

Using Aesthetics and Self-affirmation to Encourage Openness to Risky (and Safe) Choices

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Abstract

Research has shown self-affirmation to be a powerful tool for increasing openness to arguments. However, prior examinations of its effects involved manipulations with limited applicability outside the laboratory. Building on recent work suggesting that choice of highly aesthetic products can be a form of affirmation, we proposed and tested whether merely affiliating people with high aesthetics can affirm their sense of self and thus encourage openness to arguments advocating selection of one option over another. In three experiments we examined this effect in financial and consumer decisions where choices varied in their inherent risk. Across the experiments, after affiliating people with high (versus low) aesthetics, they were more likely to select the advocated option – whether that option was the riskier or less risky option. This occurred using actual annual reports and a sample of experienced investors (Experiment 1), when the aesthetic affiliation and the choice tasks were in entirely unrelated areas (Experiment 2) and was driven by greater openness to arguments (Experiment 3). Together these studies offer a self-affirmation manipulation that is relevant and easily employed by practitioners in a variety of fields. They also provide novel insights on the link between aesthetics, self-affirmation, openness, and risk taking.

Key words: self-affirmation, aesthetics, openness, risk

The field of social psychology offers great insight on both the natural defenses that people maintain against persuasive messages and threatening information as well as the manner in which these defenses can be attenuated. In general, individuals have a tendency to be biased against new information that does not support their pre-existing attitudes (Kunda, 1990). For example, a devoted smoker might disparage the speaker in an anti-smoking campaign as unintelligent. Similarly, a lazy individual might resist the marketing campaign for a new gym by perceiving its claims to be exaggerated, or a tentative investor might view a financial advisor advocating a risky venture as irresponsible or imprudent.

One intervention for counteracting this self-serving bias might be self-affirmation: the process of affirming an individual's sense of self by emphasizing who they are and the values they uphold (Cohen, Aronson, & Steele, 2000). Self-affirmation theory (Steele, 1988) and subsequent related work has demonstrated the ability to encourage individuals to be more open to new information. A wide range of practitioners might find this ability to encourage openness useful if it could easily be accomplished in the field. For example, in the lab, participants who previously engaged in a self-affirming manipulation were more likely to purchase condoms after viewing an AIDS education video than similar participants who had not undergone the manipulation (Sherman, Nelson, & Steele, 2000). If health educators and social marketers could easily self-affirm their target audiences, this would likely help their campaigns and ultimately improve the behavior and health of their constituents. Similarly, marketers tasked with convincing a skeptical consumer audience that their brand new product is worthy of consideration might benefit from harnessing the powers of self-affirmation. Even practitioners in the realm of finance who must encourage potential investors to see past the risk inherent in a deal in order to get their buy-in would benefit from being able to self-affirm their target audience.

Unfortunately for practitioners, existing techniques for affirming an individual by emphasizing their sense of self and values are not easily applied in real world settings. Research on self-affirmation has traditionally used manipulations such as writing about ones' values (Cohen et al., 2000; Shrira & Martin, 2005) or rating oneself (Napper, Harris, & Epton, 2009), neither of which are likely to occur naturally in the marketplace. However, recent research suggested a new way through which self-affirmation may occur in daily life; Townsend and Sood (2012) found that choice of a highly aesthetic product, such as a product that is very good looking or very artistically designed, had the same effects on subsequent behavior as a self-affirmation task, including increased openness to arguments. While educators, marketers, and sellers of investments cannot always force customers to choose an aesthetic option, we suggest that there may be other routes through which aesthetics can be used to encourage customer openness. In this research we consider mere affiliation with high aesthetics as a potential source of self-affirmation. Affiliation, in these contexts, consists of exposing an individual to an aesthetically pleasing stimulus while also reminding them of some personal connection to that aesthetic material. For example, in one of our studies, we simply remind college students of the beautiful parts of the campus to which they belong. Choice of a high aesthetic product, a strong form of affiliation, presumably functions as a form of self-affirmation by creating a sense of connection between the consumer and the highly aesthetic object. By considering mere affiliation, we examine the psychological outcome of choice but broaden its scope to include concepts such as exposure and conceptual consumption, thus no longer requiring a particular behavioral action that may be difficult for a practitioner to control. In other words, we consider the psychological consequences of choice, that is the sense of being associated or connected with something, without having to engage people in actually choosing products. As such, this research

harnesses the power of self-affirmation by suggesting a manipulation that is useful and relevant to the world outside of the laboratory and one that a practitioner can easily achieve.

As we suggest, the most obvious uses of a more ecologically valid self-affirmation manipulation might be in the context of marketing or education around behavioral change. Some practitioners may wish to promote less risky behavior, such as social marketing campaigns that promote engaging in safety precautions – using a car seatbelt, not drinking and driving, abstaining from gambling. In contrast, other practitioners might be interested in promoting choice of the risky option, such as financial advisors encouraging investors to support a new startup venture. In this case, self-affirmation and its resulting greater openness to arguments might be helpful in order to encourage consumers to reap the benefits of a risky investment that their risk-averse nature might otherwise predispose them to be biased against. While the link between self-affirmation and openness to arguments has been explored, how this openness might then influence risk uptake has not been studied. In our examination of high aesthetic affiliation as a form of self-affirmation we focus on how the resulting openness influences choice between options that vary in their inherent risk when arguments are presented either for the riskier option or for the safer option. In doing so this work offers another important extension of prior research on self-affirmation in that we identify when, how, and why self-affirmation, through mere affiliation with high aesthetics, may make an individual more or less likely to choose a risky option. Next we present a theoretical framework that draws upon work in social psychology and consumer behavior to offer an explanation of this process. We begin with a review of work on self-affirmation and openness.

Self-affirmation and Openness

Self-affirmation theory posited that people are motivated to see themselves as competent and sensible individuals (Steele, 1988). When self-integrity (a person's sense of their values and beliefs) is threatened, affirming a central aspect of one's identity can function to restore integrity and reduce the threat to self, even if the source of affirmation and source of threat come from different domains. The idea is that reminding a people of their identity and core qualities can provide perspective and anchor their sense of self in the face of threat in another arena. Since people are generally motivated to seek positive reinforcement (Allport, 1943; Epstein, 1973; Steele, 1988), their efforts to protect themselves from negative information often biases their evaluation of new opportunities. But by affirming a person's sense of self, even in an entirely unrelated area, this prejudice can be overcome.

An important consequence of self-affirmation is that individuals become more open to arguments after being self-affirmed. For example, Correll, Spencer, and Zanna (2004) found that self-affirmation through consideration of personal values led individuals to be more objective in evaluating information during their decision making. In their studies, self-affirmed individuals paid more attention to argument strength and displayed less of a desire to self-enhance. Cohen et al. (2000) found that self-affirmation led individuals to be more open to arguments, including counterattitudinal arguments that they might otherwise not have considered. More recently, Sivanathan, Molden, Galinsky, and Ku (2008) found that engaging individuals in a self-affirmation manipulation made them more willing to de-escalate their commitment to a failing course of action. They propose that self-affirmation reduces the individual's need to justify previous decisions and thus leaves him open to other options. This increased openness to arguments can also lead to greater openness to persuasion (Sherman et al., 2000; Steele & Liu, 1983). The general theme of much of this research is that self-affirmation is most helpful when

individuals are being exposed to arguments that might be perceived as threatening; these threats could be to one's self image or even a physical threat (e.g., cancer in Harris & Napper, 2005). Self-affirmation has even been found to have an effect in non-threatening situations if it occurs prior to delivery of the persuasive argument because individuals are less likely to elaborate and generate counterarguments (Briñol, Petty, Gallardo, & DeMarree, 2007).

Recent research on self-affirmation identified choice of a highly aesthetic option over a less aesthetic one as a form of affirmation (Townsend & Sood, 2012). Their findings revealed this self-affirmation effect to be specific to aesthetics; choice of a preferred brand, more ergonomic product, or more functional option does not have the same effect. Moreover, in line with other work on self-affirmation, Townsend and Sood (2012) ruled out attention or mood as the mechanism through which this works. In this research we attempt to extend their findings by examining mere aesthetic affiliation, rather than choice, as a form of self-affirmation. Aesthetic choice works as a form of affirmation by tapping into the common bias to equate beauty with goodness in people (Dion, Berscheid, & Walster, 1972) as well as aesthetics being a fundamental and universal personal value (Allport, Vernon, & Lindzey, 1970; Kopelman, Ravenpor & Guan, 2003; Vernon & Allport, 1931). In addition, prior work has suggested that material or symbolic indicators are connected to identity (Belk, 1988; Braun & Wickland, 1989), and that “conceptual” consumption, rather than physical consumption, of objects and ideas can have effects similar to active choice (see Ariely & Norton, 2009). Thus, we expect that mere affiliation, association, or simply exposure to a highly aesthetic product should have the same effect as choice. In a sense, affiliation offers the same psychological result of choice without the risk that the individual fails to select the highly aesthetic option. This is a key contribution of this

work as it offers a managerially relevant implementation of self-affirmation, one that practitioners can more easily and naturally deploy in customer interactions.

It should also be noted, however, that affiliation with high aesthetics is not the same as social signaling through affiliation with high status goods or individuals. Choice of high status products has been shown to provide a psychological motive for consumption among low power individuals (Rucker & Galinsky, 2009), and most importantly for our results, has also been shown to provide benefits of self-affirmation (Sivanathan & Pettit, 2010). Both Townsend & Sood (2012) and the results presented here are able to separate the social signaling benefits of high status from high aesthetics by assuring that any consumption or affiliation with high aesthetics occurs in private. While we expect that high status and high aesthetics are different manipulations of self-affirmation, it is possible that the underlying mechanism is the same; both high status and high aesthetic products offer the individual a “psychological repair mechanism” that enables the individual to strengthen his or her sense of self (Sivanathan & Pettit, 2010).

Choice of Advocated Options with Varying Risk

Building upon prior research, we propose that aesthetic affiliation may be a form of self-affirmation that will lead to greater openness to arguments from sources that individuals may otherwise be cautiously biased against. The effect of greater openness to arguments advocating an option is that the individual will be more likely to actually choose that option in a subsequent choice task. Moreover, because the effect is due to openness, individuals who have affiliated with high aesthetics should report generally being more open to arguments, which will mediate their likelihood of selecting the advocated option.

In all of our studies, the options varied in terms of their inherent risk allowing us to determine whether aesthetic affiliation can affect risky choices relative to safer ones. In two of

our three studies, the advocated choice was the riskier one while in the other (Experiment 2) we varied whether the arguments advocated the riskier or safer option. Thus, we could observe whether the increased openness that results from self-affirmation was able to overcome natural risk aversion. In talking about risk, we stay consistent with prior consumer research that defined risk based on uncertainty in the decision or the outcomes (Campbell & Goodstein, 2001; Dowling, 1986); in this paper, we consider high risk (i.e., high uncertainty) outcomes that also carry the potential for large positive outcomes which can be used to justify taking the risk. While the choice to take a risk is primarily influenced by an individual's perception of that particular risk (Weber & Milliman, 1997), other factors can influence the decision to take on risk in a given situation. For example, visceral influences (Ditto, Pizarro, Epstein, Jacobson, & MacDonald, 2006), goal orientation (Zhou & Pham, 2004), cultural social networks (Weber & Hsee, 1998), gender and issue capability (He, Inman, & Mittal, 2008), and self-construal priming (Mandel, 2003) have all been found to affect risk taking. While the direct link between self-affirmation and risk taking has not been explicitly studied, feelings of self-confidence and self-competence have been shown to lead individuals to see more opportunities in risky choices and therefore take more risks (Krueger & Dickson, 1994). Our studies primarily explore effects of self-affirmation within the domains of risky financial and consumer decisions, but we expect that our findings will offer insights for all practitioners on how aesthetic affiliation can increase openness.

Overview of Experiments

In this work, we focus on advocated choices for financial and consumer decisions for several reasons. In terms of the former, openness to arguments is an important factor for many financial investment decisions, such as when investors consider a pitch for a new IPO, read a prospectus on a new business venture, or review annual reports to decide whether the arguments

advocating investment are valid and appropriate for their situation. Additionally, financial institutions have suffered a severe erosion of trust among customers during recent market downturns, especially relative to other industries. This makes the domain a challenging one in which to encourage customers to accept a professional's advice (Ernst & Young, 2010).

In terms of consumer decisions, the job of a marketer is often to persuade the consumer to engage in some action, whether it is to purchase a product, to use a service, or to change behavior in cases of social marketing or public policy. Goods or services with particularly strong claims or high price tags may be considered risky by consumers (Shimp & Bearden, 1982). Moreover, the inclination towards status quo likely instills a natural bias against any information advocating change, whether it is for switching brands of detergent or improving a sedentary lifestyle. Having a tool that can increase openness and dispel the bias toward the status quo would be of value in such contexts. Finally, finding implementable ways to increase openness to informative messages may help counteract consumers' predisposed skepticism towards advertising and other marketing tools (Obermiller & Spangenberg, 1998).

We tested the effect of aesthetic affiliation in three experiments with our key dependent measure being uptake of an advocated option. In Experiment 1 we demonstrated that affiliation with high aesthetics leads to greater propensity to invest in a risky business venture in a subsequent unrelated investment task. Experiment 1 was both a strong and externally valid test of our theory in that we used only the aesthetic variation available in actual annual reports to manipulate high versus low aesthetic affiliation and also we examined the effect on a sample of experienced investors. We also measured how convincing the investors found the materials as an initial test of whether openness was involved. In Experiment 2, we broadened our results by showing that affiliation with high aesthetics can lead not only to increased choice of a risky

option but also to increased choice of a safe option dependent on the strength of the arguments provided for each option. We tested this both in financial and consumer decision-making domains. Finally, in Experiment 3 we tested the process through which these effects occur, revealing that self-affirmation, either through a traditional value consideration manipulation or through aesthetic affiliation, led to choice of an advocated option due to increased openness. Together these studies reveal when, how, and, why aesthetic affiliation influences choice of an advocated option.

Experiment 1: Affirmation through Aesthetic Affiliation and Uptake of an Advocated Option among Experienced Investors

Materials and Method

Participants were 52 individuals ($M_{\text{age}} = 28$ years, $SD = 2.8$, 78% male) who have taken at least one post-collegiate course in finance and, on average, three courses. Sixty percent (60%) regularly analyze company information for personal investment for themselves or close others and 40% have had a job or internship in the finance sector or in asset evaluation or trade. Respondents were randomly assigned to one of two conditions (Aesthetic Affiliation: High versus Low) in a between-subject design. The experiment was presented as two separate and independent studies. Self-affirmation through aesthetic affiliation (high or low) occurred in part one and dependent measures were taken in part two.

Self-affirmation through aesthetic affiliation. In both conditions participants were presented with between four and eight actual annual reports for real companies that consisted of two to four pairs of reports matched on industry but varying on aesthetics – with one highly

aesthetic report and one less aesthetic report per pair. Aesthetics were determined by independent rating and confirmed using quantifiable factors. Specifically, we had a rater, blind to our hypothesis, rate each annual report on three dimensions using a 100-point scale for each. They were asked to rate the overall aesthetics of the annual report, the aesthetics of the cover, and the aesthetics of the inside (non-cover) pages. For quantifiable factors we considered the number of colors on the cover, the first two pages, and for the full report; the number of photographs on the cover, the first two pages, and per page in the full report; and the number of non-photograph images on the cover, the first two pages, and per page in the full report. We then confirmed that within each pair the high aesthetics annual report was significantly higher than the low aesthetics annual report on both the average of the three aesthetic ratings ($M_{\text{high aesthetics}} = 68.33$, $SD = 15.39$ and $M_{\text{low aesthetics}} = 41.06$, $SD = 21.48$), $t(18) = 3.19$, $p < .01$, $d = 1.44$, as well as on the average of the measured quantifiable factors ($M_{\text{high aesthetics}} = 7.62$, $SD = 2.26$ and $M_{\text{low aesthetics}} = 4.46$, $SD = 2.34$), $t(18) = 3.07$, $p = .01$, $d = 1.35$. See Appendix A for sample annual report covers and inside pages. Respondents spent at least 30 minutes and up to an hour reviewing the information in the reports and were asked to answer various questions about the content. After reviewing all reports, respondents were then told to imagine that they were institutional investors who were recommending investment in certain companies. All respondents were told that they had decided to recommend investment in half of the companies and were told which companies this included; this serves as our affiliation procedure. Using the letter labels on the front of the reports (e.g. “you have decided to recommend investment in companies B, X, L, D and not companies C, Y, M, A”), respondents in the high aesthetics affiliation condition were assigned the more aesthetic annual reports while respondents in the low aesthetics affiliation condition were assigned the less aesthetic annual reports. The aesthetics of the annual reports was never mentioned or pointed out

to the participants. Respondents were told to put aside the reports for the companies they had decided not to invest in and to focus on the ones they had selected. Respondents were then asked how they believed they had selected these companies for investment, to rate how wise a decision this was on a 5-point scale, and to explain the reason for their rating. Respondents were then thanked for their participation in the experiment and then moved on to the next experiment.

Uptake of advocated option measures. In the second part of the experiment, respondents were told, “Imagine you have just inherited \$2,500 from an unknown relative. A stipulation of the gift is that you must invest the money and are not allowed to touch it for at least 3 years. Along with the money your relative has given you a meeting with a financial advisor to help you decide how to invest it. The financial advisor offers you two options described below. Both options have a minimum buy-in of \$2,500. Therefore, you must put all the money either in one or the other option. You cannot split the money.” They were then given two investment options. One option was an IPO; respondents received a description of the IPO company including arguments promoting investment in the company and were told it is rated by a third party as “high” risk with “high potential for lucrative payoff” (Advocated Risky Option). The other option was a savings account with no arguments provided for investing; respondents were told it is rated as “low” risk with “low potential for lucrative payoff” (Non-advocated Safe Option). Respondents rated (7-point scale) their likelihood of investing in the high risk IPO versus low risk savings account. To test for openness to arguments, respondents were then asked to rate the investment pitch on three 7-point scales for how convincing, valid, and reasonable it is. These measures have been previously used in the self affirmation literature to test for openness (Cohen et al., 2007). Respondents then filled out the Centrality of Visual Product Aesthetics scale (Bloch, Brunel, & Arnold, 2003) which captures individual differences in respondents’ inherent

appreciation for good design. Finally respondents were asked what they thought the studies were about and whether they thought the first experiment was related to the second.

Results

After being told which of the companies they had elected to recommend, respondents were asked how wise they felt this decision was as well as why they thought they had selected these companies. There was no difference in ratings of the wisdom of the decision across conditions ($M_{\text{high aesthetics}} = 2.57$, $SD = 1.10$ and $M_{\text{low aesthetics}} = 2.26$, $SD = .96$), $t(49) = 1.05$, $p = .30$, $d = .30$, suggesting that the aesthetics of the annual reports did not influence perceived intelligence of their selections. In the open-ended responses probing on how they thought they had selected the reports, what the experiment was about and whether the two studies were related, aesthetics was not mentioned nor were there any other indications that respondents were aware of the manipulation.

Respondents who had been affirmed through affiliation with the more aesthetic annual reports were more likely to invest in the subsequent unrelated IPO decision (the advocated option) than those affiliated with low aesthetics and thus not affirmed ($M_{\text{high aesthetics}} = 4.00$, $SD = 2.2$ and $M_{\text{low aesthetics}} = 2.83$, $SD = 1.6$), $F(1, 51) = 4.55$, $p = .04$, $\eta^2 = .08$. When asked how convincing, valid, and reasonable the pitch for the IPO is, $\alpha(3) = .89$, respondents who were affirmed consistently rated the pitch higher ($M_{\text{high aesthetics}} = 4.06$, $SD = 1.5$ and $M_{\text{low aesthetics}} = 3.10$, $SD = 1.3$), $F(1, 51) = 6.10$, $p = .02$, $\eta^2 = .10$. While not an explicit measure of openness, the consistently higher score on these measures for participants in the high aesthetics condition suggests that those individuals were more swayed by the IPO pitch than were the investors in the low aesthetics condition. This offers support for our theory that affiliation with high aesthetics leads to greater openness and willingness to choose the advocated option.

Centrality of visual product aesthetics. To investigate whether this result was driven by respondents for whom aesthetics was of particular interest or whether this was a more universal behavior, we examined whether scores on the Centrality of Visual Product Aesthetics scale had an effect on likelihood of investing in the IPO. A regression analysis including variables for aesthetic affiliation, this scale, and an interaction term for these two ($R^2 = .57$) revealed no significant effect of either the Centrality of Visual Product Aesthetics scale ($\beta = .022$, $p = .56$, 95% CI [-.053, .090]) or the interaction ($\beta = -.03$, $p = .97$, 95% CI [-.184, 1.90]). Thus the overall results held regardless of how much an individual valued visual aesthetics.

Discussion

Experiment 1 demonstrates that affiliating individuals with well-designed annual reports, by simply asking them to generate explanations for why they would invest in those companies, can significantly influence their reported willingness to take a subsequent unrelated investment risk when arguments are presented for doing so. Note that the effect was specific to individuals who were affiliated with the aesthetic reports; while all participants were exposed to the highly aesthetic reports, only those asked to think about why they would invest in those companies showed the effect on subsequent choice. This effect occurred with experienced investors trained to examine annual reports and presumably less prone to any resulting biases. We also found that variations in the visual appeal of real annual reports were enough to produce these effects. These results held regardless of the weight individuals place on product aesthetics as measured by the Centrality of Visual Product Aesthetics scale.

Experiment 2: Affirmation through Aesthetic Affiliation and Openness to Arguments for both Risky and Safe Options

Experiment 1 examined how the self affirmation that comes from affiliation with high aesthetics can increase individuals' openness to arguments for a risky advocated option. This approach is consistent with prior work that has investigated how traditional methods of self-affirmation can increase openness to persuasion (Sherman et al., 2000; Steele & Liu, 1983), including both threatening (e.g., Cohen et al., 2000; Harris & Napper, 2005) and non-threatening situations (Briñol et al., 2007). Given these prior findings, we wished to see whether the effect of self-affirmation through aesthetic affiliation could lead to more openness for both risky and safe options. We also wanted to rule out an alternative explanation that aesthetic affiliation, rather than increasing openness, changes the perception of the risk. These were the goals of Experiment 2. If it was affirmation and openness that were driving the effects seen in Experiment 1 then we expected to see participants who were affiliated with high aesthetics to be more likely to accept a choice, either risky or safe, when presented with arguments in its favor.

We also took this opportunity to broaden the domain of the risky choices beyond financial decisions. In Experiment 2 we created a greater distinction between the aesthetic affiliation task and the risk measurement task and in doing so, offered a more conservative test of our theory. In the prior study the two parts of the experiment were presented as separate tasks and, indeed, respondents reported no connection between the two during debriefing. However, both the aesthetic affiliation and the choice task were in the general realm of financial decision making. While self-affirmation and its effects are fungible, meaning they are not area-specific, it is possible that the resulting choices we observed only occur when the aesthetic affiliation has occurred in a related area. To ensure that the effect still occurs despite a complete content separation between cause and effect, in Experiment 2 we created a greater distinction between

the aesthetic affiliation task and the persuasion measurement by using an aesthetic affiliation task not related to financial decision-making and then two different contexts for choice (randomized across respondents) – financial decision making and recreational activities. Additionally, in the aesthetic affiliation manipulation in Experiment 2 we paired high aesthetics with low function and vice-versa to ensure that the effect was based on aesthetics and not just affiliation with a product that is superior on any dimension. If any high-value option is sufficient to provide self-affirmation then there should have been no difference between a high function option and a high aesthetics option. However, we expected that aesthetics' affirmational properties are distinct from the effects of high functionality.

Materials and Method

Respondents included 362 University of California Los Angeles undergraduate students who participated for monetary compensation. Respondents were randomly assigned to one of 12 conditions in a 2 (Aesthetic Affiliation: High aesthetics with low function, or Low aesthetics with high function) \times 2 (Decision Topic: Financial or Watersports) \times 3 (Arguments presented: Advocating riskier option, Advocating safer option, Balanced) between subjects design. The experiment was presented as two separate, independent studies with self-affirmation through aesthetic affiliation (high or low) in the first part and dependent measures taken in the second part.

Self-affirmation through aesthetic affiliation. Respondents in either the High aesthetics with low function or the Low aesthetics with high function conditions were asked to evaluate a section of a proposed guidebook which gave basic information about their university campus. In the High aesthetics with low function condition it discussed the beauty of the campus but suggested that its beauty was to the detriment of its serviceability in that it made the campus hard

to navigate and the buildings not well marked. In the Low aesthetics with high function condition it discussed the continuous upgrades that modernized the campus and made it more functional but often led to unsightly construction. The High aesthetic condition included four images that depicted the beauty of the campus while the Low aesthetic condition included images of construction on campus. See Appendix B for guidebook page images. To increase attention and strengthen the affiliation process, respondents were asked to first review the guidebook section and then report the number of adjectives it contained as well as count the number of trees. Respondents were then thanked and moved on to the next section.

Measures. The second section was presented as a study of choices. In the Financial condition respondents were presented with a hypothetical scenario where they had won a campus-wide lottery and would receive \$1,000 in one of two financial products. The two options were to take the money either in stocks (riskier option) or in bonds (safer option). Respondents were then presented with information about these two options. The stock option was presented with a risk rating of 83/100 and a potential reward rating of 91/100. The bonds option was presented with a risk rating of 63/100 and a potential reward rating of 71/100. These did not differ across conditions. However, the descriptions of these options did differ between the three conditions (Advocating the riskier option, Advocating the safer option, or Balanced).

In the Watersports condition respondents were presented with a hypothetical scenario where they had won a campus-wide lottery with a prize of participation in one of two activities – either a jetski obstacle course (riskier option) or a boat tour of a neighboring island (safer option). Risk and reward ratings mirrored those in the financial scenario. Again, descriptions varied across the three conditions to advocate the riskier option, the safer option, or balanced.

In all conditions, respondents were asked to make a choice between the two options and explain why they made the choice. Respondents then rated each of the two options on perceived risk, and rated the arguments for each option on measures of convincing, valid, and reasonable (all 7-point scales). These measures have been previously used in the self-affirmation literature to test for openness (Cohen et al., 2007). Note that in all conditions, the choice options were not referred to as the “riskier” or “safer” option but rather as “Option A” or “Option B”.

Results

Argument manipulation check. In order to confirm whether our manipulation of giving additional arguments for the risky option, the safe option, or a balanced approach worked, we examined differences in ratings of the arguments across conditions. Specifically, for both choice options participants were asked how convincing, valid, and reasonable they considered the information given about that option. We then calculated a difference in ratings between the two for each measure (rating for riskier option minus rating for safer option) and created a combined measure across the three, $\alpha(3) = .81$. Indeed, we found that there was a significant difference in the mean difference in ratings of the arguments in terms of how convincing, valid, and reasonable they were depending on argument condition ($M_{\text{safe}} = -.95$, $SD = 1.8$; $M_{\text{neutral}} = .37$, $SD = 1.3$, $M_{\text{risky}} = .68$, $SD = 1.6$), $F(2, 361) = 35.46$, $p < .001$, $\eta^2 = .17$. Moreover, the difference was greater than zero in the condition advocating the riskier option, $t(119) = 5.43$, $p < .001$, $d = .50$, equal to zero in the neutral option $t(118) = .21$, $p = .83$, and less than zero, $t(121) = 5.74$, $p < .001$, $d = .52$, in the condition advocating the safer option. At the same time, the argument manipulations did not change perceptions of risk for each option ($M_{\text{safe}} = 2.63$, $SD = 1.9$; $M_{\text{neutral}} = 2.81$, $SD = 1.7$, $M_{\text{risky}} = 2.61$, $SD = 1.8$), $F(2, 361) = .46$, $p = .633$, $\eta^2 = .003$. Therefore, it appeared that our manipulation worked and, moreover, did so without affecting perceptions of

the riskiness of the endeavors. This was also the case when we examined respondents in the Low aesthetics high function and High aesthetics low function conditions separately.

Overall results. There was a significant effect of argument on choice; the percent selecting the risky option varied depending on whether participants saw statements advocating the safe option (39%), both options (50%), or the risky option (64%), $\chi^2(2, N = 362) = 15.01, p = .001, \phi = .20$. However, when respondents were split between those affirmed through affiliation with high aesthetics and those not affirmed (affiliation with low aesthetics), we found that this effect was driven by self-affirmed respondents with 30% of participants in the High aesthetics low function affiliation condition selecting the risky option when given statements advocating the safe option, 48% when statements advocated both, and 71% when given statements advocating the risky option, $\chi^2(2, N = 182) = 21.89, p < .001, \phi = .35$. There was no effect of argument among respondents who were not affirmed; the percent of respondents who were affiliated with low aesthetics high function selecting the risky option was 49% when given arguments advocating the safe option, 52% when statements advocated both, and 56% when given statements advocating the risky option, $\chi^2(2, N = 180) = .586, p = .75, \phi = .06$. See Figure 1. Indeed, considering all three conditions in a single analysis, logistic regression revealed a significant interaction of aesthetic affiliation and advocated position on choice, $\beta = .78, S.E. = .27, p = .004, 95\% \text{ CI } [.24, 1.31]$. The same pattern existed when we examined finance and watersports separately; for both domains there was no significant effect of argument on choice when there was no self-affirmation (affiliation was with low aesthetics high function) Finance: $\chi^2(2, N = 98) = .14, p = .93, \phi = .03$, Watersports: $\chi^2(2, N = 82) = 1.99, p = .37, \phi = .16$, but there was a significant effect across the three argument conditions when participants had been affirmed by affiliation with high aesthetics: Finance: $\chi^2(2, N = 81) = 15.03, p = .001, \phi = .43$,

Watersports: $\chi^2(2, N = 101) = 10.44, p = .01, \phi = .32$. Again, an examination of the percentage of respondents who selected the risky option revealed that, after affirmation, respondents' choice was in line with the advocated position. See Table 1.

-- Insert Figure 1 and Table 1 about here --

Discussion

Experiment 2 found that self-affirmation through affiliation with high aesthetics can increase choice of an advocated position, regardless of whether it is a risky option or a safe option. This was consistent with our proposed process by which affiliation with high aesthetics is self-affirming and thus leads to greater openness to arguments in favor of a given option. In this study, not only were the aesthetic affiliation manipulations in a non-financial context, but also the High aesthetic affiliation condition discussed low functionality (difficulty in navigation) and the Low aesthetic affiliation condition discussed high functionality (upgrades). With this manipulation, therefore, we were able to isolate the effects as specific to aesthetic affiliation and not affiliation with any superior attribute, consistent with prior work on affirmation through choice of high aesthetics (Townsend & Sood, 2012).

The next study aimed to specify the process more precisely. While there are no direct measures of self-affirmation, there are measures of openness. We included two measures of openness to identify the specifics of the effect. First, we included a measure of openness designed to measure situational aspects of openness. We also included the myside bias questionnaire, shown to measure chronic, stable individual traits about openness to arguments (Stanovich & West, 2007). In line with our theory, we expected chronic openness to not vary with our manipulation, but situational openness to vary and, furthermore, to mediate the influence of aesthetic affiliation on risky choice.

Moreover, because this experiment was our ultimate process measure, we tested the effect with two forms of self-affirmation: affiliation with high aesthetics as in Experiments 1 and 2, and a traditional self-ratings-task affirmation manipulation. As evidence that the aesthetic affiliation is, indeed, a form of self-affirmation, we expected the effect on advocated choice to be the same for both manipulations, and for situational openness to play the same mediating role for both. Having already established the effect with actual annual reports, in the next study we created a hypothetical annual report. This allowed us to control all information content and fluency and only vary the aesthetics between the two aesthetic affiliation conditions.

Experiment 3: Mediation by Openness for both Traditional Self-affirmation and Aesthetic Affiliation

Materials and Method

Respondents included 370 University of Miami undergraduate business students. Responses from two students were dropped because they indicated the design of the report as a reason for selecting the company, resulting in a final sample of 368 participants. Respondents participated in the experiment along with a series of other studies for course credit in an online environment that collected the amount of time taken on each task. Respondents were randomly assigned to one of four conditions consisting of two traditional affirmation-related conditions (Control/No affirmation and Self affirmation) and two aesthetic affiliation conditions (High versus Low).

Self-affirmation. Participants in the two self-affirmation conditions were asked to complete a “Character Strength Questionnaire” modeled after that by Napper et al. (2009) and shown to lead to self-affirmation. Respondents were shown a series of 32 statements pertaining

to personal values. In the control condition they were asked to evaluate how much they felt each statement applied to David Beckham on a 6-point scale from “Very much like him” to “Very much unlike him”. In the self-affirmation condition, respondents were asked to evaluate whether the statements “describe what you are like” by rating them on a 6-point scale from “Very much like me” to “Very much unlike me”. This manipulation has been shown to be a stronger form of self-affirmation than the essay task as used by Steele and Liu (1983). The statements included items such as “I/he am/is a spiritual person,” “I/he love(s) to learn new things,” and “My/his friends value my/his good judgment”. Respondents were then thanked for their participation in the experiment and then moved on to the next experiment.

Aesthetic affiliation. In the two aesthetic affiliation conditions participants were given a three-page packet and told it was “an exact reproduction of the first three pages of an annual report” as well as a separate survey packet that contained questions about the annual report. The annual report packet varied between conditions with respondents in the high aesthetic condition receiving the more aesthetically-pleasing annual report than respondents in the low aesthetic condition. In both conditions the packet was presented as the first three pages of the 2009 Annual Report for “ShonBros Group, Inc.” The text and financial information in the annual report were taken from that of a real company, though the name was changed. The information in the two reports was exactly the same. The differences were in the images shown, the lay-out of the images, and the overall aesthetics. Care was taken so that the two reports did not differ in fluency. In pretests, 22 participants taken from the same population as the main experiment all selected the stimulus used in the “high aesthetic” condition when asked which one had better “overall looks/design”. See Appendix C for annual report images. In both aesthetic conditions respondents were told to imagine they “are part of an investment group and that the group meets

once a month to discuss investments and provide information on good investment opportunities. This month you are in charge of presenting a stock you recommend for purchase. After doing quite a bit of research, you decide that the group should invest in Shonbros.” They were then told to write three points as to why they chose this company and why it would make a good investment. Respondents rated their confidence in the recommendation, were thanked for their participation in the experiment, and then moved on to the next part which was presented as a separate experiment.

Dependent measures. In all four conditions, respondents were thanked for their participation and told that the next part was a separate experiment. The next set of questions was used to measure propensity to accept an advocated option and used the same instructions, investment scenario, and information as given in Experiment 1 with an investment choice between a high risk IPO (Advocated option) and a low risk savings account (Non-advocated option). After making this choice they were asked how risky they perceive the investment to be (7-point scale) and how sure of the decision they are (7-point scale).

As the final step before completing the experiment, we asked participants to complete two sets of questions measuring openness to arguments. The first was designed to measure state openness and was a series of five questions asking about their likelihood of engaging in various behaviors on a 7-point scale from “Not at all likely” to “Extremely likely”. Specifically, respondents were asked the likelihood that they would read a newspaper with outrageous statements, attend a religious service for a religion you do not practice, listen to a political canvasser discuss a candidate of whom you have never heard, read a book that discusses why people ought not to attend college, and listen to a friend’s argument why [your University] is not

a good college. Second, respondents answered the Myside bias questionnaire measuring trait openness (Stanovich & West, 2007). Respondents were then debriefed and thanked.

Results

Risky choice measures. Whether a participant engaged in a ratings self-affirmation manipulation or not had a significant impact on their decision to invest in the riskier IPO (Advocated option) or the safer savings account (Non-advocated option) as predicted; self-affirmed individuals had a greater propensity to opt for the advocated option (percent investing in IPO: Self-affirmation, 68%, Control/No affirmation: 49%), $\chi^2(1, N = 186) = 6.67, p = .01, \phi = .19$. The results from the two aesthetic affiliation conditions paralleled these results; respondents who were affiliated with a highly aesthetic product were more likely to choose the advocated option than those who were affiliated with the less aesthetic product (High Aesthetic Affiliation: 64%, Low Aesthetic Affiliation, 49%), $\chi^2(1, N = 182) = 4.30, p = .04, \phi = .15$. See Figure 2.

--- Insert Figure 2 and Table 2 about here ---

Perceptions of investment decision and openness measures. After opting to invest in either the IPO or the savings account, respondents were asked to rate the riskiness of their investment as well as how sure they were of their investment decision. There were no significant differences between either the Affirmation conditions, Riskiness: $F(1, 185) = .47, p = .50, \eta^2 = .003$; Sure in decision: $F(1, 185) = 1.73, p = .19, \eta^2 = .01$ or the Aesthetic Affiliation conditions Riskiness: $F(1, 181) = .13, p = .72, \eta^2 = .001$; Sure in decision: $F(1, 181) = 2.26, p = .14, \eta^2 = .01$; see Table 2 for means.

Having ruled out perceptions of risk as an explanation for the differences in choice, we looked to openness as a potential explanation. We had two measures of openness. The Myside Bias scale measured chronic openness and, as expected, there were no differences between either

the traditional self-affirmation conditions ($M_{\text{self affirmation}} = 6.48$, $SD = 8.54$, $M_{\text{control}} = 7.85$, $SD = 11.19$), $F(1, 185) = .88$, $p = .35$, $\eta^2 = .01$ or the aesthetic affiliation conditions ($M_{\text{high aesthetics}} = 8.75$, $SD = 10.86$, $M_{\text{low aesthetics}} = 9.03$, $SD = 9.28$), $F(1, 181) = .04$, $p = .85$, $\eta^2 = .001$. Our other measure was designed to measure overall situational openness and as predicted there was a significant difference on this measure between the two traditional affirmation conditions ($M_{\text{self affirmation}} = 3.26$, $SD = 1.02$, $M_{\text{control}} = 2.94$, $SD = 1.06$), $F(1, 185) = 4.15$, $p = .04$, $\eta^2 = .02$ and also between the aesthetic affiliation conditions ($M_{\text{high aesthetics}} = 3.21$, $SD = 1.10$, $M_{\text{low aesthetics}} = 2.91$, $SD = .98$), $F(1, 181) = 3.82$, $p = .05$, $\eta^2 = .02$. Both affirmation and high aesthetic affiliation led to greater openness.

Mediation analysis by openness. Next we examined whether the openness measure could explain the increase in choice of the advocated option. Following suggestions by Preacher and Hayes (2004) we used a bootstrapping approach to test for mediation (Preacher & Hayes, 2004; Zhao, Lynch, & Chen, 2010). Starting with the traditional self-affirmation manipulation, we found a significant positive mean indirect effect (.07), with a 95% confidence interval excluding zero (.001 to .149). Moving from the control condition to the self-affirmation condition increased the openness measure by .312; while holding affirmation condition constant, a unit increase in openness increased the likelihood of selecting the advocated option by .229. The direct effect (.115) was still marginally significant ($p = .07$), suggesting complementary mediation.

Switching to the aesthetic affiliation conditions, again we found that the mean indirect effect from the bootstrap analysis was positive and significant (.08), with a 95% confidence interval excluding zero (.003 to .156). In the indirect path, moving from the low aesthetics condition to the high aesthetics condition increased the openness measure by .302; the path from openness to choice was positive and significant (.263), so holding condition constant, a unit

increase in openness increased choice of the advocated option. In this case the direct effect (.072) was not significant ($p = .23$), indicating indirect-only mediation. Thus, increased openness did appear to explain the increase in advocated choice for both the aesthetic affiliation and traditional self-affirmation manipulation conditions.

Discussion

We tested two forms of self-affirmation – self value rating as well as aesthetic affiliation – and found that both led to significant differences in propensity to select a risky option for which persuasive arguments are presented. That these effects occurred not only for the high aesthetics affiliation condition, but also for the condition involving a traditional rating self-affirmation task, supported our theory that self-affirmation is the mechanism by which high aesthetic affiliation leads to increased uptake of an advocated option. Additionally, there were no differences in perceived riskiness, ruling out an explanation based on changes in risk aversion.

While Experiments 1 and 2 suggested that affirmation and subsequent openness were the drivers of the effect, Experiment 3 directly tested whether situational openness was, indeed, causing respondents to select the advocated option. The situational openness scale mediated risk taking in both the traditional affirmation conditions and the aesthetics affiliation conditions. As expected there was no effect of any of the four conditions on the myside bias scale which measures chronic openness, suggesting that the effect of self-affirmation on choice of an advocated option, either through aesthetic affiliation or otherwise, is a situational effect rather than a chronic trait.

Conclusions and Implications

The three studies presented here revealed that mere affiliation with high aesthetics can function as a form of self-affirmation, resulting in greater openness to persuasive arguments. This increased openness can influence choice behavior when arguments are provided for selection of one option over another. We found this to be the case whether the advocated option was more risky or not and whether the choice was in a financial context or not. That we found this effect both on a student population as well as a population of experienced investors and using a variety of stimuli for aesthetic affiliation speaks to the applicability and generality of this effect. We also identified openness as the driver of the effect, ruling out alternative explanations such as changes in risk perception, and in doing so, extend the implications of this research.

Theoretical Implications

The results of these studies have implications for those studying self-affirmation, aesthetics, or persuasion as well as more general implications about human psychology and judgment. First, the manipulation of aesthetic affiliation used in this research was a conservative test of both the power of aesthetics to self-affirm and the power of self-affirmation on openness to arguments. Prior work on self-affirmation with aesthetics has entailed choice of highly aesthetic options for self-affirmation, not simply affiliation with aesthetics (Townsend & Sood, 2012). Future research may wish to push this boundary even further, by exploring whether explicit affiliation is required or if exposure through simply viewing aesthetic materials may be sufficient for the effect. If mere affiliation and/or exposure with the highly aesthetic is able to produce the observed effects, actual choice of aesthetics and other forms of self-affirmation that provide a conscious recognition of one's core values may have an even stronger effect.

Exploring the process by which choice, affiliation, and/or exposure to highly aesthetic options lead to effects consistent with self-affirmation generates a deeper set of research

questions about self-affirmation more generally, especially the mechanisms by which it operates. As noted previously, other research on affirmational properties has suggested that they provide a “psychological repair mechanism” for the self (Sivanathan & Pettit, 2010). If so, then affiliation with aesthetics may be one of several related self-affirming mechanisms. A broader perspective of these underlying mental processes may suggest an even broader set of practical interventions for affirming an individual’s sense of self.

The connections between self-affirmation, persuasion, and risk taking are a rich area with many opportunities for additional research. Thus far, only limited evidence is available to show a direct connection between self-affirmation and increased risk taking; certainly there is much more to be done in this important area. These results revealed one manner in which thoughts about the self influence risk taking; it seems likely that other aspects of self perception may also impact openness and, therefore, propensity to engage in risk. Previous research on aesthetics has considered its effects on decision making through attribute perception (Nisbett & Wilson, 1977), consumer product choice (Hoegg, Alba, & Dahl, 2010), and even financial product evaluations (Townsend & Shu, 2010). However, we believe this is the first research to expand the investigation of aesthetics’ influence to the domain of openness and risk taking. More broadly, while these examples of prior research on aesthetics have considered how the look of a choice option might influence perceptions of that same option, this current research considers the carry-over effect to subsequent decisions. For example, the work of Townsend and Shu (2010) considered how the aesthetics of a company’s annual report influence perceptions of the company; while in Experiments 1 and 3 of the current research we examined how the aesthetics of annual reports subsequently influence perceptions on an unrelated entity. As such the current research identifies a more psychological and less rational effect of aesthetics, that of self-

affirmation. The effects of aesthetics are also relatively unexplored in the larger domain of persuasion research, a topic with many important implications. The three experiments presented here focus on self-affirmation, specifically affiliation with high aesthetics, to reveal when, how, and why it can influence risk taking behavior – both promoting and preventing uptake of a risky choice. These findings offer implications in any decision-making arena where risk might be involved and, moreover, for any situation where aesthetic affiliation may occur. As such, there are myriad areas where the consequences of effects identified in this research might apply.

Applications

By investigating affiliation with high aesthetics as a potential source of self-affirmation, the results of these studies take prior findings and theories that existed only in the lab and make them both relevant to and applicable in the marketplace. The advantageous effects of self-affirmation are well-known within the world of social psychology with effects shown in such diverse and significant areas as stereotyping a stigmatized group (Shrira & Martin, 2005) to honoring sunk costs (Sivanathan et al., 2008). Its effects on openness leads decision makers to consider information more objectively (Correll et al., 2004) be more open to persuasive arguments (Cohen et al., 2000; Sherman et al., 2000; Steele & Liu, 1983), and reduces counterarguing (Briñol et al., 2007). Given these effects, self-affirmation through aesthetics may be able to trigger openness in other situations where it is beneficial, such as when a detrimentally risk averse investor considers a less certain investment, when a voter evaluates a political candidate from an opposing party, when an overweight individual who has previously failed at weight loss is presented with a new diet plan, or generally any situation where an individual may be predisposed to disqualify a point of view. Broadly speaking, there is a growing body of work on how to “nudge” people to engage in behavior that is better in the long run such as healthy

eating and retirement savings (e.g., Thaler and Sunstein 2008). The findings presented here offer assistance in how one might encourage behavioral change, particularly within a population that may be initially resistant to such ideas.

Self-affirmation through aesthetics might also assist in generating creative ideas. Indeed, there is work showing that self-affirmation can counter the deleterious effects of stress for tasks that require openness and creative thought (Creswell, Dutcher, Klein, Harris, & Levin, 2013). Perhaps the aesthetically pleasing environment naturally offered by places such as art schools or design firms provides a feedback loop wherein the surroundings then result in more creative output and, in turn, an even more aesthetically pleasing environment.

The effects of affiliation with high aesthetics, something that can easily occur in daily life, as a form of self-affirmation have significant implications not only for persuasion but also for other domains where self-affirmation has been studied. We focus on openness to arguments due to the fact that marketers and practitioners are finding it increasingly difficult to break down the consumers' automatic defenses against them. Our results suggest that something as simple as reminding someone of the good-looking bag or watch they own may make them affirmed enough to override any such bias. It is important to note that this is not just another gimmick by marketers to trick consumers; research on self-affirmation has clearly shown that respondents make *better* decisions after self-affirmation by, for example, increasing attention to argument strength (Correl et al., 2004). Moreover, this increased openness can be used for pro-social messaging such as communications touting healthy behavior, sound financial activities such as saving for retirement, or environmentally friendly actions. Indeed, a tangible recent example reveals one situation where aesthetic affiliation may be a less controversial form of self-affirmation. Specifically, the British government's Behavioral Insights unit received negative

press in April 2013 for requiring unemployed job seekers to complete an online “personality strengths” survey to be eligible for benefits; the criticism was that each respondent received identical feedback, which angered those required to take it (Malik, 2013). The test appears to be a traditional self-affirmation task, and was presumably assigned as a way to strengthen self-identity and increase openness during the job-seeking process. Rather than utilizing a deceptive survey task, our results suggest that the unemployment office could have exposed job seekers to pictures of beautiful English cities and countryside landscapes and thus reminded them of their affiliation with this beautiful country to achieve the same goal.

Additionally, our findings of an effect of aesthetic affiliation even for risky financial options speak to its strength and also to its applicability in the field of financial decision-making in particular. Currently there is a plethora of available sound financial advice. For example www.mymoney.gov is a service available from the US government to teach Americans the basics of finance. And yet there is a common concern with the financial literacy of the general public and the lack of savings or long term investment (Lusardi & Mitchell, 2007). The implication is that the public may not be open to the financial advice that is offered. Our results offer an easily implemented fix for this; prior to presenting the information, people can be offered a highly aesthetic object for affiliation or motivated to consider the highly aesthetic products they own and, therefore, with which they are already affiliated. More generally, by identifying aesthetic affiliation as a form of self-affirmation, we expand the set of manipulations available for such pro-social policy interventions.

Limitations and Future Research

There are at least four ways in which this research could be extended or further strengthened. First, while we identified openness as the driver of the effect an alternative

explanation could be that after affiliation with high aesthetics, it is involvement that increases and thus greater attention to the arguments. In Study 3 we examined the amount of time taken to complete the experiment as a measure of involvement. While we found no differences between either the aesthetic affiliation conditions or the two affirmation conditions, it is possible that such a measure does not fully capture involvement. Additional research could help identify exactly how this openness results from self-affirmation, and whether involvement plays a role.

Second, while affiliation and/or choice of high aesthetics is something we suggest occurs more naturally in the real world than more traditional self-affirmation manipulations, the particular tasks we used for aesthetic affiliation may not be frequently encountered in typical consumer or financial decision-making. Moreover, we did not run any tests in the field or with actual choices. However, the strength and consistency of the effects suggests that these findings are likely to apply even when overt aesthetic affiliation does not occur. For example, if consumers are asked to explain to a retailer's front door attendant why they opted to shop at this store versus the grimmer and less beautiful one down the street, or consumers choose the better looking of two offered shopping baskets upon entering a store, we expect that the same openness would result.

Third, and related to this, is the question of whether affiliation or mere exposure to high aesthetics is necessary for the openness effects to occur. All of our manipulations involved not just exposure to aesthetic documents but affiliation with them, for example telling participants they had selected the highly aesthetic annual reports rather than just displaying them, or showing students guidebook pages depicting not just any university, but the one they attended. The point of this was to motivate the sense of connection and association similar to that which results from product choice and ownership. Townsend and Sood's (2012) use of product choice as their

manipulation suggests that some level of psychological connection with the high aesthetics may be necessary. In these studies, we never measured whether feelings of affiliation did in fact result from our manipulations; it is thus possible that mere exposure to high aesthetics may have the same self-affirming effects. We have remained conservative in our description of our manipulation, labeling it affiliation rather than exposure. However, future research might consider whether a connection with the high aesthetics is necessary or whether mere exposure might suffice.

Finally, in all of our studies, the choice task occurred soon after the aesthetic affiliation manipulation. As such, we are unable to speak to the duration of the effect. This is, again, an area for future research. Identifying aesthetic affiliation as a form of affirmation as well as exploring the effects of affirmation on choice suggests numerous future avenues for research on these areas. With this new tool for self-affirmation, the entire field of self-affirmation is now open to exploration in realistic marketing environments for both consumer and financial decision-making.

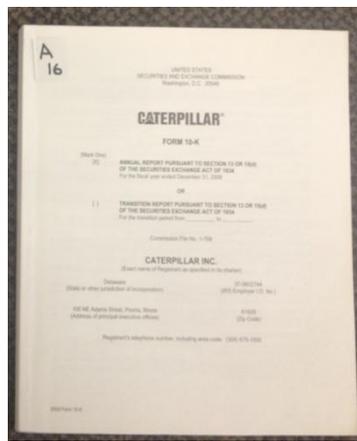
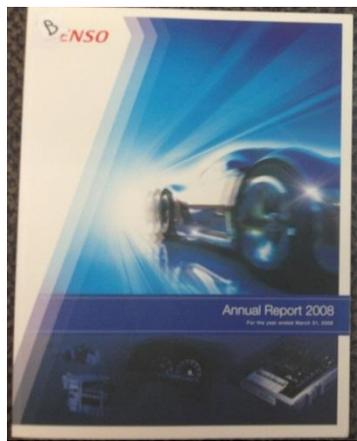
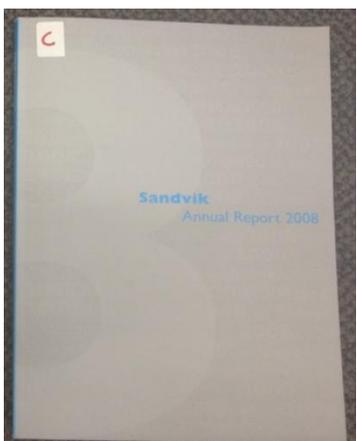
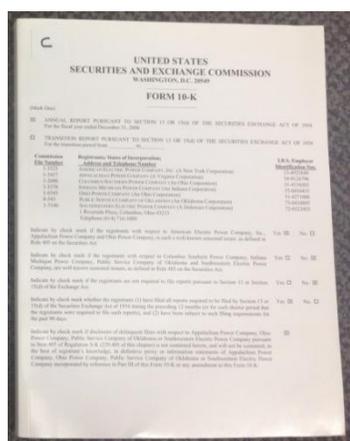
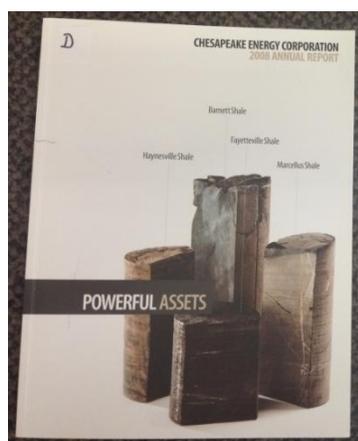
Appendices

Appendix A: Experiment 1 Samples of Covers and Inside Pages of Actual Annual Reports Used

High Aesthetics Sample Covers

Low Aesthetics Sample Covers

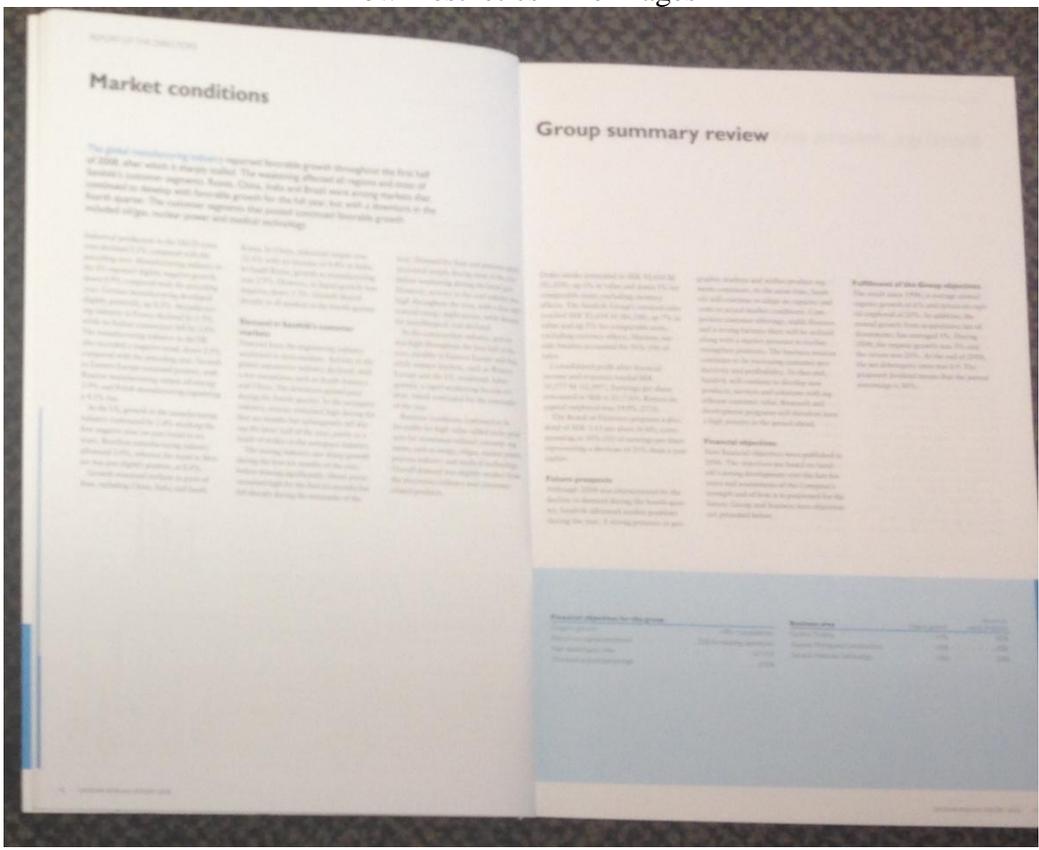
(Pairs matched on industry)



High Aesthetics Sample Inner Pages



Low Aesthetics Inner Pages



Appendix B: Experiment 2 Aesthetic Affiliation Conditions

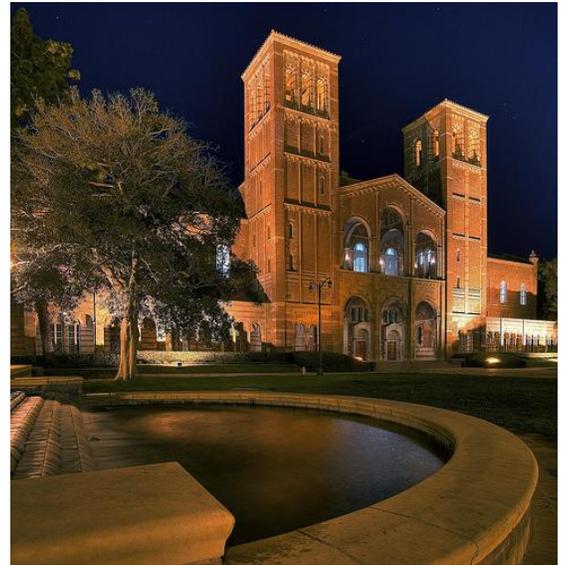
High Aesthetics Low Function Condition

Sample Page: 3A

Los Angeles Guidebook Information

The University of California, Los Angeles campus was first formed in 1919. Today the main campus is bounded by Sunset Blvd. on the north and Le Conte Ave. on the south; the east border is Hilgard Ave. and the west border is Gayley Ave.

The campus is one of the most beautiful in the U.S. It has an exquisitely blended mixture of traditional architecture with more modern buildings interspersed. As the campus has grown, the University has done an excellent job of keeping the aesthetics congruous and pleasing. The grounds are also well-manicured with rolling hills and lawns, indigenous trees, and carefully maintained flower beds. On the campus are several fountains as well as gardens including the sculpture garden and the botanical garden.



Perhaps because there has been such an emphasis on beauty, the campus is not easy to navigate. Buildings are often not labeled in a manner that is visible while walking by and there is no method to how they are positioned. To the visitor, it is an extremely daunting task to find a particular department or office on campus. When visiting, you will often see confusion in both the eyes of the students as well as visitors who are frequently looking with exasperation at a map.



Low Aesthetics High Function Condition

Sample Page: 2B

Los Angeles Guidebook Information

The University of California, Los Angeles campus was first formed in 1919. Today the main campus is bounded by Sunset Blvd. on the north and Le Conte Ave. on the south; the east border is Hilgard Ave. and the west border is Gayley Ave.

The campus is one of the most beautiful in the U.S. It has an exquisitely blended mixture of traditional architecture with more modern buildings interspersed. As the campus has grown, the University has done an excellent job of keeping the aesthetics congruous and pleasing. The grounds are also well-manicured with rolling hills and lawns, indigenous trees, and carefully maintained flower beds. On the campus are several fountains as well as gardens including the sculpture garden and the botanical garden.



The campus is one of the easiest to navigate and up-to-date in the U.S. It is well-planned with related departments generally located near each other, clearly marked paths, and navigation tools such as maps available. Since its beginning buildings have been consistently added and upgraded and continue to be today. Currently both the Young Research Library and Pauley Pavilion are being renovated.

Perhaps because there has been such an emphasis on upgrades and navigation, the campus is not consistently beautiful. Buildings from different time periods sit next to each other and create incongruous contrast in styles. Moreover, because of the constant desire to upgrade one's view often includes the prevalent caution tape and scaffolding. To the visitor, it is an extremely daunting task to enjoy a pleasant walk across campus. When visiting, you will often see disdain in both the eyes of the students as well as visitors who are frequently looking with exasperation at another construction project.



Appendix C: Experiment 3 Aesthetic Affiliation Stimuli

High Aesthetics Condition

Low Aesthetics Condition

Page 1

BUILDING A BETTER TOMORROW



2009 Annual Report **SHONBROS GROUP, INC.**

BUILDING A BETTER TOMORROW



2009 Annual Report **SHONBROS GROUP, INC.**

Page 2

Engineering Construction Project Management

Find us on the NYSE under symbol SB

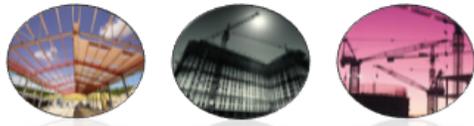
Dear Fellow Shareholders:

This past year, 2009, was one of the most meaningful years for Shonbros in our one hundred year history. We generated strong financial results providing engineering, construction and maintenance services to more than 400 industry and government clients in 60 countries, with earnings from continuing operations before special items of \$1.98 per diluted share and cash flow from continuing operations of \$187 million, a record for the Company. I believe these results provide solid evidence that our strategy and execution skills are vastly improved and our business model sound. Last year was also a year of significant achievements for us as we continued to reap the benefits of our efforts to further position Shonbros as a leader in the engineering and construction industry. Highlighting this effort, 2009 performance reflects the first full year we have benefited from the two acquisitions we made in 2008 as part of our diversification strategy. MidEast, now our Canadian pipeline construction company, extended our geographic presence more significantly into Canada, while InGenve, our Downstream unit, expanded our market reach and the breadth of our services, particularly increasing our maintenance and repair capabilities. Both acquisitions significantly outperformed our expectations in 2009. Additionally, we continue to make significant progress towards key strategic objectives which contributed to our successful year and better position us for the future.

Key numbers and expectations:

- Analysts expect our future stock price to remain steady or increase over the next year.
- The industry as a whole is expected to grow and we are expected to be one of the leaders.
- Our profit margin was 11.4% which is higher than the industry average

Yours,
The Chairman of the Board



Engineering Construction Project Management

Find us on the NYSE under symbol SB

Dear Fellow Shareholders:

This past year, 2009, was one of the most meaningful years for Shonbros in our one hundred year history. We generated strong financial results providing engineering, construction and maintenance services to more than 400 industry and government clients in 60 countries, with earnings from continuing operations before special items of \$1.98 per diluted share and cash flow from continuing operations of \$187 million, a record for the Company. I believe these results provide solid evidence that our strategy and execution skills are vastly improved and our business model sound. Last year was also a year of significant achievements for us as we continued to reap the benefits of our efforts to further position Shonbros as a leader in the engineering and construction industry. Highlighting this effort, 2009 performance reflects the first full year we have benefited from the two acquisitions we made in 2008 as part of our diversification strategy. MidEast, now our Canadian pipeline construction company, extended our geographic presence more significantly into Canada, while InGenve, our Downstream unit, expanded our market reach and the breadth of our services, particularly increasing our maintenance and repair capabilities. Both acquisitions significantly outperformed our expectations in 2009. Additionally, we continue to make significant progress towards key strategic objectives which contributed to our successful year and better position us for the future.

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- Analysts expect our future stock price to remain steady or increase over the next year.
- The industry as a whole is expected to grow and we are expected to be one of the leaders.
- Our profit margin was 11.4% which is higher than the industry average

Yours,
The Chairman of the Board





Property, plant and equipment, which are used to secure debt or are subject to lien, at cost, as of December 31, 2009 and 2008 were as follows:

	December 31, 2009	2008
Construction equipment.....	\$ 148,922	\$ 133,853
Land and buildings.....	30,413	44,754
Furniture and equipment.....	37,991	34,475
Transportation equipment.....	34,954	29,207
Leasehold improvements.....	14,851	5,834
Aircraft.....	6,591	-
Marine equipment.....	142	101
	271,904	287,034
Less: accumulated depreciation.....	(121,918)	(97,281)
	\$ 149,986	\$ 189,753



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Tables

Table 1

Experiment 2: Percent selecting the Risky Option
In Response to Arguments Presented After Aesthetic Affiliation

	Arguments for Safe Option	Neutral	Arguments for Risky Option
Total across Topics			
Low Aesthetics, High Function	49%	52%	56%
High Aesthetics, Low Function	30%**	48%	71%**
Watersports			
Low Aesthetics, High Function	46%	57%	65%
High Aesthetics, Low Function	42%	50%	79%**
Financial			
Low Aesthetics, High Function	52%	47%	48%
High Aesthetics, Low Function	12%**	46%	63%

** Indicates significantly different from the neutral condition at $p < .05$.

Table 2

Experiment 3: Influence of Affirmation through Traditional Manipulation or Aesthetics

Affiliation on Choice, Openness, and Perceptions of Investment Decision

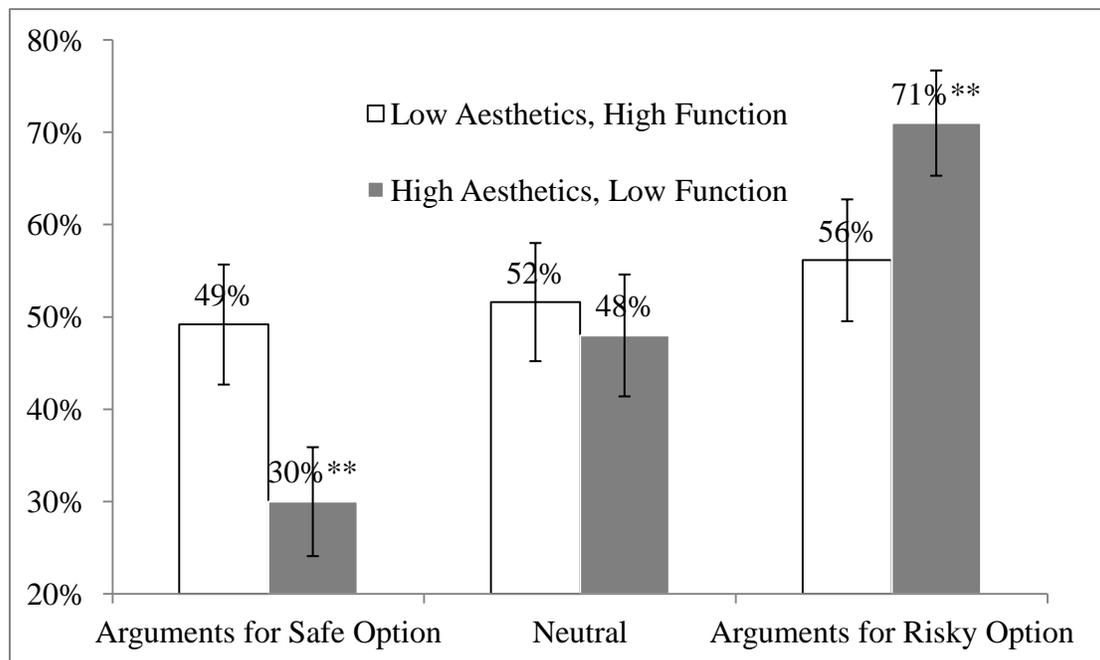
	<u>Traditional Self-Affirmation</u>		<u>Aesthetics Affiliation</u>	
	<u>No Affirmation</u>	<u>Self-Affirmation</u>	<u>Low Aesthetics</u>	<u>High Aesthetics</u>
Percent opting to invest in risk (IPO) investment	49%**	68%**	49%**	64%**
Mean (<i>SD</i>) perceptions of investment decision				
How risky is investment	4.13 (2.11)	3.91 (2.17)	3.83 (2.23)	3.72 (2.18)
How sure of investment decision	4.59 (1.60)	4.27 (1.66)	4.31 (1.63)	3.97 (1.46)
Openness measures				
Myside Bias Scale	7.85 (11.18)	6.48 (8.54)	9.03 (9.28)	8.75 (10.86)
Open-minded behavior measure	2.94 (1.07)**	3.26 (1.02)**	2.91 (.98)**	3.21 (1.10)**

** indicates significantly different at $p \leq .05$ (within affiliation conditions or within affirmation conditions).

FIGURES

Figure 1

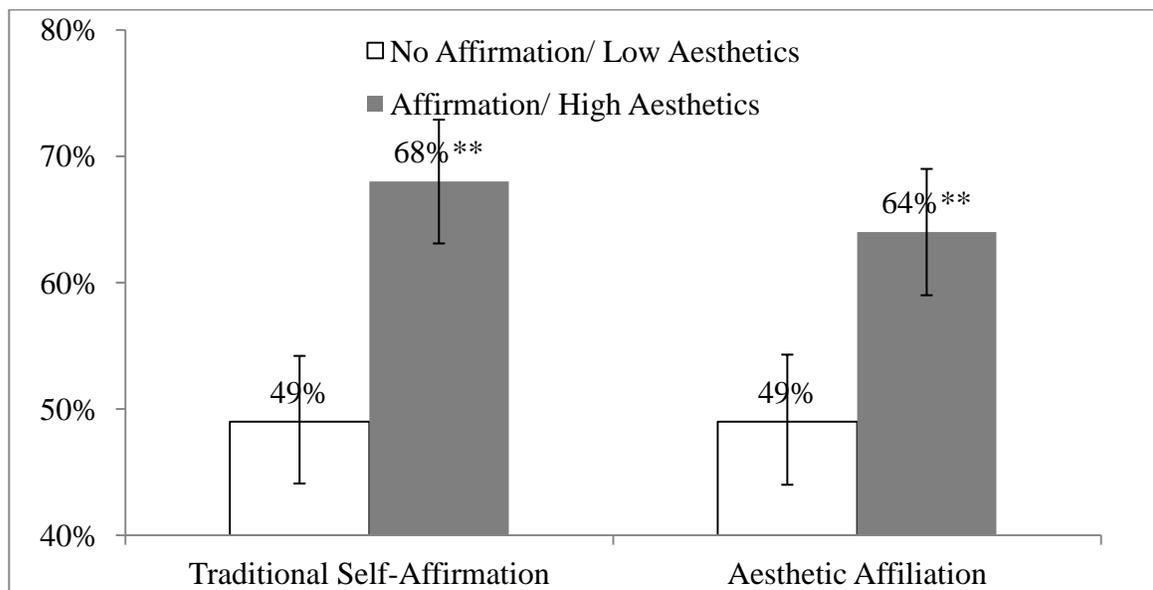
Experiment 2: Percent selecting the risky option (IPO or jetski)



** Indicates within Aesthetic Affiliation, both “Argument for Safe Option” and “Arguments for Risky Option” are significantly difference from “Neutral” at $p < .05$. Error bars signify one standard error of the mean.

Figure 2

Experiment 3: Percent selecting the advocated option (risky IPO)



** Indicates significantly larger than Low Aesthetics/No Affirmation at $p < .05$. Error bars signify one standard error of the mean.