

CHAPTER 3

The Mere Exposure Effect and Aesthetic Preference

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Canons contain the core works of many cultural pursuits—art, architecture, sculpture, theater, dance, poetry, literature, and film. These works have been the focus of what is taught, and they are among the most common objects of our aesthetic experience. To be sure, in the 1980s and particularly in the United States, canons were objects of intense controversy, and since then arts academics have generally moved toward more global and contemporary concerns. But courses on canonical Western art still thrive, and in art museums canonical images are seen by larger numbers of people than ever before. For these and many other reasons canons are worthy of considerable study. In this chapter I focus on the particular canon of French Impressionist art.

Why French Impressionism? First, it is modern. This has the useful consequence that documentation of its formation and maintenance are more available than for the canons of earlier periods. Classical Greek, Gothic, and even Renaissance and Baroque canons, for example, have very little documentation written at the time their works were wrought. Second, Impressionism is sufficiently old. By this I mean it is relatively crystallized, and that there is little change going on within it, at least in terms of the artworks' reproduction in texts. Virtually the entire Impressionist corpus is known and owned by museums or in private hands. Third, of all schools of art Impressionism may be the most popular. This fact may have started in reaction to some official scorn cast on it in the 1870s and beyond, and in the amplification of that apparent scorn in the retelling of the story of Impressionism by legions of twentieth century writers. It also seems likely that the general

accessibility and color of Impressionist works have pleased many. The images appear easy to “understand.” They portray the everyday. No heritage of iconography—classical or Biblical—seems necessary to enjoy them. Moreover, and perhaps for these reasons, French Impressionist paintings have commanded high sales prices at art auctions throughout the twentieth century, and they were the focus of many of the largest and best-attended art exhibitions in the 1980s and 1990s. All of this hoopla for Impressionism over the years has also brought it very close to popular culture, and made it generally known by the public. Finally, although undeniably French, Impressionism has a distinctively American cachet. Many of those with the largest collections of Impressionist works were American. Indeed, France and the Musée d’Orsay notwithstanding, there are more Impressionist paintings in museums in the United States than anywhere else. Impressionist works are embedded within contemporary American culture. They also forge strong ties with a Europe of the nineteenth century, where modernism began.

MERE EXPOSURE AND CULTURE

The central argument in this chapter is that the laboratory phenomenon *mere exposure* (Zajonc, 1968, 1980) can be generalized to our broader culture in important ways. I claim it part of the fabric of establishing and maintaining an artistic canon. Through repeated occurrences of objects and events in our lives, we acquire information and attitudes, and we do so nonconsciously. This process helps shape our preferences, even our aesthetic preferences. It is a biologically sensible mechanism and it works for many kinds of creatures. For example, by having an animal exposed to a home environment, it will grow to like it, feel comfortable in it, and generally prefer it to strange environments. Such a mechanism keeps toddlers and the young of many species nearby their caregivers. Moreover, as human beings grow up, they enlarge upon the familiarities of their domiciles to include the familiarities of the neighborhoods, and eventually for those of their culture, both broadly and narrowly defined.

Mere exposure is a phenomenon related to *implicit learning* (see Seamon et al., 1995). That is, we are unaware that it is happening, but the focus of this learning is deeply connected to affect. Consider pictures. From childhood through college and throughout adulthood, we are exposed to a myriad of images. Only a few of these concern art and most are representations of art, but occasionally as during a museum visit we may see the artwork itself. But whether the image is an artwork or not, we often do not remember it, much less where

we saw it. We often do not even recognize it when we see it again. Nonetheless, its trace is left within us. It is easily demonstrated that our history with it can influence our future judgments. Such effects result from simply being in a culture populated with cultural artifacts (see Zajonc, 1970).

Laboratory evidence suggests that what we are exposed to, and then prefer, can be quite meaningless (see Bornstein, 1989)—line drawings, polygons, ideographs, nonsense words or syllables, sounds. But they can also be meaningful—photographs of objects or people, or even music (Szpunar, Schellenberg, & Pliner, 2004). What about paintings? Laboratory results have been mixed. Berlyne (1970) found mere exposure effects for abstract paintings, but then research and discussion was dragged in a different direction. Berlyne also found an interaction that complex paintings were preferred over simpler ones, which fit better with his theoretical views (Berlyne, 1971). Zajonc, Shaver, Tavis, and Van Kreveld (1972) found the reverse effect, and Brickman, Redfield, Harrison, and Crandall (1972) found both effects depending on initial responses, favorable or unfavorable. But as studies relying on laboratory exposure, these research efforts did not explore the everyday exposure of individuals to artwork. The purpose of this research was to assess effects of mere exposure measured as it might occur across many years.

I should also note that much of the more recent research on mere exposure has allied itself methodologically with subliminal perception. Stimuli are presented extremely briefly, but then masked such that observers cannot overtly report what they have seen, have been shown to prime other responses (e.g., Kunst-Wilson & Zajonc, 1980; Monahan, Murphy, & Zajonc, 2000; Moreland & Zajonc, 1977; Seamon, Brody, & Kauff, 1983). These results are interesting and important, but from my perspective subliminal perception is a laboratory phenomenon used to mimic other processes in real life—in particular, those of inattention and forgetting over the long haul. Thus, in this context then, I am less interested in alternative theories that may explain mere subliminal exposure (e.g., Bonanno & Stilling, 1986; Klinger & Greenwald, 1994; Smith, 1998; Winkielman, Zajonc, & Schwarz, 1997; Zajonc, 2001) than in the more general phenomenon.

THE IMAGES

Distel (1994) organized a celebration for the centennial of the death of Gustave Caillebotte (1848-1894), a minor Impressionist artist and a collector of his better-known colleagues works. In an appendix to her book Distel presented a large number of small, black-and-white images

of those works. In part because Caillebotte had fascinated me for well over a decade, and because I had recognized many but not all of these images, I decided that they would form half the basis of my studies (Cutting, 2003). I used 66 of the images in his collection and bequest to the State of France as stimuli—2 Caillebottes, 5 Cézannes, 8 Degas, 4 Manets, 16 Monets, 14 Pissarros, 9 Renoirs, and 8 Sisleys. I then sought as many high-quality reproductions of these images as I could find, and digitized the best of them (51 in color). I then matched each of these images to another by the same artist, in generally the same style, from roughly the same period, and with the same general subject matter. These second 66 images were selected from the same general sources, screened for reproduction quality in the same way, and digitized. Color images were paired with colored images, and black-and-white with black-and-white. They were chosen generally without regard for their location, although a good many were in the Musée d'Orsay, as with the bulk of Caillebotte's collection. After selecting the images, a research assistant and I began to consult all the relevant books we could find in the Cornell University libraries. Our intent was to record every occurrence of each image in Cornell's more than seven million volumes. Carrying an electronic notebook with us, we created and then continually updated 132 separate databases.

Several constraints governed the tallies. Multiple copies of the same book were not considered, although a foreign language book and its English-language translation were counted separately, as well as different editions of the same book. In a given book occasionally there would be both a full image and a detail of it. Both were counted, with the idea that if the author felt it important enough to show the image twice, or more, it should be counted each time it or a part of it occurred. We searched over 6000 books in 20 months in at least 200 library visits. Totals were accumulated each month and compared with those of previous months. Correlations were always extremely high. Thus, however many books we missed while assembling our databases, the counts of images in them would not change the relative patterns. In all, we located over 4000 reproductions of the 132 images in nearly 1000 different books published between 1901 and 2002. The frequencies of occurrence across all images ranged from 2 to 278. The mean was 31.5, the median 16. Counts varied widely—7 images occurred more than 100 times, 41 fewer than 10 times, with the rest in between. Thus, across the 132 images there was a clear gradation from the core canon of Impressionism to its base corpus.

An important issue arises about the utility of these databases and image frequencies. How representative are the relative occurrences of these 132 images to what would be more broadly available in our

culture? I approximated an answer in two ways. First, I searched the online catalog of the Cornell libraries for all occurrences of the last name of each 8 artists used by keyword, inspected the results for relevancy (e.g., excluding Russian texts with "monet" in the title; *monet* is the Russian word for money), and recorded the number. I did the same in the Bibliography of the History of Art, a professional online database of books and articles published since 1973. The correlation between the frequency of relevant titles at Cornell and in the BHA was very high ($r = .97$). Thus, the holdings at Cornell on these artists and the broader scholarly work done on them in the last third of the twentieth century are quite tightly related. But are the images in the books representative? Second, I created an index of obtained versus expected values for the images of each painter within the Cornell system. For each artist its numerator was the total number of books in which any of these images appeared. Its denominator was the total number of books that were accessed using the artist's name as a keyword plus those accessed using either the keywords "Impressionism" or "Impressionist." The logic of the index is that, if the artist's works among these stimuli were central to his *oeuvre*, one might reasonably expect that at least one of those in the sample would appear in every book on the painter and in every book on Impressionism generally. Thus, index values should be near 1.0. The fact that the mean indices for these seven artists were a bit higher (1.15), suggests that these stimuli formed a suitable and representative sample of the Impressionist canon.

A few statistics across the image set are important. First, images from the Caillebotte collection did not appear with any reliably different frequency than their matched pairs. Means were 33 and 30, respectively. Second, Musée d'Orsay images *did* appear more often than those elsewhere. Means were 43 and 18, respectively. This was not a surprise. The *Musées nationaux de France* have been thorough in promoting their art for a long time. Finally, paintings and pastels that reside in any museum—the Orsay or elsewhere—appeared reliably more often than those in private collections, 37 vs. 6, respectively. This was not a surprise either. Most artworks in private collections are seldom reproduced, and in another larger database I found the median to be zero.

MERE EXPOSURE AS A FUNCTION OF PUBLICATION FREQUENCY

Various pairs of these images were presented for a few seconds across several studies to undergraduates ($n = 278$), older adults (mean age = 46; $n = 19$), and children (ages 6 to 10; $n = 66$). Their order in

sequence was different across studies and for each it was random with several constraints. Images by the same artist could not follow one another. They were balanced left and right across experiments by previous ownership (Caillebotte or not), and by location (Orsay or not). All viewers were asked which image, that presented on the left or right of each pair, they liked better. Undergraduates and older adults were also asked if they recognized either of the images in each pair while making the preference judgment. They also filled out a brief questionnaire indicating how often they went to museums each year, if they had ever been to the Musée d'Orsay, and for undergraduates whether they had taken an art history course or not. Only 17% had.

The results divide a number of ways. First consider claims of recognition. Undergraduate viewers recognized less than 3% of the images. The older adults did a bit better, recognizing 19%, but they saw a different and more frequently reproduced set. Multiple regression showed that the number of images viewers claimed to recognize was correlated with how often they went to museums, and if they had been to the Musée d'Orsay. However, once these were factored out for the undergraduates, there was no effect of how many art history courses they had taken. The Caillebotte images were not recognized with any reliably different frequency than their matched pair. In addition, those in the Musée d'Orsay were not recognized more often than those elsewhere. Finally, those images in museums *were* recognized a bit more often—3.3 vs. 1.5% for the undergraduates. All of the images presented to the older adults were from museums.

Notice, I make no assumption that observers' responses necessarily represent the true recognition of a particular painting or pastel. There would be no way to verify these claims, except perhaps for those who had taken art history courses. Nonetheless, there are some interesting trends. For example, against the mean backdrop recognition of less than 3%, the undergraduates claimed to recognize the seven images of Degas dancers at a mean rate of 9%. Such results, I would claim, are examples of generic recognition—evidence that an individual had seen some Degas-like dancers before. For a laboratory analog see Monahan et al. (2000). Given that Degas produced 600 pastels and paintings of dancers perhaps this is not entirely surprising.

Consider next the preferences. First, the undergraduates, the older adults, and the children expressed no preference for the Caillebotte images, choosing them 48, 51, and 50% of the time, respectively. Thus, there is nothing unusual in this context about the paintings and pastels in the Caillebotte collection. Second, as might be expected adults viewers did prefer somewhat the images in the Musée d'Orsay. Undergraduates and adults selected them 54 and 52% of the time,

respectively, when one was paired against a non-Orsay image. Nonetheless, when frequency differences were factored out, there was not a reliable preference for Orsay images in either group. Thus, what distinguishes this selection of Orsay holdings is only that its images appear more often.

Most importantly, however, are the data for image preference by frequency of publication in my databases. Over all pairs, undergraduate and adult viewers preferred the more frequently occurring image of each pair on 59% of all trials. This highly reliable effect is about the size of many mere exposure effects in the literature (e.g., Seamon & Delgado, 1999). Indeed, for the undergraduates 43 more frequent images of 64 pairs were preferred (with 2 ties), and for adults 17 of 25 were preferred. Moreover, unlike the recognition results this effect was uniform across all types of observers. Among undergraduates, it occurred equally for those who never had an art history course, and those who had taken at least one such course. Among all viewers it occurred for those not visiting a museum in the past year, those visiting once, and those visiting more than once; and it occurred equally for those not visiting and visiting the Musée d'Orsay. Moreover, when differences in recognition rates are compared with preferences for each of the 66 images pairs, there is no reliable correlation.

As importantly, children showed no preference for the more frequent image of each pair—51 vs. 49%. Overall preferences for more frequent images were 49, 47, 53, and 56%, respectively, for the 6, 7, 8, and 9-year-olds—a tantalizing trend—but variance was large and this pattern of increase was not reliable. Moreover, the children's results for the images pairs were uncorrelated with those of the undergraduates and the adults. Thus, what governed the adult preferences is not operative in the preferences of children. These are important null results. Although elementary school children may have seen a few Impressionist paintings before, they lack the broad cultural exposure to Impressionist art that would systematically match them to what adults have experienced. What drives all of these preference results, at least statistically, would appear to be frequency of appearance. But consider some other possibilities.

COMPLEXITY AND PREFERENCE

Bornstein (1989) reviewed the literature on complexity and preference in laboratory experiments on mere exposure. He found that six of nine published studies found stronger mere exposure effects for complex than simple stimuli, but more relevant are those using art works as stimuli. As noted earlier the results of Berlyne (1970), Zajonc

et al. (1972), and Brickman et al. (1972) were mixed. Thus, it seemed worthwhile to pursue the idea with these stimuli. Since complexity cannot be defined with rigor in most domains (Goodman, 1972), I let the observers define it for themselves. In a new study (Cutting, 2003), I asked 112 undergraduates to serve as viewers of a sequence of individually presented stimuli, all 132 in this set. Only 17% of the students had taken an art history course and 7% had been to the Musée d'Orsay. Viewers were asked to make a judgment about which image was more complex. Complexity judgments were not correlated with preferences or claims of recognition. Inspecting the judgments for each pair suggests that viewers were simply counting things, often people or trees, in the pictures. Thus, they thought that images with more elements were more complex—neither a surprising nor a particularly interesting result.

PROTOTYPICALITY AND PREFERENCE

One account for the preference results might be that viewers, when faced with making preference judgments, were comparing images on the basis of what they thought were the most representative (prototypical) Impressionist paintings. Indeed, this has been a hotly debated topic in the psychology and art literature (see Boselie, 1991, 1996; Farkas, 2002; Hekkert & Snelders, 1995; Martindale, 1996; Martindale, Moore, & West, 1988). Thus, another study was designed to address this issue (Cutting, 2003). Twenty-one undergraduates in a seminar on visual perception viewed a PowerPoint sequence of 138 images—all 132 used previously, plus 6 more by Gustave Caillebotte. These images were presented singly and viewers rated them on a 1-to-7 scale as to how representative each was of Impressionist paintings generally, with 7 being the most prototypical. Farkas (2002) called these *style-typical* judgments. Presentation order was again haphazard with the constraints that images by the same artist could not follow one another.

Perhaps surprisingly, prototypicality judgments were *not* correlated with experimental variables of previous interest—either the frequencies of the images or the recognition rates. The differences in prototypicality judgments within a pair were also not correlated with preferences or with complexity judgments. Moreover, all of this is true whether the correlations are calculated in a linear or nonlinear fashion (the latter would be suggested from the work of Berlyne, 1971; see also Martindale et al., 1988). Some have suggested that familiarity ought to be controlled for when assessing prototypicality (for example, Boselie, 1996). If recognition is used as a metric for familiarity then one might be able to

factor out this effect using the differences in recognition for the images in each pair. However, once these differences are considered, the residual correlation of preference rates and the differences in prototypicality across pairs is still not reliable. Given the methodology used here it is not clear how these results should be taken with respect to Martindale's preference-for-prototypes theory (e.g., Martindale, 1990, 1996; Martindale et al., 1988), but they are clearly not a ringing endorsement.

Nonetheless, there were some striking prototypicality effects by painter. Most prototypical were the 16 images by Sisley (mean rating = 5.3). This is interesting because he is clearly the least major of the seven "major" impressionists by any count of images that appear in Impressionist books. Clustered next and together were the 32 works of Monet (5.0), the 28 of Pissarro (4.9), and the 18 of Renoir (5.0), with the first two reliably different than Sisley. Clustered next, and reliably below these four, were the 16 works of Degas (4.6) and 10 of Cézanne (4.2). Finally, well below these were the 8 of Manet (2.8) and the 10 of Caillebotte (2.8). Interestingly, Cézanne and Manet are often described as not really being Impressionist painters. Cézanne's most important works are later than the period of the 1870s and 1880s—the heyday of Impressionism—and Manet's were earlier. In addition, at the time of the Impressionist exhibitions Caillebotte's work was often favorably reviewed when that of the others was not. Finally, Degas never painted outdoors, which certainly influenced the content of his works, and which then may have influenced judgments.

Other classifications of images also show some interesting differences. Of this set of 138 images, 90 were landscapes, 44 were portraits (often of groups and often outside), and 4 were still lifes. Mean ratings for landscapes (5.0) was reliably higher than those for portraits (4.1) and still lifes (3.8). The latter two did not differ. It should be noted that, among these images and throughout their *oeuvres*, Sisley painted only landscapes, Pissarro mostly landscapes, Renoir mostly portraits, and Degas almost exclusively portraits.

OVERVIEW

Undergraduates and older adults viewers generally liked the images in each pair that were more frequently published across the twentieth century. Children, on the other hand, did not. Viewers recognized few of these Impressionist images—undergraduates less than 3%. Low recognition rates are requisite for laboratory demonstrations of mere exposure (Kunst-Wilson & Zajonc, 1980). Recognition rates were not related to any frequency counts. Moreover, they were not related

preferences either, another requisite for laboratory demonstrations of mere exposure. This lack of relation shows, yet again, that our knowledge of what we overtly know, sometimes called explicit memory, is dissociable from our broader experience, which even against our knowledge affects our behavior, our preferences, and our desires.

Several conclusions can also be made about various collections. First, images from the Caillebotte collection were neither preferred more often nor recognized more often than those matched to them. It has often been said that Caillebotte had extraordinary taste in amassing his collection. This is no doubt true, but at least for contemporary viewers that taste did not outstrip that of the many collectors involved in amassing the collections from which the matched images were chosen. Second, the Musée d'Orsay holdings did occur more often in this sample. This is not a surprise. A systematic culling of images from the Orsay, which arguably owns one sixth of all Impressionist paintings publicly available, would form the bulk of the core of the canon. However, at least with respect to this corpus of images and these viewers, the Orsay's holdings are neither preferred more often nor recognized more often than other images matched to their frequencies of occurrence. Third, art in private collections is not in the Impressionist canon. These images occur less often in the literature; they are less frequently recognized; and, lacking exposure, they are preferred less.

Together, all of these trends support the idea that it is not where an image is, or who bought it, but how often it appears, that affects public appreciation. Any artwork in a prized location—such as in the Musée d'Orsay—has a great advantage over other artworks, but systematic promotion by other museums and authors can overcome this advantage.

QUALITY AND PREFERENCE

There is, of course, the thorny issue of quality. Perhaps the paintings that are reproduced more often are simply "better" paintings. Perhaps people simply respond to quality in art. This has been an idea popular since Immanuel Kant (1794/1952), and more recently both outside (Feynman, 1985; Pirsig, 1974) and within art history (Rosenberg, 1967; Woodford, 1983). But it is not likely to be true (see Bal & Bryson, 1991; Cheetham, 2002; Moxey, 1994). In yet another experiment (Cutting, 2003) I presented these images to students in my undergraduate course on perception, randomly interspersed in my PowerPoint presentations on various scientific topics such as the cochlear microphonic, stereopsis, and sensory substitution. I presented—as nonsequiturs—102 of these

images (all of those in color), about 12 per lecture, for a few seconds each and without comment. Across two dozen lectures I presented singly the images that were less frequent in the literature in each pair a total of four times. I presented the more frequent member only once. Still later I presented the images together in pairs, and found that I had reversed the students' preferences. That is, this group now liked slightly better the images that they had seen in class more often. Thus, what governs these judgments is not quality, but how often the images have been seen before.

MERE EXPOSURE AS A MEDIATOR OF CANON MAINTENANCE

How might mere exposure work within a culture for art? How might it affect an artistic canon, its reception, and its maintenance? All of us are members of a culture, and we all absorb what is around us. As visual beings, we digest images voraciously even without noticing. A very small proportion of the images we see are from the Impressionist corpus and canon. Nonetheless, we respond to their occurrences in our future interactions with Impressionism. We like the ones we've seen before, and particularly those we may have seen many times.

We find these images everywhere. Impressionist paintings are not only in galleries, but also in books and on textbook covers, calendars, posters, coasters, tee shirts, and towels, and one can find them readily on the Internet. Mere exposure dictates that every occurrence can matter, particularly when an image is otherwise rare. Museum curators ought to note this. Museums already do a reasonable job at promoting their collections, but placing images everywhere (and without cost to the public) will go a long way towards ramifying the importance of their collections as received by the broader public. But the competition is stiff; everyone seems to be doing it. Currently, the correlation of what's in the literature and what's on the Internet is not high. If this difference is maintained, the canons of the future could change in directions independent of goals and interests of art professionals.

CONCLUSION

Artistic canons are promoted and maintained by a diffuse but continual broadcast of images to the public by museums, authors, and publishers. The repeated presentation of images to the public without direct awareness or memory makes mere exposure a prime vehicle for canon maintenance. Tacitly and incrementally over time, it teaches the public to like the images, to prefer them, eventually to recognize

them as part of the canon, and to want to see them again. In turn, it seems likely that this implicit education also reinforces the choices made by professionals in what they present to that public. The public's appreciation rewards museums, scholars, and the publishing industry by demonstrating an interested and responsive audience.

In this manner, mere exposure cyclically reinforces canons across generations of authors and curators on the one hand, and museum goers and book buyers on the other. Although it may be tacit, I do not think this is necessarily a subversive trend, nor one to be denigrated. I claim it is part of the same force that binds a culture. It is part of our human nature, built on an evolutionary substrate that makes very good sense. It helps ensure steadiness in culture more generally, and relative constancy in artistic canons more particularly.

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