

# The world looks better together: How close others enhance our visual experiences

ERICA J. BOOTHBY,<sup>a</sup> LEIGH K. SMITH,<sup>b</sup> MARGARET S. CLARK,<sup>a</sup>  
AND JOHN A. BARGH<sup>a</sup>

<sup>a</sup>*Yale University and* <sup>b</sup>*The University of California, Davis*

## Abstract

People derive a number of benefits from sharing experiences with close others. However, most research on this topic has been restricted to forms of sharing involving explicit socializing, including verbal communication, emotion expression, and behavioral interaction. In two studies, these complexities were eliminated to find out whether merely experiencing visual stimuli (photographs) simultaneously with a close other—without communicating—enhances people's evaluations of those stimuli relative to coexperiencing the same stimuli with a stranger or alone. Compared to when viewers were alone, visual scenes were enhanced (better liked and seen as more real) when coexperienced with a close other and were liked less when coexperienced with a stranger. Implications for close relationships are discussed.

People are driven to share experiences with those to whom they are close, and decades of relationship science suggest that this inclination serves them well. For example, relationship quality is enhanced when couples share novel and challenging activities (Aron, Norman, Aron, & Lewandowski, 2002; Aron, Norman, Aron, McKenna, & Heyman, 2000; Reissman, Aron, & Bergen, 1993), sharing good news with a close other maximizes positive affect and life satisfaction (Gable, Gonzaga, & Strachman, 2006; Gable & Reis, 2010; Gable, Reis, Impett, & Asher, 2004; Lambert et al., 2013) and it is with close others that we often make meaning out of life and establish a shared sense of reality (Przybylinski & Andersen, 2015; Rossignac-Milon, 2015).

To date, however, the vast majority of work on sharing experiences with close others has focused on episodes involving substantial interpersonal interaction and communication.

What about the quieter moments that round out the daily rhythm of our lives, the moments when we are not necessarily communicating with our partners but simply experiencing the world simultaneously with them: savoring a bite of ice cream together, marveling at a scene in a movie, or listening to the rumble of an approaching storm? Does the presence and coattention of close others also influence the way we experience moments like these?

In the present research, we explored how simply experiencing something in parallel with a close other—without communication or any explicit interaction—influences people's evaluations of that experience. We call this type of minimal shared experience a *coexperience*. We measured the effect that the mere presence of close others, compared to the mere presence of strangers, has on people's evaluations of coexperienced stimuli, and contrasted each of those social effects with how people evaluate stimuli when alone.

## *Close others change our experience of the world*

Previous research spanning several subfields suggests that close others have a powerful and unique impact on our thoughts, emotions, and

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Erica J. Boothby, Department of Psychology, Yale University; Leigh K. Smith, Department of Psychology, The University of California, Davis; Margaret S. Clark, Department of Psychology, Yale University; John A. Bargh, Department of Psychology, Yale University.

Correspondence should be addressed to Erica J. Boothby, Department of Psychology, Yale University, New Haven, CT 06520, e-mail: ericaj-boothby@gmail.com.

behaviors. They exert a considerable influence over our attitudes and beliefs about the world (Davis & Rusbult, 2001; Jost, Ledgerwood, & Hardin, 2008). They affect our daily emotions and global affective states (Butler & Randall, 2012; Fehr & Harasymchuk, 2005; Guerrero & Andersen, 2000; Sbarra & Emery, 2005). They even shape our perceptions of the external environment (e.g., Johnson & Rusbult, 1989; Schnall, Harber, Stefanucci, & Proffitt, 2008). While the robust influence of close others may sometimes hinge on direct, explicit communication (Overall, Fletcher, Simpson, & Sibley, 2009), or overt persuasion (Stephens et al., 2009), research also indicates that close others can influence us involuntarily and subtly (Etcheverry & Agnew, 2008; Kiecolt-Glaser, Bane, Glaser, & Malarkey, 2003; Kramer, Guillery, & Hancock, 2014), and in ways that are not always under conscious control (e.g., physiological and health outcomes; Christakis & Fowler, 2007; Coan, Schaefer, & Davidson, 2006; Kamarck, Manuck, & Jennings, 1990; Uchino et al., 2013; Waters, West, & Mendes, 2013). Indeed, a large body of research demonstrates that close others impact our lives in a variety of ways, but little is known about how the mere presence and coattention of close others, relative to that of strangers or being alone, for example, impacts our moment-to-moment evaluations of the world around us in the absence of communication.

A new body of evidence, outside of the domain of close relationships, suggests that experiencing stimuli simultaneously with familiar relationship partners may amplify one's perceptions of those stimuli. Although the researchers who have conducted such studies primarily have examined these coexperience effects on people whose relationships were created in the laboratory, the results offer hints that increased relational closeness is likely to enhance coexperiences. For example, chocolate eaten simultaneously with a confederate whom participants had spent 10 min getting to know was judged as more flavorful and better liked than chocolate eaten simultaneously with a confederate whom participants did not have the opportunity to get to know (Boothby, Smith, Clark, & Bargh, 2016). Likewise, participants demonstrated

enhanced memory for stimuli they believed were being coexperienced by in-group rather than out-group members, although these groups were somewhat superficial (e.g., based on the avatar color purportedly selected by sham participants; Shteynberg, 2010). Indeed, every study demonstrating a coexperience "enhancement effect" to date has included a manipulation designed to lead participants to feel closer or more connected to their coexperiencer prior to engaging in experiences with them (e.g., Shteynberg, 2010).

Drawing from and extending upon this work, in the present research we predicted that stimuli would be enhanced when coexperienced by people who have *naturally occurring* close relationships with one another (e.g., real-life friendships, romantic relationships) relative to how they are experienced when alone. Further, we predicted that relational distance (e.g., out-group membership or interpersonal unfamiliarity) ought to dampen experiences, again relative to how they are experienced alone.

#### *Theoretical rationales for experience enhancement with close others*

In addition to the research mentioned above, there are at least three theoretical and empirically rooted reasons to predict that evaluations of stimuli should be enhanced when coexperienced with close others compared to strangers—even in the absence of direct communication. First, because people are more empathic with close others than they are with nonclose others (Batson, Eklund, Chermok, Hoyt, & Ortiz, 2007; Beckes, Coan, & Hasselmo, 2013; Bouchard et al., 2013), they are more likely to take those others' perspectives and to automatically simulate their experiences (Miles, Griffiths, Richardson, & Macrae, 2010; Smith & Mackie, 2014; for a review, see Chartrand & Lakin, 2013). Thus, stimuli shared with a close other may be experienced both directly through one's own senses *and* vicariously through taking the perspective of a close other, compounding the impact of the stimuli and enhancing their effects. For example, participants reported thinking more about what a person with whom they had become familiar

was thinking and feeling when that familiar other was eating chocolate at the same time they were, compared to when that familiar other was engaging in an unrelated activity; these same participants also reported being more absorbed in the experience of eating the chocolate when the familiar other was coexperiencing the chocolate with them (Boothby, Clark, & Bargh, 2014; Study 2). Coexperiencers who are interpersonally close may believe their partners are having more similar thoughts and feelings about the experience to their own, whether or not this belief is actually warranted (Savitsky, Keysar, Epley, Carter, & Swanson, 2011), increasing the experienced fluency involved in perspective taking for such partners.

On the other hand, experiencing a stimulus with a stranger, whose mind is unknown, whose perspective is more difficult to take, and, indeed, whose perspective one may not wish to take, should lessen people's tendency to empathize with their coexperiencer (e.g., Martin et al., 2015). Supporting this reasoning are findings reported by Martin et al. (2015) that being with a stranger causes physiological stress, which is known to interfere with one's propensity to empathize and take another person's perspective (Todd, Forstmann, Burgmer, Brooks, & Galinsky, 2015). Additionally, observing a stranger's affectively arousing experience is known to activate brain regions associated with one's own experience to a lesser extent than does observing the same experience of a friend (Meyer et al., 2012), and empathic responses are deactivated with strangers with whom one does not wish to bond (Shaw, Batson, & Todd, 1994), particularly if the stranger is perceived as an out-group member (Gutsell & Inzlicht, 2010, 2012). In sum, the nature of the emotional connection between people is an important determinant of whether they automatically simulate one another's experiences and responses to stimuli (Smith & Mackie, 2014) and, thus, of whether coexperiences will be dampened or enhanced.

Second, when people feel safe and secure in the presence of others, attentional resources that might otherwise be dedicated to self-presentation and threat vigilance (Beckes & Coan, 2011; Clark, Graham, Williams,

& Lemay, 2008; Mikulincer & Shaver, 2007) instead are free to be directed toward the exploration of stimuli in the environment (Bowlby, 1988; Elliot & Reis, 2003; Feeney, 2004; Feeney, 2007; Feeney & Van Vleet, 2010; Mikulincer & Shaver, 2007). For example, Feeney and Thrush (2010) demonstrated that spouses in more securely attached relationships are more encouraging of each other's exploratory behaviors (e.g., trying a novel activity involving discovery, learning, and challenge) and also are less likely to interfere with their partner's exploratory behavior than are spouses who are not securely attached. Thus, coexperiencing stimuli with close trusted others may result in less distraction and deeper engagement with the stimuli in one's environment. Because greater focus on affective objects is known to result in stronger attitudes (Pessoa, Kastner, & Ungerleider, 2002; Tesser, Martin, & Mendolia, 1995; Wilson & Gilbert, 2008), coexperiencing stimuli with a close other ought to result in more intense reactions to those stimuli. However, coexperiencing stimuli with a stranger, who represents a potential threat, ought to cause threat vigilance, directing one's attention away from focusing on the contents of one's environment. This should result in a dampening of one's experience, rather than enhancement, compared to being with a close other or being alone.

Third, sharing experiences with close others helps to establish a communal sense of reality through the experience of feeling on the same wavelength and having the same thoughts and beliefs (Berger & Calabrese, 1975; Funder & Colvin, 1988; Thomas & Fletcher, 2003). Therefore, coexperiencing stimuli with close others not only makes those stimuli more salient and more likely to garner attentional resources, but may also enhance how "real" those stimuli seem (Hardin & Higgins, 1996). That is, experiences shared with close others may have a more certain and less deniable existence, especially to the extent that people assume close others experience stimuli similarly to themselves (Hardin & Higgins, 1996). This could serve an adaptive function because it suggests that a "common social ground" or a "shared reality" (Hardin & Conley, 2001) is,

in part, established and maintained by sharing experiences with those closest to us and with whom we have the greatest likelihood of interacting in the future (e.g., in-group members, relationship partners, family, and friends). However, because people are more uncertain about—and potentially wary of—strangers' perspectives, and because strangers cannot be assumed to respond to stimuli similarly to oneself, people should be less likely to establish shared reality with strangers than with close partners. Because people tend to believe that they perceive the world objectively—as it truly is—it is important to understand how close others, with whom we spend a substantial amount of time and who most powerfully influence us, shape our sense of reality, even in the absence of direct communication and without our awareness of their doing so (Ross & Ward, 1996).

### *Overview of the present work*

Experiencing stimuli with others ought to enhance those stimuli in a variety of ways. Based on the rationales outlined above, in the present studies we measured whether the extent to which pleasant images were *liked* and the extent to which images seemed *real* were enhanced when those images were coexperienced. In a preliminary study (Study 1), we first investigated whether simply viewing a series of images at the same time as another person, without communication, changed people's evaluations of the images compared to viewing the images alone. At the time of data collection, the literature in the shared experience and shared reality domains had not been focused on carefully examining the effect of naturally occurring relationships on coexperiences (e.g., Hardin & Higgins, 1996; Shteynberg, 2010). In accord with this literature, therefore, our preliminary hypothesis was that evaluations of coexperienced stimuli would be enhanced regardless of the particular relationship between coexperiencers, compared to stimuli experienced alone. However, drawing on findings from the relationship science domain, we also took seriously the possibility that coexperiencers would evaluate the images differently depending on the

relationship between them. Thus, while in preliminary Study 1 we did not control a priori for the type of relationship between coexperiencers, we did carefully *measure* the relationship between coexperiencers after they had completed the study. Based on the results of Study 1, which revealed that the type of relationship between coexperiencers did appear to influence their image evaluations, we then experimentally *controlled* the relationship between coexperiencers in Study 2 by randomly assigning participants to coexperience images with a close other (i.e., someone with whom they had an established relationship prior to their participation in the study), with a stranger (i.e., someone with whom they had no relationship), or alone. Study 2 was thus a partial methodological replication and conceptual extension of Study 1.

Sample sizes for both studies were determined by referencing published empirical articles in which researchers reported using similar designs, measures, and outcomes; these studies included approximately 20 participants per condition.<sup>1</sup> After compiling the effect sizes across these studies and calculating the average effect size (average Cohen's  $d = 0.95$ ), we ran a power analysis using this average effect size in G-Power. Results indicated that the two present studies were sufficiently powered (83.3%) to detect the relatively large effects reported in the relevant existing literature.

### **Study 1**

Study 1 provides an initial investigation into whether images coexperienced with another person (i.e., viewed simultaneously without communication) are better liked and seem more real compared to images viewed alone. Additionally, in this study we measured the relationship between coexperiencers to determine whether and to what extent it would influence the way they evaluated the images.

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1. Studies used as reference to determine present study sample sizes and power included Martin et al. (2015), Fraley and Aron (2004), Smoski and Bachorowski (2003), Clendenen, Herman, and Polivy (1994), and Wagner and Smith (1991).

## Method

### Participants

Participants were 18 men and 52 women at Yale University, recruited to participate in an “Image Rating Study.” Ages ranged from 17 to 47 years ( $M_{\text{age}} = 24$  years,  $SD = 7.24$ ). The sample was 37.4% Caucasian/White, 15.3% Asian/Asian American, 1.4% Native American, 4.2% Latina/Hispanic, 12.5% Black/African American, and 29.2% “other.” All individuals were compensated with \$5 cash for their participation.

### Procedure

*Recruitment.* Participants were recruited through summer school classroom announcements and recruitment tables around campus. After signing up to participate, individuals were assigned randomly to participate in the study alone ( $N = 34$ ) or to participate with another person ( $N = 36$ ). Because participants were recruited on campus, there was a good chance that people would know one another (i.e., they may have been in the same academic class or social group or residence). Thus, we kept track of whether participants knew one another by asking them to report on their relationship with one another during study debriefing.

*Arrival and study setup.* Participants arrived at the laboratory and were greeted by the experimenter. Those who were participating in pairs were seated side by side at a large table in swivel chairs facing a single high-definition computer monitor. We took pains to make sure participants in pairs could not see one another’s responses to any questions asked during the study. To this end, participants made all their paper-and-pencil ratings on their own small side table situated to their side farthest from the other participant. Using the side tables required participants to turn away from one another such that they were back to back while making their ratings. This ensured that participants could not see one another’s responses. The participants also were monitored through a live audio-visual feed to ensure that they did not communicate during the study (and none did).

Those assigned to participate alone were seated at the same large table facing the single computer monitor and made their paper-and-pencil ratings using the table directly in front of them.

*Stimuli.* After consenting, participants were told that they would view several slideshows of images on the computer monitor. The images (e.g., see Appendix A) were preselected prior to the launch of the study for being both moderately likable and moderately real, as judged by the authors, who designed the study, and confirmed by 100 Amazon Mechanical Turk workers on scales ranging from 0 (*not at all*) to 100 (*extremely*) ( $M_{\text{liking}} = 58.10$ ,  $SD = 17.70$ ;  $M_{\text{real}} = 55.52$ ,  $SD = 19.81$ ). We chose photographs as our stimuli in part because previous researchers have demonstrated that the perceived realness of photographs can be manipulated depending on contextual features (Lee, Deng, Unnava, & Fujita, 2014) and in part because viewing images alone or with other people is a common experience in people’s everyday lives, lending ecological validity to this experimental design. We specifically selected images that we believed would be judged to be moderately likable and real, so that participants’ ratings would be neither at floor nor at ceiling. That way, there would be room for participants’ responses to vary depending on the social context condition to which they were assigned. These photographs depicted subject matter such as sculptures, landscapes, and natural formations.

### Measures

*Image ratings.* Participants rated each of 48 images of scenes on two criteria: (a) “How much do you like this scene?” and (b) “How real is this scene?” using 11-point scales ranging from 0 (*not at all*) to 10 (*extremely*). Participants rated each slideshow of images on one of the dependent measures at a time. For example, participants first viewed one slideshow of the 48 images and indicated how much they liked each scene, and then they viewed a second slideshow of the same 48 images (presented in a different order) and indicated how real each scene seemed. Which dependent measure (liking or perceived

realness) and which slideshow (i.e., image order) participants responded to first was counterbalanced across study sessions.

During each slideshow, a single image appeared onscreen for 3 s followed by a blank screen for 5 s. Participants were told to focus on the image while it appeared onscreen, and then to make their rating of the image when the screen went blank. The internal consistency of participants' ratings across the 48 images was acceptably high ("liking" ratings: Cronbach's  $\alpha = .92$ ; "realness" ratings: Cronbach's  $\alpha = .97$ ; see Table 1).

*Familiarity with coexperiencer.* After participants viewed the slideshows, they were debriefed by the experimenter alone in a private room and asked whether or not they "were familiar with, or had previously met" their coexperiencer prior to coming into the laboratory (participants who participated alone were not asked this question). Sixteen participants (45% of the pairs) reported that they were familiar with their coexperiencer prior to coming into the laboratory, and 20 participants (55% of the pairs) reported that they were not familiar with their coexperiencer prior to coming into the laboratory. No participant's answer to this question was inconsistent with his or her coexperiencer's answer.

Last, participants answered several demographic questions.

## Results

Analyses were conducted on two composite scores as decided a priori: (a) an average of how much each participant liked the 48 images he or she viewed and (b) an average of how real each participant rated the same 48 images to be. No data were excluded from analyses.

### *Alone versus together*

Independent samples *t* test indicated that, overall, participants' evaluations of the images did not differ significantly depending on whether they viewed the images alone or with another person. This null effect occurred both for how much participants liked the images ( $M_{\text{alone}} = 5.65$ ,  $SD = 1.26$ ;

$M_{\text{together}} = 5.81$ ,  $SD = 1.27$ ),  $t(68) = -0.56$ ,  $p = .581$ ,  $d = -0.13$ , 95% CI  $[-0.77, 0.44]$  (see Figure 1, left panel), and how real participants rated the images ( $M_{\text{alone}} = 5.30$ ,  $SD = 0.86$ ;  $M_{\text{together}} = 5.34$ ,  $SD = 1.43$ ),  $t(68) = -0.11$ ,  $p = .909$ ,  $d = -0.03$ , 95% CI  $[-0.59, 0.54]$  (see Figure 1, right panel).

### *Familiarity with coexperiencer influences image ratings*

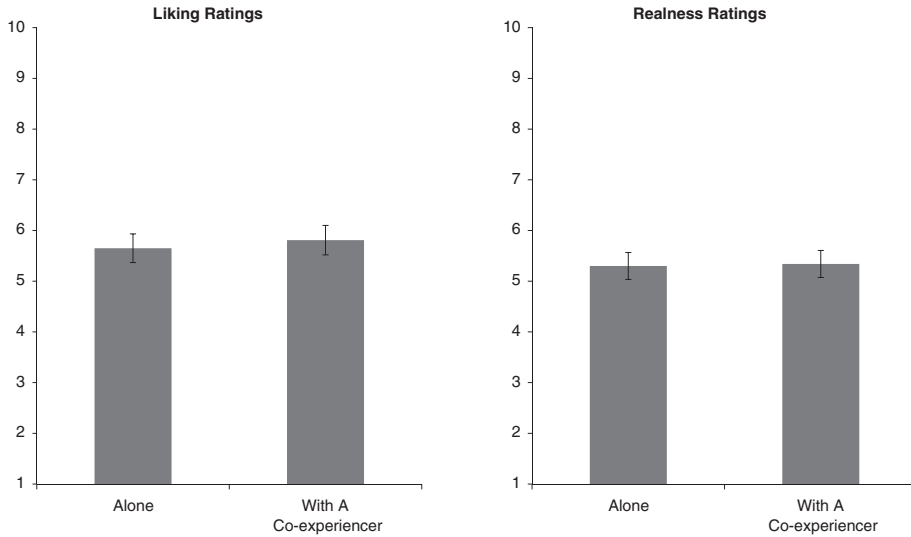
To determine whether the null results reported above truly reflected no effect of coexperience or whether differences in participants' image evaluations were being masked because we had not taken into account the relationship between coexperiencers, we next ran 2 one-way analyses of variance (ANOVAs; one for image liking and one for image realness) comparing the image ratings of participants who were alone, who were with an unfamiliar coexperiencer, and who were with a familiar coexperiencer.<sup>2</sup>

*Image liking.* The first one-way ANOVA revealed that the extent to which participants liked the images differed depending on whether participants viewed the images alone, with an unfamiliar coexperiencer, or with a familiar coexperiencer,  $F(2, 67) = 8.53$ ,  $p = .001$ ,  $\eta^2 = 0.203$  (see Figure 2, left panel). Among participants who coexperienced the images with another person, Tukey honestly significant difference (HSD) post hoc tests indicated that participants who were familiar with their coexperiencer liked the images significantly more ( $M_{\text{familiar}} = 6.68$ ,  $SD = 0.78$ ) than did participants who were unfamiliar with their coexperiencer ( $M_{\text{unfamiliar}} = 5.12$ ,  $SD = 1.17$ ),  $t(34) = 4.60$ ,  $p < .001$ ,  $d = 1.57$ , 95% CI  $[0.87, 2.26]$ . Further post hoc tests revealed that participants who were familiar

2. A test for nonindependence (of indistinguishable dyads) was conducted in SPSS following procedures outlined by Alferes and Kenny (2009), to test whether there was dependency in the data of our participants who were assigned to participate in pairs. Results indicate that there was no dependency in our data: for the "liking" variable: intraclass correlation coefficient (ICC) = .33, 95% CI  $[-0.13, 0.68]$ ,  $F(17, 18) = 2.00$ ,  $p = .154$ ; for the "real" variable, ICC = .12, 95% CI  $[-0.35, 0.54]$ ,  $F(17, 18) = 1.27$ ,  $p = .615$ . Thus, the analyses presented are conducted at the individual, rather than the dyadic, level.

**Table 1.** Descriptive statistics and reliability for images in Study 1

	Image liking					Image realism				
	<i>N</i> (raters)	Mean	<i>SE</i>	Min.	Max.	<i>N</i> (raters)	Mean	<i>SE</i>	Min.	Max.
Image 1	70	6.29	2.35	0	10	70	4.26	2.99	0	10
Image 2	70	7.63	2.20	1	10	70	5.04	3.05	0	10
Image 3	70	3.66	2.59	0	9	69	6.30	3.09	0	10
Image 4	70	4.17	2.91	0	10	70	8.56	1.76	1	10
Image 5	70	3.90	2.82	0	10	70	3.40	2.86	0	10
Image 6	70	5.26	2.59	0	10	70	4.30	2.91	0	10
Image 7	70	6.14	2.80	1	10	69	3.10	2.72	0	10
Image 8	70	5.67	2.85	0	10	70	3.63	3.03	0	10
Image 9	70	6.10	2.95	0	10	70	2.47	2.72	0	10
Image 10	70	7.31	2.54	0	10	70	4.41	3.21	0	10
Image 11	70	6.34	2.35	0	10	70	7.69	2.28	1	10
Image 12	70	4.77	3.11	0	10	70	5.50	3.43	0	10
Image 13	70	6.46	3.10	0	10	70	3.50	2.51	0	10
Image 14	70	3.87	2.99	0	10	70	2.90	3.04	0	10
Image 15	70	4.83	2.84	0	10	69	5.16	3.07	0	10
Image 16	70	5.84	2.79	0	10	70	7.09	3.10	0	10
Image 17	70	6.47	2.69	0	10	70	4.43	2.96	0	10
Image 18	70	5.86	2.42	0	10	70	2.91	2.86	0	10
Image 19	69	6.43	2.30	0	10	69	8.54	2.25	0	10
Image 20	70	6.51	2.69	0	10	70	5.10	3.12	0	10
Image 21	70	5.54	2.97	0	10	70	4.79	3.44	0	10
Image 22	70	5.19	2.77	0	10	70	5.37	3.08	0	10
Image 23	69	3.83	2.78	0	10	69	2.74	3.04	0	10
Image 24	70	4.14	3.10	0	10	70	7.81	2.59	1	10
Image 25	69	6.97	2.58	0	10	70	7.10	2.66	0	10
Image 26	70	7.24	2.34	2	10	70	6.71	2.76	1	10
Image 27	70	6.31	2.60	0	10	70	7.40	2.22	0	10
Image 28	70	6.10	2.27	0	10	70	7.14	2.49	0	10
Image 29	70	4.31	2.75	0	10	70	2.14	2.51	0	9
Image 30	69	4.51	2.74	0	10	70	4.81	2.87	0	10
Image 31	70	5.54	2.53	0	10	70	6.90	3.25	0	10
Image 32	70	5.07	3.18	0	10	70	3.67	3.26	0	10
Image 33	69	6.49	2.62	0	10	70	6.24	3.33	0	10
Image 34	70	7.07	2.15	1	10	70	5.80	2.75	0	10
Image 35	70	6.50	2.89	0	10	69	6.07	2.99	0	10
Image 36	69	6.93	2.53	0	10	69	6.77	2.92	0	10
Image 37	70	5.14	2.92	0	10	70	5.30	3.02	0	10
Image 38	70	7.14	2.40	1	10	70	7.67	2.46	1	10
Image 39	70	5.44	3.01	0	10	69	4.16	3.39	0	10
Image 40	70	6.63	2.30	1	10	70	6.51	2.45	0	10
Image 41	70	6.20	2.46	0	10	70	5.80	3.33	0	10
Image 42	70	5.17	2.68	0	10	70	1.84	2.23	0	10
Image 43	70	5.24	2.72	0	10	70	5.44	3.20	0	10
Image 44	70	6.27	2.33	0	10	69	6.97	2.63	0	10
Image 45	70	4.54	2.49	0	10	70	3.76	3.44	0	10
Image 46	69	6.54	2.34	2	10	70	6.16	3.00	0	10
Image 47	70	6.69	2.82	0	10	70	5.53	2.91	0	10
Image 48	70	4.87	2.90	0	10	70	6.56	2.87	0	10
Average	69.85	5.73	2.67	0.19	9.98	69.81	5.32	2.88	0.10	9.98
Cronbach's $\alpha$ , $N = 70$ raters			0.92					0.97		



**Figure 1.** Evaluations of how much participants liked the images (left panel) and thought the images seemed real (right panel) did not differ depending on whether they viewed the images alone or with a coexperiencer. Error bars represent 95% confidence intervals around each group mean.

with their coexperiencer liked the images significantly more than participants who viewed the images alone ( $M_{\text{alone}} = 5.65$ ,  $SD = 1.26$ ),  $t(48) = 3.02$ ,  $p = .004$ ,  $d = 0.98$ , 95% CI [0.35, 1.73]. Participants who viewed the images with an unfamiliar coexperiencer, on the other hand, descriptively liked the images somewhat less than participants who viewed them alone,  $t(52) = -1.53$ ,  $p = .133$ ,  $d = -0.44$ , 95% CI [-1.22, 0.17], although this difference was not statistically significant.

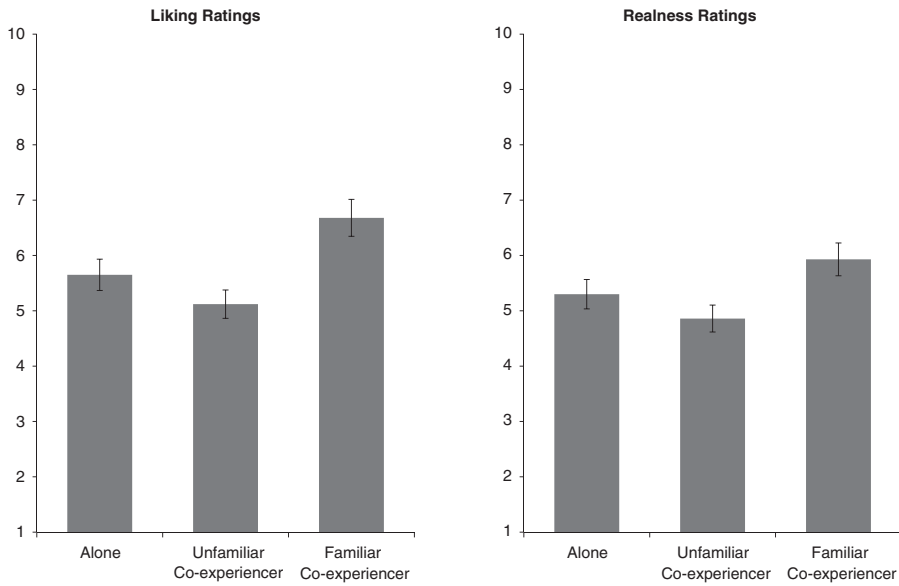
*Image realness.* A second one-way ANOVA revealed that the extent to which the images seemed real to participants also differed depending on whether they viewed the images alone, with an unfamiliar coexperiencer, or with a familiar coexperience,  $F(2, 67) = 4.04$ ,  $p = .022$ ,  $\eta^2 = 0.108$  (see Figure 2, right panel). Among participants who viewed the images with another person, Tukey HSD post hoc tests indicated that participants who were familiar with their coexperiencer rated the images as significantly more real ( $M_{\text{familiar}} = 5.93$ ,  $SD = 1.37$ ) than participants who were unfamiliar with their coexperiencer ( $M_{\text{unfamiliar}} = 4.86$ ,  $SD = 1.31$ ),  $t(34) = 2.40$ ,

$p = .022$ ,  $d = 0.79$ , 95% CI [0.16, 1.99]. Further post hoc tests revealed that participants who were familiar with their coexperiencer descriptively thought images seemed more real than did participants who viewed the images alone ( $M_{\text{alone}} = 5.30$ ,  $SD = 0.86$ ),  $t(48) = 1.69$ ,  $p = .106$ ,  $d = 0.55$ , 95% CI [-0.15, 1.41], although this effect was not statistically significant. Lastly, participants who viewed the images with an unfamiliar coexperiencer rated the images as less real than did participants who viewed them alone,  $t(52) = -1.51$ ,  $p = .185$ ,  $d = -0.40$ , 95% CI [-1.04, 0.15], although these differences were also not statistically significant.

### Discussion

Although we initially believed we might see differences in participants' evaluations of stimuli depending simply on whether people experienced the images alone or coexperienced them, the results of this first study suggested that the relationship between coexperiencers is critical for understanding whether or not coexperienced stimuli will be enhanced. Analyses comparing the ratings of participants who





**Figure 2.** Liking of the images (left panel) and the realness of the images (right panel) varies depending on whether images were viewed alone, with an unfamiliar coexperiencer, or with a familiar coexperiencer. Error bars represent 95% confidence intervals around each group mean.

viewed the images alone to the ratings of participants who coexperienced the images with another person revealed no significant mean differences; it was only after we accounted for the type of relationship between coexperiencers that significant differences in image evaluations emerged. Specifically, we found that participants who viewed the images with a familiar coexperiencer liked the images significantly more and thought they seemed significantly more real than did coexperiencers who were unfamiliar with one another. Further, images were enhanced for familiar coexperiencers, and may be dampened for unfamiliar coexperiencers, compared to participants who viewed the images alone. Given the large literature on the powerful influence of close relationships on people's views of one another and of other aspects of the world (Davis & Rusbult, 2001; Jost et al., 2008), we were not entirely surprised to see this pattern of results. However, in this first study, we did not control the relationship between coexperiencers experimentally, meaning that we did not randomly assign people to view the images with someone whom they knew, with a stranger, or alone. Thus, we conducted a second

study in which experimental control was introduced.

## Study 2

The primary goal of Study 2 was to experimentally vary the person with whom each participant in the study coexperienced visual stimuli rather than simply measuring the relationship between coexperiencers post hoc. Thus, each participant was assigned randomly to view and to evaluate images simultaneously with a close other (strong relational context), simultaneously with a stranger (weak relational context), or alone (no relational context). Because of our particular interest in the naturally occurring relationship between coexperiencers in Study 2, we included measures asking coexperiencers to evaluate one another on several interpersonal variables after they had viewed the images. Additionally, in order to determine whether the effect of relational context is unique to the way people evaluate coexperienced stimuli, or if relational context changes participants' moods in general, we included a measure asking participants to evaluate their time spent in the laboratory.

## Method

### Participants

Participants were 26 men and 34 women at Yale University, recruited to participate in an “Image Rating Study” (i.e., 20 participants in each experimental condition). Ages ranged from 18 to 30 years ( $M_{\text{age}} = 21$  years,  $SD = 2.43$ ) and the sample was 55% Caucasian/White, 13% Asian/Asian American, 8% Native American, 5% Latina/Hispanic, 5% Black/African American, and 14% “other.” All individuals were compensated with \$5 cash for their participation.

### Procedure

*Recruitment.* In order to randomly assign people to participate with a friend versus a stranger without their knowledge of our doing so, we discreetly kept track of the social relationship between participants when they initially signed up for the study. We did so in the following way. All participants were recruited at a table outside of a central campus dining hall. Potential participants were not told anything about the nature of the research being conducted during the recruitment. They simply were told that we were conducting research and seeking participants. After potential participants provided their contact information on a sign-up sheet, research assistants discreetly kept track of groups of friends<sup>3</sup> who signed up by making a note in the margin of the sign-up sheets indicating which potential participants were friends with one another and which were not. This allowed us to later schedule participants to come into the laboratory with their friend, with a stranger (i.e., someone else’s friend), or alone.

For example, if a group of friends signed up for the study, the research assistants placed a letter “A” next to each of their names. If a different group of friends signed up for the

study, the research assistants placed a “B” next to each of their names. Later, when participants were assigned randomly to an experimental condition, those assigned to participate with a friend were scheduled to arrive in the laboratory at the same time as someone else from their friend group (e.g., both participants would have been from Group A). In contrast, participants assigned to come into the laboratory with a stranger would each have had different letters next to their names on the study signup sheet (e.g., one participant would have been from Group A and the other from Group B). To confirm the effectiveness of this procedure, people who participated in pairs were asked to indicate the type of relationship they had with their coexperiencer as a manipulation check (described below). To avoid cuing participants to the relevance of their relationship status with their coparticipant to our research, the study was not advertised as involving two participants. Thus, pairs of participants who knew one another were not in contact about the study prior to participating in it and they did not intentionally come into the laboratory together, as indicated by their surprise to be participating together on entering the laboratory as noted by the experimenter.<sup>4</sup> We went to great lengths to ensure that participants did not know they would be participating with another person (although it is impossible to know with complete certainty whether some were aware).

3. We did not ask participants directly about their relationship to one another so as not to reveal we were interested in their relationship. During recruitment they reasonably could be considered more likely to be friends than strangers. Later, following their participation in the study, the specific nature of their relationship was assessed allowing us to confirm our assumptions.

4. We note that the experimenter could not be kept completely blind to condition, because it was obvious whether participants appeared alone or with another person. However, we did our best to keep the experimenter unaware of whether participants were participating with a friend or a stranger. While the experimenter did not know whether participant pairs were friends or strangers prior to their arrival in the laboratory, their relational context sometimes became clear by the time they left the laboratory. Additionally, even though experimenters could not be kept blind to whether they were running a single participant or a pair of participants, we took care in our methodology to ensure that the experimenter would not influence participants’ ratings of the images. The experimenter simply read a script of instructions to the participants and was never present while participants were viewing the images and or making their ratings. (However, participants were monitored via surveillance to make sure they did not talk or collaborate on ratings.)

*Arrival and study setup.* The arrival and study setup procedures were identical to those described in Study 1.

*Slideshows.* The procedure we followed to present the slideshows was identical to that in Study 1.

### Measures

*Image ratings.* Participants were asked to rate how much they liked each image and how real each image seemed using exactly the same questions and response scales described in Study 1. The internal consistency of participants' ratings across the 48 images was moderate for their "liking" ratings (Cronbach's  $\alpha = .64$ ) and moderate to high for their "realness" ratings (Cronbach's  $\alpha = .78$ ; see Table 2).

*Interpersonal measures.* As a relational context manipulation check, participants who viewed the images with another person also completed a brief assessment of their coexperiencer. These interpersonal measures were anchored on 7-point scales ranging from 1 (*not at all*) to 7 (*extremely*), and consisted of the following questions: "How well would you say you know the other participant?" "How much do you like the other participant?" "How similar are you to the other participant?" "How much do you feel you can trust the other participant?" and "How comfortable are you with the other participant?" Additionally, participants were asked to indicate specifically what type of relationship they had with the other participant (stranger, acquaintance, classmate, casual friend, close friend, romantic partner, family member, other).

*Overall experience ratings.* Lastly, participants were asked to respond to two questions using 7-point scales anchored at 1 (*not at all*) and 7 (*extremely*): (a) Overall, how real did your experience here in the laboratory feel to you today? (b) Overall, how much did you like your experience here in the laboratory today?

### Results

As in Study 1, analyses were conducted on two composite scores: an average of how much participants liked the 48 images they viewed and

an average of how real the participants rated the same 48 images. No data were excluded from the analyses.

### Image ratings

*Liking ratings.* A one-way ANOVA revealed a significant effect of relational context on image liking,<sup>5</sup>  $F(2, 35) = 25.13$ ,  $p < .001$ ,  $\eta^2 = 0.42$  (see Figure 3, left panel).<sup>6</sup> A series of Games–Howell post hoc tests<sup>7</sup> indicated that participants who viewed the images with a friend liked the images significantly more ( $M_{\text{friend}} = 6.72$ ,  $SD = 0.73$ ) than did participants who viewed the images with a stranger ( $M_{\text{stranger}} = 4.42$ ,  $SD = 1.29$ ),  $t(38) = 6.91$ ,  $p < .001$ ,  $d = 2.19$ , 95% CI [1.48, 3.13]. Additionally, participants who viewed the images with a friend liked them significantly more than did participants who viewed the images alone ( $M_{\text{alone}} = 5.55$ ,  $SD = 1.31$ ),  $t(38) = 3.48$ ,  $p = .004$ ,  $d = 1.10$ , 95% CI [0.34, 1.99], whereas participants who viewed the images with a stranger liked them significantly less than participants who viewed the images alone,  $t(38) = -2.75$ ,  $p = .008$ ,  $d = 0.87$ , 95% CI [-2.01, -0.26].

*Realness ratings.* A one-way ANOVA revealed a significant effect of relational context on image realness,  $F(2, 57) = 12.79$ ,  $p < .001$ ,  $\eta^2 = 0.31$  (see Figure 3, right panel).

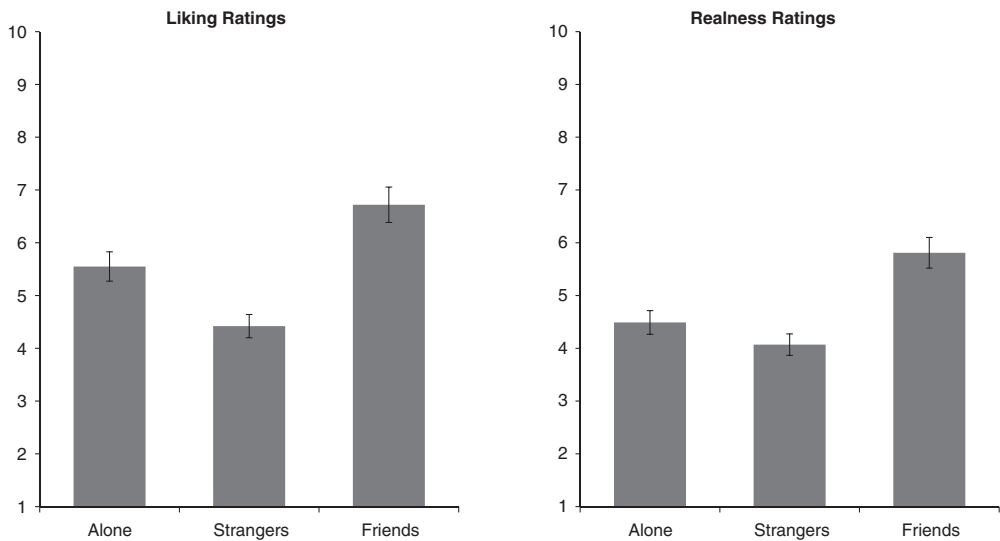
5. A test for nonindependence (of indistinguishable dyads) was conducted in SPSS following procedures outlined by Alferes and Kenny (2009), and confirmed that the data of our participants who were assigned to participate in pairs was nonindependent for the "liking" variable,  $ICC = .78$ , 95% CI [0.53, 0.91],  $F(19, 20) = 8.11$ ,  $p < .001$ , as well as the "real" variable,  $ICC = .89$ , 95% CI [0.75, 0.96],  $F(19, 20) = 17.60$ ,  $p < .001$ . Thus, we used a multilevel model that accounted for the fact that participants were nested within dyads, and subsequently determined that relational context (strangers = -1, alone = 0, friends = 1) significantly predicted participants ratings of how much they liked the images ( $\beta = 5.57$ ,  $SE = 0.22$ ,  $p < .001$ ) as well as how real participants rated the images ( $\beta = 4.94$ ,  $SE = 0.26$ ,  $p < .001$ ).

6. These data violated the assumption of homogeneity of variances; to correct for this, a more conservative Welch  $F$  statistic with adjusted degrees of freedom is reported.

7. These data violated the assumption of homogeneity of variances; to correct for this, more conservative Games–Howell post hoc tests with adjusted degrees of freedom are reported.

**Table 2.** Descriptive statistics and reliability for images in Study 2

	Image liking					Image realism				
	<i>N</i> (raters)	Mean	<i>SE</i>	Min.	Max.	<i>N</i> (raters)	Mean	<i>SE</i>	Min.	Max.
Image 1	60	4.50	2.87	0	9	60	5.17	2.87	0	10
Image 2	60	4.82	2.18	0	10	60	6.23	2.65	1	10
Image 3	59	5.14	2.21	0	10	59	4.61	2.53	0	10
Image 4	60	5.80	2.34	2	10	60	5.85	2.52	0	10
Image 5	60	3.50	2.42	0	10	58	5.03	2.89	0	10
Image 6	60	3.50	2.46	0	9	60	6.15	2.86	0	10
Image 7	58	3.33	2.69	0	10	60	5.97	2.64	0	10
Image 8	60	4.10	2.63	0	10	60	6.08	2.58	0	10
Image 9	60	4.25	2.77	0	10	60	5.98	2.69	0	10
Image 10	60	4.88	2.40	1	10	60	5.57	2.69	1	10
Image 11	60	4.47	3.12	0	10	60	5.37	2.56	0	10
Image 12	60	4.22	2.79	0	10	60	5.55	3.44	0	10
Image 13	60	4.42	2.65	0	10	60	5.83	2.47	1	10
Image 14	60	4.72	2.12	0	10	60	5.85	2.46	0	10
Image 15	60	5.87	2.45	1	10	58	5.55	2.57	0	10
Image 16	60	4.98	2.78	0	10	59	5.24	2.67	0	10
Image 17	59	5.05	2.78	0	10	60	6.15	2.79	0	10
Image 18	59	4.12	3.16	0	10	60	6.05	3.03	0	10
Image 19	60	5.68	3.22	0	10	60	5.73	2.80	0	10
Image 20	60	5.37	2.51	0	10	60	5.53	2.91	0	10
Image 21	60	4.63	2.71	0	10	59	5.05	3.08	0	10
Image 22	60	4.55	2.72	0	10	60	5.22	2.96	0	10
Image 23	59	4.32	2.76	0	10	60	4.63	2.88	0	10
Image 24	60	5.08	2.70	0	10	60	4.82	3.50	0	10
Image 25	60	4.40	2.55	0	10	60	5.83	2.74	1	10
Image 26	60	5.72	2.41	0	10	60	6.72	2.48	0	10
Image 27	59	6.27	2.46	1	10	60	5.62	2.82	0	10
Image 28	60	5.80	2.39	1	10	60	5.77	2.55	1	10
Image 29	58	4.40	2.52	0	10	58	5.36	2.74	0	10
Image 30	59	4.71	2.97	0	10	60	5.17	2.79	0	10
Image 31	60	5.00	3.32	0	10	60	5.13	2.90	0	10
Image 32	60	4.43	2.61	0	10	60	5.87	3.07	0	10
Image 33	60	4.23	2.93	0	10	60	6.08	3.07	0	10
Image 34	60	4.83	2.46	0	10	60	5.98	3.12	0	10
Image 35	60	4.80	2.66	0	10	60	5.10	3.17	0	10
Image 36	60	4.75	2.67	0	10	60	5.05	2.84	0	10
Image 37	59	5.14	3.01	0	10	60	4.08	2.84	0	10
Image 38	60	6.08	2.47	0	10	60	6.32	2.66	0	10
Image 39	60	4.80	2.74	0	10	60	5.33	2.64	0	10
Image 40	60	5.12	2.55	1	10	60	6.23	2.49	0	10
Image 41	60	4.15	2.54	0	10	60	5.92	3.19	0	10
Image 42	60	3.95	2.59	0	10	60	5.40	2.51	0	10
Image 43	60	4.85	2.60	0	10	60	5.60	2.74	0	10
Image 44	59	5.37	2.64	0	10	59	5.36	2.87	1	10
Image 45	60	4.50	2.98	0	10	60	5.45	2.52	0	10
Image 46	60	5.00	2.68	0	10	60	5.72	3.00	0	10
Image 47	60	5.80	2.62	0	10	60	6.05	3.14	0	10
Image 48	59	4.29	3.42	0	10	60	4.77	3.36	0	10
Average	59.73	4.79	2.67	0.15	9.96	59.79	5.57	2.82	0.13	10.00
Cronbach's $\alpha$ , $N = 60$ raters			0.64					0.78		



**Figure 3.** Liking of the images varies as a function of relational context (left panel). Error bars represent 95% confidence intervals around each group mean. Realness of the images varies as a function of relational context (right panel). Error bars represent 95% confidence intervals around each group mean.

A series of Tukey HSD post hoc tests indicated that participants who viewed the images with a friend thought they seemed more real ( $M_{\text{friend}} = 5.81$ ,  $SD = 1.12$ ) than participants who viewed the images with a stranger ( $M_{\text{stranger}} = 4.07$ ,  $SD = 1.23$ ),  $t(38) = 4.67$ ,  $p < .001$ ,  $d = 1.48$ , 95% CI [0.88, 2.60]. Additionally, participants who viewed the images with a friend thought they seemed more real than participants who viewed the images alone ( $M_{\text{alone}} = 4.49$ ,  $SD = 1.04$ ),  $t(38) = 3.86$ ,  $p = .001$ ,  $d = 1.22$ , 95% CI [0.46, 2.18]. Participants who viewed the images with a stranger thought they seemed less real than participants who viewed the images alone, and although this difference was in the hypothesized direction and the effect was of moderate magnitude ( $d = 0.37$ ), it was not statistically significant,  $t(38) = -1.15$ ,  $p = .479$ , 95% CI [-0.45, 1.28]. (See Appendix B for additional information about how participants evaluated the realness of the images.)

#### *Interpersonal evaluations*

We next ran a series of independent  $t$  tests to explore whether interpersonal evaluations varied as a function of relational context (see

Table 1). This served as a manipulation check to ensure that participants who viewed the images with a friend were indeed interpersonally closer to their coexperiencer than were participants who viewed the images with a stranger. As expected, participants assigned to participate with a friend reported significantly higher levels of interpersonal knowledge, liking, similarity, trust, and comfort with their coexperiencers than did participants assigned to the weak relational context condition. Additionally, all participants assigned to participate with a stranger indeed did indicate that the other person with whom they participated was a stranger. Of those assigned to the friend condition, 70% indicated they were close friends and 30% indicated they were acquaintances and/or classmates; none reported being romantic partners. Grouping close friends, acquaintances, and classmates preserves our a priori random assignment of participants to conditions, and prior work (Boothby et al., 2014, 2016) reveals that a simple in-laboratory exercise of asking and answering questions of one another establishes a sufficient level of familiarity with a new person to obtain the enhancement effect; the acquaintances

**Table 3.** *Interpersonal outcomes as a function of relational context*

Interpersonal outcome	Strangers, <i>M</i> ( <i>SD</i> )	Friends, <i>M</i> ( <i>SD</i> )	<i>t</i>
How well do you <i>know</i> the other participant?	1.05 (0.22)	5.10 (1.51)	139.2
How much do you <i>like</i> the other participant?	3.65 (0.93)	6.40 (0.88)	91.67
How <i>similar</i> are you to the other participant?	2.55 (0.94)	6.00 (1.07)	116.1
How much do you <i>trust</i> the other participant?	3.40 (1.39)	6.15 (1.26)	42.67
How <i>comfortable</i> are you with the other participant?	3.75 (1.24)	6.35 (1.09)	44.85

*Note.* All  $df = 38$ , except  $df_{\text{comfortable}} = 34$ . All  $p$  values are  $< .001$ . Test for nonindependence (of indistinguishable dyads) were conducted in SPSS (Chicago, IL) following procedures outlined by Alferes and Kenny (2009), and confirmed that the data of our participants who were assigned to participate in pairs was nonindependent for all interpersonal outcomes. Thus, we used a series of multilevel models that accounted for the fact that participants were nested within dyads, and subsequently determined that relational context (strangers = 0, friends = 1) still significantly predicted participants' ratings of all interpersonal variables (know partner:  $\beta = 3.07$ ,  $SE = 0.27$ ; like partner:  $\beta = 5.03$ ,  $SE = 0.16$ ; similar to partner:  $\beta = 4.28$ ,  $SE = 0.20$ ; trust partner:  $\beta = 4.78$ ,  $SE = 0.25$ ; comfortable with partner:  $\beta = 5.05$ ,  $SE = 0.25$ ). All  $p$ -values are  $< .001$ .

and classmates in this study likely have established at least this level of familiarity (Table 3).

( $M_{\text{alone}} = 7.00$ ,  $SD = 0.00$ ;  $M_{\text{stranger}} = 6.94$ ,  $SD = 0.24$ ;  $M_{\text{friend}} = 7.00$ ,  $SD = 0.00$ ).

#### *Overall experience ratings*

Finally, in order to explore whether the effect of relational context is specific to coexperiences of stimuli or if it simply influences participants' global outlook, we examined whether participants' evaluations of their overall experience in the laboratory varied as a function of whether they participated alone, with a stranger, or with a friend. Not all participants had the opportunity to respond to the two items assessing overall experience due to experimenter error ( $N_{\text{alone}} = 17$ ,  $N_{\text{strangers}} = 18$ ,  $N_{\text{friends}} = 18$ ). As we expected, 2 one-way ANOVAs revealed that neither the extent to which participants liked their overall experience in the laboratory nor the extent to which participants rated the overall laboratory experience as being real varied as a function of relational context: liking ratings,  $F(2, 50) = 1.93$ ,  $p = .156$ ,  $\eta^2 = 0.07$ , and real ratings,  $F(2, 50) = 0.97$ ,  $p = .386$ ,  $\eta^2 = 0.04$ . That is, there were no significant differences detected in how much participants indicated they liked the images across conditions ( $M_{\text{alone}} = 6.00$ ,  $SD = 0.87$ ;  $M_{\text{stranger}} = 6.44$ ,  $SD = 0.78$ ;  $M_{\text{friend}} = 5.89$ ,  $SD = 1.02$ ) nor how real they rated the images across conditions

#### *Discussion*

Replicating the pattern of results that emerged in Study 1, in Study 2, using methods designed specifically to test the effect of relational context on visual experiences, we found further confirmation that visual stimuli are experienced differently depending on the relational context in which they were viewed. When coexperiencers were interpersonally connected, images were liked more and seemed more real relative to when coexperiencers were alone and more than when coexperiencers were strangers. Furthermore, participants who viewed the images with a stranger liked the images less than those who viewed the images alone. This pattern of results is particularly interesting because it reveals that not only are experiences enhanced when shared with a close other compared to when shared with a stranger, but also that coexperiencing with a close other causes stimuli to be enhanced compared to experiencing stimuli alone whereas coexperiencing stimuli with a stranger causes stimuli to be dampened compared to experiencing stimuli alone. The way people experience stimuli in their surrounding environment thus appears to be quite sensitive to their relationship with

the people with whom they happen to be, if any, even when no communication takes place and they have no particular reason to think they might be influenced.

Considering the results of Study 1, one might suggest that participants who were strangers to their coparticipants in that study were, on average, of a different ilk (e.g., more likely to be loners, unfriendly, or socially off-putting) than were participants who were friends with those with whom they participated. Importantly, because of our recruitment methods followed by random assignment of participants to participate with a friend, a stranger, or alone, we know that the strangers in Study 2 likely were not qualitatively different from the friends we recruited; that is, they were not categorically less likable or friendly because all participants were recruited from groups or pairs of friends, and then subsequently assigned to participate with their own friend or the friend of another participant (a stranger).

However, the fact that all participants were recruited from groups or pairs of friends may be a limitation of this study design. While systematic sampling of groups or pairs of people was appropriate given the methodological requirements of this study, it may have implications for the generalizability of the results. For example, the participants in our sample may have been particularly social. However, the fact that Studies 1 and 2 revealed a similar pattern of results indicates that participants' a priori sociability was either not likely drastically different across participant samples from each study, or if it was different, it did not have a substantial effect on participants' image evaluations.

Finally, we note that the effects observed cannot be explained simply by people liking their time spent in the laboratory more when with a friend than when alone or with a stranger. Participants did not report globally enjoying their time in the laboratory to a different extent depending on the relational context in which they viewed the images. In fact, participants expressed having quite a good time in the laboratory across the board. If participants, instead, *had* reported enjoying their time in the laboratory to a greater extent when with

friends compared to when with strangers, then the effects we observed could have simply been the results of people feeling good when with friends and feeling bad when with strangers and these feelings priming positive or negative thoughts about the images viewed (Clark & Isen, 1982) or serving as affective feedback, leading participants to conclude that they liked the images more when with friends and less when with strangers (Clore, Gasper, & Garvin, 2001; Schwarz & Clore, 1983). Such an explanation would have nothing particular to do with the fact that participants were *coexperiencing images*.

## General Discussion

In the absence of communication (which could exert an informational or normative influence on ratings of external stimuli), the simple process of merely experiencing stimuli in parallel with another person alters the way people evaluate those stimuli. Yet whether one's experience is enhanced or dampened depends on the particular relationship between coexperiencers. In the present studies, images viewed with a close other were enhanced (liked more and seemed more real) than were precisely the same images viewed alone, and images viewed with a stranger seemed to be dampened (liked less, in Study 2) in experience compared to precisely the same images viewed alone.

These results have meaningful implications for how coexperiences affect people in their daily lives. Just as images viewed with a friend were enhanced compared to images viewed with a stranger or alone, in the present research people may derive similar psychological benefits from exposure not only to photographs but also to art, songs, sunsets, and movies together. The enhanced pleasure derived from joint experiences may well explain, in part, why people do things such as go to movies together, although they typically do not speak to one another as they watch the movie.

Furthermore, the fact that stimuli not only are liked more but also seemed more real when they are coexperienced with close others suggests that such shared moments are more likely to serve as a foundation for shared memories in a mutual history (and thus more likely to be

used in simulating and planning future actions; see Schacter, Addis, & Buckner, 2007), more likely to heighten feelings of nostalgia, and more likely to serve as relationship-enhancing investments that strengthen relational ties (Rusbult, Drigotas, & Verette, 1994; Sedikides & Wildschut, 2016), whereas the fact that the “realness” of stimuli coexperienced with strangers was comparatively dampened suggests that experiences with strangers may be deemphasized in memory and more likely to fade with time compared to stimuli that are experienced with close others. To preserve the functional utility of memory, the storage of information that is more likely to be called upon in the future should be prioritized (Deutsch & Deutsch, 1963; Norman, 1968). Consistent with this line of reasoning, people have better recall for stimuli they witnessed with a member of their in-group than for stimuli they witnessed with an individual from an out-group (Shteynberg, 2010). In short, we speculate that stimuli experienced with close others may benefit dually from deeper processing and commitment to memory on the one hand and greater accessibility for recall on the other.

The present results not only have implications for understanding the benefits people derive from coexperiences with close others, but also lend support for the theoretical ideas that served as the basis for our initial predictions. In particular, we based our hypotheses on the assumption that sharing an experience with safe others would have two consequences that would lead to the enhanced liking and reality of stimuli. First, being with a safe other ought to reduce our automatic tendencies to devote attention to self-protection (and attendant self-focus), resulting in increased attention to stimuli in our environment and, in turn, savoring of and amplification of those stimuli (assuming the stimuli are pleasant). Second, being with a safe and liked partner should increase empathic tendencies to experience the world not just through one’s own eyes but also through the eyes of one’s coexperiencer. This process, too, should amplify the pleasantness of pleasant stimuli. Of particular interest is the fact that only when people were with friends (and not when they

were with strangers) did coexperiencing stimuli cause those stimuli to be experienced as more pleasant and more real. This makes good sense given our initial theorizing. The fact that being with a stranger decreased the pleasure derived from the stimuli (albeit significantly only in Study 2) also supports our theoretical rationale. Future studies should be designed to test these mechanisms directly and to find out whether these processes operate in tandem or whether one assumes primary responsibility for the enhancement of stimuli viewed with a close other.

### *Future directions*

We see at least two interesting directions for extending this work. First, future researchers might investigate the moderating impact of individual differences in relationship-related factors, such as attachment style and interpersonal trust, on the extent to which coexperienced stimuli are enhanced or dampened. Although little is known about this at present, given our theoretical perspective personality and relationship factors such as these are likely to have an impact on the ways in which people evaluate the experiences they share with others. Coexperience may not confer the same benefits to avoidant or anxious individuals (Mikulincer & Shaver, 2007), to low self-esteem individuals (Leary, Tambor, Terdal, & Downs, 1995), and/or to rejection-sensitive individuals (Downey & Feldman, 1996) because such individuals may not trust others sufficiently for the mechanisms we suggest cause our observed effects to kick in when coattending to stimuli with familiar others. That is, even coexperiencing stimuli with a familiar other may be insufficient for such people to relax and turn their attention away from self-protection and toward stimuli in the environment (thereby savoring them more) and toward their partner in a manner sufficient to see stimuli through their partner’s eyes as well as their own. That is, such individuals’ chronic lack of security, even when in the presence of familiar partners, may not afford them the sort of flexible focus of attention to shift away from self-focus and toward their partner and shared experiences



(Clark, Von Culin, & Hirsch, 2015; Clark et al., 2008).

Although the present studies were not designed to test this question, we would predict that not only chronic individual differences in trust of others but also *any* relational factor that enables people to freely direct attentional resources toward the safe exploration of their environments should lead to shared experience enhancement effects. This should be true whether the traits are one's own (as discussed above), a coexperiencer's (e.g., a partner's chronic trustworthiness), or features of the relationship dynamic (e.g., a history of mutual trust). However, we would predict that factors that pull people's attention away from the environment and instead toward monitoring their coexperiencer (e.g., social vigilance, self-presentation, anxious attachment style) should cause experiences to be dampened.

Second, if engaging in an activity simultaneously with a close other enhances people's evaluations of *stimuli*, could it also enhance people's evaluations of their *relationship*? If a sunset seen with a close partner seems more beautiful, then it is possible that this enhanced experience could become associated with one's partner, thereby increasing one's positive feelings about one's partner and their relationship (Strong & Aron, 2006). Although we did not set out to measure changes in people's relationships as a result of sharing an experience, we would expect shifts in people's interpersonal evaluations based on prior research showing that people feel closer and more connected to one another after engaging in activities like singing together (Weinstein, Launay, Pearce, Dunbar, & Stewart, 2016), moving in synchrony (Hove & Risen, 2009; Valdesolo & DeSteno, 2011; Wiltermuth & Heath, 2009), and attending to the same side of a computer screen (as opposed to different sides; Wolf, Launay, & Dunbar, 2015). While we know that sharing exciting, novel, and challenging activities with one's partner results in self-expansion and greater relationship satisfaction (Aron & Aron, 1986; Aron et al., 2000), little research has been conducted on the simple everyday moments that close others share with one another, despite the fact that these types of experience comprise a large portion of our

social lives. Thus, in future work researchers should explore how engaging in parallel activities, without explicit communication or interaction, alters the relationship between coexperiencers. Does the presence and coattention of a partner increase relationship satisfaction over time, bolster commitment, and deepen investment? Likewise, would the inattention of partners to stimuli that are meant to be experienced together negatively affect such relationship factors?

### Conclusions

The people with whom we have relationships influence us in many different ways. The present research shows that simply experiencing stimuli in parallel with another person is sufficient to change people's experiences, and that the *manner* in which a coexperiencer's presence impacts one's experience depends on the relationship they have with one another. We spend much of our lives in the company of others, doing things socially but silently, and precisely who that company is may have a profound impact on how we experience the world around us.

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## Appendix A

### Example Image Stimuli



## Appendix B

### Study 2: The Meaning of “Real”

After participants evaluated all 48 images on the extent to which they liked them and how real they seemed, they were asked: “When rating how ‘real’ each scene was, how did you define real?” They were presented with five response options of possible meanings of “real” and told to check all that applied to how they defined the term (see Table B1 below). We specifically did not define “real” for participants prior to their image ratings because we wanted to allow participants the flexibility to use the term in a way that felt intuitively right to them and not overthink their responses.

Participants’ responses to the question of how they were defining the term “real” while

evaluating the images for their realness were consistent with our expectations (see Table B1 below). A majority of participants indicated that an image seemed more “real” to the extent that it depicted something that they could easily imagine experiencing in their everyday lives. That is, a “real” image was one that was a part of their normal, tangible world and not the result of digital alteration. Further, participants tended to ground their perceptions of “realness” in the way the images themselves looked (61%–78% of responses) to a much greater extent than to an internal feeling they experienced in response to the image (26.5% of responses), suggesting that it was indeed their sense of objective reality that shifted depending on the relational context in which they viewed the images.

**Table B1.** *The meaning of “real” to participants*

Definition of “real” presented to participants	Percentage of subjects who checked the option
1. Something that I have seen before, that I know actually exists.	61.2
2. Something I could easily imagine seeing in real life or finding in nature.	67.3
3. The content of the scene was not computer-generated (i.e., the scene was real).	71.4
4. The photograph itself was not photo-shopped (i.e., it was real).	77.6
5. Intense and immersive (i.e., a feeling or sensation I had in response to it).	26.5