the understanding of satori employed by these test subjects is different from the "true" understanding in Buddhism and the experience itself a shallow version of true breakthrough or insight. Viewers who reported satori here may have already considered art to be a "challenge" – as suggested by their pre-expectations – which was confirmed in their experience, leading them to report that they had in fact experienced some kind of pleasurable "enlightenment." However, again when we consider the full results we might make a strong argument against this interpretation. Viewers who claimed satori also claimed anxiety and confusion, as well as a need to leave, self-awareness and a triggering perception. If they had simply found a pleasurable challenge these antecedent stages would presumably be absent. Whatever the magnitude of their experience, the collected outcome adheres to satori's cognitive basis.

Finally, the specific satori experience considered here, which occurred in an average time of roughly six minutes, does correspond to the rough estimate of ten minutes given in earlier work by Arnheim (1969) and Sakurabayashi (1953), who considered schema-change when presented with a perceptual task. However, this should not be misinterpreted to indicate that this entire psychological process can be so quickly achieved. It is a general rule in Zen that the first koan will take about one year to complete. In Korea, it is common to work on a single koan, seeking deeper interpretations, for an entire life. In art too enlightenment takes time. Danto (1986), for example, acknowledges that he had been struggling with the problem posed by the Brillo Box for 20 years before his revelation. The time required, again ostensibly connects to the relative importance and magnitude of self adjustment, which may not be so dire in this case of art, as well as a subject's pre-expectations, which eventually might be acted upon given the right type of koan. We might argue, however, that once pre-expectations are in a sufficient state and a particular cognitive riddle is met, the actual mechanism might be reduced to the steps discussed herein, and through the structural similarity with art, meaningfully explored.

## REFERENCES

- Adorno, T. W. (1984). *Aesthetic theory*. Routledge & Kegan and Henley.
- Arnheim, R. (1969). *Art and visual perception; A psychology of the creative eye*. University of California Press.
- Becker, H. S. (1974). Art as collective action. *American Sociological Review*, 39(6), 767-776.
- Belting, H. (2002). Beyond iconoclasm: Nam June Paik, the Zen gaze and the escape from representation. In B. Latom & P. Weibel (Eds.). *Iconoclasm*. MIT Press.
- Bem, D. J. (1967). Self-Perception: An alternative interpretation of cognitive dissonance phenomena. *Psychological Review*, 74(3), 183-200.
- Berlyne, D. E. (1974). *Studies in the new experimental aesthetics*. Hemisphere.
- Blyth, R. H. (1992). *Haiku, volume 1: Eastern culture*. Hokuseido Press.
- Burch Brown, F. (1983). *Transfiguration; poetic metaphor and the language of religious belief*. University of North Carolina Press.
- Carroll, J. B. (1959). Review of the measurement of meaning. In J. G. Snider & C. E. Osgood (Eds.). *Semantic differential technique; a sourcebook* (pp. 58-77), Aldine.
- Carver, C. S. (1996) Cognitive interference and the structure of behavior. In I. G. Sarason, G. R. Pierce, & B. R. Sarason (Eds.), *Cognitive interference; theories, methods, and findings*. Lawrence Erlbaum Associates.
- Danto, A. C. (1974). The transfiguration of the commonplace. *The Journal of Aesthetics and Art Criticism*, 33(2), 139-172.
- Danto, A. C. (1986). *The philosophical disenfranchisement of art*. Columbia University Press.
- Danto, A. C. (1992). *Beyond the Brillo Box; The visual arts in post-historical perspective*. Farrar, Straus, Giroux.
- Danto, A. C. (1998). *After the end of art*. Princeton University Press.
- Danto, A. C. (2004). Upper west side Buddhism. In J. Baas & M. Jacob (Eds.), *Buddha mind in contemporary art* (pp. 49-60), University of California Press.
- Dewey, J. (1951). Experience, knowledge and value: A rejoinder. In P. A. Schilpp (Ed.). *The philosophy of John Dewey* (pp. 533-596). Tudor Publishing Company.
- Dewey, J. (1980). *Art as experience*. Perigree.
- Deuze, A. (2005). Transfiguration of the commonplace. *Variant*, 2(22), 17-19.
- Duval, S., & Wicklund, R. A. (1972). *A theory of objective self awareness*. Academic Press.
- Efran, J. S., & Spangler, T. J. (1979). Why grown-ups cry; a two-factor theory and evidence from the miracle worker. *Motivation and Emotion*, 3(1), 63-72.
- Ekman, P., Friesen, W. V., & Ancoli, S. (1980). Facial signs of emotional experience. *Journal of Personality and Social Psychology*, 39(6), 1125-1134.
- Elderfield, J. (2005). Transformations. In G. Phillips, & T. Crow (Eds.), *Seeing Rothko* (pp. 101-116), Getty Research Institute.
- Elkins, J. (2001). *Pictures and tears; a history of people who have cried in front of paintings*. Routledge.
- Ellsworth, P. C., & Sherer, K. R. (2003) Appraisal processes in emotion. In R. J. Davidson, K.R. Scherer, & H.H. Goldsmith (Eds.), *Handbook of affective sciences* (pp. 572-595). Oxford University Press.
- Epstein, S. (1973). The Self-concept revisited; or a theory of a theory. *American Psychologist*, 28, 404-414.
- Festinger, L. A. (1957). *Theory of cognitive dissonance*. Trivistock.

- Foult, T. G. (2000). The form and function of koan literature: A historical overview. In S. Heine, & D. S. Wright (Eds.). *The Koan: Texts and contexts in Zen Buddhism*, (pp. 280-309). Oxford.
- From, F. (1971). *Perception of other people*. Columbia University Press.
- Funch, B. S. (1997). *The psychology of art appreciation*. Museum of Tusculanum Press, University of Copenhagen.
- Gadamer, H. (1984). *Truth and method*. Crossroad.
- Garfield, J. L. (1995). *The fundamental wisdom of the middle way: Nagarjuna's Mulamadhyamakakarika*. Oxford University Press.
- Garfield, J. L., & Priest, G. (2003). Nagarjuna and the limits of thought. *Philosophy East and West*, 53(1), 1-21.
- Garfinkel, H. (1967). *Studies in ethnomethodology*. Prentice-Hall.
- Goffman, E. (1974). *Frame analysis; an essay on the organization of experience*. Harvard University Press.
- Gross, J. J., Fredrickson, B. L., & Levenson, R. W. (1994). The psychophysiology of crying. *Psychophysiology*, 31, 460-468.
- Ingram, R. E. (1990). Self-focused attention in clinical disorders: Review and a conceptual model. *Psychological Bulletin*, 107 (2), 156-176.
- Jacobsen, T., Schubotz, R. I., Höfel, L., & Cramon, Y. (2006). Brain correlates of aesthetic judgment of beauty. *NeuroImage*, 29, 276-285.
- James, W. (1958). *The varieties of religious experience*. New American Library.
- Jones, J. (2002, Saturday, December 7). Feeding fury. *The Guardian*, 8.
- Pattison, G. (1992). *Kierkegaard on art and communication*. St. Martin's Press.
- Kitagawa, J. M., & Cummings, M. D. (1989). *Buddhism and Asian history: Religion, history, and culture*. Macmillan Publishing Company.
- Larson, K. (2004). Shaping the unbounded. In J. Baas & M. Jacob (Eds.), *Buddha mind in contemporary art* (pp. 49-60), University of California Press.
- Leder, H., Belke, B., Oeberst, A., & Augustin, D. (2004). A model of aesthetic appreciation and aesthetic judgments. *British Journal of Psychology*, 95.
- Levi-Strauss, C. (1982). *The way of the masks*. University of Washington Press.
- Miceli, M., & Castalfranchi, C. (2003). Crying: Discussing its basic reasons and uses. *New Ideas in Psychology*, 21, 247-273.
- Mohr, M. (2000). Emerging from nonduality: Koan practice in the Rinzai tradition since Hakuin. In S. Heine, & D. S. Wright (Eds.). *The Koan: Texts and contexts in Zen Buddhism*, (pp. 280-309). Oxford.
- Moore, R. J. (1995). Dereification in Zen Buddhism. *The Sociological Quarterly*, 36(4), 699-725.
- Mor, N., & Winquist, J. (2002). Self-focused attention and negative affect: A meta-analysis. *Psychological Bulletin*, 128(4), 638-662.
- Ningen Zen Kyoudan, (2006). *Gasenshu: The systematic compilation of Koans in Zen Buddhism*. Ningen Zen Kyoudan.
- Nodelman, S. (1997). *The Rothko chapel paintings: Origins, structure, meaning*. University of Texas Press.
- Osgood, C. E. (1961). *The measurement of meaning*. University of Illinois press.
- Parsons, M. J. (1987). How we understand art: *A cognitive developmental account of aesthetic experience*. Cambridge University Press.
- Pelowski, M. & Akiba, F. (2008). Tears and recognition: A correlation between "feeling like crying" and Dewey's aesthetic experience. *Proceedings of the 20th Biennial Congress of the International Association of Empirical Aesthetics*, 171-176.
- Pelowski, M. & Akiba, F. (2009). Failure and success in the perception of art: a case for a failure-based model. *Human Environmental Studies*, 7(2), 95-102.



- Pelowski, M. & Akiba, F. (2011). A model of art perception, evaluation and emotion in transformative aesthetic experience. *New Ideas in Psychology*, 29(2), 80-97.
- Phillips G. & Crow, T. (2005). *Seeing Rothko*. Getty Research Institute.
- Rollins, M. (2004). What Monet meant: Intention and attention in understanding art. *The Journal of Aesthetics and Art Criticism*, 62(2), 175-187.
- Rosemont Jr., H. (1970). The Meaning Is the use: Koan and mondo as linguistic tools of the Zen masters. *Philosophy East and West*, 20(2), 109-119.
- Rothbaum, F., Weisz, J. R., & Snyder, S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of Personality and Social Psychology*, 42(1), 5-37.
- Saito, Y. (2007). The moral dimension of Japanese aesthetics. *Journal of Art Criticism and Art History*, 65(1), 85-97.
- Sakurbayashi, H. (1953). Studies in creation: IV. The meaning of prolonged inspection from the standpoint of creation. *Japanese Journal of Psychology*, 23.
- Sandkühler, S., & Bhattacharya, J. (2008). Deconstructing Insight: EEG correlates of insightful problem solving. *Plos One*, 1(e1459), 1-12.
- Silvers, A. (1976). The artwork discarded. *The Journal of Aesthetics and Art Criticism*, 34(4), 441-444.
- Sloboda, J. A. (1991). Music structure and emotional response: Some empirical findings. *Psychology of Music*, 19, 110-120.
- Sogen Hori, G. V. (2000). Koan and kensho in the Rinzaï Zen curriculum. In S. Heine, & D. S. Wright (Eds.). *The Koan: Texts and contexts in Zen Buddhism*, (pp. 280-309). Oxford.
- Steele, C. M., Spencer, S. J., & Lynch, M. (1993). Self-image resilience and dissonance: the role of affirmational resources. *Journal of Personality and Social Psychology*, 64(6), 886.
- Stoichita, V. I. (1997). *The self-aware image; an insight into early modern meta-painting*, A. Glasheen (Trns.), Cambridge: Cambridge University Press.
- Stoudenmire, J. (1971). On the relationship between religious beliefs and emotion. *Journal for the Scientific Study of Religion*, 10(3), 254.
- Swann, W. B., & Read, S. J. (1981). Self-verification processes: How we sustain our self-conceptions. *Journal of Experimental Social Psychology*, 17, 351-372.
- Suzuki, D. T. (1950). *The complete works of D.T. Suzuki: Essays in Zen Buddhism, second series*. Rider and Company.
- Torrance, E. P. (1979). *The search for satori & creativity*. The Creative Education Foundation Inc.
- Tanaka, Y., Oyama, T., & Osgood, C. E. (1963). A cross-cultural and cross-concept study of the generality of semantic space. *Journal of Verbal Learning and Verbal Behavior*, 2, 392-405.
- Walsh, S. (1992). Kierkegaard: Poet of the religious. In G.. Pattison (Ed.), *Kierkegaard on art and communication* (pp. 7-46), St. Martin's Press.
- Watts, A. W. (1957). *The way of Zen*. Thames and Hudson.
- Zug III, C. G. (1967). The nontraditional riddle: The Zen koan. *The Journal of American Folklore*, 80(315), 81-88.