
Looking Expensive: Experts' Valuation of Paintings Influenced by Context

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Abstract

Many factors influence the price of artwork. Few studies have focused on how contextual variables influence price despite their influence on how people experience and evaluate art. I constructed an online experimental study to look at painting setting (i.e., museum, street), painting attributes (i.e., style, reputation), and viewers' expertise to determine their influences on price. The results of the experiment showed that setting, style, and reputation interact with expertise to affect the pricing of art. Contrary to expectation, the results showed that experts were most influenced by setting manipulation when determining price, despite their reported familiarity with the established paintings. Experts and quasi-experts were also more likely to price paintings according to reputation than novices. There was also a significant three-way interaction between expertise, reputation, and style, whereby those with greater expertise were influenced by reputation and style when pricing art compared to novices.

Keywords

expertise, art price, context, setting, painting attributes, painting style

Introduction

Art is bought, sold, and invested like any other commodity. However, its valuation remains more subjective and elusive than most (Fosso, 1988) and is primarily driven by the consensus of art experts (Schönfeld & Reinstaller, 2007). Consider the following two scenarios: In New York City's Central Park, an elderly man set up a "Spray Art" stall, selling stencil canvases for \$60 apiece. That day, in October 2013, the man sold eight canvases (MacIntosh et al., 2013), two of which were subsequently auctioned for more than a thousand times their purchase price (Kennedy, 2014). The stencil art had been created by the British street artist Banksy. In the second scenario, years earlier (in 2007) in Washington D.C., a young man in jeans and a t-shirt played classical pieces on his violin at the L'Enfant Plaza Station during rush hour. He

earned \$32.17 in 43 minutes, a decent hourly rate for a street performer—except that he was Joshua Bell. This award-winning violinist typically commands \$1,000 a minute (Weingarten, 2007).

Both social experiments disrupt the congruence between what is considered high art and the exhibition space that it normally occupies. By stripping away the usual corresponding context, these artists became "art without a frame." Mark Leithauser, a senior curator at the National Gallery of Art, acknowledged that if an abstract painting of Ellsworth Kelly were hung inside a restaurant, it would go unnoticed by most—although an art curator would likely note that it resembled a Kelly (Weingarten, 2007). Leithauser hypothesized that once art is removed from its

traditional space (i.e., museums and galleries) its value becomes more ambiguous, and more so for novice evaluators than those considered to be experts. Thus, setting and expertise are two key predictors that can explain the undervaluation of art in the Bell and Banksy scenarios.

The primary purpose of my study is to test empirically whether the manipulation of setting affects the valuation of art, and secondarily, to examine how key painting attributes would interact with this setting manipulation. For example, would reputable paintings be valued less if viewed without the framing of a gallery or a museum setting? Aside from the art setting, the other factors that I will test are expertise, style, and reputation of the art. Studies have shown that these factors influence art aesthetic judgment (e.g., Gartus & Leder, 2014; Else et al, 2015; Pazzaglia et al., 2020), however, it is unclear if they influence monetary valuation. To make the setting manipulation possible with established paintings, the study was conducted virtually in an online environment where participants saw images of paintings presented against settings that were digitally modified.

The Effect of Setting and Painting Attributes on Price

Although the Bell and Banksy stunts suggested undervaluation of their work because of contextual manipulation, no empirical research supports or refutes this hypothesis. Research from the aesthetics literature shows contextual influence on art appreciation, but it is unclear if that influence extends to art's monetary value. Leder et al.'s (2004) aesthetic appreciation and judgment model proposed that contextual classification (e.g., museum, art gallery) is critical in preparing the viewer for aesthetic processing. Various studies on context and art also support the hypothesis that contextual factors (not limited to setting) influence aesthetic experience. For example, art labeled as from galleries scored higher in aesthetic ratings than those labeled as computer-generated (Kirk et al., 2009). Likewise, participants' ratings of paintings, including pleasantness, quality, and desire for possession, were lower when the

paintings they viewed were labeled as "copies" compared to when they were labeled as "originals" (Wolz & Carbon, 2014). It appears that the presented authenticity of paintings affected the novices' opinion of the artwork. Similarly, participants randomly assigned to view artworks in a museum gave higher ratings compared to those who were assigned to view the same ones on a computer in a laboratory setting (Brieber et al., 2014). Finally, artworks believed to have required more time or greater effort to create also increased participants' aesthetic judgment of them. (Kruger et al., 2004; Cho & Schwarz, 2008). These studies demonstrated viewers' malleability to setting and a preference for more prestigious or effortful art. Given that contextual manipulation affects aesthetics, my current study will examine whether that influence will carry over to the art's monetary valuation. To examine the effect of setting on price, Hypothesis 1 tested the assumption that participants would assign a higher price to paintings in a museum compared to a street setting.

The few empirical studies that have investigated the price of art can be classified into "How price affects X" or "How X affects price." Under the "How price affects X" category, Luring et al. (2016) found that participants preferred paintings with (fictitiously) higher sale prices (e.g., \$ 60-80 million) over those with lower sale prices (e.g., \$ 250). In "How X affects price," Kruger et al. (2004) found that participants assigned a lower price to a poem if they believed it took less time to create and a higher price if it took more time. Although a clear demonstration of how manipulating X (e.g., effort) can affect price, most people's encounters with art involve only limited information such as title, artist, year, medium, and at best a brief description. As for studies with real-world art prices, Beckert and Rössel (2013) found through analyses of auction databases that the popularity and attainment of awards by artists positively predicted price. Schönfeld and Reinstaller (2007) also found a positive correlation between artists' reputation and their art prices in their analysis of art sales prices. These studies all show that better quality

and more prestigious paintings fetch higher prices. With regard to how the reputation of the art and artist affects price outcome, Hypothesis 2 predicted that participants would pay higher prices for the paintings of established artists than unestablished ones.

Regarding style, Goetzmann et al. (2016) found mixed evidence for a positive relationship between price and style among 58 well-known artists' works (e.g., Picasso, Miro, Matisse). Their empirical evidence supported this pattern for specific art periods such as impressionism, post-impressionism, and expressionism, but not for others like surrealism and pop art. Given the mixed results and the more generic abstract and representational style categories in my study, Hypothesis 3 posited that on average participants would not vary in their pricing for different painting styles.

Expertise, Setting, and Painting Attributes' Interaction on Price

Levels of expertise are typically divided into three categories: Novices have little to no experience or knowledge, experts have superior knowledge and performance in a domain, and quasi-experts fall somewhere in between (Plucker et al., 2009). In Bell's scenario, two quasi-experts with some musical training stopped to listen and noted that the violinist was good but didn't recognize Bell (Weingarten, 2007). Their ability to recognize talent aligns with the finding that quasi-experts' judgment can match that of experts (Kaufman & Baer, 2012).

Examining the relationship between art price and expertise, Kruger et al. (2004) had participants provide an auction price estimate for paintings by a local artist. They found that self-identified experts (art students) gave higher auction estimates than novices. Using real-world auction data, Ashenfelter and Graddy (2003) found that experts' (art auctioneers) price estimates correlated highly with the actual prices at which the paintings were sold. It seems that the inclination of those with art experience to set higher prices for art may reflect the reality of the art market. Thus, Hypothesis 4 predicted

that experts would give higher prices than novices and quasi-experts.

The other component in Banksy and Bell's scenario that warrants further consideration is the interaction between expertise and context. In the Bell scenario, the difference in response between most commuters and the two quasi-experts who stopped to listen suggests that greater expertise means a better ability to perceive the value of the product even when its setting is out of alignment. In the Banksy scenario, none of the buyers were aware of the potential value of the canvases (MacIntoch et al., 2013). If the novices were not aware, would those with expertise do better? Anecdotally it appears not. An NBC article reported a firsthand encounter with the Banksy social experiment. Emily Christensen-Flowers, an NBC editor, admitted she was hoodwinked by the stunt—even though she would qualify as a quasi-expert/expert. She knew who Banksy was; She followed his month-long art residency in NYC, attended his art exhibit in Greenwich Village, and studied art history in college. Passing by the stall, she initially assumed the stall was selling knockoffs—albeit good ones—and continued walking (Christensen-Flowers, 2013).

Christensen-Flowers' experience echoed Mark Leithauser's earlier sentiments that framing is important in art and that a multimillion-dollar art piece might go unnoticed outside a museum (Weingarten, 2007). Paintings hanging in a museum can command a certain price because of expert consensus (Beckert & Rossel, 2013; Schönfeld & Reinstaller, 2007). Consequently, being housed in an establishment like a museum further elevates the value of both the painting and the painter (Beckert & Rossel, 2013; Yogev, 2009). Given the entanglement of context and expertise on price, it is important to understand how expert judgment would be affected by contextual manipulation. This information is valuable for enhancing the reputation and credibility of the judges and their affiliated institutions (Beckert & Rossel, 2013).

Evidence is scant regarding what the interactions between expertise and setting or painting attributes on price look like. The only

study thus far to test the interaction between expertise and setting, using aesthetics as an outcome, found no significant interaction (Van Paasschen et al., 2015). They did find a main effect of expertise, wherein experts rated paintings higher in beauty and liking compared to novices. As for the interaction between expertise and other painting attributes, Else et al. (2015) examined affect ratings and EEG activity in response to abstract, representational, and indeterminate painting styles among artists and non-artists. The results of the affect ratings showed that non-artists gave lower affect ratings to abstract or indeterminate art but higher to representational art compared to artists. In addition, there were no significant differences in affect ratings between the three styles for artists. Else et al. used the event-related potential technique (ERP) to assess emotional, attentional, and visual processing (e.g., P1, N1, P2, N2, P3). ERPs are electrophysiological brain responses to a stimulus measured using EEG (for an overview of ERP see Sur & Sinha, 2009). The results showed that across all components, artists exhibited larger ERP amplitudes to all art types than non-artists. Else et al. concluded that experts' higher amplitude indicated that both expertise and cognitive effort are necessary to appreciate and experience emotional arousal from more abstract art. In sum, both the affect rating and EEG results showed that experts maintain similar cognitive and emotional engagement with different types of art while novices were less engaged with abstract and more with representational art.

The pattern that experts were less influenced than novices by changes in painting attributes was found in other studies. In a more nuanced investigation of style, Pihko et al. (2011) collected aesthetic and emotional valence ratings for paintings that ranged on a five-category continuum of representational to abstract art (e.g., I-representational, II-less representational, V-abstract). In their study, novices' aesthetic and emotional ratings became less favorable with increasing levels of abstraction, but experts' ratings were unaffected by that change. Experts' ability to not be affected by changes in painting attributes was

also seen in an experiment that manipulated the presence and absence of lacunae (i.e., missing sections) in artworks. Pazzaglia et al. (2020) measured participants' implicit and explicit aesthetic attitudes toward intact and lacunar artwork. Novices implicitly and explicitly preferred intact over lacunar artwork. The experts (art historians and restorers) expressed similar explicit aesthetic attitudes for intact and lacunar artwork. Art restorers showed a more positive implicit attitude toward lacunar artwork than art historians. Overall, experts were better able to appreciate the aesthetics of artworks despite degradation than novices. Furthermore, by including different subtypes of art experts, Pazzaglia et al. found that there were nuanced differences between experts' appreciation too.

These studies revealed how experts and novices differentially respond to variability with painting attributes. When combined with existing information about art and price, such as the findings that art experts were more accurate at estimating art auction prices (Ashenfelter & Graddy, 2003) and were also more emotionally detached in evaluating artwork (Leder et al., 2014), it follows that their valuation would be the least affected by setting or style. In conclusion, these studies support the overall assumption that experts would provide a more holistic appreciation of art and would price art more in line with the art market rather than the novices' less informed or more subjective valuations.

Hypotheses 5 through 7 were based on the premise that experts are less influenced by setting or style and would thus assess paintings according to their actual value and reputation. Since novices have less knowledge about artwork than experts, additional cues like setting and style would play a larger role for them than for experts. Hypothesis 5 stated that experts and quasi-experts would value paintings similarly across settings, whereas novices (as reported by Brieber et al., 2015 and Grüner et al., 2019) would prefer paintings in museums over street settings. Given that experts can better recognize established paintings and reputation is positively correlated with price (Beckert & Rössel, 2013; Schonfeld & Reinstaller, 2007), Hypothesis 6

stated that experts and quasi-experts would give higher prices for established than unestablished paintings, whereas novices would price the paintings similarly regardless of reputation. Lastly, Hypothesis 7 stated that novices would price representational higher than abstract paintings whereas quasi-experts and experts will price abstract higher than representational ones. Hypothesis 7 is based on findings that novices preferred representational art (Van Paasschen et al., 2015; Pihko et al., 2011) and experts were

more appreciative of abstract art (Furnham & Walker, 2001a, 2001b; Leder et al., 2012). Further confirmation of novices' representational bias is provided by Durkin et al. (2020), who found that novices prefer to be physically and temporarily more distant from abstract paintings (e.g., exhibit them in another state in a year) than from representational paintings (e.g., exhibit them tomorrow around the corner). The seven hypotheses are simplified in Table 1.

Table 1. Summary of Hypotheses for Price

	Setting	Reputation	Style	Expertise
Main	H1. Museum > Street	H2. Established > Unestablished	H3. Representational = Abstract	H4. Experts > Quasi-experts & Novices
Interactions with Expertise				
Novices	H5. Museum > Street	H6. Established = Unestablished	H7. Representational > Abstract	
Quasi-Experts	Museum = Street	Established > Unestablished	Presentational < Abstract	
Experts	Museum = Street	Established > Unestablished	Presentational < Abstract	

Note. The results supported all hypotheses except for H3, H7, and H5 (for experts).

Method

Participants

There were 182 female and 116 male participants from ages 18 to 81 ($M = 31.8$, $SD = 16.9$). The participants were community college students, MFA students, and professional artists. The community college students received course credit for the study, but the other participants were not compensated. The Claremont Graduate University Institutional Review Board exempted the study from IRB review because of minimal risks.

Material

Aesthetic Fluency Scale (AFS)

Participants were categorized into novice, quasi-expert, and expert using the results from the Aesthetic Fluency Scale (AFS). The AFS is a 10-item Likert scale that assesses individuals' subjective knowledge of various artists (e.g.,

Noguchi, Botticelli) and art topics (e.g., Fauvism, Impressionism) (Smith & Smith, 2006). The AFS has demonstrated good reliability, validity, and generalizability with college students and nonstudents (Silvia, 2013; Smith & Smith, 2006; Swami, 2013).

Art Stimuli

Eight representational and eight abstract paintings were selected as art stimuli (see Appendix A). For each style, half of them were from Oxford University Press online art reference books and the other half were paintings for sale on art-mine.com, the online storefront of Agora Gallery (based in New York), which represents emerging contemporary artists. The two sources allowed for a comparison between paintings that are established and those that are unestablished. The combination of style and reputation resulted in four painting categories: established-

representational, unestablished-representational, established-abstract, and unestablished-abstract. Paintings from the established category were matched with those in the unestablished category in terms of painting object/theme (e.g., paint drip, fruits). Each of the 16 paintings was digitally placed in both museum and street settings using Adobe® Photoshop® software, resulting in 32 images.

Procedure

The participants were sent a link to participate in the online experiment created on Qualtrics.com. After the participants gave consent, they rated all 16 paintings displayed in either a street or museum setting. Participants were shown the following prompt to give their price for the painting: “If this painting was being sold at an auction, how much is your maximum bid on it? Assume that money is

not an issue. To put things in perspective, the highest auctioned painting on record is \$300,000,000.” Since the prompt asked for their maximum bid, the price variable measured their subjective assessment of the painting’s monetary value. After all the paintings were priced, participants completed demographic questions for age, education, art experiences, and the AFS. As an exploratory variable and a possible confound, participants’ familiarity with the painting was also assessed on a 7-point Likert scale with 1 being “not at all familiar” and 7 being “extremely familiar.”

Participants were first randomly assigned to all four combinations of painting type and reputation categories (Block 1 in Figure 1). Then within each category, there were six possible presentation sequences, which counterbalanced the images to ensure that both museum and street settings were presented for each category (Block 2 in Figure 1).

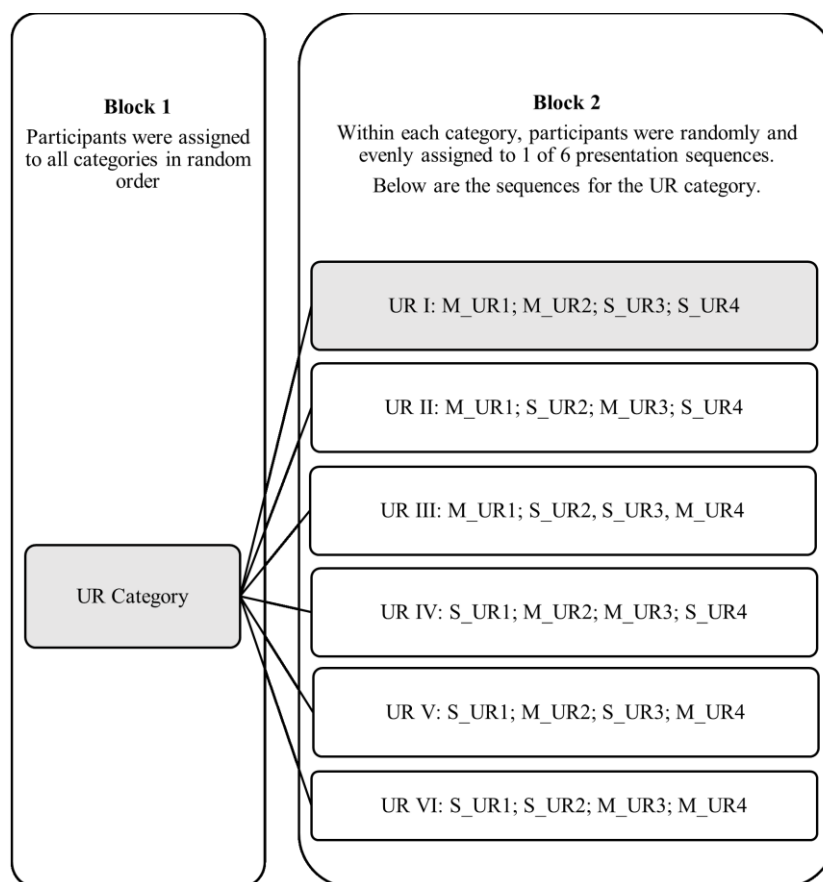


Figure 1. The above scenario shows the UR category and its six presentation sequences. The other categories and their sequences follow the same setup.

Note. E = Established, U = Unestablished, R = Representational, A = Abstract (e.g., UR = Unestablished, Representational paintings). M_ = museum setting, S_ = street setting (e.g., M_UR1 = Unestablished-Representational painting #1 in a museum setting).

Participants were randomly and evenly assigned to Block 1 and Block 2 to ensure that all categories and presentation sequences had a similar number of participants. The category labels were not shown to the participants, only the paintings and the corresponding survey items. Emulating Gartus and Leder's (2014) setting manipulation, the participants saw all 16 paintings, but they saw each painting in only one of two settings, never both. It took the participants an average of half an hour to complete the online experiment.

Design

The current study was a 3 (expertise: novice, quasi-expert, experts) \times 2 (setting: museum, street) \times 2 (style: representational, abstract) \times 2 (reputation: established, unestablished) multifactorial design. Setting, style, and reputation were within-subject variables and expertise was a between-subject variable. The key outcome was price in US dollars, with familiarity as an exploratory one.

Result

Expertise Classification Using AFS and Education

AFS averages and medians were used to determine boundaries for the expertise category. Participants who scored 0 to 1.30 ($Mdn = .70$) were classified as novices, 1.31 to 2.70 ($Mdn = 2.05$) were classified as quasi-experts, and 2.71 to 4.00 ($Mdn = 3.40$) were classified as experts. The AFS categorization resulted in 196 novices, 61 quasi-experts, and 45 experts with AFS mean scores of .50 ($SD = .35$), 1.97 ($SD = .42$), and 3.44 ($SD = .38$), respectively. The mean and medians both corresponded with the original interpretation of the AFS score where a score of 0 to 1 indicates little to no knowledge of surveyed items, 2 indicates some idea and understanding, and 3 to 4 indicates understanding and being able to talk intelligently about the artist or ideas.

Demographic information further supported these expertise category boundaries. On average, the experts were older and had over a decade more art experience compared to the

quasi-experts and two decades more art experience compared to the novices. Fifty-six percent of novices had no experience with art, while the other 44% had some personal art-related interest or had taken high school or college courses in art. Quasi-experts had both non-formal (36%) or formal training (39%, i.e., work and education), and experts had the highest percentage of formal training (89%). Quasi-experts with informal training reported an average of three and a half years of experience, and those in the art field reported an average of 7 years of experience. Experts reported an average of 22 years of work experience. Nearly all experts (except one) were primarily career artists. On the other hand, half of the quasi-experts had art-related occupations and only a few novices had art-related occupations.

Mixed ANOVA Analysis for Pricing Art

Some participants ($n = 93$, mainly the undergraduates/novices) were excluded because of an error in the initial presentation setup where some participants were missing exposure to a museum or street setting for one of the four type and reputation categories. The error was corrected upon discovery and subsequent participant data showed they were exposed to all settings for all categories. Aside from that, three other participants' responses were excluded from the price analysis because they reported zeros for all paintings. Seven outliers were detected and then Winsorized (Hoaglin & Iglewicz, 1987). Because of the price variable's extreme range (0 – 100 million), high positive skew (12.1), and kurtosis (163), a log10 transformation was applied to normalize the price variable. As a result, 124 novices, 45 quasi-experts, and 37 experts were in the final price analysis.

The normality of distribution for each of the 24 conditions for the 2x2x2x3 mixed ANOVA design was assessed by Shapiro-Wilks tests. The Shapiro-Wilks showed 11 statistically significant $p < .05$ conditions and 13 non-statistically significant $p > .05$ conditions. However, the histogram and Q-Q plot for the distribution of each condition showed a fairly normal distribution. Furthermore, the skew and

kurtosis for all conditions were below ± 1.5 . Levene's test showed homogeneity of variance for all ($p > .05$) except one ($p = .001$). Sphericity is satisfied because there are only two levels for the within-subject variables. Overall, although Shapiro-Wilks tests indicated some violation of normality, the histogram and Q-Q plot, along with skew and kurtosis all indicated fairly normal distributions. Given the sample size and evidence of reasonably normal distributions, a four-way mixed ANOVA was run to determine the effect of within-group variable setting (museum vs. street), reputation (established vs. unestablished), and style (abstract vs. representational), and the between-group variable of expertise (novice vs. quasi-expert vs. expert) on the price of paintings. Subsequent follow-up analyses used Bonferroni correction to account for alpha inflation. Despite the unequal group sizes, ANOVA analysis was used because F -tests are robust to deviations from normality when there is homogeneity of variance—which is the case in this data set. Specifically, Blanca et al. (2017) found that regardless of certain deviations, unequal group sizes included, F -tests were robust and valid in their ANOVA Monte Carlo simulations.

Main Effects on Price

There was a statistically significant main effect for setting, $F(1, 203) = 18.93, p < .001, \eta^2 = .085$. Consistent with Hypothesis 1, pairwise comparison showed that participants priced paintings shown in museum settings ($M = 4.02, SD = .11$) higher than the same paintings in street settings ($M = 3.72, SD = .11, p < .001, 95\% CI [.17, .46], d = 2.73$). There was a statistically significant main effect for reputation, $F(1, 203) = 212.15, p < .001, \eta^2 = .51$. Consistent with Hypothesis 2, pairwise comparison showed that participants priced established paintings ($M = 4.44, SD = .12$) higher than unestablished paintings ($M = 3.30, SD = .11, p < .001, 95\% CI [.99, 1.30], d = 9.90$). There was also a significant main effect for style, $F(1, 203) = 6.14, p = .014, \eta^2 = .03$. Contrary to hypothesis 3, the pairwise comparison showed that participants priced representational paintings ($M = 3.96, SD = .11$)

higher than abstract paintings ($M = 3.78, SD = .11, p = .014, 95\% CI [.04, .33], d = 1.64$). There was a statistically significant main effect of expertise, $F(2, 203) = 10.7, p < .001, \eta^2 = .095$. In line with hypothesis 4, post hoc pairwise comparisons showed significant differences between experts' ($M = 4.39, SD = .21$) and novices' prices ($M = 3.33, SD = .12, p < .001, 95\% CI [.58, 1.53], d = 6.20$), and between quasi-experts' ($M = 3.89, SD = .19$) and novices' prices, $p = .014, 95\% CI [.01, .99], d = 3.52$). There was no statistically significant difference between quasi-experts and experts, $p = .078, 95\% CI [-.06, 1.07], d = 2.50$. The data showed that quasi-experts and experts both gave significantly higher prices compared to novices, whereas quasi-experts and experts did not differ significantly from each other on prices.

In sum, participants gave higher price valuations to paintings in museum settings, of established reputation, and representational in style. As for differences in expertise, experts gave the highest price, novices the lowest, and quasi-experts in between.

Interactions of Expertise with Other Factors on Price

Hypothesis 5: Interaction of Expertise and Setting for Price

There was mixed evidence in support of Hypothesis 5. There was no statistically significant setting and expertise interaction, $F(2, 203) = 2.97, p = .053, \eta_p^2 = .03$ (see Figure 2).

However, as hypothesized, follow-up repeated ANOVAs showed that novices priced paintings shown in museum settings ($M = 3.44, SD = .13$) significantly higher than the same ones shown in street settings ($M = 3.23, SD = .13, F(1, 123) = 10.84, p = .001, \eta_p^2 = .08$), whereas quasi-expert did not vary in prices between museum ($M = 3.95, SD = .19$) versus street settings ($M = 3.82, SD = .21, F(1, 44) = .66, p = .42, \eta_p^2 = .02$). However, contrary to Hypothesis 5, experts priced paintings in museum settings ($M = 4.68, SD = .20$) significantly higher than those in street settings ($M = 4.11, SD = .22, F(1, 36) = 10.46, p = .003, \eta_p^2 = .23$).

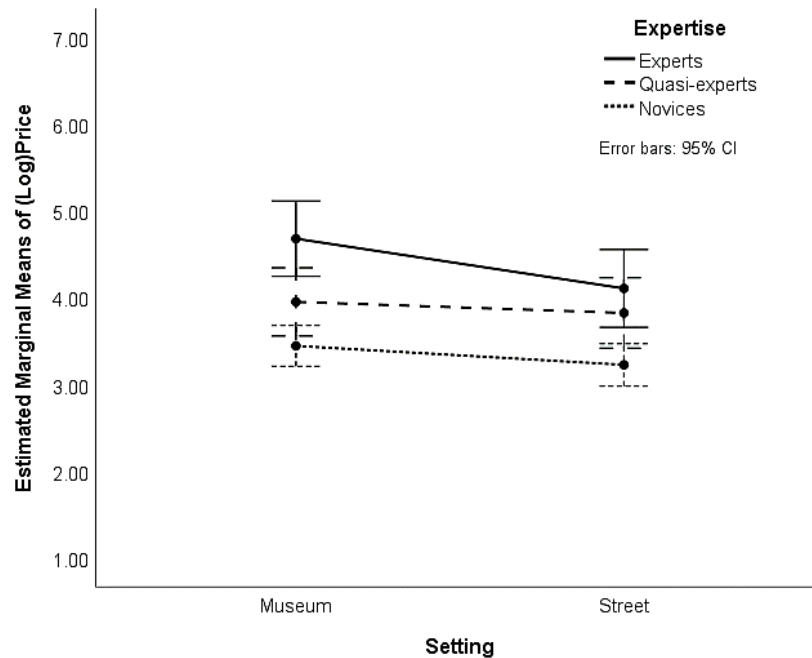


Figure 2. The interaction between expertise and setting for price.

Hypothesis 6: Interaction of Expertise and Reputation for Price

The two-way interaction of reputation and expertise was statistically significant, $F(2, 203) = 93.68$, $p < .001$, $\eta_p^2 = .48$ (see Figure 3). Consistent with Hypothesis 6, follow-up repeated ANOVAs showed statistically significant simple main effects of reputation for quasi-experts and experts but not for novices. Novices did not price established ($M = 3.33$, $SD = .12$) and unestablished paintings ($M = 3.34$, $SD = .12$) differently, $F(1, 123) = .139$,

$p = .71$, $\eta_p^2 = .001$. Quasi-experts priced established ($M = 4.39$, $SD = .24$) higher than unestablished ($M = 3.39$, $SD = .18$) paintings, $F(1, 44) = 26.73$, $p < .001$, $\eta_p^2 = .38$. Experts also priced established ($M = 5.62$, $SD = .25$) higher than unestablished ($M = 3.16$, $SD = .21$) paintings, $F(1, 36) = 98.48$, $p < .001$, $\eta_p^2 = .73$. In summary, experts exhibited the widest price discrepancy between unestablished and established paintings, while quasi-experts demonstrated a smaller gap, and novices showed no discernible gap (see Figure 3).

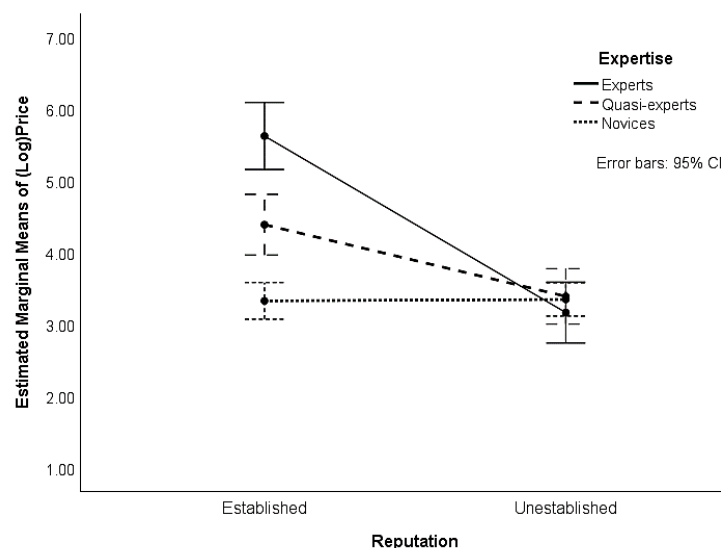


Figure 3. The interaction between expertise and reputation for price.

Hypothesis 7: Interaction of Expertise and Style for Price

The two-way interaction of style and expertise was not statistically significant, $F(2, 203) = .094, p = .91, \eta_p^2 = .001$. Hypothesis 7 was not supported; there was no evidence that different groups priced paintings differently according to style.

Post Hoc & Exploratory Analysis

Post Hoc Three-Way Interaction of Reputation, Style, and Expertise on Price

Though not originally hypothesized, there was one statistically significant three-way interaction

between reputation, style, and expertise, $F(2, 203) = 15.30, p < .001, \eta_p^2 = .13$. This indicated that the reputation and style interaction is different among the three expertise groups (see Figure 4). For the subsequent three two-way interaction follow-up analyses, there were statistically significant simple two-way interactions of reputation and style for quasi-experts, $F(1, 44) = 10.88, p = .002, \eta_p^2 = .20$ and experts, $F(1, 36) = 24.93, p < .001, \eta_p^2 = .41$, but not for novices, $F(1, 123) = .17, p = .68, \eta_p^2 = .001$.

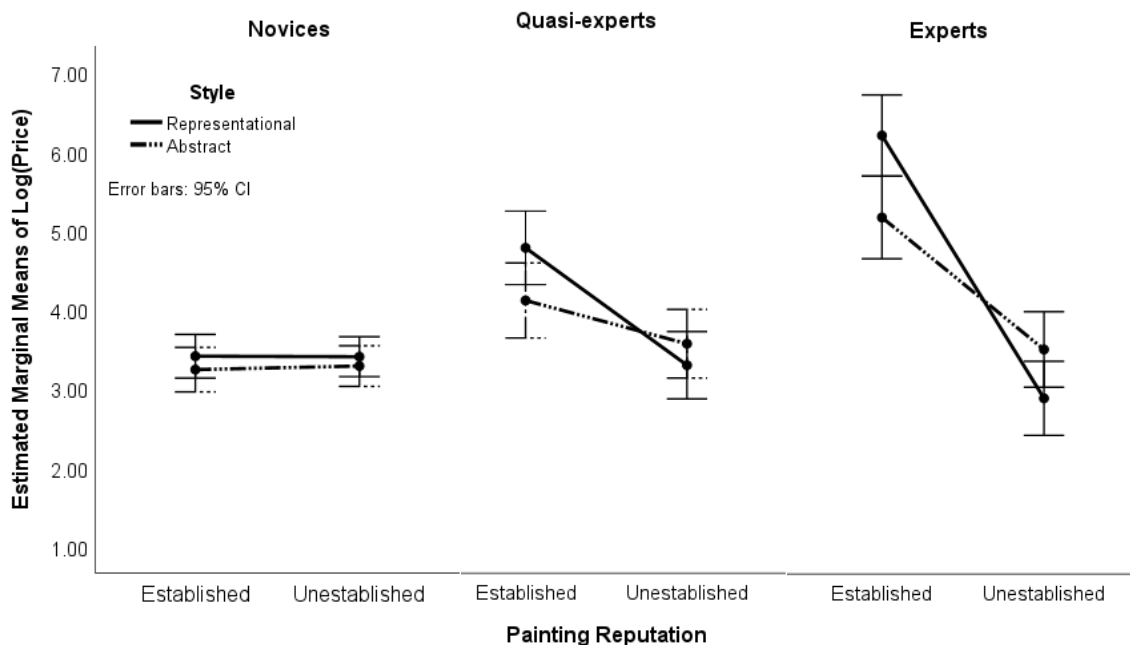


Figure 4. Three-way interaction of reputation, style, and expertise for price.

For quasi-experts and experts, there was a cross-over interaction. The pattern appeared to be that for established paintings, representational paintings garnered higher prices than abstract. However, for unestablished paintings, abstract garnered higher prices than representational paintings. Follow-up analyses showed that the differences were statistically significant except in one contrast. For quasi-experts, established representational paintings were priced higher ($M = 4.71, SD = .28$) than established abstract paintings ($M = 4.06, SD$

$= .24$), $F(1, 44) = 9.40, p = .004, \eta_p^2 = .17$.

Similarly, experts also priced established representational paintings ($M = 6.13, SD = .26$) higher than established abstract paintings ($M = 5.11, SD = .29$), $F(1, 36) = 20.24, p < .001, \eta_p^2 = .36$. The simple-simple main effects of style on unestablished paintings showed a statistically significant effect for experts, $F(1, 36) = 7.76, p = .008, \eta_p^2 = .18$, but not for quasi-experts, $F(1, 44) = 2.24, p = .14, \eta_p^2 = .05$. Experts priced unestablished abstract ($M = 3.47, SD = .24$)

higher than unestablished representational paintings ($M = 2.86$, $SD = .23$) but the difference was not statistically significant for quasi-experts.

Exploratory Analysis on the Familiarity Variable

The familiarity variable was included to assess participants' familiarity with the paintings they saw, especially with established ones. This was to investigate whether their familiarity might pose a potential confound for pricing. For the familiarity variable, 216 participants with complete data were included, with the breakdown of 126 novices, 47 quasi-experts, and 43 experts. Familiarity ratings for all participants had a mean of 3.99 ($SD = 1.04$) with a skew of $-.29$ ($SE = .17$) and kurtosis of $.64$ ($SE = .33$). Bivariate correlation analysis showed an overall significant correlation with familiarity of established paintings and AFS mean scores ($r = .56$, $p < .001$), but not between familiarity of unestablished paintings and AFS mean scores ($r = .05$, $p = .48$). This result indicated that familiarity with established painting is an indicator of expertise.

On familiarity, there was a significant interaction between painting reputation and expertise: $F(2, 213) = 62.61$, $p < .001$, $\eta_p^2 = .37$. Separate follow-up ANOVAs found significant main effects of expertise for established paintings $F(2, 213) = 43.29$, $p < .001$, $\eta_p^2 = .29$ but not for unestablished paintings $F(2, 213) = .60$, $p = .55$, $\eta_p^2 = .01$. For established paintings, all three expertise groups differed significantly from each other. Experts ($M = 5.37$, $SD = .17$) gave higher familiarity score than novices ($M = 3.65$, $SD = .10$), $p < .001$, 95% CI [1.35, 2.11], $d = 12.33$, and quasi-experts ($M = 4.45$, $SD = .16$), $p = .002$, 95% CI [.26, 1.19], $d = 5.57$. Quasi-experts also gave a higher familiarity score than novices, $p < .001$, 95% CI [.62, 1.37], $d = 6.00$. This pattern aligned with the finding that expertise is positively correlated with the familiarity of established paintings.

For within-group comparisons, no differences were found for novices' familiarity rating between established and unestablished paintings, $F(1, 125) = .86$, $p = .36$, $\eta_p^2 = .01$. There were statistically significant differences in established and unestablished paintings for quasi-experts, $F(1, 46) = 33.55$, $p < .001$, $\eta_p^2 = .42$ and experts $F(1, 42) = 79.73$, $p < .001$, $\eta_p^2 = .66$. Quasi-experts gave higher familiarity scores to established ($M = 4.65$, $SD = .14$) than unestablished paintings ($M = 3.87$, $SD = .14$). Experts also gave higher familiarity scores to established ($M = 5.37$, $SD = .17$) than unestablished paintings ($M = 3.84$, $SD = .15$). Overall, the correlation and ANOVA results indicated that the greater the expertise, the higher the rating on familiarity on established paintings and the greater the mean differences were between established and unestablished paintings on familiarity. On the other hand, there were no differences found between expertise groups on familiarity with the unestablished paintings (see Figure 5).

To determine whether familiarity is related to pricing behavior across expertise groups, and if experts only priced familiar paintings higher, bivariate Pearson correlations were calculated between familiarity and prices for established and unestablished paintings. Experts did not show a significant correlation between familiarity and price on established or unestablished paintings. It appears that the relationship between familiarity and price differed across all expertise groups (see Table 2). For quasi-experts, familiarity was positively related to the pricing of established and unestablished paintings. For experts, familiarity was not related to their valuation of the paintings, and for novices, a small positive correlation was found for established but not unestablished paintings. The analysis showed no systematic way in which familiarity might have confounded participants' pricing of the paintings.

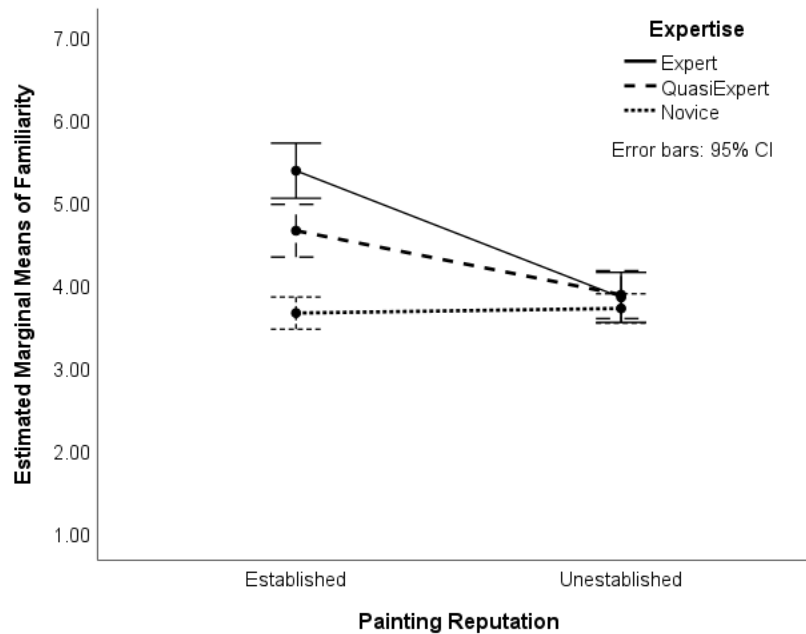


Figure 5. The interaction between expertise and reputation on familiarity with paintings.

Table 2. The Correlations of Familiarity Rating with Price

	Familiarity & Price		
	<i>n</i>	Established Paintings	Unestablished Paintings
Novices	126	.18*	.06
Quasi-experts	47	.58***	.40**
Experts	43	.27	.11

Note. *** $p < .001$, ** $p < .01$, * $p < .05$

Discussion

The current study tested how setting, reputation, and style influenced the pricing of paintings. Via a hypothetical auction, I further investigated how expertise interacted with these variables to affect painting valuations. The results of the main effects will be discussed first, followed by the interactions.

Setting, Reputation, and Style's Influence on Price

The results showed that all three factors of setting, reputation, and style influenced

participants' valuation. Consistent with Hypothesis 1, participants were willing to bid higher for paintings in museums than the same ones in street settings. This behavior is consistent with the idea that paintings displayed in museums would signal respectable provenances whereas the paintings in the street settings do not. Paintings with known provenances are more valuable, and provenances provide quality assurance about them. Provenance, at least for artifacts of antiquities, shows a slight association in driving

up auction prices (Brodie, 2014). Consistent with the current finding, Campos and Barbosa (2009) found that prices of Latin American paintings increased at auctions if they came from museums or galleries.

Consistent with Hypothesis 2, the data showed that participants were willing to pay more for established than unestablished paintings. This is consistent with findings that an artist's reputation is a key predictor of (Beckert & Rössel, 2013) and is positively correlated with (Schönfeld & Reinstaller, 2007) market price. Although reputation was not explicitly stated in this study, on average the participants did price the artworks in line with the reputation of the work. Regarding Hypothesis 3 on style, the data showed that participants were willing to pay more for representational than abstract paintings. There is evidence of a representational art preference, as evidenced by favoritism toward this style in auctions (Zbigniew, 1991) and a greater return on investment for still life and figures (Agnello & Pierce, 1996). These studies indicated some price advantage of representational over other painting styles.

Expertise' Influence on Price

For Hypothesis 4's effect of expertise on price, the study found that the greater the expertise, the higher the bid. This finding resonated with Kruger et al.'s (2004) study where they found that self-identified experts quoted higher prices for paintings than novices. This outcome can be viewed from two perspectives: age (as a proxy for income) and expertise. Age is strongly correlated with income such that older people make more money (up to the age of 50) (Martin, 2017). Given that the novices were the youngest participants and were mostly students, they likely had less income, while experts were the oldest and had more income. Drawing from Keynes' psychological law of consumption, experts may willingly spend more on paintings because they have more money (Bunting, 2001). The survey instruction asked the participants to bid without regard to their finances, and it also provided a 300 million anchor price for the highest bid in art history; nevertheless, the

participants may have given price estimates that reflected their financial reality rather than a no-monetary-constraint hypothetical scenario. A second explanation is that greater expertise in the arts also means greater awareness of actual art prices. The Agora gallery paintings were priced around several thousand dollars, and the museum paintings were worth tens to hundreds of millions of dollars. There is evidence that experts, like art auctioneers, are good at estimating auction item prices (Ashenfelter & Graddy, 2003). Unlike other consumer goods, art prices are more dependent on cultural and social acceptance of the work, so experts are more in tune with that trend and the market price than novices. Because of that, experts will likely price the paintings higher even if their bid price is out of reach in real life.

Setting, Painting Attributes, and Expertise Interactions

Hypotheses 5, 6, and 7 examined the potential for significant interactions between expertise and setting, reputation, and style, respectively. The analyses revealed significant interactions between expertise and setting, as well as between expertise and reputation. However, no significant interaction was found with style. For the setting and expertise interaction, novices and quasi-novices behaved as predicted, but experts did not. Contrary to Hypothesis 5, experts showed the greatest difference in valuation between identical paintings in street versus museum settings. This is despite data showing that experts were also the most familiar with established paintings. In this case, experts were still susceptible to error. Given experts' vast background knowledge in the arts, the assumption was that they would focus on the art and ignore the setting. Yet, in this situation, experts, but not novices, gave significantly higher prices to the paintings in museums. Though Luring et al. (2016) found that novices were influenced by peer evaluation and auction prices in their rating for art, this effect may also be present for experts. In real life, art displayed in museums is vetted by respected curators, thus signaling the approval of other professionals and gatekeepers. The opinions of these museum

curators may bias the opinion of the professional artists. This effect is consistent with findings from the expertise literature showing that greater knowledge doesn't always translate to better judgment (Camerer & Johnson, 1991).

On a positive note, experts' knowledge was not for naught. Despite experts' price valuations being influenced by setting, they did recognize art with greater reputation and did price them accordingly. Consistent with Hypothesis 6, those with greater expertise priced established paintings higher than unestablished ones. Among the three expertise groups, the unestablished paintings were priced similarly low—possibly a floor effect. The price differences were most evident for established paintings, where the greater the expertise, the higher the valuation. Given that reputation is key in determining price in the art market, experts were more accurate. Quasi-experts and experts both priced the established paintings much higher (about three to four standard deviations) than unestablished paintings. Novices, on the other hand, priced the paintings similarly regardless of reputation.

Interaction of Expertise, Reputation, and Style on Price

The post hoc three-way interaction showed that greater expertise corresponded with greater differences in price between different reputations and styles (see Figure 4). The interactions exhibited a growth-like pattern where the greater the expertise, the more the pricing pattern aligned with the art market. Novices' pricing pattern supported the idea that novices were unable to distinguish between the values of established and unestablished paintings and that they were indifferent to style. On the other hand, quasi-experts' and experts' monetary valuations of the paintings reflected art market norms where a greater reputation garners a greater price. Also, for both expert groups, there was a price advantage for representational style when reputation was established. When reputation was unestablished, at least for experts, there was a price advantage for abstract paintings. It may be that due to the

ambiguous nature of abstract painting, experts and quasi-experts were more generous when pricing unestablished abstract paintings than unestablished representational paintings. If any advice can be gleaned from this interaction for artists selling their art, it would be that abstract-style paintings would fetch higher prices if their reputations were not yet established. Lastly, with greater expertise, there was also more extreme pricing behavior. Compared to novices and quasi-experts, experts were the most extreme in their valuation of paintings, whereas novices did not differ in the amount of money they were willing to spend on the different paintings. Compared to novices and quasi-experts, experts were willing to spend more money on established paintings but were more frugal with unestablished paintings.

Limitations

The evident limitation is that the present study used a hypothetical situation. It is difficult to determine if the hypothetical prices would reflect real-life prices if participants had the financial means to pay them. Moreover, participants were instructed to give their highest bids, not what they thought the paintings could fetch in an auction. I chose the former because it gave an indicator of how much they prized the paintings, rather than how much they thought others prized the paintings. The use of subjectivity is a hallmark of expert consensus. Nevertheless, as a reflection of their expertise in art assessment, experts were more accurate in their estimates of established paintings. A follow-up study might compare the participants' valuation of an artwork compared to how they think others value it, and if their level of expertise would affect that comparison. An additional limitation is that the online setting manipulation may have limited generalizability compared to real-life manipulations. Last, the results of the study may be strengthened with a more balanced number of participants across the three expertise groups.

Conclusion

Previous studies have shown that manipulating price can change laypeople's preference for an object (e.g., Luring et al., 2016) and that manipulating information can also influence how they price the object (e.g., Kruger et al., 2014). This study replicated the finding that manipulating object information does affect pricing. More importantly, this study expanded on that relationship by testing the resiliency of experts to contextual manipulation.

Surprisingly, this study demonstrated that experts were susceptible to such manipulation despite their familiarity with the paintings. The susceptibility of experts underscores the importance of understanding how these settings and painting attributes affect pricing so that these confounds can be better controlled when soliciting experts' valuations.

Author's Declarations

The author declares that there are no personal or financial conflicts of interest regarding the research in this article.

The author declares that the research reported in this article was conducted in accordance with the Ethical Principles of the *Journal of Expertise*.

The author declares that data will be made available upon request.

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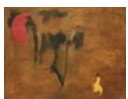




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Appendix

List of Paintings

	Representational	References
Established		Velazquez, D. (1650). <i>Juan de pareja</i> . Retrieved from https://www.metmuseum.org/art/collection/search/437869
		Rembrandt, H. (1645/1648). <i>The mill</i> . Retrieved from https://www.nga.gov/collection/art-object-page.1201.html
		Van Gogh, V. (1889). <i>Wheat field and cypress tree (F615)</i> . Retrieved from https://www.nationalgallery.org.uk/paintings/vincent-van-gogh-a-wheatfield-with-cypresses
Representational Art		Cézanne, P. (1893). <i>Still-life with basket of apples</i> . Retrieved from http://www.artic.edu/aic/collections/artwork/111436
		JCK. (2011). <i>Man</i> . Retrieved from http://s3.amazonaws.com/contactimages/superlarge/AK5EC8C7DE_1F5D_47E1_9209_85431175F533.jpg
		Bottomly, J. (2014). <i>Rocky point</i> . Retrieved from http://s3.amazonaws.com/contactimages/superlarge/AKF1031D86_16DD_4953_AD17_FC978E96E5C5.jpg
		Knecht, N. (n.d.). <i>Field of Van Gogh sunflower</i> . Retrieved from http://s3.amazonaws.com/contactimages/superlarge/AKF1031D86_16DD_4953_AD17_FC978E96E5C5.jpg
Unestablished		Ward, L. (2014). <i>Seven apples</i> . Retrieved from http://s3.amazonaws.com/contactimages/superlarge/AK5166AA91_1557_4086_BF80_F172F3A4BF83.jpg

	Abstract	References
Established		Kandinsky, V. (1913). <i>Painting with white border</i> . Retrieved from https://www.guggenheim.org/exhibition/kandinskys-painting-with-white-border
		Malevich, K. (1915). <i>The black square</i> . Retrieved from https://www.tate.org.uk/art/research-publications/the-sublime/philip-shaw-kasimir-malevichs-black-square-r1141459
		Pollock, J. (1950). <i>One: Number 31 1950</i> . Retrieved from https://www.moma.org/collection/works/78386
Abstract Art		Miró, J. (1925). <i>Painting</i> . Retrieved from https://www.guggenheim.org/artwork/2936
		Vos, M. (2014). <i>Untitled 1</i> . Retrieved from http://s3.amazonaws.com/contactimages/superlarge/AKA504BEAA_4FEC_4421_AB0D_A2BFEB932FC7.jpg
		Wifvesson, V. (2014). <i>Inspirito</i> . Retrieved from http://s3.amazonaws.com/contactimages/superlarge/AKF1313899_86F3_4B15_A9FF_1AAD5C59E73B.jpg
		Hart, P. (2014). <i>Blue energy</i> . Retrieved from http://s3.amazonaws.com/contactimages/superlarge/AK6E4C57DB_74FD_40E6_9FEB_C3BB4662AEDB.jpg
		Lescinskaite, I. (2013). <i>Abstract velvet</i> . Retrieved from http://www.irmalescinskaite.com/paintings.html