

Psychology of Aesthetics, Creativity, and the Arts

When Multiple Creators Are Worse Than One: The Bias Toward Single Authors in the Evaluation of Art

Rosanna K. Smith and George E. Newman

Online First Publication, May 19, 2014. <http://dx.doi.org/10.1037/a0036928>

CITATION

Smith, R. K., & Newman, G. E. (2014, May 19). When Multiple Creators Are Worse Than One: The Bias Toward Single Authors in the Evaluation of Art. *Psychology of Aesthetics, Creativity, and the Arts*. Advance online publication. <http://dx.doi.org/10.1037/a0036928>

When Multiple Creators Are Worse Than One: The Bias Toward Single Authors in the Evaluation of Art

Rosanna K. Smith and George E. Newman
Yale University

The present studies investigate whether people perceive the same work of art to be of lower quality if they learn that it was a collaborative work (resulting from the efforts of multiple artists) versus the work of a single artist. Study 1 finds that indeed, as the number of authors increases, the perceived quality of an artwork decreases. Study 2 finds that this effect occurs because people tend to assess quality in terms of the effort put forth by each author, rather than the total amount of effort required to create the work. Study 3 further demonstrates that this bias toward single authors appears to be driven by people's beliefs, rather than by any inherent differences between individual versus collaborative work. These results broaden our understanding of how perceptions of effort drive evaluative judgments, and are consistent with a more general notion that art is not evaluated as a static entity, but rather as an endpoint in a "creative performance."

Keywords: judgment and decision-making, heuristics and biases, effort

Between 1984 and 1986, Jean-Michel Basquiat and Andy Warhol created 50 paintings together, entitled *The Collaboration Paintings*. Prior to their joint work, Warhol had already achieved world-renowned fame for his silkscreen prints, films, and photographs. Basquiat was a newer arrival on the art scene but had already received critical acclaim for his graffiti prints. Warhol spoke highly of the collaborative process between him and Basquiat and called some of the resulting paintings "masterpieces" (Fretz, 2010, p. 142). He even attributed Basquiat's influence to subsequently helping him create work that was "arguably his greatest" (Dillenberger, 2001, pp. 10–11).

Critics, however, did not share Warhol's enthusiasm. The initial showings of the paintings received negative reviews. There was constant speculation about the ulterior motives behind the collaboration, and a preoccupation with analyzing the paintings to determine "who did what." Critics came to the conclusion that the collaboration had not only resulted in shoddy work, it had also ruined Basquiat's career (Fretz, 2010).

Interestingly, the art created by both Warhol and Basquiat prior to their joint work had been also highly collaborative in nature (even though it was attributed to a single person). Warhol famously had a number of assistants who created his pieces in his studio called The Factory. Basquiat began his career working with a friend under one collective pseudonym and had been a part of many group artistic projects. This raises the question, would the

Collaborative Paintings of Warhol and Basquiat have been better received if only one artist had attached his name to them?

This article examines how people intuitively assess the quality of art. As the example of Warhol and Basquiat illustrates, when we evaluate art, we often evaluate the final product as well as the processes that gave rise to it (Dutton, 2009). Building on this notion, the present studies examine how information about the number of creators influences perceptions of quality. Specifically, we test whether people will rate the same artwork as higher in quality when they are told that an individual versus a group created it.

Assessments of Art

People often value objects for their functional utility—a watch's ability to tell time, or a coat's ability to provide warmth, and so forth. In certain cases, however, people may value an object, such as a work of art, for its history (e.g., where it came from or how it was made). Dutton (2009) has suggested that this occurs because people evaluate art not as a static entity, but as the endpoint in a "creative performance." Specifically, Dutton (2009) suggested that a key way in which we assess artwork is by attending to the intentional processes that created it. As a result, information about how a creative work was made (e.g., who was involved, how long it took, etc.) is central to how we determine its quality and relative value.

Indeed, past empirical research finds support for this notion even among participants without expertise in art. For example, Newman and Bloom (2012) presented participants with two very similar landscape paintings by unknown artists. Half of the participants were told that one painting was an intentional copy of the other, whereas the other half of them were told that the similar paintings happened merely as a coincidence. Participants reported

Rosanna K. Smith and George E. Newman, Organizations and Management, Yale University.

Correspondence concerning this article should be addressed to George E. Newman, Organizations and Management, Yale University, PO Box 208200, New Haven, CT 06520-8200. E-mail: george.newman@yale.edu.

that the copy should be worth substantially less than the original, whereas the two coincidental duplicates should be equivalent in value, suggesting that whether or not a painting is an “intentional” duplicate appears to matter a great deal in assessments of its value.

Past research also suggests that differences in perceived effort can change perceptions of quality—the so-called “effort heuristic.” For example, Kruger et al. (2004) had participants rate the quality of artworks, such as paintings or poems, and manipulated their beliefs about the amount of time that the artist spent creating it. Overall, they found that works that were said to have taken more time to create were rated as higher quality than identical works that were said to have taken less time to create (also see Cho & Schwarz, 2008).

Thus, people will use information about a creator’s intent to inform their judgments of quality, and perceived effort seems to be an important dimension for those assessments. The present studies draw on these findings to explain why people may show an intuitive preference for creative works made by an individual versus a group. Specifically, if we consider the effort heuristic from the perspective that people assess art as an endpoint in a creative performance, then one prediction is that when evaluating art people may focus more on the performance of what each author did rather than the end product itself. In other words, when assessing perceived quality, people may be more sensitive to differences in individual effort than differences in total effort. For example, consider a sculpture that took 30 hr to complete. The proposal is that if people learn that the sculpture was created by a group of three artists working together (rather than a single artist), they may actually perceive it to be lower quality because they focus on each artist’s individual effort (roughly 10 hr each) rather than the total amount of effort (30 hr).

If true, this makes two subsequent predictions: (a) When evaluating the same artwork perceptions of quality should decrease as the number of authors increases, and (b) people should rate a creative work as highest in quality when they are told that a single person (vs. multiple people) created it, given that “one” reflects the least number of potential authors.

In addition to potentially documenting a new psychological phenomenon (i.e., a bias toward individual vs. collaborative artwork), these predictions have the potential to broaden the understanding of the effort heuristic itself. In past research on the effort heuristic (Cho & Schwarz, 2008; Kruger et al., 2004), information about the total amount of effort varied (e.g., a painting that took 4 vs. 26 hr to create), but the number of authors was always held constant (participants were always told it was created by a single person). As a result, to date, it is unclear whether the effort heuristic itself is sensitive to information regarding the number of authors (i.e., the efforts of each person), or rather, simply the total amount of effort required to create the final product.

Individual Effort Versus Identifiability

An alternative mechanism, which we also examine here, is that people may rate single authored creative works as higher quality because of identifiability but not necessarily because of perceptions of individual effort. Several studies have found that identifiable persons receive more attention than groups of people—for example, identifiable victims receive more help than groups (Small & Loewenstein, 2003), and identifiable perpetrators receive

harsher punishments (Small & Loewenstein, 2005). One explanation of this effect is people are able to more vividly picture an identified person than a larger mass of people. This vividness evokes stronger feelings of either sympathy (or anger), which subsequently leads to higher levels of giving (or punishment). Therefore, it may be that single authored works engender a more vivid picture of the process behind their creation than group authored works. This vividness may heighten viewers’ sense of understanding or empathy, which in turn increases perceptions of quality.

In the present studies, we directly examine whether perceptions of quality based on the number of authors are driven by identifiability versus intuitions about individual effort. Indeed, there is some empirical support for the notion that identifiability and the number of individuals (numerocity) are orthogonal concepts. For example, Kogut and Ritov (2005) varied the number of the victims as well as the availability of identifying information about the victims (providing the name of each victim). In their studies, only the single victim (identified or unidentified) showed the increase in participants’ willingness to contribute, whereas the group of victims (identified or unidentified) did not. Also note that the concept of identifiability is distinct from the concept of identity (Blok, Newman, Behr, & Rips, 2001; Blok, Newman, & Rips, 2005; Newman, Bartels, & Smith, in press)—that is, who the particular artist is and, for example, whether that person is well known. In this article, our aim is to examine the effect of the number of artists (numerocity), while holding the identity of the artist(s) constant and therefore we only used fictitious names. In the General Discussion section, however, we discuss the implications of our findings for beliefs related to identity.

Overview of Studies

Study 1 provided an initial test of the hypothesis. All participants rated the quality of the same sculpture. We manipulated whether the sculpture was made either by one, two, three, or five people. We predicted that when evaluating the same artwork, perceptions of quality should decrease as the number of authors increased.

In Study 2, participants evaluated the quality of a painting and a poem, and we manipulated whether they were created by a single person or by multiple people working together. To test the role of identifiability, we also manipulated whether the author(s) was named or not. Finally, this study also sought to provide direct support for the hypothesis that perceptions of individual (but not total) effort mediate the bias toward single authors.

Study 3 examined whether the bias toward single authored works may be grounded in some actual quality difference between artwork made by one person versus a group. To assess this, we had participants generate poems either individually or in groups. We then had another set of participants rate the quality of the poems and provided either correct or incorrect information about the number of authors.

Study 1

Method

We recruited 241 adults from Amazon’s Mechanical Turk, which is an online crowdsourcing subject pool in which Mechan-

ical Turk Workers can choose to do various tasks (including participation in research studies) in exchange for money. In the present study, participants were each paid \$0.25 in exchange for participating and completed the study on average in 2 minutes ($M_{\text{completion time}} = 1 \text{ min and } 51 \text{ s}$).

We randomly assigned participants to one of four conditions in a between-subjects design in which we manipulated the number of artists (one, two, three or five) who presumably created a sculpture. The sculpture was Tara Donovan's (2006) "Untitled (Plastic Cups)." It is a large (50' × 60') sculpture made entirely of millions of stacked, translucent plastic cups. From a distance, the sculpture takes on a flowing, glacier-like appearance. We also presented participants with a second detailed image of the sculpture, which showed that it indeed was made of plastic cups. Participants read the following (with the number of authors varying across conditions): "One (two, three, five) artist(s), working alone (together), made this 50 ft × 60 ft sculpture. The artist (They) made it by stacking varying numbers of plastic cups (see detail). It took 30 hours to complete." In all conditions, the amount of time to create the work was held constant.

After viewing the sculpture, participants in each condition rated how much they agreed with a series of four statements assessing the quality of the sculpture (1 = *strongly disagree*, 7 = *strongly agree*): "It is high quality," "It is impressive," "It is praiseworthy," and "It is excellent."

At the end of the study, participants were asked to recall whether the sculpture had been made by a single person or multiple people using a forced-choice response. Nineteen people did not pass this manipulation check and were dropped from subsequent analyses, leaving 222 participants in total ($M_{\text{age}} = 28.55$; 40.5% female).

Results

A reliability analysis indicated that the four items assessing the quality of the sculpture were highly correlated ($\alpha = .90$) and therefore, they were averaged into a single measure of perceived quality. A one-way analysis of variance (ANOVA) indicated a significant effect of number of authors, $F(3, 218) = 3.04, p = .03, \eta^2 = .04$. Moreover, a regression analysis indicated that perceptions of the sculpture's quality decreased as the number of authors increased, $\beta = -.20, SE = .07, t(220) = -2.91, p = .004$ (see Figure 1).

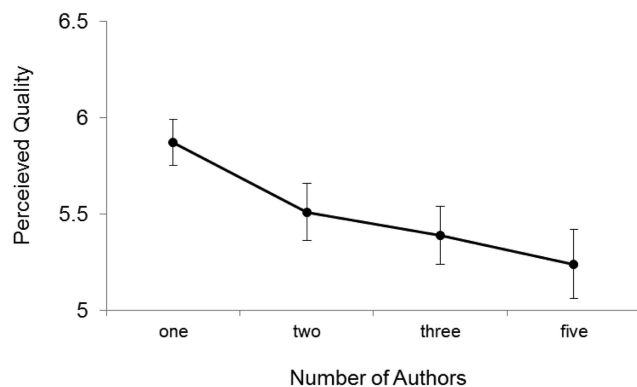


Figure 1. Mean ratings of artwork quality in Study 1.

We then compared the single artist condition to the other multiple artist conditions. As predicted, participants rated the sculpture as higher quality when it was created by a single artist ($M = 5.87, SD = .84$) versus multiple artists ($M_{\text{pooled}} = 5.39, SD_{\text{pooled}} = 1.19$), $t(218) = 2.77, p = .006, \eta^2 = .05$. Additional pairwise comparisons indicated a marginally significant difference between one versus two artists ($M = 5.51, SD = 1.20$), $t(218) = 1.73, p = .09, \eta^2 = .03$; a significant difference between one versus three artists ($M = 5.39, SD = 1.04$), $t(218) = 2.17, p = .03, \eta^2 = .06$; and a significant difference between one versus five artists ($M = 5.24, SD = 1.32$), $t(218) = 2.90, p = .004, \eta^2 = .08$.

Discussion

These initial results support the main hypothesis that people rate the same artwork as higher quality when they are told that it was made by one person versus a group of people. We also found that as the number of authors increased, ratings of quality decreased. This finding is interesting at least for three reasons: First, the fact that the number of authors had any impact on quality ratings aligns with the more general idea that people take into account the historical properties of a creative work when assessing its quality. If people were only assessing the aesthetic properties of the sculpture, then the increase or decrease in number of authors should have had no impact on quality judgments.

Second, the negative linear relationship between the number of authors and quality ratings is consistent with the hypothesis that the single author effect is driven by how people weight individual, but not total, effort. The present study found that as the number of authors increased, ratings of quality continued to decrease, suggesting that the single author bias may not necessarily be a bias toward single authors per se; rather, single authorship may be preferred as it reflects the fewest number of possible authors.

Finally, this result appears to be inconsistent with the hypothesis that the bias toward single authored creative work is driven by identifiability. This alternative mechanism would predict that ratings of quality should be higher for creative works made by one versus multiple people. However, it would not predict any subsequent differences in ratings of quality as the number of authors increases (which we found in this study).

Study 2

The pattern of results in Study 1 suggested that identifiability does not appear to explain the bias toward single authored artwork. However, the goal of Study 2 was to directly test this mechanism using a manipulation from previous research (Kogut & Ritov, 2005). To do so, the present study varied the number of artists (as in the previous study) as well as whether or not the name of each artist was provided. Furthermore, this study sought to directly test the mediating role of perceptions of individual effort (vs. total effort) using a series of ratings. Finally, the present study examined the bias toward single authors in two new artistic domains: paintings and poetry. Poetry, in particular, was chosen as a second artistic domain because compared to paintings, the effort required to physically produce the artwork is considerably less. Therefore, we wanted to determine whether the bias toward single authors is unique to domains where a great deal of physical effort is required

(sculpture or paintings) to actually make the final product, or this bias generalizes to domains where most of the effort is conceptual or cognitive in nature.

Method

We recruited a new group of 269 adults from Amazon's Mechanical Turk. Participants completed the survey on average in 4 minutes. ($M_{\text{completion time}} = 4 \text{ min and } 3 \text{ s}$).

Participants were randomly assigned to one of four conditions in a 2 (Number of Creators: Single vs. Group) \times 2 (Identifiability: Identified vs. Unidentified) between-subjects design. In each condition, participants viewed a painting and read a poem. The painting used was a collaborative work made by Riha Rothberg and Wayne Mikosz (2010) entitled, "New Music." In this study, we chose a collaborative painting to ensure that it could have plausibly been created by multiple people working together. The painting itself was a medium-sized (46" \times 56") abstract painting composed of thick brushstrokes of yellows, reds, and browns on a yellow-white background. The poem was a 13-line, loose-style poem entitled "Four Mares, Flank to Flank" written by Katherine Fallon (2006).

The painting and the poem were the same in all conditions and the order that they were presented was counterbalanced across participants. Between-subjects we varied information about the number of authors who created the work (single vs. group) and whether or not the names of the creators were provided (e.g., Max Peterson). In this study, we used only fictitious names (i.e., not the names of the actual artists) to control for any potential effects of recognizing the artists. This information was presented in a brief statement, which appeared below the painting or poem. For example, in the single unidentified condition, participants read, "This poem was written by one person, who worked alone," whereas in the single identified condition they read, "This poem was written by one person named Max Peterson, who worked alone." In the group unidentified condition, participants read, "This poem was written by five people, who worked together," whereas in the group identified condition they read, "This poem was written by five people named Max Peterson, Nathan Reed, Carl Black, Mac Staben, and Jacob Simon, who worked together."

After viewing the painting and reading the poem, participants in each condition rated the extent to which they agreed with four statements assessing the quality of the painting/poem (the same as those presented in Study 1). Because of a programming error, one additional item was included but was not analyzed further once it was established via a factor analysis that it loaded on to a separate factor from any of the other dependent measures. In addition, participants rated two items about how much effort they thought went in to the creation of the painting and poem. One item captured perceptions of individual effort: "How much effort do you think the (each) person put into creating this painting (poem)?" (1 = *very little*, 7 = *an extreme amount*), whereas the second item captured perceptions of total effort: "How much total effort do you think it required to create this painting (poem)?" (1 = *very little*, 7 = *an extreme amount*). The order in which these two statements were presented was randomized.

At the end of the study participants completed a manipulation check in which they indicated whether a single person versus multiple people created the painting/poem using a forced choice response. One person failed both the painting and the poem ma-

nipulation check and was excluded from subsequent analyses, leaving 268 participants ($M_{\text{age}} = 29.22$; 34.7% female).

Results

The four items assessing the quality of the painting ($\alpha = .96$) and the four items assessing the quality of the poem ($\alpha = .96$) formed reliable scales. As this study aimed at examining different types of artwork for robustness, we analyzed them separately.

Painting. We first conducted an omnibus 2 (Number of Creators: Single vs. Group) \times 2 (Identifiability: Identified vs. Unidentified) \times 2 (Order of Painting Appearance) between-subjects ANOVA on ratings of quality for the painting. This analysis revealed a significant main effect of the number of creators, $F(1, 260) = 5.33, p = .02, \eta^2 = .02$. As predicted, participants rated the painting as higher quality when it was created by a single author ($M = 4.08, SD = 1.42$) than when it was created by multiple authors ($M = 3.64, SD = 1.50$). However, there was neither effect of identifiability nor interactions (see Table 1 for all F statistics).

A similar pattern was observed for ratings of individual effort. Participants rated the painting as having required higher levels of individual effort when it was created by a single author ($M = 4.90, SD = 1.36$) than when it was created by multiple authors ($M = 4.32, SD = 1.42$), $F(1, 260) = 10.55, p = .001, \eta^2 = .04$. However, an analogous model for total effort showed no significant main effect of the number of creators, $F(1, 260) = 2.15, p = .14, \eta^2 = .008$.

We then conducted two bootstrapping analyses (Preacher & Hayes, 2004), which examined whether ratings of individual/total effort mediated the effect of the number of authors on ratings of painting quality. The first analysis used the number of authors as the independent variable, painting quality as the dependent variable, and individual effort as the mediator (identifiability, order, and the interaction terms were included as covariates). This analysis indicated that individual effort significantly mediated the relationship between the number of authors and perceived quality (estimated indirect effect = .21; 95% confidence interval [CI] = .09 to .34). However, an analogous model using total effort instead of individual effort was not significant (estimated indirect effect = .10; 95% CI = -.04 to .22).

Poem. We performed an analogous set of analyses on the measures associated with the poem. As found with ratings of painting quality, an omnibus ANOVA indicated that participants rated the poem as higher quality when it was created by a single author ($M = 3.67, SD = 1.47$) than when it was created by multiple authors ($M = 3.26, SD = 1.37$), $F(1, 260) = 4.99, p = .03, \eta^2 = .02$. Again, however, there was neither main effect of identifiability nor interactions.

For individual effort, participants perceived the poem as having required higher levels of individual effort when it was created by a single author ($M = 4.57, SD = 1.42$) than when it was created multiple authors ($M = 4.14, SD = 1.47$), $F(1, 259) = 5.91, p = .02, \eta^2 = .02$. But, there was only a marginal effect of the number of creators for ratings of total effort ($M_{\text{single}} = 4.48, SD = 1.47$; $M_{\text{group}} = 4.17, SD = 1.56$), $F(1, 259) = 2.86, p = .09, \eta^2 = .01$.

We then examined mediation for perceptions of poem quality using analogous bootstrapping models. Again, we found that individual effort significantly mediated the relationship between the

Table 1
Results From Analysis of Variance in Study 2

	Quality		Individual effort		Total effort	
	<i>F</i>	<i>P</i>	<i>F</i>	<i>P</i>	<i>F</i>	<i>P</i>
Painting						
Number of creators	5.33	.02	10.55	.001	2.15	.14
Identifiability	0.71	.40	0.04	.84	0.01	.94
Order	0.13	.72	0.09	.77	1.30	.26
Number of Creators × Identifiability	0.60	.44	1.56	.21	1.40	.24
Number of Creators × Order	0.43	.51	0.40	.53	0.84	.36
Identifiability × Order	1.16	.28	0.21	.65	0.01	.92
Number of Creators × Identifiability × Order	0.53	.47	0.03	.87	0.07	.79
Poem						
Number of creators	4.99	.03	5.91	.02	2.86	.09
Identifiability	0.03	.86	0.12	.73	0.68	.41
Order	0.02	.88	1.91	.17	0.21	.65
Number of Creators × Identifiability	1.89	.17	2.42	.12	1.29	.26
Number of Creators × Order	0.16	.69	0.06	.80	0.78	.38
Identifiability × Order	2.74	.10	1.88	.17	0.30	.59
Number of Creators × Identifiability × Order	1.95	.16	1.34	.25	1.54	.22

number of authors and perceived quality (estimated indirect effect = .12; 95% CI = .03 to .24) while there was no significant indirect effect of total effort (estimated indirect effect = .09; 95% CI = -.01 to .20).

Discussion

Study 2 found that only information about the number of authors, but not whether the authors were identified, affected quality judgments. In addition, this study found direct evidence via mediation analyses that this effect is explained by perceptions of individual, but not total, effort. This reinforces the idea that people may base perceptions of quality on the perceived efforts of each individual and thus, as the number of authors increases, perceptions of quality decrease.

Study 3

In previous work on the effort heuristic (e.g., Kruger et al., 2004) information about the total amount of effort varied, but the number of authors was always held constant. In such cases, the use of effort to inform judgments of quality may indeed be a useful heuristic because, in general, things that take more time to create will be higher quality than things that require less time to create. However, it is unclear whether the same is true for the present studies. For example, it may be that all else being equal, creative works made by one person do not tend to be higher quality than works made by groups of people. Therefore, the goal of Study 3 was to examine any potential differences in the actual quality of single versus multiple authored artwork.

We explored this by having participants actually generate poems either individually or in groups. We then had a second set of participants rate the quality of the poems with either accurate or inaccurate information about the number of authors.

Method

Stimulus generation. Seventy-one participants ($M_{age} = 19.78$; 64.8% female) were recruited to a lab at a private university

and were randomly assigned to either the individual or group condition (groups were comprised of three participants). In the individual condition, participants were asked to create a three-line haiku that followed a five–seven–five syllable format in response to the prompt “What is water?” In the group condition, participants were given the same task but were told to come up with the poem as a group. Both individuals and groups were given 10 min to complete the task. We collected 23 individual poems and 17 group poems (see the appendix for examples). One individual poem was dropped because it was determined to be inappropriate.

Participants and procedure. We then recruited a new group of 239 adults from Amazon’s Mechanical Turk. Participants completed the survey on average in 2 min ($M_{completion\ time} = 2\ min\ and\ 32\ s$).

Participants were randomly assigned to one of four conditions. In each condition, participants read a randomly selected poem from either the individual- or group-generated poems. They were told either correct or incorrect information about the number of authors (i.e., “This poem was written by one person, who worked alone,” “This poem was written by three people, who worked together”). This created a 2×2 between-subjects design with (Framing: Single vs. Group) and (Actual: Single vs. Group) as factors. After reading the poem, participants rated the quality of the poem using the same four item scales as in previous studies. In addition, as in Study 2, they provided ratings of individual effort and total effort, which were presented in randomized order.

At the end of the study participants completed a manipulation check in which they indicated whether a single person versus multiple people created the poem using a forced choice response. Ten participants failed this manipulation check and were excluded from subsequent analyses, leaving a total of 229 participants ($M_{age} = 29.62$; 38.9% female).

Results

As in the previous studies, a reliability analysis indicated that the four items assessing the poem quality formed a reliable scale ($\alpha = .94$).

A 2 (Framing: Single vs. Group) \times 2 (Actual: Single vs. Group) between-subjects ANOVA with the particular poem included as a random factor revealed a marginally significant main effect of framing, $F(1, 155) = 4.04, p = .053, \eta^2 = .11$. Participants rated the poem as higher quality when they were told that it was created by a single author ($M = 3.73, SD = 1.38$) versus a group ($M = 3.39, SD = 1.51$). However, there was no main effect of whether the poem was actually created by an individual versus a group ($M_{actual_single} = 3.63, SD = 1.48; M_{actual_group} = 3.51, SD = 1.42$), $F(1, 115) = .05, p = .83, \eta^2 = .002$, and no significant two-way interaction, $F(1, 155) = .01, p = .92, \eta^2 = .001$. In addition, there was no main effect of the particular poem, $F(1, 155) = 1.15, p = .47, \eta^2 = .08$, and this random factor did not interact with any of the other effects.

Mediation. We then conducted the same mediation analyses as in Study 2. This analysis included framing (single vs. group) as the independent variable, poem quality as the dependent variable, and actual number of authors and the interaction as covariates. A bootstrap analysis indicated that again, individual effort significantly mediated the relationship between the number of authors and perceived quality (estimated indirect effect = .21; 95% CI = .08 to .34). However, an analogous model using total effort revealed no significant indirect effect (estimated indirect effect = .11; 95% CI = -.02 to .22).

Discussion

The results of Study 3 suggest that what people believe about the number of authors may have a greater impact on assessments of quality than how many people actually created it. When participants were told that a poem was written by one person, they rated it as higher quality than when they were told it was created by a group. However, there were no perceived quality differences between poems actually created by individuals versus groups. In addition, we replicated the mediation findings from Study 2: Individual effort, but not total effort, significantly mediated ratings of quality. Thus, the present study broadens the implications of this finding by demonstrating that beliefs about the number of authors are used as an indicator of quality above and beyond the actual merits of individual versus group generated work.

General Discussion

The present studies tested the hypothesis that the very same artwork is perceived to be higher quality when it is said to have been created by a single author versus multiple authors. This hypothesis draws on the broader notion that people assess art not as a static entity, but as the endpoint of a creative performance in which information about how a creative work was made is central to how people determine its quality and relative value (Dutton, 2009). As a result, assessments of quality appear to be related to intuitions about how much effort each person put toward creating the work (i.e., the extent of the performance), rather than the total amount of effort that was required to make it.

Indeed, Study 1 found that as the number of authors of a creative work increased, the perceived quality of the work decreased. Study 2 ruled out identifiability as a potential alternative mechanism and verified that perceptions of individual, but not total, effort appear to explain the effect. Study 3 broadened the implications of this

effect by demonstrating that it appears to be driven solely by people's beliefs, rather than by an inherent difference between individual versus group generated creative work.

This result documents a novel psychological phenomenon in the evaluation of artwork. In addition, it serves to further our understanding of past research on the effort heuristic (e.g., Kruger et al., 2004) by demonstrating that for creative works, perceptions of quality appear to be based on perceptions of individual, rather than total, effort. It is important to note that we are not suggesting that information regarding the number of authors is the only factor influencing perceptions of artwork quality. Indeed, previous work has shown that assessments of quality may draw on a number of dimensions including (of course) the aesthetic properties of the artwork itself, the evaluator's prior knowledge, and the broader historical context in which the artwork is considered (see Bullock & Reber, 2013 for review). Therefore, the purpose of this article is to highlight the importance of one (potentially surprising) dimension that people appear to incorporate into their assessment of quality and the psychological mechanisms underlying it.

We suggest that when evaluating the relationship between effort and quality, people's lay theory is to divide perceived effort by the number of authors. However, another complementary explanation for the preference toward single authors is that the inclusion of other authors may "dilute" appreciation of the creative work itself. It could be, for example, that multiple authors may draw people's attention away from appreciating the entirety of the creative work and instead draw their attention to determining the specific nature of each author's contribution (similar to the example of *The Collaboration Paintings* discussed in the Introduction). Note that to explain the current results such a mechanism would still have to take into account the total number of authors (one vs. two vs. five), rather than just the mere difference between individual versus collaborative efforts. Nevertheless, in future research it would be interesting to examine how perceptions of quality might change when people are made aware of the exact efforts of each contributor. For example, is the quality of an artwork rated differently in a case where one person worked for 9 hr while the other worked for 1, versus a scenario in which each person worked for 5?

Second, though the results of Studies 1 and 2 suggest that identifiability per se does not appear to explain the present effects, it may still be that focusing on a single creator enhances perceptions of quality in ways that we did not identify here. For example, past work has shown that providing pictures or a vivid story about a particular incident or person impacts emotional reactions far more strongly than less illustrative information (Nisbett & Ross, 1980; Schelling, 1984). Research on narrative comprehension has demonstrated that people tend to focus on a single protagonist's goals (e.g., Suh & Trabasso, 1993) and will selectively attend to the behaviors and intentions of more prominent characters (Magliano, Taylor, & Kim, 2005). Therefore, it may be that people are able to construct a more elaborate or vivid narrative around a single author, which along with perceptions of individual effort, further contributes to enhanced assessments of quality.

In addition as alluded to in the Introduction, who the artist is may have a significant impact on assessments of quality. We suspect that the effect of author identity could interact with the effect of the number of authors (numerosity) in potentially interesting ways. For example, when evaluating collaborative art, it may be that a single famous artist is enough to undo (or override)

any negative effects resulting from a single author bias. Furthermore, the identity of author could have differential effects depending on the level of expertise or knowledge of the participants evaluating the artworks. For example, those with expertise of the particular artist may be more critical of the actual elements of the art itself and be less inclined to rely solely on name recognition as an indicator of quality.

The effect of the number of authors may also depend on the particular creative domain. Our studies focused on domains where individual artists are the norm (sculpture, paintings, poems), but it is possible that other domains where collaboration is the norm may be less susceptible to the single author bias. For example, films and musical performances often depend on multiple individuals working together, and thus, the knowledge that there were multiple creators may not dilute the perceived quality of the final creative product. Nonetheless, anecdotally, it seems as though even works of this nature are often attributed to one individual (e.g., a single director or producer), suggesting that perhaps the preference toward single authorship may also hold even in domains where collaboration is the norm.

It may also be that this effect is in some sense culturally specific. It is well known that Western cultures tend to view the self as independent and possessing a unique set of traits (Markus & Kitayama, 1994) whereas Eastern cultures tend to view the self as interdependent and possessing traits that are more heavily influenced by context (Cousins, 1989). Thus, it may be that the single authorship bias is limited to cultures that place a greater emphasis on the efforts of individuals—in fact, perhaps the exact opposite would be true in more collectivist cultures, where an artwork is perceived to be higher quality when it was created by multiple authors than when it was created by a single author.

Finally, these findings may hold implications for thinking about the tension between the organizational/structural processes that give rise to creative output and how those efforts are communicated to others. Organizations are increasingly aware that collaboration is often necessary to creative and innovative endeavors. For instance, the use of team-based work in U.S. companies has increased dramatically over the past decades (Ilgen, 1999; McGrath, 1997; Paulus & Nijstad, 2003). Organizations also recognize that successful innovations often emerge from the mixing of diverse perspectives (Liu, 2010). And yet, the present studies suggest that in terms of perceptions, people may have existing biases toward works created by a single person versus a group. For example, in addition to the present studies, recent work has identified a pervasive belief that successful organizations often emerge from isolated, hard-working, geniuses who challenge the status quo and work outside of institutions (i.e., the garage start-up belief) (Audia & Rider, 2005).

Therefore, the present research raises a broader question regarding a potential disconnect between creative processes that may actually be effective (i.e., collaborations) and the creative processes that people perceive as resulting in high quality work. This too may make for an interesting line of future research as one could examine how organizations and individuals may navigate this disconnect and the potential types of interventions and framings that may lead to more favorable evaluations of collaborative endeavors.

References

- Audia, P. G., & Rider, C. I. (2005). A garage and an idea: What more does an entrepreneur need? *California Management Review*, *48*, 6–28. doi: 10.2307/41166325
- Blok, S. V., Newman, G. E., Behr, J., & Rips, L. J. (2001). Inferences about individual identity. *Proceedings of the 23rd Annual Conference of the Cognitive Science Society* (pp. 80–85). Mahwah, NJ: Erlbaum.
- Blok, S. V., Newman, G. E., & Rips, L. J. (2005). Individuals and their concepts. In W. K. Ahn, R. L. Goldstone, B. C. Love, A. B. Markman, & P. Wolff (Eds.), *Categorization inside and outside the lab* (pp. 127–149). Washington, DC: American Psychological Association. doi: 10.1037/11156-008
- Bullot, N. J., & Reber, R. (2013). The artful mind meets art history: Toward a psycho-historical framework for the science of art appreciation. *Behavioral and Brain Sciences*, *36*, 123–137. doi:10.1017/S0140525X12000489
- Cho, H., & Schwarz, N. (2008). Of great art and untalented artists: Effort information and the flexible construction of judgmental heuristics. *Journal of Consumer Psychology*, *18*, 205–211. doi:10.1016/j.jcps.2008.04.009
- Cousins, S. (1989). Culture and selfhood in Japan and the U.S. *Journal of Personality and Social Psychology*, *56*, 124–131. doi:10.1037/0022–3514.56.1.124
- Dillenberger, J. (2001). *The religious art of Andy Warhol*. London, UK: Continuum.
- Donovan, T. (2006). *Untitled (plastic cups)* [sculpture]. Retrieved from <http://www.nytimes.com/2008/09/28/arts/design/28kino.html?pagewanted=all>
- Dutton, D. (2009). *The art instinct: Beauty, pleasure and evolution*. New York, NY: Bloomsbury Press.
- Fallon, K. (2006). *Four mares, flank to flank* [poem]. Retrieved from <http://sinkreview.org/sink-1/four-mares-flank-to-flank/>
- Fretz, E. (2010). *Jean-Michel Basquiat: A Biography*. Westport, CT: Greenwood Press.
- Ilgen, D. R. (1999). Teams imbedded in organizations. *American Psychologist*, *54*, 129–139. doi:10.1037/0003–066X.54.2.129
- Kogut, T., & Ritov, I. (2005). The “identified victim” effect: An identified group, or just a single individual? *Journal of Behavioral Decision Making*, *18*, 157–167. doi:10.1002/bdm.492
- Kruger, J., Wirtz, D., Van Boven, L., & Altermatt, T. W. (2004). The effort heuristic. *Journal of Experimental Social Psychology*, *40*, 91–98. doi: 10.1016/S0022–1031(03)00065-9
- Liu, C. C. (2010). A spatial ecology of structural holes: Scientists and communication at a biotechnology firm. *Academy of Management Annual Meeting Proceedings*, *1*, 1–6.
- Magliano, J. P., Taylor, H., & Kim, H. (2005). When goals collide: Monitoring the goals of multiple characters. *Memory & Cognition*, *33*, 1357–1367. doi:10.3758/BF03193368
- Markus, H., & Kitayama, S. (1994). A collective fear of the collective: Implications for selves and theories of selves. *Personality and Social Psychology Bulletin*, *20*, 568–579. doi:10.1177/0146167294205013
- McGrath, J. E. (1997). Small group research, that once and future field: An interpretation of the past with an eye toward the future. *Group Dynamics: Theory, Research, and Practice*, *1*, 7–27. doi:10.1037/1089–2699.1.1.7
- Newman, G. E., Bartels, D. M., & Smith, R. K. (in press). Are artworks more like people than artifacts? Individual concepts and their extensions. *Topics in Cognitive Science*.
- Newman, G. E., & Bloom, P. (2012). Art and authenticity: The importance of originals in judgments of value. *Journal of Experimental Psychology: General*, *141*, 558–569. doi:10.1037/a0026035
- Nisbett, R., & Ross, L. (1980). *Human inference: Strategies and shortcomings of social judgment*. Englewood Cliffs, NJ: Prentice Hall.

- Paulus, B. P., & Nijstad, B. A. (2003). *Group creativity: Innovation through collaboration*. New York, NY: Oxford University Press. doi:10.1093/acprof:oso/9780195147308.001.0001
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments & Computers*, *36*, 717–731. doi:10.3758/BF03206553
- Rothberg, R., & Mikosz, W. (2010). *New music* [painting]. Retrieved from <http://www.convergencestudios-nm.com/html/collaborative.html>
- Schelling, T. C. (1984). *Choice and consequences: Perspectives of an errant economist*. Cambridge, MA: Harvard University Press.
- Small, D. A., & Loewenstein, G. (2003). Helping the victim or helping a victim: Altruism and identifiability. *Journal of Risk and Uncertainty*, *26*, 5–16. doi:10.1023/A:1022299422219
- Small, D. A., & Loewenstein, G. (2005). The devil you know: The effect of identifiability on punishment. *Journal of Behavioral Decision Making*, *18*, 311–318. doi:10.1002/bdm.507
- Suh, S. Y., & Trabasso, T. (1993). Inferences during reading: Converging evidence from discourse analysis, talk-aloud protocols, and recognition priming. *Journal of Memory and Language*, *32*, 279–300. doi:10.1006/jmla.1993.1015

Appendix

Example Poems Generated by Participants in Study 3

Poem created by an individual:

glistening body
that sparkles in the bright sun
water is just that

Poem created by a group:

one oxygen and
two hydrogen atoms make
water molecules

Received November 7, 2013

Revision received February 18, 2014

Accepted March 23, 2014 ■