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When a Body Meets a Body: An Exploration of the Negative Impact of Social Interactions on Museum Experiences of Art

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Abstract

We consider the phenomenon of social interactions within the art museum, arguing that even the bare possibility of meeting others or intruding into their gaze can have a profoundly detrimental effect on art experience. This is done by tracing a finding from our previous studies in which we considered three museum galleries—each

with the same artist's paintings and basic layout; the only major difference being design elements within one space encouraging social interaction and in turn causing repressed enjoyment, negative emotional experience and negative art evaluation. We use this example as a frame for introducing a model of the psychological impact of social interaction on the behavioral and cognitive experience of art, considering its implications for education—which often focuses on the social—as well as implications for personal or introspective art engagement. We also consider a number of measures and aspects that relate to this model and which might be considered by educators in their planning and art study. We conclude with a follow-up study of the same gallery, after its physical renovation to minimize social interactions within the space, and showing significant increases in pleasurable or rewarding outcomes as well as increased positive evaluations of the same art.

Introduction

Few phenomena of modern life are as thoroughly social as art. Art is made for a social display, intended to be seen or addressed by social others (Becker, 1974, 1982), placed in a line of other artists and socio-historical actions constituting an "Artworld" society (e.g., Danto, 1964); and the very act of art making, itself, is of course a culturally consistent means of declaring one's social existence. The art museum—supported by civic resources, often at the center of cities, housing a citizenry's valued objects and serving as a major forum for civic and cultural life—is a paragon of a public or social space. It is no surprise then that art, and museum, research does often concern art's social aspects—whether considering why patrons choose to join a museum group (Dimaggio & Useem, 1978), how seating or hallways might make a better social flow (Bitgood, 2006); of course what socio-economic or cultural factors drive art's reception (Bourdieu, 1968; Eaton, 1995), and increasingly how social interactions can drive art's education. With modern and post-modern art, it is often noted that art-viewing itself is increasingly becoming a more challenging 'social' task, and learning from others, approaching art as a collective group or within a collective action, and sharing reactions, opinions and information is given as primary means for increasing patron enjoyment.

However, while art viewing, and art museum engagement, is undoubtedly a social event, the actual question of *what effect* the social interactions of patrons themselves does in fact have on the actual psychological and behavioral process and outcome of viewing art is rarely considered within present research (see Coffee, 2007). This is unfortunate because, in contrast to much discussion in present art education, a great deal of sociological and social psychological research would suggest that it is such meetings—the bumping of bodies, the sharing of information; even navigation around another patron—that should be some of the most uniquely impactful elements on our understanding, appraisal and emotional experience. In fact, as we will both argue and explore in this review, social interaction when coupled with

design and socio-educational context may be one of the key reasons why patrons, especially within their *personal* experience, do not have a fulfilling or rewarding outcome when they engage museum art.

This is the goal of this paper. We investigate impact of social interactions in the museum, specifically considering underlying importance for patron behavior, art education and art experience. This will be done by reviewing current trends emphasizing social interaction in art, as well as our own previous work in which we introduced an alternative model considering more personal introspective experience. We then use this as a base for the exploration of a finding from our previous research in which we considered three empirical studies of experience in art museums, each with the same artist's works; and with the only major difference being design elements within one particular gallery encouraging unavoidable—and, we argue, disruptive—social engagement. We use these discussions as a launching point for a theoretical exploration of the psychological foundations and ramifications of social encounters presumably occurring in this space and introduce an update to our previous model, which incorporates these impact of social interactions on our cognitive and emotional art experience. We conclude by reviewing several issues that museums and educators, given this model, might consider in relation to this research and end by returning to the same museum, introducing empirical evidence from a follow-up study in the same space after its redesign to eliminate social engagements and resulting in a significant improvement in the positive interaction with its art. Throughout this paper, although we largely employ a great deal of previous psychological discussion, it is our goal to adapt this to the use of the art educator or museum in order to provide a new insight and set of tools that might be employed when creating a shared space for enjoying art.

Background: Art Museums, Art Viewing, and Social Experience

First, a brief review of current approaches to art viewing and educating within the museum, does reveal an increasing social focus. As noted in the introduction, art and art museums have always been seen as social events, however this is increasing within the present day and with present art. Art philosophy, history and especially sociology and anthropology (see Becker, 1982 for a nice review) have long noted that art is created precisely within a field of connected social behaviors and designed from the start for communication with others inside a given social group. Art is further received by an audience themselves with varying degrees of knowledge regarding conventions for how art should be perceived (Becker, 1982, p. 48), and in turn much of the excitement and the power of art viewing or art making, as well as its history (Harrington, 2004), comes from attempts to manipulate those conventions held by one's social group. Recent theory on art's origin goes so far as to argue that this social interaction and social reinforcement may constitutes art's evolutionary and continuing purpose (e.g., Dissanayake, 2008). The social frame goes doubly for the museum, which itself

has always employed "inherently dialogic and social" interactions enacted within specific socio-cultural space (Coffee, 2007, p. 377), and which is often seen as a center for making available expensive or even priceless works that would not otherwise be encountered by the public, as well as helping the viewing public to understand the history of conventions and rules that have framed reception of such art. Emphasis on social elements has only been further enhanced within the past two decades, coinciding with a larger shift in understanding of "museum experience". As noted by McCracken (2003, p. 143) museums have seen a switch from a traditional model of "preferment"—the idea that the primary role of a museum was as storehouse and arbiter for culture—to one of communication and active visitor involvement. Chang (2006, p. 171) adds, "since the early 1990s [museums have] settled firmly into patterns that emphasize successful [visitor] relationships." This has also led to a number of new educational theories that stress, along with cognition and pleasure, museums' social elements.

As reviewed by Pekarik, Doering and Karns (1999, p. 152-153), while such ideas can be traced back several decades (Annis, 1974; Graburn, 1977), recent key arguments include Falk and Dierking (1992, updated in 2000) "Contextual Model of Learning." This presents a view of three overlapping sectors affecting visitors experience: personal contexts including intrinsic interests and motivations, physical elements of museum display and social context, including other viewers and companions. Similar discussions are given by Roberts (1997), Kotler and Kotler (2000) or Goulding (2000; see Chan & Yeoh, 2010 for review). This approach was also concomitant with a switch in ideas for education itself, which also increasingly came to focus on the social. As reviewed by Litwak (1993), following "social constructivist" theories in education and social psychology which hold that social interaction and discourse with others "enhances learning," museum and art educators argued that "the surest way to enhance museum learning [was] to facilitate the visitor social agenda" (p. 111), employing such techniques as social cognition or cooperative learning which stresses a group's ability to better learn or overcome challenges by experiencing together (p. 112).

This brings us to the present day. As summarized by Chang (2006, p. 183), the basic attitude toward museums, and often art education, is: "because museum [and art] are social …museums should facilitate learning experiences that capitalize on the social nature." To achieve this, "educators should (1) permit people to share experiences socially and physically through educational programs and activities; (2) offer opportunities where motivated novices can communicate with knowledgeable experts… and (3) create opportunities to combine knowledge and information" through interactions with others within the space. This approach has only been further heightened with introduction of social media allowing digital forums or immersive spaces for sharing information, meeting others and sharing reactions in a gallery (Chan & Yeoh, 2010; Tesoriero et al., 2012).

But What of Personal/Introspective Experience?

Undoubtedly, the present social focus has shown success in many cases. Museum research has shown that social interaction can enhance cognitive processes when viewing displays (Blud, 1990). It can aid information retrieval and retention (see Litwak, 1993). It can enhance dialogic inquiry, especially with children, and even increase desire for learning in a museum (Ash, 2004). In turn, much recent art making—for example installations or conceptual works—are often created with a general idea of a large interactive public, requiring such social emphasis (Griswold et al., 2013 for review). However, as also noted in the introduction, this entire approach appears to lack discussion of one vital element. While this may of course hold for many encounters, especially for a visiting school or tour, this may not apply to the unique case of art and the unique phenomenon of personal, introspective meetings between art and viewer. Art, despite its many social functions, still can be a highly personal engagement. In fact, it can be argued that art's history champions such personal, powerful and emotional encounters (see Pelowski & Akiba, 2011). This argument also comes with a good deal of research—McLaughlin (1999), Packer and Ballantyne (2002), Chang (2006) have all noted that the individual alone or in a small group, usually with just one other person, does approach museums with a very different perspective; does have a potential for engagement that is much more emotional and introspective, and in fact may be uniquely affected by social experience.

A Model of Personal Art Experience

It is from this point that we will begin. Our research for the past several years has been an analysis of such personal art experience. This culminated in a recently published model for the cognitive process of art perception (Pelowski & Akiba, 2009, 2011). This builds on current theory in cognitive or psychological aesthetics, employing an information processing view of engagement. This approach is obviously different from the above models which focus on more overt learning or retention. Rather, the main purpose here is to answer how and why viewers do arrive at the many emotions, evaluations, or understanding that can accompany art. As it turns out, this model also provides a basis for consideration of impact of social arrangements on the personal experience of art. The model, which we will briefly review, is shown in Figure 1. It argues for basic division of art viewing into a series of five stages and three main outcomes (noted on the far left of the model) that could be had by any individual, only one of which is particularly desired for art museums or education.

1.) Pre-expectations: Essentially, we argue that the viewing of art, or any cognitive task begins with and is driven by one's expectations and one's sense of self. Before a viewer can set foot in a museum or encounter cognitive task, they already hold expectations for what they will see and do: in the words of Lawler and Thye (1999, p. 228) "'fundamental' meanings regarding themselves, other persons, objects or behaviors"—*Who am I? What is art? How*

does art relate to me? How do I relate to (art) society?—which collectively combine to form one's image of the world or an ideal image of the self. Following previous work of Carver (1996), this self-image can be divided into a hierarchical frame (see top left inset of Figure 1) headed by traits that are aspired to and that are integral to one's identify ('be an art person'), pursued through expectations for actions—"do goals," e.g., 'I should understand art'—and subdivided into schema—classify, find meaning, follow social norms—relating to more and more local behaviors. In this way, all action or perception essentially entails application of this self and the results of this application determine the outcome of experience.

2.) Cognitive Mastery: First, individuals classify, understand and process art, based upon their pre-expectations in such a way as to control and reinforce the self. This successful navigation of the environment (recently called "cognitive mastery" by Leder et al., 2004 within their own art model) is generally considered to be a goal of human action itself (e.g., Rapee & Heimberg, 1997), allowing the individual to behave without difficulty, disruption or threat. When such interaction is successful, we might also talk of harmonious or smoothly flowing, and often pleasurable, events. However, when we do consider the ontological basis of such interactions, especially in the case of art, because this marks a matching of perception to existing schema this stage is also the result of circularity, requiring that a viewer expand classification or break off perception rather than modify the self. Thus assimilation cuts off possibility for new perception, change in ideas and becomes a 'facile' outcome without fundamental mark or effect on one's life (think of the typical viewer identifying mimetic signs, reading a label, and moving on to the next painting). To move past this point requires something to bump us out of our preconceived frame. This occurs through discrepancy—between expectations for perception and perception itself, perceived information and prior concepts, between expectations for actions and behavior—in matching of world to the self.

3.) Secondary Control: This leads to the second conclusion—a period marked by quite negative response. Here faced with a discrepancy the individual must alter cognitions so as to lesson the impact on the self. In turn, because contextual factors or artwork themselves are not typically self-important, viewers discard or diminish the environment, in a process Rothbaum et al. (1982) call "secondary control." Individuals will engage one of three attempts: 1) re-classification, often taking on an accusatory tone—art is meaningless, bad or esoteric; 2) physical escape; or last 3) mental withdrawal, lowering importance of the discrepant event—"it's only art". In practical terms regarding the evaluation of art, this also means that art becomes quite negatively considered for both its meaning, its hedonic appeal as well as the skill of the artist. It is also here that a viewer will leave the gallery with the negative reactions often found in modern galleries of art.

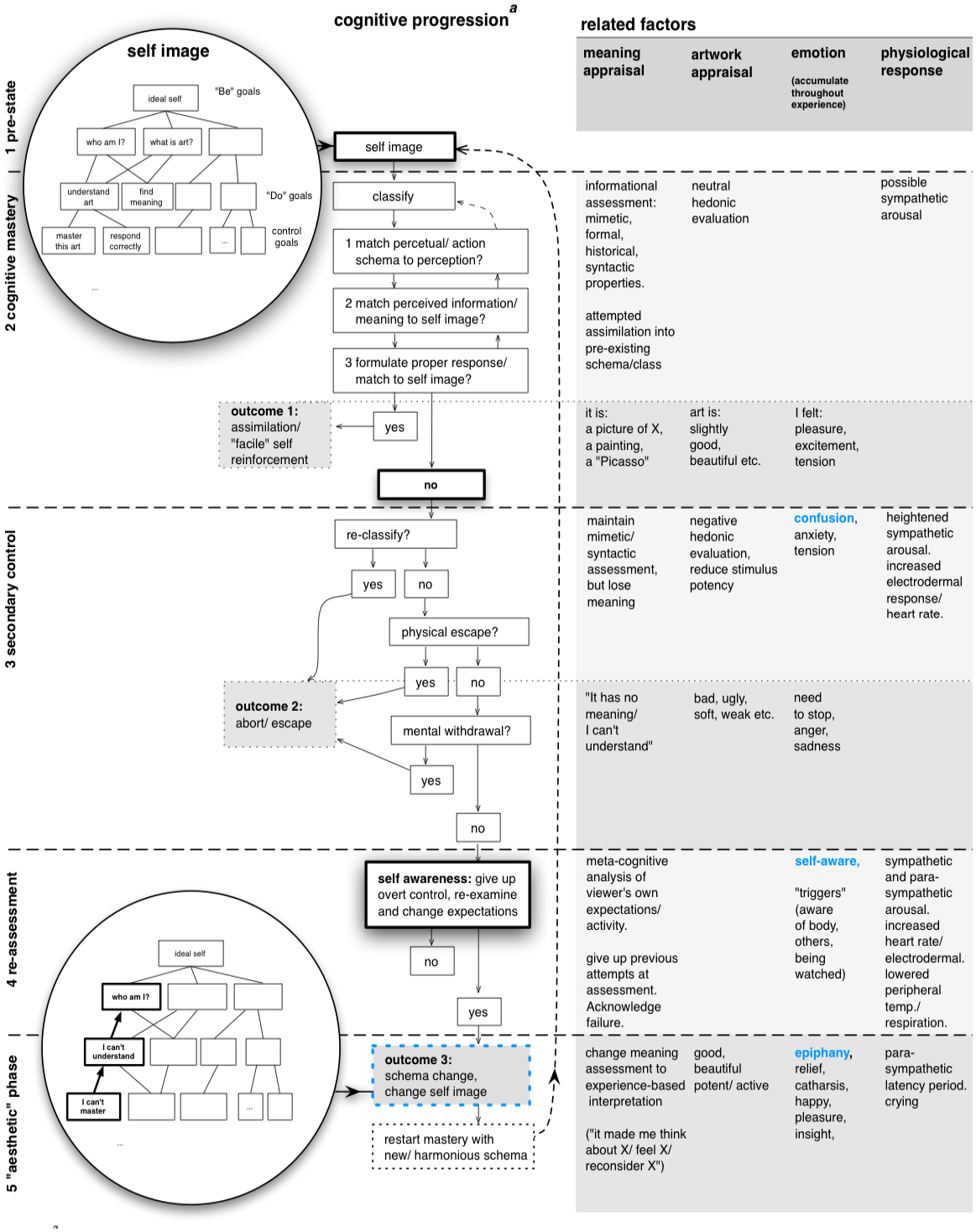

Figure 1. Cognitive flow model of major stages in art experience (adapted from Pelowski & Akiba, 2011). Right side: locations of aroused emotions, artwork appraisals and meaning processing. Top/bottom inset: hierarchical model of "ideal self image" (adapted from Carver, 2006).

4.) Schema/self change: It is only in cases when viewers do not assimilate or escape that we instead find a profound conclusion. Viewers find themselves in an intractable position. Unable to process a discrepancy and unable to downplay its importance, they are left with no choice but to reframe their own involvement, seeking what Torrance (1979, p. 182) has called a "second-order change" whereby they adopt a meta-cognitive approach to their interaction, "looki[ng] outside the problem situation to the system" itself, giving up attempts at overt control, revisiting expectations—what did I expect; what did I see?—discarding or changing schema, and eventually creating new expectation or image of the self (Figure 1, bottom left).

5.) Aesthetic/insightful experience: This change then may usher in an experience that holds unique importance for art. By changing the self, one can reset involvement; re-enter mastery, employing new schema allowing new more harmonious interaction and ability to attend to or understand previously troubling or overlooked elements. In this way, viewers can be said to grow and to learn from interaction, to experience deepened engagement or to see and experience something new. This outcome has also been tied to myriad emotion—harmonious interaction, catharsis or happiness, enlightenment and epiphany which we have argued to be a unique indicator of this stage; culminating in a period which we have connected to the phenomenon commonly referred to as "aesthetic experience" (see also Dewey, 1980).

Key Points for Consideration of Social Interaction in Experience of Art

This approach then raises a number of important elements in regards to both art and social experience. First, the model and its posited stages have been well supported in current research (Leder, 2013), which have noted that this does provide a needed framework for understanding reactions and progressions that one might look for in museum or art research. This model and progression has also been attached to several types of media, including a range of abstract and mimetic painting (Van der Cruys & Wagemans, 2011), literature (Bal & Veltkamp, 2013), even art-making (Stevenson-Taylor & Mansell, 2012) suggesting wide applicability. More important, the model's final aesthetic experience corresponds to an outcome which is a generally agreed-upon goal for viewing art, even within current social theories. Staying in the realm of philosophical or psychological discussion, art is argued to mark one rare case where we are presented with opportunity to take on a new perception, reassess conceptions and find new ideas or alignments (Becker, 1982; Eaton & Moore, 2002). Writers speak of potential "challenge" posed by art (Leder et al., 2004), or the opportunity for surprise, novelty and new discovery (Berlyne, 1974). On the other hand, this outcome, by explaining how individuals adjust and arrive at the latter stage, can also be connected to other noted aspects of "harmony" and pleasure or positive alignment.

It is also this outcome that can be tied to implicit goals of museums. For example, it specifically covers all of the three levels of cognitive adjustment, learning and especially the

emotional "dream space" of Annis (1974), or the "reverential experience" of Graburn (1977). In turn, it can also be fit to explicit arguments for learning that have previously been used a key bases for above social contexts. Most notably, it essentially duplicates Kolb's (1984) "experiential learning," which was given as a key influence on the social trend by Litwak (1993), and which stresses interaction whereby an individual has some experience which leads to consequences (discrepancy), causing reflection, modification of mental models, and leading to opportunity for new experiences.[1]

What is not often noted is that according to this model there are several embedded requirements that do raise issues for social focus. First is the basic importance of the progression itself. The aesthetic experience outcome is of course a goal, but it is also temporally tied to the previous outcomes noted above, requiring a viewer to move, *often within one encounter*, through assimilation and secondary control, before arriving at aesthetic end. When we do look to a museum viewer, our research shows that this progression can literally be traced. As shown in the right side of Figure 1, a viewer's path that does end in epiphany or happiness will also correlate to earlier anxiety, confusion and reflection on the self. The same can be said for appraisal of artworks, which is not static but evolves as a viewer moves through the stages of viewing. Again in our own research, viewers can be seen to move from rather ambivalent judgments (probably the most common reaction to a museum work), to marked negative evaluations within secondary control and only after this full progression to the most positive end.[2]

Equally important, when looking to this full progression, there are two major requirements. First, a viewer's path must begin with *not* sufficiently understanding or (at least at first) *not* mastering their interaction with art—essentially they must fail in their attempt at control or encounter discrepancy. And it is only when the individual, on some level, comes to

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[1] This outcome can also be fit to what curators themselves say they want for their visitors. In review of the American Association of Museums' first seminar on "Learning in Museums," Meadows (1997) notes that visitors should have an "engaging and interesting experience" where ideally something should happen "in their feelings, their heads, their memories," leading to enlightenment, emotion and self improvement (see also McCracken, 2003; Packer & Ballantyne, 2002). This final outcome and its distinction from the other end-points posited in our model can also be connected to what educators *would not want to happen* for guests. Meadows (p. 21) recalls Dewey's "noneducative" or "miseducative" experiences whereby "a visitor is bored in a gallery" or "is kicked [or kicks themselves] out," most probably also leading to lack of understanding and negative emotion/evaluation.

[2] We are also not claiming that it is *only* through discrepancy resolution that a viewer will come to positive evaluation of art. In fact, the initial reaction to works can often be pleasurable or rewarding if one finds that they can immediately appreciate or understand. However, we would argue that these reactions are in response to more surface elements, presuppose a matching of art to schema/expectations, and therefore often do not have the depth or impact of experiences involving the full model progression.

acknowledge this that they can move on. In turn, in order to move out of secondary control, one must further become self aware. As noted by Steele et al. (1993) self-focus acts as a catalyst in a discrepant encounter. While it forces subjects who anticipated doing poorly to abort through reclassification or escape, as were the prime outcomes of secondary control (Ingram, 1990), it induces individuals who cannot break off their encounter to enter this period of meta-cognitive re-analysis (Duval & Wicklund, 1972) and potentially aesthetic response. This is often tied to some perceptual "trigger"—a climax, a feeling/awareness of the body, a surprising detail—which serves as a "punctum" (Barthes, see Fried, 2005) forcing awareness of one's position, expectations and ultimately of oneself.[3] It is this self-awareness and reflection—begun by initial discrepancy— that is then the final psychological element leading to rewarding experience. It is also these checkpoints that are specifically impacted by social encounters—a phenomenon perhaps best exemplified by a museum study of art.

Case Study: A Curious Finding of Social Interaction in Three Encounters with Art

In tandem with our model, for the past several years we have been conducting empirical studies of interactions with museum art. Among our studies, we have had the opportunity to consider three instances of work by one particular artist, in three similar rooms, which together with our above model, raise an intriguing aspect for social interference.

The artist Mark Rothko is an important representative of the mid 20th c. abstract expressionist art, and a well-known figure in modern painting. His works (see Figure 2), typically consist of one or more rectangles or bars of color set against a differently colored ground, and are a common feature of most modern museums. His works, perhaps because of their abstract simplicity and intense color, are often noted especially by lay viewers for their beauty. They are also well respected by more expert viewers as pioneering examples of abstraction and the burgeoning "American" style of painting (Borchardt-Hume, 2008). In fact, Rothko paintings are often noted by curators (c.f. Elderfield, 2005) as one of the more universally appreciated examples of contemporary art within their museums. At the same time, Rothko is an intriguing target because his works are particularly notable for aesthetic experience. There are a number of critical writings that note the above considered emotions: confusion, anxiety, tension (Elderfield, 2005), self-awareness (Nodelman, 1997). Critics also note epiphany, relief and perceptual or conceptual transformation (Elderfield). Even more, this reaction is caused

[3] It should be noted, as we have discussed elsewhere (Pelowski & Akiba, 2011; Pelowski et al., 2012), that a feeling of being watched by another human, or even by a painting (see also Duval and Wicklund, 1972), *can* act as such an impetus/"trigger" for self awareness. Thus this *could* be one means of ushering in aesthetic experience. However, as we will argue, due to the social overtones of this trigger type, and to external factors discussed below, for many it most probably marks merely high potential for disrupting experience.

by, objectively speaking, quite "simple" objects. As abstract works, despite Rothko's mastery the paintings are rather austere. Although perceived as paintings in the classical sense, the artworks cannot be said to depict anything. Because of absence of mimetic content, they are unlikely to evoke highly personal associations, coming in fact to mimic the ideal abstract stimuli for assessing underlying cognitive bases in art viewing (Jacobsen et al., 2006). In fact according to critical analysis (e.g., Jones, 2002) they often cease to be seen as mimetic paintings and instead become 'just' two-dimensional fields of brushstrokes and paint which viewers respond to in a number of facile/positive/negative ways.

This is exactly what we have found in our empirical research. As noted above, we previously analyzed three collections: A permanent gallery of black and purple paintings in Houston, U.S.A., known as the Rothko Chapel; a similar room of red and black works in Kawamura, Japan; and a larger special exhibition of Rothko paintings in London's Tate modern.[4] While each of these spaces does of course have its own characteristics (see footnote below),[5] for the purpose of this paper what was most intriguing was that, at the level of basic design, these spaces are quite similar. Each has basically the same arrangement (Figure 2): one or a few closed rooms with only Rothko's art, simple benches, and no extraneous information—labels, windows/ doorway or other paintings—which could impact the resulting experience.

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[4] This exhibition—"Mark Rothko the Late Paintings," held from September, 2008 to the end of January, 2009—marked a large retrospective of works from the artist's later years. The room included a number of galleries all devoted to different paintings as well as a large main gallery of 14 paintings from the same series as the Kawamura art (with five of the same paintings borrowed from the Kawamura museum; see Borchardt-Hume, 2008). This room was the focus of our study (see also Pelowski et al., submitted).

[5] The authors of course also acknowledge that each gallery space is unique and has its own specific features that may play a role in the experience. We do not wish to minimize this aspect, merely to note that it is not specifically important for the present discussion which introduced these rooms solely as a basis for a deeper consideration of social meetings occurring in Kawamura. For those interested in other differences, it should be noted that especially the Houston room was created as a permanent gallery for a set of Rothko paintings, and designed by the artist. In turn, this space, especially in its octagonal nature, and staggering of hanging heights, may provide one of the most successful examples at evoking aesthetic experience (Nodelman, 1997). Likewise, the paintings in this space, which mark some of Rothko's last, and which are of quite somber colors, may also play a role in assessment. On the other hand the works in Kawamura and many of those in the Tate represent an earlier attempt by the artist to create a commissioned space originally intended to hang in the Seagrams building of New York (see Borchardt-Hume, 2008). These works have brighter colors and may evoke different response (although we have not found this to actually be the case in empirical study; Pelowski et al., submitted). Finally, regarding the name "chapel" in the Houston space. It should be noted that, despite original intention of the founders that it be a Catholic church, this never materialized. Rather even during the time that Rothko was working on the paintings and building, its purpose had been changed to that of a non-denominational community space. It is also clear from the statements of Rothko that he never intended the art to have direct religious connotation. According to his studio assistant, Rothko "hated that kind of talk" (in Barnes, 1989, p. 44). Ultimately, while name and other factors should be considered, viewers are reacting to 20th century abstract art.

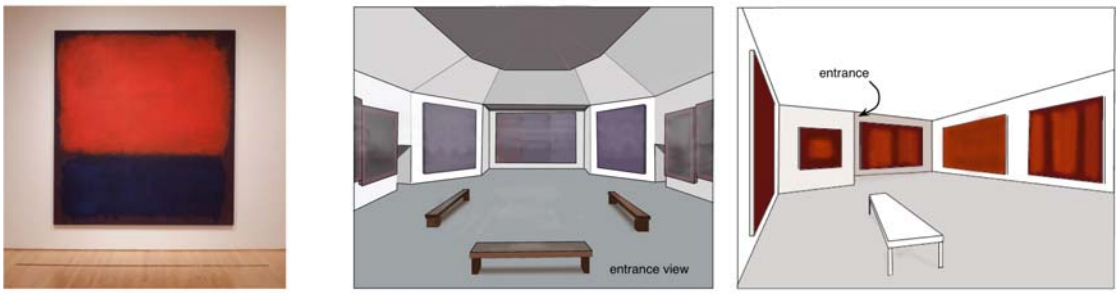
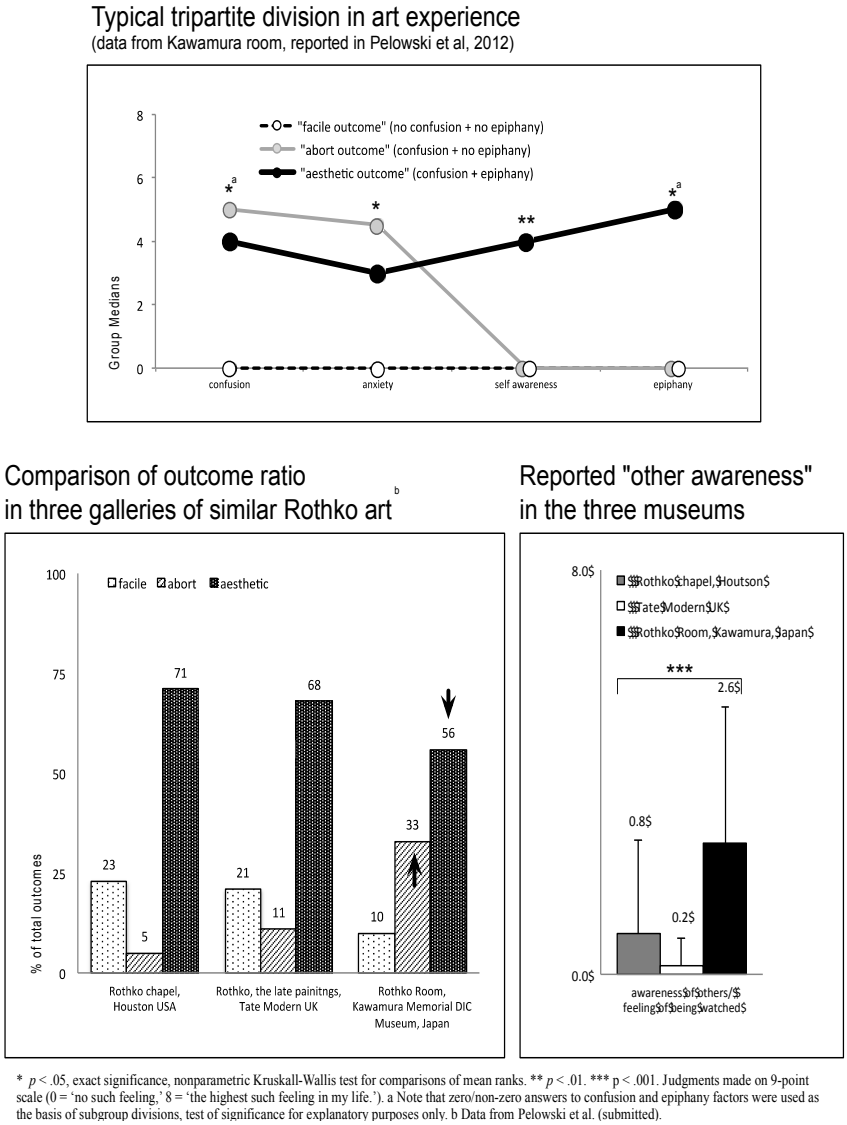


Figure 2. Examples of Rothko painting and 'Rothko rooms': Left, Mark Rothko, *No. 14* (photograph by Notnarayan (Own work), public domain image via Wikimedia Commons*)*. Middle, illustration of the Mark Rothko chapel, Houston Texas. Right, Mark Rothko room, Kawamura Memorial DIC Museum, pre-renovation. (Illustrations by first author).

Methodology and findings can be found in Pelowski et al. (2012); see footnote for brief summary).[6] Essentially, we assessed a number of emotions and art assessments described above to demarcate the varieties of experience, and arriving at the three posited outcomes. First, assessment may often be rather facile. As with any abstract work, viewers may first begin with simple hedonic or mimetic responses. Especially because of the large scale, as noted by Nodelman (1997), viewers may have a sense of meaning, and often find significance in the brushstrokes or blocks of color. Viewers may also of course respond to the art's critical-historical importance, or check off a line on their internal list, having just seen a 'Rothko' painting. When looking to our data, viewers in this outcome are notable for generally no emotion, shallow assessment and short time spent viewing (see for example the white circles in the top box of Figure 3).

[6] Studies were made by pre- and post-viewing survey, eliciting responses to a number of scales regarding emotion, understanding and artwork evaluation. Studies were further designed to allow the viewer to look at the art at their own pace, without observation, so as to best capture a "natural" art experience. Reported studies here and in the following sections also all refer to single or paired adult visitors. This focus, omitting especially children and larger groups, follows discussion (McManus, 1991; Packer & Ballantyne, 2002), which suggests that, while single or paired adults have quite similar viewing behaviors, other groups do not often approach art to the depth or have the same potential for cognitive/emotional reactions, which again are the focus of this paper.



* $p < .05$, exact significance, nonparametric Kruskall-Wallis test for comparisons of mean ranks. ** $p < .01$. *** $p < .001$. Judgments made on 9-point scale (0 = 'no such feeling,' 8 = 'the highest such feeling in my life.'). a Note that zero/non-zero answers to confusion and epiphany factors were used as the basis of subgroup divisions, test of significance for explanatory purposes only. b Data from Pelowski et al. (submitted).

Figure 3. Typical tripartite progression in art experience, differences in ratio of outcomes, and incidence of reported other awareness or feeling of being watched in three galleries of Rothko art.

On the other hand, as also shown in this figure, viewers may also have negative response. Again, looking to critical analysis, this may be caused by the paintings' simplicity. While visitors may come with an initial sense of meaning or attempt at direct mimetic interpretation, according to Nodelman (1997, p. 333), as an individual attempts to fit the paintings together, because of their austerity they can "render [such interpretation] untenable," leading a viewer to decide that there is no meaning/significance. This reaction too is quite common with abstract works. In turn, looking to our data (grey circles in Fig. 3), individuals who stop at this

point do often show high anxiety and confusion. They also show quite negative art assessment of goodness or beauty, and lack self-awareness, understanding or insight.

Last, viewers may also have "aesthetic" experience. Represented by the black circles in Figure 3, this outcome can be identified in all three galleries by confusion and anxiety, in addition to the latter reactions of self-awareness, motive re-assessment and "epiphany". Here as well, critics have documented potential reasons for this event. The epiphany may come through some shift attention to the self and to one's own act of viewing. "Frustrated and thrown back to yourself" Nodelman (p. 297-334) concludes for viewing Rothkos, "you think about your conduct, your body." The art, "forces disturbing questions about the nature of the self," and its expectations for finding meaning. This self-confrontation for some viewers may in turn induce an expectational change, in which we "may emerge on a new plateau" of understanding where one looks away from finding meaning within the art to a realization of their own contribution. Regardless of the exact reasons, this final outcome is also tied to positive hedonic evaluations of beauty and goodness, sense of understanding and sense of "meaningfulness" as well as longer time spent viewing. As also shown on the left side of Figure 3, the same patterns were found in all three museums, despite the different languages, contexts and viewers (see also Pelowski et al., 2012 for cross-cultural comparison between Western and Japan studies which also showed no significant difference; also Smith et al., 1994). At the same time, despite uniformity in the *types* of experiences which viewers could have, comparison also showed that there was an intriguing difference in their *distribution*. As shown in the bottom left of Figure 3, while Houston and London saw roughly 70% of viewers achieve aesthetic experience—with very few stopping in secondary control and the remainder ending in facile mastery—in Kawamura fewer (56%) reported aesthetic experience, few reported facile or non-discrepant outcome and a higher number (34%) reported negative outcomes with the art.

Why the Disparity? Physical Elements of Social Interaction in the Kawamura room

To better understand this disparity we looked to the movement and behavior of individuals within the Kawamura room. This was conducted as an empirical observation of 65 adult subjects, made over three days and using a checklist to record actions, movements and engagements with the paintings.[7] When we explored these elements we again found one key

[7] More extensively, methodology for in-room observations was made following procedure of Bitgood and Patterson (1993), wherein the first visitor to enter the gallery was selected and observed until he or she left the gallery, repeating with the next visitor to enter after the previous visitor's exit, and so on. Visitor movement was traced on a floorplan of the gallery, recording time spent viewing, time stopped at a painting, distance from painting, notable actions and utterances made by visitors. Location of other viewers in the room was also recorded for each observed subject, as were any between-visitor interactions. Observation also only targeted single/paired adults (see footnote 6). Due to the dynamics of the museum (a rather remote, private setting

difference. Whereas the Houston and Tate galleries were by square area much bigger environments, the Kawamura room at the time of this study represented a much narrower space. This in turn came to have a profound impact on behavior when engaging the art. Looking to a typical adult art viewer's movements (see Figure 4), patrons first entered the room through a short hallway with a right angle, revealing at once the entire gallery and most of the artworks it contained. The viewer invariably paused in this doorway, presumably forming a classification as it was reviewed above and accessing the proper schema (if it at all differed from what they had adopted in the drive to the museum itself) for what they expected to find and the goals or expectations they hoped to match. After this they would embark on a circumambulation, moving from painting to painting.[8]

However, upon entering the doorway and pausing to survey the room, and *before* engaging the art, it also appeared that viewers were making one more assessment. While a viewer, faced with an empty room, would typically make a full leftward circumambulation, in practice the room was often not empty but had other viewers, especially seated in one of four locations on the bench. In turn, as a viewer moved about the room, the specific direction of their movements and the path that a viewer would take, the amount of time spent and even the specific paintings seen came to be determined in almost all cases by the location of other individuals within this space. These locations were primarily centered on two points: the bench, located in the middle of the space and in the far corner where the in-room docent stood. Viewer interaction first showed an effect from this seated viewer. Upon entering if another viewer was sitting on the bench facing to the right (viewing paintings 6 or 7), 100% of viewers moved left. If another was looking left (position 2 or 3), viewers moved right, 91% of the time.

The determinant factor of viewer action in these cases, or what was being avoided, was not another viewer *per say* but their pool of vision—most often trained upon the particular painting ahead. As shown in Figure 4, it was a quite common occurrence to observe a viewer wait, just outside another's pool of vision, trained on the next painting in the waiting viewer's natural progression, until the other had moved their gaze. Viewers also often—if they desired

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requiring a substantial trip) there were very few children and larger groups in attendance during our testing period. There was also a generally low level of crowdedness, with only one or two viewers (plus an individual on the bench) at any given moment.

[8] This progression is also a typical behavior. previous studies (e.g., Bitgood, 2006) have often shown that the typical museum pattern is to complete a full circle, following the wall in the direction along which one enters (in our case to the left), until one comes again to an exit, after which they will leave—unless either something engages their interest or impedes their path.

to view an already visually occupied work—approached another viewer from behind, with the bench between them, looking over their shoulder and in this way viewing a painting without themselves being seen. Initial avoidance of seated viewers was then coupled with a subsequent interaction with the docent standing in the far corner. This again occurred in two possible places depending on which direction the viewer had initially moved. If a viewer entered moving left, upon turning the corner from painting 4 to 5 (Figure 4), they immediately came face to face with the docent gaze. In a likewise fashion if a viewer moved right, they encountered the docent upon turning the corner from paintings 7 and 6 and moving toward painting 5. Our observations quite clearly showed that these gaze avoidances came to have profound effect on behavior. Of thirty-eight (58%) of viewers who initially moved left, 29% (n = 11) stopped and turned around when hitting the corner of 3/4. Of 27 viewers who moved right, 22% (n = 6) turned around at painting 5 in front of the docent while 37% (n = 10) turned around and left at the first corner.

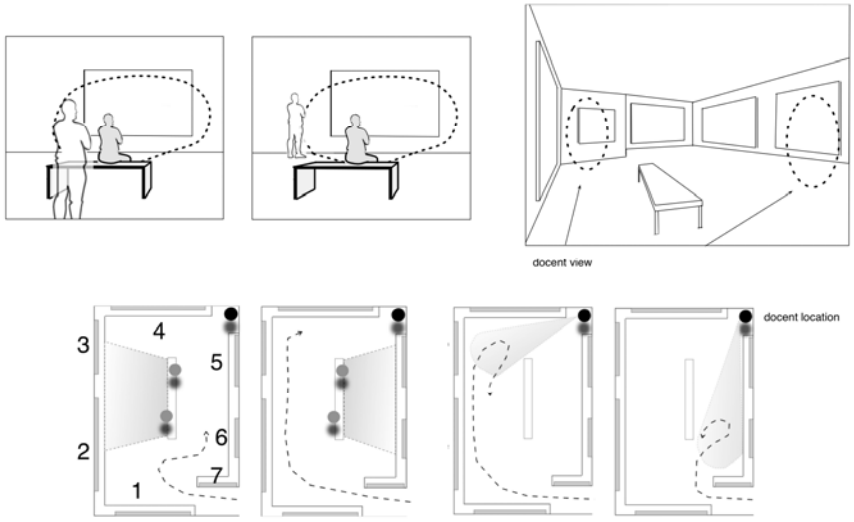

Figure 4. Gaze spaces in Rothko Room, Kawamura Memorial DIC Museum, pre-remodel.

The above behavior also connected to very real impacts on interaction with the art. Most basically, depending on the others' positions, a viewer would only see half of the artworks. Viewers entering the room when others were sitting at the bench front (position 2 or 6), meant looking at one to ½ painting less than if the other visitor were at the back of the room. In regards to time, when another individual was sitting on the bench near the room entrance, viewers spent roughly one less minute inside. That is, if we compare these findings to the room layout, the time spent inside and the amount of gallery covered, results align almost exactly to the amount of time and space available before one came upon a point where they had no choice but to enter another's gaze. And it was at this point that most viewers presumably decided to leave. Evidence also appeared in our surveys for this same element. As can be seen on the right side of Figure 3, one of the only reactions that occurred at a

magnitude significantly higher than the other rooms in the Kawamura space was a specific "awareness of others" within.

Why Walk Away? A Psychological View of the Social Self in Art Experience

This brings us to this paper's new discussion: despite the differences that may be contained within these different museums, and focusing only on Kawamura, why is there such a seemingly profound impact from other viewers in the narrow gallery space? What is the reason underlying the avoidance of another's gaze? There is in fact a good deal of literature, within the realm of social psychology that we can attach to this discussion, and which quite uniquely dovetails to our above discussion of personal aesthetic experience.
As in the above discussion, we might theoretically return specifically to the pause and the assessment made by a viewer at the entrance—with another aspect of the image of one's self.

According to Rapee and Heimberg (1997; preceded by Ingram, 1990; Rothbaum et al., 1982; Schlenker & Leary, 1982; Fenigstein & Scheier, 1975; Duval & Wicklund, 1972), while viewers carry conceptions with them into a task, so too do they hold expectations for the social environment and their social self within this setting. "On encountering a social situation," they (p. 742) argue, before any processing of specific tasks, interaction begins with a classification of this social landscape and the social balance between an audience and their self. "An individual forms, a mental representation of his/her external appearance and behavior as presumably seen by the audience. The individual simultaneously formulates a prediction of the performance standard or norm, which he/she expects the audience to utilize in the given situation. The representation of how the audience is expected to view the individual and the appraisal of the audience's presumed situational standards are compared [to one's image] to provide an estimate of the audience's perception of the individual's performance... a determination is made whether the individual [is likely to] perform in a manner which meets the presumed standard of [the] audience in a given situation" (p. 743). Essentially this means that we actually have not one but two self-images. As a viewer begins to engage art, they do so carrying not only an image of their personal self, but also a separate conception of its social manifestation. While as noted above the former is relatively static, the latter is more fluid, composed of the static hierarchical self image and its relative relation to the others in the social space. As shown in Figure 5, the individual enters a social setting, assesses the others and the conditions or context where these others will act and considers the hypothetical other's skills and proficiency. Looking into the mirror of the others, they see their static self and, *through the other's presumed gaze,* determine their self-image as it will be publicly viewed.

In turn, as Schlenker and Leary (1982, p. 651) note, in cases where there is a presumed negative or troubling imbalance between the audience and this social self—because one

believes "they do not possess the attributes, skills, accomplishments, or resources… required to make a successful claim" to the social space or its contained tasks—one goes on to consider the probability that this assumed discrepancy would lead to a negative audience evaluation. And it is this expected negative evaluation, the fear of 'looking the fool' or being out of place, that marks one of the strongest motivating forces in viewer psychology, has a powerful impact on behavior, and returns again to the basic need for protection of one's self.

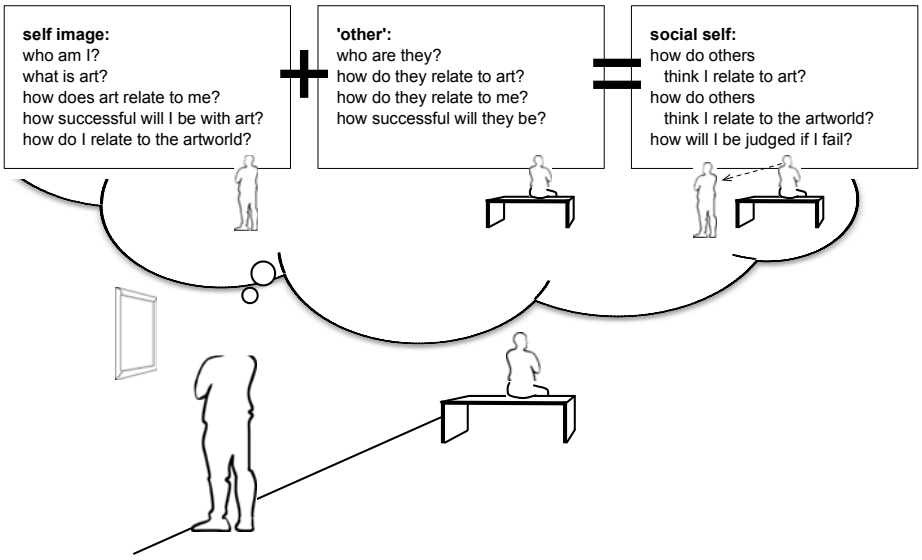

Figure 5. Basic elements and process of forming a "social self" (based on Rapee & Heimberg, 1997).

"When an individual appears before others," the sociologist Goffman (1959, p. 242-243) says, they "knowingly and unwittingly project a definition of the situation, of which a conception of him [or her]self is an important part. When an event occurs which is expressively incompatible with this fostered impression, significant consequences are simultaneously felt in three levels.... First, the social interaction, may come to an embarrassed and confused halt. "Secondly," with failure, the individual's social standing or (presumed) place and connection with society "may be weakened." Finally, returning to the more static self, because "the individual may deeply involve his ego in his identification with a particular [social situation,]" as with any failure, "the self-conceptions around which his personality has been built may become discredited." Therefore, if discrepancy is detected and negative evaluation likely, a viewer will essentially shift into a mode of escape or secondary control as introduced above (Rapee & Heimberg, 1997; Schlenker & Leary; Kleinknecht et al., 1997)—with the maintenance of the self and avoidance of social failure becoming paramount.

Rapee and Heimberg (1997) list three such strategies for responding to social imbalance—emotional, behavioral and cognitive—all of which would impact on the viewing of art. First, as noted with other forms of discrepancy in one's cognitive tasks, detection of imbalance between one's expectations and the social self would manifest in anxiety. "The greater the predicted probability and consequences of negative evaluation," they argue (p. 748), reviewing several studies showing this essential emotional result, "the greater the anxiety in the situation." In turn, viewer response to this anxiety will be to avoid or diminish it. The viewer who detects social discrepancies will shift their focus away from art to the specific evaluation and search for social danger or negative appraisals from others within the social space. Viewers will also shift cognitive resources to monitoring their own behavior, checking for actions that would draw attention from others or would be out of line with their presumed standards and thus confirming the individual's social inadequacy fears. At the same time, viewers will also minimize their own cognitive involvement so as to reduce the possibility for failure, shifting resources away from the task in order not to open a possibility for failure and therefore danger to the social self. Finally, Rapee and Heimberg (1997; see also Schlenker & Leary, 1982) add that subsequent action will be driven by the avoidance of potential meetings with others in the space, with viewers likely exhibiting "subtle behaviors aimed at reducing the potential for social interaction" (p. 750). These may include "avoiding eye contact, reducing verbal output, and standing on the periphery of the group" (see also Rothbaum et al., 1982; Moukheiber et al., 2010); or essentially the avoidance of others, the disengagement, and the navigation around another's gaze found in the Kawamura room.

Social Interaction Impact within Processing of Art: A Return to the Aesthetic Model

This social processing, we would argue, was the key driving element of the behavioral outcome found in Kawamura and is also a common factor underlying engagement with publicly displayed art. The gaze space in turn, while interesting on its own, is simply a physical manifestation and specific test of this social assessment. While social imbalance can be avoided or managed for some time, stepping into the pool of immediate vision of another is akin to stepping on stage. It is a point where one must specifically confront another's presence and observation. And as the above museum study would suggest, it is this check and chance of social interaction that can have a profound impact on the assessed art and resulting experience. It must be stressed that Kawamura is also not unique. In our studies we have found similar reactions within the Rothko gallery of the Tate, where viewers stood shoulder-to-shoulder, backs against the wall, in order to avoid stepping in front of each other's view of the art. Similar studies have found this reaction in other museums or galleries, especially showing a inverse correlation between crowdedness and time or depth of looking (Bitgood & Patterson, 1993; Bitgood, 2006; see also Griswold et al., 2013). This appears to be a natural human reaction within especially an intimate social environment such as a museum, and it is no mistake the bulk of the literature on this issue itself comes from outside the arts—from

supermarkets to lavatories (e.g., Goffman, 1963, 1967; Molotch, 2010). The same universality can be argued for the Kawamura viewer. Research on social assessment (Kleinknecht et al., 1997) has stressed the basic equivalence of this process across cultures, as well as specifically between Western viewers and Japanese. What is also important, returning to our above model of viewing art, is that a large amount of literature can be connected directly to the specific elements—discrepancy and self awareness—noted above as key points of demarcation in aesthetic experience. We have in fact considered this, updating our model to include this social element. As shown in Figure 6 below, social processing (shown on the right side) might be said to run in parallel to cognitive interaction and understanding (left) and to play an important role within each stage a meeting art.

1-2, pre expectations and cognitive mastery: First, returning again to the viewer pausing at the entrance to a gallery, we would first expect this initial social appraisal to occur at that moment when a viewer first surveys art, in tandem with or perhaps even before one classifies and makes an initial art assessment. It is only following this initial social check and artwork classification that a viewer will then engage —"allocating cognitive resources" such as attention or focus (Rapee & Heimberg, 1997, p. 748), to either the social setting or its art. In turn, should a strong imbalance be detected, experience would most probably end abruptly at this point. Individuals who find themselves at the entrance to a gallery and strikingly out of their element would presumably not even attempt to set foot inside, pausing, backing out, turning around to instead seek out a more comfortable space. Even in cases where a social imbalance is detected yet a viewer is unable to quickly flee—for example, a 'captive' audience or a situation where one finds that all heads turn toward oneself and one realizes that a hasty escape would actually be worse, drawing even more embarrassment or attention—impact of this social check and social imbalance would also be profound.

Given an assessment of discrepancy and resulting anxiety, the viewer's cognitive switch of resources to the monitoring of the social space and one's actions within would mean that the act of looking at art would be greatly diminished. "There is a wealth of evidence," note Rapee and Heimberg (p. 745), "to suggest that [social] anxiety is associated with decreased performance on complex cognitive tasks, and it appears that concerns about evaluation are largely responsible.... Thus, there will be some situations in which individuals with [perceived social imbalance would] actually perform worse." Ingram (1990, p. 160) adds, such individuals "spen[d] less time generating task-relevant cognitions, reported more… task-generated cognitive interference, experienced more task-irrelevant cognitive distractions," and would also show lower ability to generate the sustained concentration necessary for deeply engaging art. This may even be the case in situations where one does not find a dire social imbalance—either because they have a sufficiently high self-opinion, a sufficiently low or ambivalent expectation of the task or a low, unspecific image of the others. The mere potential

for a troubling interactions—such as another viewer sitting at an inevitable bottleneck in the gallery space—may be enough to shift an individual's resources away from an intense interaction to essentially what is the 'facile' end (outcome 1).

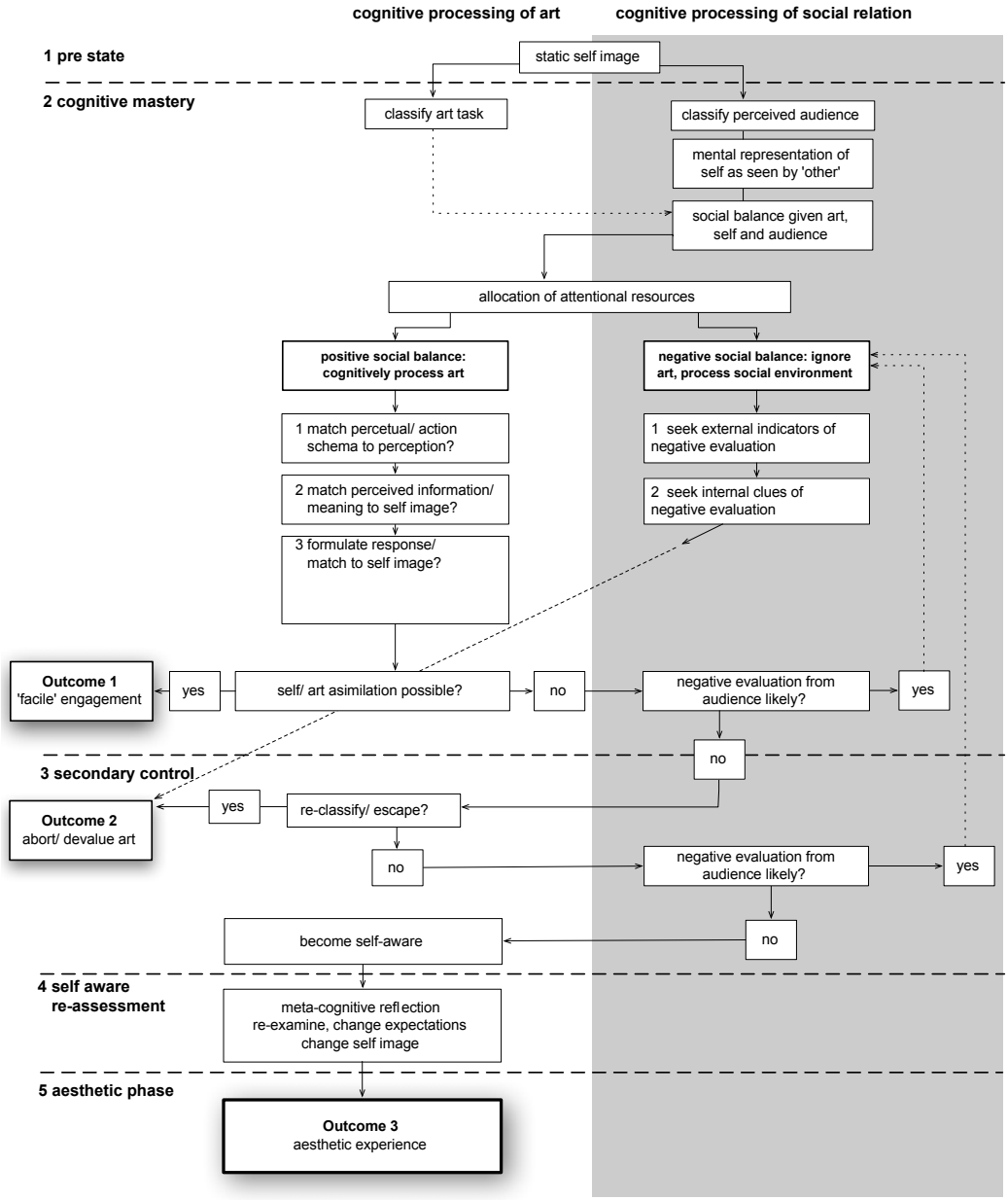

Figure 6. Cognitive flow model of aesthetic experience (left side) integrated with parallel processing of social self (right side). Possible outcomes highlighted.

3-4, Discrepancy and secondary control: Even after assessing an environment as suitable for art viewing and an audience not too demanding or esteemed; stepping into the room, the

balance of social assessment arises again upon encountering the first key aesthetic experience element—discrepancy or confusion. While this was argued to be a central step in a rewarding art experience, ushering in the possibility for novelty, change and even final pleasurable or transformative experience, Rapee and Heimberg (p. 745) also note that, much as discrepancy can lead to a quick disengagement, because of its inherent threat to the preconceived self, one's social "perceptions of 'poor' performance," within the social space, may "also provide" a "powerful indication [of] an inept appearance to the audience" leading to a negative evaluation of one's social place. That is, should a viewer encounter a discrepancy in their cognitive interaction, depending on the robustness of the initial social self, this may in fact change their previously perceived social arrangement suggesting that they are in fact not of equal standing, tipping the scales toward disengagement. Therefore, here too, following discrepancy we would expect another switch to the right side of self processing, acting here as another gateway that must be passed through, and another potential impetus to negative experience.

5, Schema/self change, Self awareness and the 'Aesthetic' experience: Finally, even if an individual should allow themselves to encounter discrepancy in their engagement with art, and should they not immediately flee or devalue the art or its context upon discrepancy arousal, social awareness may again play a role in the next important element—self-awareness. As noted above, at some point following a discrepancy, in order for positive resolution or adjustment in the individual's conceptions or approach, one must engage in reflection, meta-cognitive consideration or essentially become self-aware. However, it is also this switch to self or meta analysis which social imbalance actively works against. Rothbaum et al. (1972, p. 23) note that "a well-replicated finding" is that those who have a particularly tenuous tie to the social environment or the audience in this space, "seek to avoid self-awareness," *especially following initial failure (i.e., discrepancy) in a cognitive task* and in cases where there is a potential for entering another's gaze. Gur and Sackheim (1979, p. 162) note, subjects who received prior negative task feedback—such as 'I couldn't understand art'—are the first to depart a room in which there is a potential for self-awareness. With socially anxious response, in fact the entire subsequent cognitive and behavioral mechanism is designed to both shift resources to the avoidance of social pitfalls such as another's gaze and to minimizing the possibility for reflection on the self (see also Wells & Papageorgiou, 1998), thereby halting art interaction at outcome two. Duval and Wicklund (1972, p. 71) have actually made this point specifically for the case of art. "As he enters a particular gallery… During the entire process of exploration and then fixation, the individual's scope of awareness is limited to [the art]… Now let us interject another person into the situation whose function is to stare at our [viewer]… This event expands the [viewer's] scope of awareness by forcing his consciousness to focus on the self, causing him to recognize that he is also an object in the world… [and only if] the art critic's self is defined as 'stronger' [than this audience, and only

if this social balance can be maintained throughout the entire encounter with art, is this viewer] "likely to become self aware." And only in this case would we expect the positive conclusion in aesthetic experience (outcome 3).

Implications for Education and Museum Interaction with Art

This above discussion adds a vital element to discussion of art, and an important new aspect for education. As was shown in the specific case of the Kawamura room, social processing might be an instrumental factor in the outcomes of the viewer in the gallery and even more a node of connection between action, expectations and cognition. This may in turn help to determine, even in the simplest cases, what an outcome will be, how one will react; whether one will engage or flee. Underlying this discussion is also a series of questions and key implications for the art educator and the museum, especially given the social focus outlined in the beginning: what, given this process of cognitive appraisal of social interaction, determines the outcome, either positive or negative, within a viewer's social assessment? What can a museum do to address social interaction's effect? It is with these points that we will conclude, returning to the discussion of art and museum experience that began this paper.

Individual, Contextual and Sociological Factors Contributing to Social Imbalance

To briefly review, the social interaction process can be thought of as essentially tying to three key elements, the image or psychology of the individual viewer, the perceived audience, and of course the physical, educational or social context. All of which can have profound effect.

General personality of the viewer: Beginning with the viewer, there are a number of general personality factors that can effect this process. First, Rapee and Heimberg (1997, p. 747) note that propensity to a social imbalance is tied to individuals who for whatever reason are "continually primed to detect threat from [an other] and to respond with submission." People with propensity to finding imbalance are those who believe that "other people are inherently critical, i.e. likely to evaluate them negatively" and are those who "attach fundamental importance to being positively appraised." Mor and Winquist (2002) also note social imbalance may be higher in individuals who are overly concerned about the way they present themselves, are concerned about what other people think and who have trouble working when someone is watching.[9]

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[9] There have been standardized measures in social psychology which might give interesting insight to the curator or ideas for future art research. The "Public and Private Self- Consciousness Scale" (Mor & Winquist, 2002) or "Fear of negative evaluation scale" (Rodebaugh et al., 2004), developed specifically to assess this propensity to socially-anxious outcomes. They includes elements such as: "I am concerned about the way I present myself." "I am concerned about what other people think." "Large groups make me nervous" etc.

General conditions of audience: On the other hand, there is also mention of several general elements that may relate to the audience. As might be guessed from the above discussion, others' appearance and their related expectations also play a role in the social assessment. Schlenker and Leary (1982, p. 653) note, "audiences who are perceived as especially competent, powerful, or critical should generate lower outcome expectancies" while simultaneously "evok[ing] higher standards than ones who are [presumed to be] easier to impress." That is, the more well-dressed or erudite the audience appears, especially in relation to one's perception of their own appearance, the higher the potential for perceived imbalance, making one feel that they are in a situation over their own head. They (p. 650) also note, "social anxiety [has] been found to increase in novel and unstructured situations and in encounters with people about whom [one] knows relatively little." This too might be quite indicative of art, where it may be the holiday visitor to a new city, or one who does not often partake of a museum who may feel particular threat.

Socio-economic elements: Perhaps even more important for this discussion is a consideration of underlying socio-economics or other socio-political/ educational elements. As noted by Goffman (1963, p. 220) for this general idea in sociology, it is precisely "the individual's relationship" to social occasions—such as the gallery—and the ways that individuals respond that "tells us something about relationships to broader units of social life." These relationships in turn come to play a key role in motivating behavior or the assessment of viewer and others. Taking the example of viewing art, decades of research on motives that drive visitors to a typical museum note of course general expectations of self-reinforcement, knowledge acquisition, stimulation and enjoyment (Goulding, 2000; Hendon, Costa & Rosenberg, 1989; Jansen-Verbeke & van Rekom, 1996). However, in tandem with this is an obvious social structure. As noted famously by Bourdieu (1968) and more recently by Eaton (1995; McCracken, 2003; Higgs et al., 2005; Hanquinet, 2013), the act of going to the museum or cultural center is also an act of social distinction. Numerous studies note that visitors often go to the museum with the expectation of gaining membership with a respected element of culture and to distinguish oneself from those 'others' who do not. Dimaggio and Useem (1978; see also Coffee, 2007) have noted in their studies that over half of museum viewers state that they go to the museum to be with people like themselves.[10] In turn, as for example noted by Leong (2003), if one, upon arriving at the museum, feels that they do not belong—

[10] Surveys of museum visitors, even in the present day, also suggest that this group is defined by a distinctive demographic. Surveys conducted for the National Endowment for the Arts suggest that most visitors share a higher than average annual income, a Euro-centric ethnicity; a post-secondary education and a white-collar occupation (Bradshaw & Nichols, 2004; Chang, 2006; Coffee, 2007 for reviews)—all of which may tend to lead to an assessment of not belonging by other viewers. Such findings are also true for non-western museums (Lin, 2006; Coffee).

because they feel that they are not a member of the group—we would expect heightened social imbalance and negative result.[11]

These points, when viewed through the above model lens, should be considered by the educator. First, when considering a patron's psychology, it may behoove us to find ways to better frame art viewing so that one feels less socially insecure. This could first be accomplished by "democratizing" the audience, substituting jeans and sneakers for the designer clothes of the stereotypical populous. There is evidence that such a demographic switch, in both attendee and in the type of art exhibited, has already started in many areas. Van Aalst and Boogaarts (2002, p. 198) notes that "in order to make the museum accessible to a wider audience, and specifically to visitors who have not been part of the traditional museum-going public, there are more and more blockbuster events and retrospective exhibits." Recent assessment of museum visitors (Peterson & Kern, 1996) has also shown that the high/low or "snob/slob" distinction between those who do and do not partake in art museums is shifting in favor of an '"omnivorous" visitor who enjoys a wide range of both low/highbrow events.

However, while a changing typical visitor may be the case, the key point remains—again based on the above discussion of social assessment—that regardless of the *actual* visitors in a museum, it is who the individual *imagines* others to be that is important. In this vein, perhaps ironically, many visitors still most probably harbor an image of the stereotypical other within the museum space which matches the snobbish highbrow. Therefore, in order to get the most traction from such demographic changes it may be best to make the *communication* of this shifting average viewer a main point of the information or promotion program of a gallery, highlighting the fact that the lay patron who visits twice yearly on holiday or to see a special exhibit is in fact the majority of a museum's guests.[12] At the same time, it is also important to

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[11] Chang (2006) also notes that this attitude is essentially the same for both those who never and who only infrequently visit the museum. Recent study by Higgs, Polonsky and Hollick (2005, p. 62) also finds that first time visitors to a museum (i.e., individuals who would be most likely to feel socially out) have in general "slightly lower expectations, possibly explained by a degree of uncertainty, which in turn gives rise to a tendency to underestimate expectations." This itself would be expected to lower probability for discrepancy, and therefore diminish potential for profound experience. It would also lead to quick escape should one encounter something unexpected.

[12] Interestingly, recent work in social psychology offers suggestions for interventions based on the above point. It is well-noted finding in regards to many programs meant to influence a desired behavior (increasing individual's likelihood to vote; decreasing littering etc., see Sunstein & Thaler, 2008 for nice review) that by merely informing people regarding the actual beliefs and behaviors of others (e.g., *"80% of people in this museum are here for the first time"*) they will substantially modify their own behaviors/beliefs. This suggests that, while a

remain heedful that the marketing of special exhibits *to* the masses may also reinforce a feeling of exclusion. Chang (2006) argues that by declarations about being inclusive, museums may in fact give a feeling of a false or *provisional* admittance. Even changes in museum attendance, suggesting a more egalitarian consumer, also belie an underlying division. Recent studies by Chang (2006) and Hanquinet (2013) have also found that while contemporary museum attendees may no longer be wealthier or older, this may be due to a higher representation of individuals pursuing graduate-level studies, implying again potential for a large segment of the populous, without 'sufficient' education or culture, to feel like they are not members.

Art Education and Museum-Viewer Communication: This above point in turn explicitly touches the topic of education. Focusing on programs that aid the viewer within the walls of the museum, we should be mindful of how communications can structure a context in which viewers do or do not feel empowered to deeply engage with art. First, a prime element may be the provision of didactic information or labels, accompanying art. While such information can play an important role in directing visitors' attention and stimulating interest (Bitgood & Patterson, 1993), such prominent displays of "official" artwork information, when occurring in a social environment, may also work to reinforce one's assumptions that they do not match up with the other "experts" (McCracken, 2003).[13] Argument can also be made for the inclusion of prominent docents or other "authority figures" whose mere presence might shift social scales. More basically, labels or docents may also serve to suggest that discrepancy or confusion—what we argued to be the initial key element for deepened engagement with art—represents a failure in one's social presence because other experts have obviously been able to successfully navigate the art. Kleinknecht et al. (1997, p. 172; see also Tucker, 2004) have made such an argument. They note, "the more respondents define their selves as independent from others" or a social group—as would come from the feeling that one's art opinion is unique and important—the lower their feeling of social imbalance and presumably the higher the likelihood of positive outcome when one does go through the process of art engagement.

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curator might think it goes without saying that the museum is populated by novices, this information is exactly what should be explicit.

[13] Recent studies have shown that removal of labels does not impede, and actually can enhance, enjoyment. Pekarik's (2004; see also Chang, 2006) study of a MOMA modern sculpture exhibition, which included only basic identification, revealed that "none" of the interviewed visitors pointed out the lack of extra information as a problem (p. 14). Similar argument has also been made for more classical or mimetic art (Pekarik). Similarly Baber et al. (2001), who investigated providing or withholding accompanying textual information have shown that inclusion of didactic content led to less careful observation and recall of the painting's physical elements. They explained this by arguing that "the presentation of information …minimized the need for participants to 'search' the painting themselves" (p. 444).

Therefore, one strategy may be to create educational programs designed expressly to 'empower' visitors. Of course one way of doing this could be to increase general education in the arts, thereby creating more-knowledgeable visitors—a strategy to which we would certainly not object. However, it is again important to remain mindful of the above point that individuals only need to *feel* that they themselves have adequate background to engage art. In turn, more in line with the above discussion, individuals need to feel that their own opinion matters, that there are no "correct" or incorrect understandings and that they are a valued Artworld element. Another approach would be to re-engineer communications away from emphasis on contextual knowledge to actively seeking individuals' own input. As noted by Litwak (1993, p. 113; see also Funch, 1993), "labels and brochures [could be] written so as to encourage discussion, debate, and the sharing of personal memories" (see also Meadows, 1997; Pekarik, 2004; Chang, 2006). Griffin and Symington (1998) also stress that visitors must be given a means of taking responsibility for their own interaction and to have purposeful, active involvement.

Social Strategies/Social Media: However, here we would argue that the educator should be careful with their strategy for how this might be accomplished. Many of these same arguments are given as the grounds for the current social push as reviewed above. This is also the obvious goal of social media, or the movement to "cooperative learning" (Litwak, 1993), which is seen as providing a forum to both connect visitors into comfortable social grouping and to allow for their personal involvement (Tesoriero et al., 2012). We would add however, that educators must remain mindful that this strategy may also backfire and disrupt art enjoyment. First, one must be careful not to make the experience too "social". That is, while these strategies may help to reduce anxiety from one's social self, they may also tend to steer viewers away from a truly personal interaction with the art. By switching interaction from a personal to a social experience, we might also remove the discrepancy and self-awareness elements from the experience. This might also potentially remove the grounds for aesthetic experience.

Similarly, one should be mindful of forcing debate or discussion, especially through social technology. While using social implementations can provide a ready social group and allow one to give their opinion, such approaches could also act to force individuals together into unnatural social meetings, leading to potential for anxiety in the digital or the analog space. It is important to understand that, while social clusters that individuals bring themselves to the museum have a built in peer structure, this approach may not work for the nameless others one meets in the gallery and with whom one must suddenly share their opinion. Interestingly, Litwak (1993, p. 113) gives a perfect example of such danger, arguing for a switch from use of didactic labels to a more viewer-centered social interaction space, they argue that museums should create debate and discussion among viewers, and further, in order to achieve this,

information and exhibits "can be designed to facilitate eye contact"—Chan and Yeoh (2010, p. 23) make a similar claim for creating "encounters". The argument of this paper of course suggests that we should be particularly mindful of this.

Physical Factors and Museum Design: Despite these long-term solutions that might be implemented above, perhaps most pragmatic, for an immediate impact on positive enjoyment of museum art, would be a simple consideration of the physical and social arrangement of the gallery itself. Here we might note two elements that may prove particularly rewarding. First, the number of other viewers: In this case there is also previous research. Schlenker and Leary (p. 648) note that, while of course the empty space with no others would be expected to pose no social threat, the room with only one or a handful of others may in fact pose the highest risk. This is because it is in these situations that a social interaction—the specific acknowledgement of each other—comes to the fore. On the other hand, "the greater the number of co-performers" in a room, "the fewer the disruptions," allowing a viewer to blend in to the faceless crowd and therefore undergo a private engagement (p. 648). However, we would argue that this might only be true to a certain point. Anyone who has visited the Louvre on a busy weekend and been herded past the Mona Lisa would have trouble imagining an aesthetic experience.

As shown in Figure 7, we can in fact posit a chart of likely aesthetic outcome vs. social awareness, with highest likelihood of the former and lowest likelihood of the latter at no other viewers in the room. This would be followed by a spike of anxiety, and lowest aesthetic experience probability at one or a few other viewers, then gradually declining until dropping off at some point ("n1" in the Figure) where an individual can comfortably blend in. This might then cause a second peak in possibility for aesthetic experience, until a second density point (n2) in which the room becomes "crowded" and one can no longer engage in personal contemplative experience. Museums might look to a certain density between anonymity and a crowded space. This would be an interesting topic for future research.

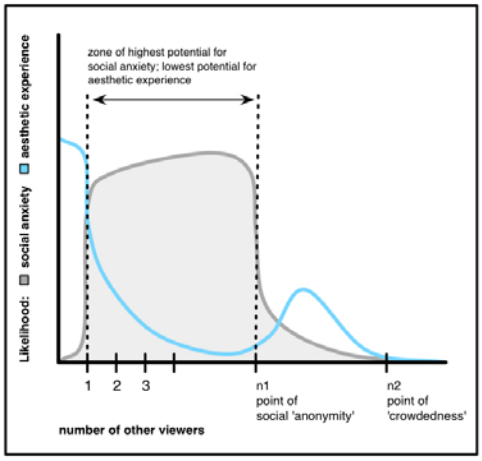

Figure 7. Theoretical relationship between likelihood of social anxiety and aesthetic experience for individual viewers, based on density of other viewers in the same public museum/gallery space.

Second, we might consider especially those stopping points such as benches and doorways which might serve as bottlenecks in the flow of patron movement, forcing social processing or decisions to leave. These especially might be considered by the museum. Interestingly, while there is literature on general crowdedness of museums and visitor circulation (Bitgood, 2006 for review), Alexander et al. (1977), writing for architecture, have actually given a specific rule that might be considered here. "To feel comfortable," they (p. 495-496) claim, "each person takes about two feet." They continue, "there needs to be about one foot between two groups which pass… and people usually walk at least one foot away from the wall. The [room's] width therefore should be at least 11 feet"— five feet per person plus one shared 'public' buffer foot. Even more specific to our case here, "a person seated or standing at the edge of a [public path]," our viewer as they walk from painting to painting in the gallery space, "feels uncomfortable if anyone [comes closer] than five feet." Thus, in places where seats are placed, "the [way] should widen to about 16 feet" (p. 496). The reason would seem to connect directly back to social assessment. "A comfortable distance between strangers is the distance at which you cannot distinguish the details of their facial features" (p. 496)—or again, cannot determine if oneself is being observed. As shown in Figure 8, this condition is met by both the Rothko chapel (left) and in the central gallery of the Tate Modern exhibit (middle). It was not met in the original Kawamura room.

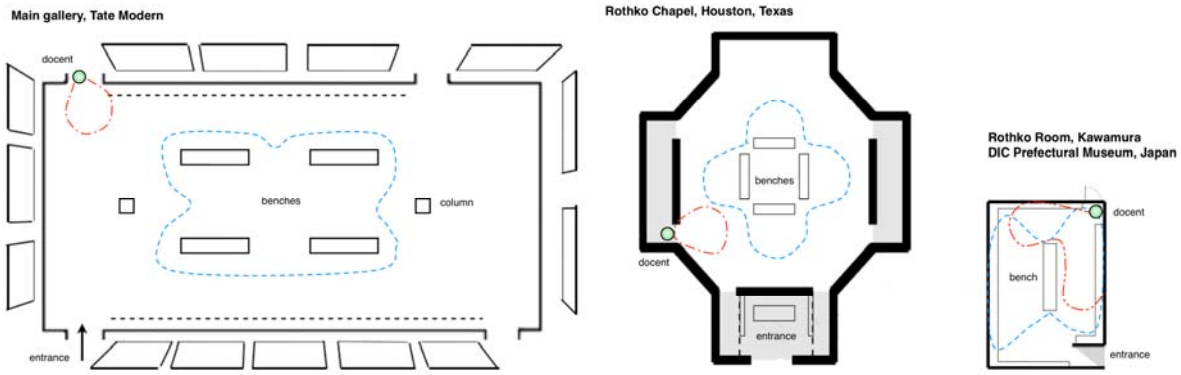

Figure 8. The three Rothko rooms showing gaze spaces in regards to "5 feet (plus one)" rule (Alexander et al., 1977) for comfortable movement in shared public space. Other art viewer gaze shown in blue. Museum docent (green circle) in red. Individual rooms drawn roughly to same scale.

Empirical Evidence from a Redesigned Kawamura Minimizing Social Engagement

Our initial assessment of the art appraisals and viewer behaviors in the Kawamura museum was done with expectation that it would soon be renovated. In fact, less than one month after our initial study, the room was closed for one year while a completely new space, specifically designed to hold the Rothko paintings, was built. One of the professed goals of the curator was the elimination of the cramped conditions of the former space and the creation of a gallery, much like the other Rothko galleries, allowing easier circumnavigation and interaction with the art.[14] A side effect of this project was also the creation of a space minimizing points of visitor interaction, and providing a compelling target for comparative empirical assessment. Figure 9 shows an illustration of the new space, designed with seven off-white walls, dark wood floor, and roughly 30% larger than before. The room retained the same art, with no new additions, however with the two largest and most visually compelling paintings moved to the back of the new gallery. Perhaps more important, the room incorporated two wide doorways and a smaller, less obtrusive circular bench placed in the center. Because of the room dimensions this bench sat further apart from all of the displayed paintings, with at least two to three meters between walking viewer and others seated on the bench. This was coupled with the elimination of the docent altogether—instead placing them in the entry hall just outside the space. As shown in the figure the results of these modifications, beyond resulting in a more modern gallery, was the creation of a path whereby a viewer could circumambulate, passing every work without intruding into viewer/docents' gaze.

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[14] From interview with Mrs. S. Hayashi, former curator of the Kawamura Memorial DIC Museum, May 2007.

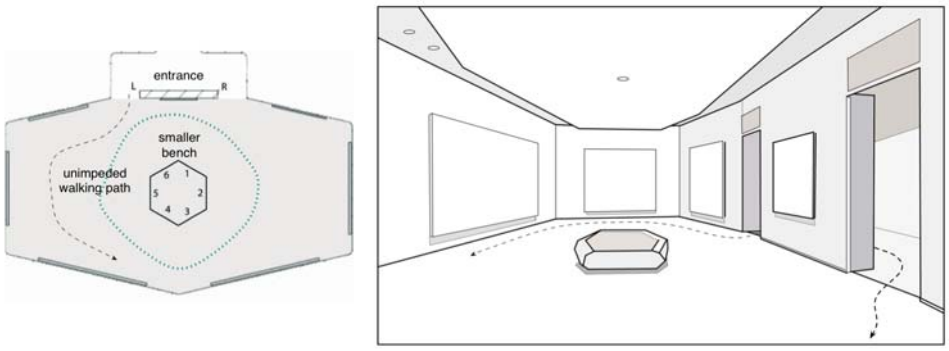


Figure 9. Floor plan and interior illustration of the remodeled Rothko Room, Kawamura Memorial DIC Museum, Japan. Likely other viewer gaze space shown in blue dashed line. Likely circumambulation route shown in black dashed line.

Method

To test impact of the redesign, a follow-up study was conducted a few months after the re-opening. The procedure was based on a method also employed in our previous studies (Pelowski et al., 2012; see also Packer & Ballantyne, 2002 for similar method). This involved the sequestering of this particular gallery to make a controlled space for recording interaction with the specific works, coupled with a post-viewing survey of the experience, and designed to allow for the capturing of a "natural" museum art engagement. Subjects were greeted by a researcher upon approaching the gallery, which sat at the back of the larger museum and at the end of a long hallway leading only to the target space. We explained that we were conducting research on its art, and asked guests if they would be interested in participating. Those who agreed were asked to enter the gallery, spending as much time and looking in whatever manner that they wished. Once finished, participants were asked to return to the testing location where they were immediately administered the survey. Participants were timed from entry to exit. However, no researcher was present, and participants were not observed, inside.

Measures: The survey duplicated that previously used in our first assessment of the Kwamura room (Pelowski et al., 2012), targeting a number of aspects noted to be of importance to art experience, and therefore allowing for a direct comparison between pre- and post-renovation, as well as measures assessing social anxiety/processing aspects which were expected to potentially be reduced post-renovation. This included the following main sections:

Emotional/Experiential Factors: We first asked viewers to first report on a number of scales relating to emotional experience (Table 1) which had been previously shown (Pelowski et al., 2012) to be key elements and means of demarcation between the main stages of our model.

These included: "confusion" and "anxiety," argued to mark a movement from an initial facile case; as well as "need to leave or stop looking," argued to arise in secondary control; "self awareness," argued to mark a movement from this second outcome, and final feeling of "epiphany" and "sense of artwork meaning," posited to mark insight/aesthetic experience. We also added two additional factors not used previously ("I changed my mind" and "questioned my motives"), which were also argued to mark the aesthetic or insightful end and were used in other studies by our team (Author, in press). Factors used a unipolar 9-point scale, with an answer of '0' corresponding to "no such feeling" and answers from '1-8' corresponding to some incidence as well as relative magnitude ('8' signifying "the most intense such feeling in my life").

Other Awareness/Interaction: In addition, this section included a question regarding awareness of other viewers or feeling of being observed, which again was noted as one of the key issues of social anxiety in the original Kawamura assessment. We also added a new question assessing awareness of one's own actions or body that was also posited to potentially tie to this point.

Artwork/Artist Appraisal: Viewers were also asked to make a number of evaluations of "the art" as well as "the artist" (in this case, Mark Rothko) using a list of 14 adjectival pairs separated by 7-point bipolar scale (e.g., 1 = "very good," 2 = "quite good," 3 = "slightly good," 4 = "neither good nor bad" etc., 5 = "slightly bad" etc.). These measures, based on the semantic differential technique (Osgood et al., 1961; also Berlyne, 1974) and previously discussed in Pelowski and Akiba (2011), Pelowski et al. (2012), included a collection of basic hedonic or evaluative measures (good, beautiful, meaningful) as well as measures assessing potency or dynamic aspects of the works (deep:shallow, intimate:remote etc.), which have also been shown to be particularly important measures when assessing artwork-viewer or Artworld-viewer relation. Scales have also shown widespread cross-cultural/ cross-topic reliability, especially between the West and Japan (Tanaka et al., 1963).

Participants: The survey was administered to 22 viewers (*M* age = 37.8; 14 female). These were compared to the results of the 30 original viewers (*M* age = 42; 21f) in the study of the pre-renovation space. All viewers in both the new and old studies were Japanese, and shared essentially the same socioeconomic and educational status, with no significant differences found between populations. In both study cases, the total samples reflected all patrons who consented to participate from among all who visited within the testing period (~60% acceptance). As also done in our previous studies, selection was confined to only single or paired adults (see footnote 6 above). This approach and collection of factors then allowed us to make a number of determinations regarding the outcomes viewers were having with the art. Specifically, we were interested in looking for incidence, and relative amount, of the three

main posited outcomes (from our previous model and empirical studies). We were also interested in comparing factors between room iterations to detect any changes in either outcomes, factors, or reactions that might be connected to change of the social or physical environment.

Results and Discussion

Looking to the results, first it is important to note what did not change from the previous art experience. Emotional and evaluative factors' relation found for this room showed essentially what we have found in our previous studies, and in the prior version of Kawamura. First, to get a general picture of the clustering of factors we looked for basic correlations between factors and "epiphany," again the measure argued to be a particularly salient indicator of the final aesthetic outcome. Due to the ordinal nature of the scales and minimal samples, non-parametric measures were used for all assessments. As shown in Table 1, epiphany (using Kendall Tau-b, see Kendall & Gibbons, 1990) was significantly correlated with "self-awareness," the second key element for the move out of secondary control, as well as "changed my mind" and "questioned my motives" both argued to mark the cognitive switch leading to learning or aesthetic insight. Epiphany also showed nearly significant trend of positive correlation with "anxiety," argued to suggest discrepancy and movement from the first "facile" interaction stage. In artwork evaluation, epiphany was also significantly correlated with finding the art meaningful, showed a nearly significant trend of judging the art more good ($p = .10$), and was significantly correlated with time. In addition, epiphany was also correlated with judging the artist as more "clear" rather than vague ($\tau_b = .442$, $p = .01$, not shown in Table).

As shown in Table 1, finding of significant correlation with time, as well as self-awareness and general finding of clarity/understanding were found in the original Kawamura room. We also found no significant difference between single or paired viewers as well as no effect from demographic factors in either old or new rooms. The basic progression posited for enjoying art became even more apparent when viewers were divided based on the two elements that we had previously argued (Pelowski & Akiba, 2011; Pelowski et al., 2012) may delineate the three main endpoints of art experience. This included: 1) viewers reporting absence of "confusion" as well as "epiphany" previously shown to coincide with the facile outcome (here n = 4); 2) viewers reporting confusion but no epiphany, signifying discrepancy but no resolution and presumably abort or escape in secondary control (n = 3); and 3) those reporting both factors, that is, those most likely to represent aesthetic experience (n = 12).

Table 1

Correlations of key emotion/experiential factors with epiphany in Rothko room pre- and post-renovation: Kawamura Memorial DIC Museum

	pre-renovation (N = 30)	**post-renovation** (N = 22)
	56%	68%
Emotion/Experiential factors		
anxiety	-.008	.313†
confusion	-.139	.180
need to leave	.225	-.078
self-aware	.685***	.535**
questioned my motives	----	.366*
changed my mind	----	.475**
understood artist intention	.426***	.138
Artwork evaluations		
art was meaningful:meaningless	.373*	.343*
art was good:bad	.233	.238†
Social anxiety elements		
aware of others	.280*	.082
aware of my actions	----	.351
time [a]	.382† (*M* = 4.9 min., *SD* = 4.3)	.356† (*M* =18.9, *SD* = 13.1)

* Significant at p < .05 (two-tailed). ** p < .01 level. *** p < .001, † p < .10
Note: unless otherwise noted, correlations based on non-parametric Kendall Tau-b.
[a] correlation based on Pearson product moment.

Analysis of differences between these groups showed again essentially what we have found before. As shown in Table 2, Kruskall Wallis comparison of mean ranks between these outcomes showed significant differences for anxiety, self awareness, changed mind, as well as for confusion and epiphany. Looking to the accompanying Figure 10, which compares both post-a pre-renovation, these differences again manifest in three distinct patterns described in the introduction as well. Whereas the no-confusion/epiphany group showed almost no other emotions, the abort (confusion + no epiphany) group showed a quite high amount of confusion (*Mdn* = 4 on 9-point scale) as well as anxiety, the highest amount of needing to leave the interaction with the art and very low/zero answers to the latter self-awareness/epiphany factors. The epiphany group, showed equally high amounts of confusion and the highest amount for all other factors, with the notable exception of needing to leave.

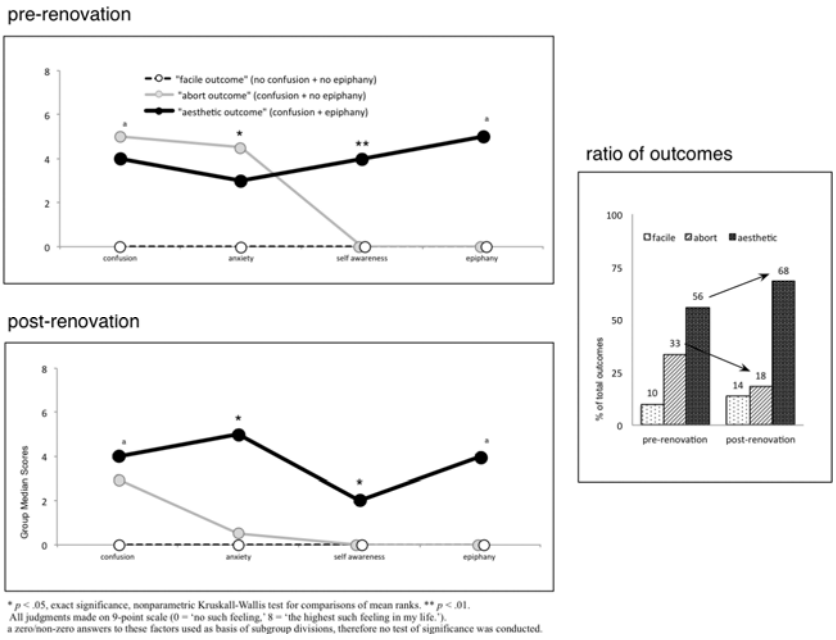


Figure 10. Same patterns, but different ratio of outcomes following remodeling. Rothko Room, Kawamura Memorial DIC Museum.

This important distinction between the epiphany and non-epiphany outcomes could also be seen in simple comparison between the epiphany/ no-epiphany groups. As shown in Table 3, if individuals reported epiphany, they had significantly higher anxiety, self awareness, feeling of changing the mind. They also evaluated the art as more good and meaningful, as well as had evaluations of more good for the artist. Without epiphany outcome on the other hand, and without the progression of reactions posited for aesthetic experience, their was significantly lower self awareness, lower incidence of changing the mind, and finding of the art and artist as more bad, as well as finding the art more meaningless—suggesting again the basic importance of this conclusion in museum interaction with art. At the same time, as in the original comparison between the three rooms above, while we detected no change in the varieties of outcomes individuals could have, we did detect a change in their ratio between the previous and the renovated spaces. Remember that the Kawamura room pre-renovation showed a stark dichotomy between viewers with confusion and no epiphany—the "abort" category tied above to discussion of social anxiety—and those reporting epiphany (or potentially "aesthetic") experience. This dichotomy, when compared to the other museums with similar art, was much more polarized and skewed to the negative variety. In the new Kawamura room, where before 10% had recorded facile outcome, 34% had recorded escape and 56% reported aesthetic outcome, now we find an essential reversal of these latter two categories. Fourteen percent recorded the first outcome, 18% recorded escape and 68% recorded epiphany and potentially aesthetic experience. This total came to almost duplicate the 71-68% found in the other Rothko rooms.

Table 2

Comparison of key aspects of art experience between three hypothesized outcomes (based on "confusion + epiphany" iterations): Rothko room, Kawamura Memorial DIC Museum, post-renovation

	sub-group	Median	Mean	*H*	effect size (η2) [a]
confusion					
	no confusion + no epiphany: "facile outcome" (n = 3)	0.0	0.0	---	---
	confusion + no epiphany: "abort outcome" (n = 4)	3.0	3.8		
	epiphany: "aesthetic outcome" (n = 15)	4.0	3.8		
anxiety					
	no confusion + no epiphany	0.0_a	0.7	**7.84***	.40
	confusion + no epiphany	0.5_b	1.3		
	epiphany	5.0_{ab}	4.0		
need to leave					
	no confusion + no epiphany	0.0	0.0	2.62	---
	confusion + no epiphany	2.0	2.0		
	epiphany	0.0	0.6		
self awareness					
	no confusion + no epiphany	0.0_a	0.0	**7.16***	.39
	confusion + no epiphany	0.0	1.0		
	epiphany	2.0_a	2.6		
changed my mind					
	no confusion + no epiphany	0.0_a	0.0	**8.34****	.46
	confusion + no epiphany	0.0_b	0.0		
	epiphany	2.0_{ab}	2.1		
aware of others					
	no confusion + no epiphany	0.0	2.7	0.45	---
	confusion + no epiphany	0.0	1.5		
	epiphany	1.0	1.7		

Note: All judgments made on 9-point scale (0 = 'no such feeling,' 8 = 'the highest such feeling in my life.') * p <.05, exact significance, nonparametric Kruskall-Wallis test for comparisons of mean ranks. ** p <.01. *** p <.001 Medians with the same subscripts differ significantly at p <.05, posthoc Mann-Whitney comparison. a Effect size, calculated following (Green & Salkind, 2005).

When considering what factors may have changed to cause such adjustment, there was compelling support for a removal of social interactions or social anxiousness. As shown in Figure 11, comparison between reported factors and evaluations for all viewers in old and new room iterations showed a nearly significant decrease (p = .10) in awareness of others, giving a strong indication that this change may have been due to alleviation of social engagement. We also found near significant (p = .10) decrease in need to leave, as well as significant changes in time spent viewing, showing an increase from an average of 4.9 minutes (SD = 4.4) before to 18.9 minutes (SD = 13.1) after the renovation. We also found significant increase (about one full point on the 7-point scale) in evaluated "goodness" of the art (see also Table 4). Interestingly, this change in reported other awareness also selectively appeared *within* the main outcomes themselves. While for abort and facile viewers we find no significant changes—that is, in either room iteration the art was comparatively more bad/meaningless, and the emotional journey lacking epiphany, reflection or self-awareness—as shown in Table 5, for the viewer who did end in epiphany (aesthetic experience), while the magnitude of

epiphany, anxiety and confusion stayed essentially the same, as did art evaluations, need to leave was significantly reduced. We also again found near significant differences ($p < .10$) in other awareness, suggesting that the new room rearrangement allowed especially those who before had been particularly susceptible to social interactions to join the epiphany group.

Table 3

Comparison of key reported emotions and artwork/artist evaluations between viewers reporting epiphany or no epiphany when viewing art: Rothko room, Kawamura

	sub-group	Median	Mean	*U*	effect size
confusion[a]					
	no epiphany (n = 7)	1.0	2.1	40.0	.19
	epiphany (n = 15)	2.0	3.0		
anxiety[a]					
	no epiphany	0.0	1.0	**24.5***	.43
	epiphany	4.0	3.2		
self awareness[a]					
	no epiphany	0.0	1.4	**17.0****	.55
	epiphany	2.0	2.8		
changed mind[a]					
	no epiphany	0.0	0.0	**10.5****	.66
	epiphany	2.0	2.5		
art was good [b]					
	no epiphany	0.0	0.6	**24.5***	.44
	epiphany	2.0	2.0		
art was meaningful [b]					
	no epiphany	0.0	4.3	**24.0***	.44
	epiphany	1.0	2.9		
artist was good [b]					
	no epiphany	0.0	3.6	**25.0***	.40
	epiphany	1.0	2.6		

* p <.05, Mann-Whitney two-sample rank-sum test. ** p <.01. a Reported emotion/experiential factors based on 9-point scale (0 = 'no such feeling,' 8 = 'the highest such feeling in my life.'). b Artwork evaluations based on 7-point bipolar scale (e.g., 3 = "very good," 2 = "quite good," 1 = "slightly good," 0 = "neither good/bad", -1 = "slightly bad", etc.).

Table 4

Significant differences in reported emotions and artwork evaluations, pre- and post-renovation (all viewers): Rothko room, Kawamura Memorial DIC Museum

	sub-group	Median	M	*U*	*r*
need to leave[a]					
	pre-renovation	0.0	2.1	252†	.22
	Post-renovation	0.0	0.7		
aware of others[a]					
	pre-renovation	2.0	2.6	246.5†	.22
	Post-renovation	0.0	1.6		
art was good[b]					
	pre-renovation	4.0	3.4	209*	.32
	Post-renovation	2.0	2.5		
time inside					
	pre-renovation	3.0	4.9	86*	.56
	Post-renovation	20.0	18.9		

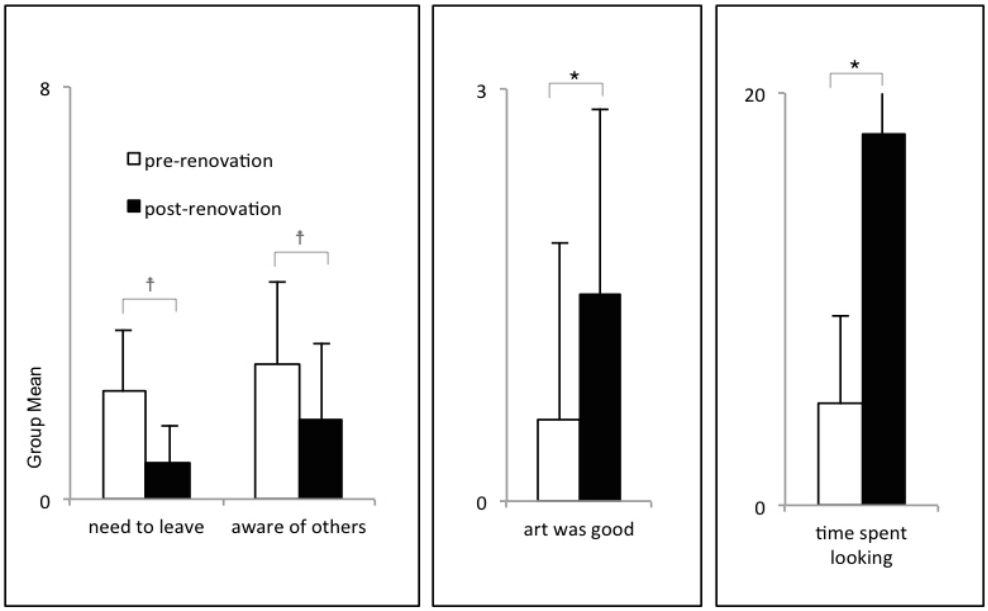
* p < .05, Mann-Whitney two-sample rank-sum test. † p <.10. a Reported emotion/experiential factors based on 9-point scale (0 = 'no such feeling,' 8 = 'the highest such feeling in my life.'). b Artwork evaluations based on 7-point bipolar scale (e.g., 3 = "very good," 2 = "quite good," 1 = "slightly good," 0 = "neither good/bad", -1 = "slightly bad", etc.).

Table 5

Comparison of reported experience factors/artwork evaluations for viewers with "aesthetic experience" outcome (confusion + epiphany), pre- and post-renovation

	sub-group	Median	M	*U*	*r*
need to leave[a]					
	pre-renovation (n = 15)	4.0	3.2	42.0*	.50
	post-renovation (n = 12)	0.0	0.6		
aware of others[a]					
	pre-renovation	4.0	3.8	51.5†	.37
	post-renovation	1.0	1.7		
viewing time					
	pre-renovation	4.0	5.6	22.0†	.48
	post-renovation	17.7	19.8		
confusion[a]					
	pre-renovation	4.0	4.3	75.5	----
	post-renovation	4.0	3.75		
anxiety[a]					
	pre-renovation	3.0	3.3	70.5	----
	post-renovation	5.0	4.0		
epiphany[a]					
	pre-renovation	4.0	3.9	85.0	----
	post-renovation	4.0	3.8		

* p < .05, Mann-Whitney two-sample rank-sum test. † p <.10.
a Based on 9-point scale (0 = 'no such feeling,' 8 = 'the highest such feeling in my life.').



* $p < .05$, Mann-Whitney median rank sum test. † $p < .01$
Note, group medians and statistical information shown in Table 6. Experiential factors reported on 9-point scale (0 = 'no such feeling,' 8 = 'the highest such feeling in my life.'). Artwork evaluation based on 7-point bipolar scale (3 = "very good," 2 = "quite good," 1 = "slightly good," 0 = "neither good nor bad," -1 = "slightly bad" etc.)

Figure 11. Comparison of reported need to leave, awareness of others, time spent viewing and artwork evaluation, pre- and post-renovation: Rothko Room, Kawamura Memorial DIC Museum (all viewers).

Conclusion

In this paper, we attempted to provide a walkthrough of social awareness or social interaction in order to explicate its effect on the viewing of art. We offered both a theoretical and empirical discussion of social awareness and its location within a cognitive discussion of art interaction, noting its key importance to the vital elements marking stages of aesthetic experience and discussing physical manifestation in avoidance of others' gaze/bodies. We concluded with an example of social awareness' elimination from the same room with the same art and showing an effect on the artwork evaluation and experience. When we place viewer experience within this frame of an aesthetic experience model, through the simple elimination of other bodies, docents and benches, 10% more viewers, who before might have fled, stayed, experienced confusion, self-awareness and enjoyed a positive end. The same individuals reported epiphany, changing their minds, questioning their motives and increased their basic evaluation of the same works, and also raising implications for future research. The paper, especially the empirical portion, does also obviously come with caveats. The study was correlative and therefore has the typical warnings regarding causality in interpretation of

results. It is also possible that other factors such as general room improvements or design played an underreported role in the improved experience. One could also downplay the actual role of social interaction and argue that viewers were simply not terribly engaged and ready to leave at the soonest inconvenience, as would occur from having to walk around another on the bench—a tendency toward maximum movement efficiency previously noted by Bittgood and Dukes (2006) and which might also play a larger than expected influence. This study also did obviously consider one particular flavor of art viewing and therefore goal of a museum, relating to the personal, introspective aesthetic experience of art. Museums certainly play other roles, often pertaining to more social functions. However, based on our model and previous work we would also argue that it is the personal emotional and cognitive experience that remains one of the most cherished aspects of art, and therefore should be considered in relation to social experience. At the very least, it behooves those involved in education or art research to be aware of social and spatial arrangements. As this study shows, when coupled with underlying cognitive and physical processes, these can have profound impact on the outcome with art—as long, that is, as it is still enjoyed within the public museum.

Acknowledgments

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