# Culture and Aesthetic Preference: Comparing the Attention to Context of East Asians and Americans

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*Prior research indicates that East Asians are more sensitive to contextual information than Westerners. This article explored aesthetics to examine whether cultural variations were observable in art and photography. Study 1 analyzed traditional artistic styles using archival data in representative museums. Study 2 investigated how contemporary East Asians and Westerners draw landscape pictures and take portrait photographs. Study 3 further investigated aesthetic preferences for portrait photographs. The results suggest that (a) traditional East Asian art has predominantly context-inclusive styles, whereas Western art has predominantly object-focused styles, and (b) contemporary members of East Asian and Western cultures maintain these culturally shaped aesthetic orientations. The findings can be explained by the relation among attention, cultural resources, and aesthetic preference.*

*Keywords:* culture; attention; East Asians; Westerners; aesthetics; visual images

Cultural psychology has demonstrated that East Asians differ systematically from Westerners in cognitive activity, including categorization, causal explanation, and logical versus dialectical inference (Nisbett, 2003; Nisbett, Peng, Choi, & Norenzayan, 2001). These studies have suggested that people from East Asian cultures (e.g., China, Korea, and Japan) tend to pay greater attention to contextual information than their counterparts in Western cultures (e.g., Ji, Peng, & Nisbett, 2000; Kitayama, Duffy, Kawamura, & Larsen, 2003).

Ji et al. (2000) examined cultural variation in attention. These authors used the Rod and Frame Test designed by Witkin and his colleagues (Witkin, 1967; Witkin & Berry, 1975; Witkin & Goodenough, 1977) to examine the influence of context on perceptual judgment. In their experiment, a frame of about 16 square inches (approximately 41 cm) was rotated independently

from a rod that sat inside the frame. At the start, the rod was at an angle to vertical. Participants were then asked to determine—without being influenced by the frame position—when the rod appeared to be objectively vertical. The results indicated that East Asian participants made more errors on the test than American participants, suggesting they found it more difficult to ignore the influence of the context produced by the frame.

Masuda and his colleagues (Masuda, Ellsworth, et al., 2008; Masuda & Nisbett, 2001, 2006) have demonstrated that such cultural variations in attention can also be observed with more naturalistic and complex visual information. Specifically, Masuda and Nisbett (2001) asked American and Japanese participants to watch animated vignettes of underwater scenes and later to report what they had seen. Japanese participants were more likely to include information about the context of objects and about relationships among the objects, whereas Americans tended primarily to describe the physical appearance of the objects. In addition, Masuda and Nisbett found that Japanese participants recognized previously seen objects better when they saw them against their original backgrounds than when they saw them against novel backgrounds, indicating "binding" of object to context, whereas this manipulation had much less effect on the recognition abilities of American participants. Chua, Boland, and Nisbett (2005) replicated the series of experiments while measuring participants' eye movements and found that North Americans looked at central objects sooner and longer whereas Asian participants made more eye movements to the background (as well as more total eye movements).

Overall, these findings have demonstrated that East Asians are likely to see visual images contextually, attending more to background and to relations, whereas Westerners are likely to focus on the most salient objects and their properties. Masuda and Nisbett (2001) suggested that such patterns of attention are at the foundation of cultural variation in higher sociocognitive processes, such as causal explanation and categorization.

Why are East Asians more likely than their Western counterparts to be sensitive to contextual information? Masuda and Nisbett (2001; Nisbett & Masuda, 2003) argue that social practices in East Asian cultures facilitate people's sensitivity to social and contextual cues. For example, child-rearing styles in Japanese culture put more importance on paying attention to contextual cues in a given situation rather than to focusing on the attributes of a single object (Fernald & Morikawa, 1993). The work of Masuda, Ellsworth, et al. (2008) gives further credence to this assertion. In their experiments, participants were presented with various images of salient cartoon figures with smaller, less salient figures in the background. Japanese undergraduate students were more likely than their American counterparts to be influenced by the background figures' facial expressions when making judgments of the target figure's emotion. Thus, for the Japanese, a smiling target figure was judged to be less happy when the background figures were frowning than when they were smiling.

Nisbett and his colleagues (e.g., Nisbett, 2003; Nisbett et al., 2001) maintain that such differences in social practices may be traced back to the emergence of ancient East Asian and Western civilizations. The need for social harmony prompted East Asians to attend closely to the social world, whereas the need for autonomy encouraged attention to objects that could be controlled through the exercise of one's will. Ideologies tend to support these perceptual tendencies. East Asian ideologies such as Buddhism, Taoism, and Confucianism, in general, tend to emphasize the statement that all things in the world are interrelated. In contrast, Western ideologies in general emphasize how to control discrete objects by paying close attention to their attributes and the categories to which they belong.

In the present research, we demonstrated the continuity of perceptual tendencies by focusing on systematic cultural variation in artistic styles and aesthetic preferences of visual images. Throughout history, visual images have often mediated interpretations of the world. These images are of course not mere copies of the real world. Many are two-dimensional representations of the three-dimensional world. Their styles, however, are strongly influenced by the conventions of the culture in which they were produced. For this reason, visual images can be viewed as cultural symbols: People from one cultural group may find it difficult to understand an image produced by members of a different culture. Are people's perceptions of artificial visual images, such as photographs or drawings, influenced by culture? To what degree do members of particular cultures internalize the dominant representational forms of paintings, drawings, and pictures?

To answer these questions, we explored the possibility of systematic cultural differences in the styles of visual art regarded as masterpieces in their own societies. We also explored the possibility of cultural differences in the drawing and photographic styles employed by contemporary members of cultural groups and in their aesthetic preferences for visual representations.

People in East Asian countries, as well as those in Western countries, have long interpreted the visual images of their own cultures and have long elaborated the artistic conventions of their own cultures. Furthermore, some East Asian countries pursued a national isolation policy for many centuries. Only in the last 150 years, for example, have Japanese and Westerners had substantial exposure to each other's styles of visual representation (e.g., Paine & Soper, 1955).[1] We hypothesized

that East Asians are accustomed to seeing objects contextually. Thus, East Asians would be predisposed to produce and prefer paintings, drawings, and pictures that incorporate a great deal of context. In contrast, Westerners would be accustomed to abstracting objects from their contexts. Thus, they would be predisposed to produce and prefer paintings, drawings, and pictures in which context is subordinate to salient, discrete objects.

## STUDY 1

Scholarship in the history of art supports the hypothesis that East Asian art is more context sensitive than Western art. The Renaissance marked a pivotal moment in the Western history of art. According to Ernst H. Gombrich (1966), "When people of the period wanted to praise a poet or an artist, they said that his work was as good as that of the ancients" (p. 161). Works of ancient Greece and Rome were reevaluated, admired, and held as standards. Like their Greek and Roman predecessors, Renaissance artists emphasized the conquest of nature and the great capacity of human beings. Representational techniques conceived during this period in the fields of architecture, visual art, and literature have greatly influenced the development of Western culture.

*Landscapes and cultural differences in perspective.* The technique of perspective, devised in the 16th century, was one of the most notable developments during the Renaissance. Kubovy (1986) describes two major functions of this technique. The most obvious is to represent space by providing the illusion of depth. Perspective provides "the means for drawing the spectator's eye to the key figure or action in the paintings" (p. 2). Perspective fixes the viewer's standpoint, usually forcing the viewer to occupy the same level as the subject of the work. The amount of field information, moreover, is restricted in classic Western art—painters include field information only to the extent that it can realistically be observed given the perspective within a given scene. Etymologically, the word *perspective* means "clear seeing." In the Western perspective, objects are depicted upon a plane surface in conformity with the way they are perceived, without reference to their absolute shape or contextual relations. The whole picture or design is calculated to be valid for one station or observation point only (Giedion, 1964, p. 31).

Various researchers have discussed the relationship between the emergence of the modern notion of individualism and the principles of Western perspective invented in the 16th century. This change in artistic style is seen to coincide with important parallel developments in science, philosophy, and social order (Blatt, 1984); the reemergence of the Greek notion of man, in which self-confidence is paramount (Burchhardt, 1860/1950); and new concepts of human values that emphasize individuals' responsibility and dignity (Panofsky, 1955). The unique point of view of the individual spectator indeed resonates with the principle of individualism (Giedion, 1964).

In East Asia, by contrast, the photographic and analytic realism associated with Western techniques of perspective was not attempted until the modern era (French, 1978, p. 95). East Asians, in contrast, have employed various ways of emphasizing field information. The Chinese developed the scroll form to depict a panoramic view of landscape "which could include a whole succession of mountain ranges, near and far, possessed of a geological sense of space and time" (Paine & Soper, 1955, p.65). The bird's eye view used in Japanese landscape depiction is another mode of representing field information. In this mode, unlike Western perspective, the artist's standpoint is higher than the objects depicted.

Ukiyo-e painters applied the "tactile" perspective (Itasaka, 1971, p. 148). In this mode, artists depict figures, trees, and mountains realistically. However, their viewpoint is not singular: They draw each object as if the viewer can go to the place where they can touch it (Itasaka, 1971).[2] Finally, East Asian painters "did not normally paint cast shadows" (Gombrich, 1995, p. 11). This also indicates the technique of multiple viewpoints: "If artists constantly move their location, they do not have to worry about shades of objects" (Itasaka, 1971, p. 148). From these constructed and often impossible viewpoints artists are able to depict fields in their entirety; without such imaginative leaps, entire scenes would be unavailable to the viewer. One of the common results of such representational devices is that the location of the horizon in East Asian paintings is much higher than that produced by the Western perspective. This is because the Eastern viewpoint includes a great deal of interesting material in the field as well as clouds in the sky. To implement this technique, close objects such as people and objects directly in front of the viewer were drawn at the bottom of the frame, and far objects such as mountains, forests, and fishermen's boats, were drawn at the top of the frame. Locating the horizon at the top of the frame resulted in less space in which artists could draw clouds in the sky. Western painters averted this problem by lowering the location of the horizon. For example, marine paintings became very popular in Amsterdam during the 17th century. Painters invented various techniques for drawing dynamic movements of clouds on the ocean by lowering the water level to the

bottom of the canvas (Kiers & Tissink, 2000). But East Asian artists solved the problem by applying an alternative technique: The horizon is still located at the top of the frame, but the clouds are superimposed on the field. The East Asian drawing technique thus allows artists to include all the necessary pieces of contextual information—not only the information on the ground but also the information in the air. This method compensates for the absence in Eastern art of the most important effect in Western paintings. That is, East Asian artists' technique of a high horizon abandons the depth of field that has been important to Western painters since the invention of perspective. As a result, Western viewers who are familiar with Western linear perspective will find East Asians' paintings with a high horizon unnaturally flat and skewed. However, several researchers and artists have averred that such flatness is one of the most important concepts shared by East Asian cultures, qualitatively different from the Western artistic tradition (Azuma, 2000; Itasaka, 1971; Murakami, 2000).

*Portraiture and the size of the model's face.* Portraiture has been a popular genre in Western societies. The origin of portraits may be traced back to ancient Roman civilization. Pliny the Elder's *Natural History* presents an anecdote of a girl who traced the shadow of her boyfriend on the wall to serve as a substitute for him during his absence. Since then, portraits have played an important role as substitutes for a person's real existence. Throughout Western history, kings and queens have ordered painters to draw their portraits as symbols of their power. Painters who sought both realism and idealism developed techniques of portraiture during the Renaissance (e.g., Da Vinci's *Mona Lisa*, Raphael's *Portrait of Agnolo Doni*), Baroque (e.g., Rubens's *Portrait of Susanna Fourment*), and Rococo (Flagonard's *A Young Girl Reading,* David's *Portrait of Madame Récamier*) periods. Portraits are still a popular genre even in contemporary abstract art (Shimada, 1990). Generally, Western portraits depict an individual and fulfill a variety of functions—they can mark the occasion of a particular success or can record the existence of an individual for posterity. Accordingly, Western portraiture seeks to make the subject salient—the intention, in other words, is to distinguish the figure from the ground. For this reason, the model occupies a major fraction of the space.

The tradition of portraiture has a long history even in East Asian societies. For example, Japanese Buddhist monks, especially Zen monks, often draw the portrait of the founder of their sect and have the portrait on the wall during their prayers. The Mikado's family members, court nobles, and Shoguns of military governments also ordered painters to draw their portraits (Shimada, 1990).

Contrary to the Western tradition of portraiture, however, East Asian portraiture is unlikely to emphasize the individual at the expense of the context. For this reason, the size of the model is relatively small, as if the model is embedded in an important background scene. Sometimes, the open space is filled with much visual information such as a mattress, a folding screen, and a window shade, but sometimes it is filled by comments handwritten by those who evaluated the portraits (e.g., Bokusai's *The Monk Ikkyu*). Furthermore, a wide-open space can be intentionally left empty so viewers can enjoy the sense of *ma* (space) as a softening factor of salient visual representation, which has been strongly appreciated in the East Asian arts tradition (Kenmochi, 1992; Minami, 1983).

Such obvious cultural differences in artistic representations have been reported in art history. However, this has never been tested in a rigorous way, and we propose to do that in the present research. Study 1 examined the cultural variations in context-inclusiveness of East Asian and Western paintings. We considered a sample of East Asian and Western paintings from the 15th through 19th centuries. The quality of images produced after the 15th century allows clear identification of depicted objects and makes possible the measurement of the object's size and location in the art.[3]

Archival research was conducted to identify visual images considered as masterpieces by each society. We began with the assumption that East Asian representations in general would show more context inclusiveness than Western representations. Based on the reasoning presented in the previous section about contextual information in art, we derived two hypotheses. First, the average location of the horizon will be higher in East Asian pictures than in Western pictures. Second, the ratio of the size of the face to the entire frame in East Asian portraits will be smaller than the ratio in Western portraits.

### Method

*Materials*. Digital images accessible on the Web sites of major museums in the United States and East Asia were selected. We chose to analyze 731 Western paintings collected by the Metropolitan Museum of Art, in New York City, and 660 East Asian paintings collected by four major museums in East Asia (Tokyo National Museum, Tokyo, Japan; Kyoto National Museum, Kyoto, Japan; the National Museum of Seoul, Korea; and the National Palace Museum, Taipei, Taiwan). Museums were selected according to their size and the quality of their collections. We considered these paintings representative of each culture because they were produced by renowned artists and have had wide exposure. We included all the accessible visual images to minimize selection bias on the part of the researchers.

However, we excluded East Asian paintings from the MET and Western paintings from all Asian museums.

Selected images were partitioned into three categories: portraits, landscapes, and people in a scene. The category "landscapes" refers to depictions that treat nature as the primary topic. In database searches of the Western Web site, pictures identified by the keyword "landscape" were chosen as subjects of analysis. In database searches of East Asian Web sites, pictures identified by the keyword "mountain-water paintings" (*Sansuizu* in Japanese) were chosen as subjects of analysis. In all, 365 Western pictures and 218 East Asian pictures fit these categories and were used for the analysis. The category "portraits" refers to pictures in which a single person appears in the scene. A total of 266 Western pictures and 151 East Asian pictures fit this category. The category "people in a scene" refers to depictions of more than one person and an identifiable horizon. A total of 110 Western pictures and 291 East Asian pictures fit this category. Pictures of nonhuman objects—such as still lifes and portraits of animals—were excluded from the study. To make claims about the difference in the prevalence of each category between cultures we would need to perform a more thorough sampling of the art, but this is not relevant to our present research hypothesis.

*Criteria of measurement.* As mentioned previously, East Asians invented a perspective that was qualitatively different from the Western perspective. We assume that the East Asian perspective allows artists to simultaneously use multiple viewpoints, such as the bird's eye view and the view from the ground. The artist tends to place the horizon at the top of the frame, or even to omit the horizon entirely, thereby providing space for more contextual pieces of information. In contrast, Western perspective forces artists to draw only images that are visible from a single standpoint. The artist can convey the depth of field using only one third or one fourth of the entire frame; thus, the amount of potential contextual information is limited.

In sum, the East Asian flat perspective allows us to draw abundant context information (contextual inclusiveness) while losing the depth of field. The Western perspective, in contrast, allow us to draw limited contextual information (contextual exclusiveness) while creating the depth of field. However there are no criteria to measure the flatness and the depth of field. We assumed that the ratio of the location of the horizon would be a reasonable and objective indicator to measure context inclusiveness of these paintings. In the analyses of landscapes, the distance from the bottom of the picture to the location of the horizon was measured.[4] In the analyses of portraits, we measured the ratio of the area of the face to the area of the entire

frame. As the area of the face becomes larger, the size of the body relative to the size of face also becomes larger, limiting the space for drawing contextual information. The area of the face was measured according to the following criteria: (a) height was determined by measuring the distance from the chin to the top of the head, including hair or hat, and (b) width was determined by measuring the longest horizontal distance across the face, excluding hair and hat.

We applied analogous criteria to the measurement of the horizon and to the area of the face in the "people in a scene" pictures. Because these latter paintings depicted more than one person, we selected the largest face in the scene for data analysis.

### Results and Discussion

*Landscapes.* Cultural variation in the field inclusiveness of landscape pictures was examined. As seen in Table 1, the location of the horizon in East Asian paintings was significantly higher than that of Western paintings, $t(581) = 10.39$, $p < .001$.[5] The East Asian paintings consisted of more field information than the Western paintings.

*Portraits.* Cultural variation in the inclusiveness of field information for portraits was examined. As seen in Table 2, the ratio of the size of the face to the size of the entire visual field was substantially smaller in East Asian than in Western portraits, $t(415) = 9.10$, $p < .001$. The finding suggests that East Asian painters deemphasize the face in portraits as measured by overall area than Western painters.

*People in a scene.* As seen in Table 3, an independent *t* test indicated that the location of the horizon was significantly higher in East Asian than in Western paintings, $t(399) = 6.08$, $p < .001$. This result indicates that East Asian paintings are more likely than Western paintings to depict field information. The ratio of the size of the largest face to the size of the entire visual field was significantly smaller in East Asian than in Western paintings, $t(399) = 2.88$, $p < .005$.

In sum, the results of Study 1 showed that East Asian paintings in general placed horizon lines higher than Western paintings, and the size of models in East Asian paintings in general was smaller than that in Western paintings. These results are consistent with the artist traditions characterizing East Asian and Western art. The location of the horizon is consistent with the use of flatness in East Asian art and the use of perspective in Western art; the size of the face in a portrait is consistent with the differing contextual emphasis in East Asian and Western traditions.

**TABLE 1:**   Average Ratio in Percentage of the Height of the Horizon to the Height of the Entire Frame for the Landscape Paintings

| | Western Paintings | | East Asian Paintings | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | M | SD | M | SD | t | p |
| Ratio of the horizon to the frame | 38.83 | 15.98 | 56.15 | 24.22 | 10.39 | .001 |

**TABLE 2:**   Average Ratio in Percentage of the Area of the Face to the Total Area of the Portraits

| | Western Paintings | | East Asian Paintings | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | M | SD | M | SD | t | p |
| Ratio of the face area to the frame | 14.65 | 12.50 | 4.28 | 8.33 | 9.10 | .001 |

**TABLE 3:**   Average Ratio in Percentage of the Height of the Horizon to the Height of the Entire Frame and the Average Ratio of the Area of the Face to the Area of the Entire Frame for Paintings of People in a Scene

| | Western Paintings | | East Asian Paintings | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | M | SD | M | SD | t | p |
| Ratio of the horizon to the frame | 64.34 | 26.05 | 82.42 | 26.79 | 6.08 | .001 |
| Ratio of the face area to the frame | 1.18 | 1.69 | 0.72 | 1.31 | 2.88 | .005 |

## STUDY 2

Study 2 examined whether people deal with context in the same way as the famous artists from their cultures. Study 2 consisted of two tasks. In one task participants were asked to draw landscapes. In a second task, participants were asked to take portrait photographs using a digital camera furnished with a simple zoom function. We have two hypotheses following the rationale presented in the introduction and results of Study 1. The first prediction extends the finding in Study 1 about context inclusion by counting various objects, such as buildings, trees, weeds, and clouds, that participants include when asked to draw a landscape. Furthermore, we predicted that when people draw a landscape, East Asians will place the horizon in the upper area of the sheet so as to portray more of the field, whereas

Americans will place the horizon lower in the frame, following the practice of perspective that permits less field information. Second, because the findings of Study 1 confirm that the percentage of space that the model occupies is greater in Western portraits than in East Asian portraits, we predicted that when participants are given a camera to photograph a model, the model will occupy a greater area of the photograph for Western than for East Asian photographers.

*Method*

*Participants.* Forty-three Americans (37 Caucasians and 6 African Americans; 19 females and 24 males) at the University of Michigan participated in the experiment to fulfill a requirement for an introductory psychology course. Forty-six East Asian international students (22 Taiwanese, 7 Koreans, 5 Japanese, and 12 Chinese; 22 females and 24 males) at the University of Michigan participated in the experiment.[6] Most of the international students participated in the experiment as a course requirement. Five American students and 13 international students received $10 for their participation. Because there was no differential effect of the method of recruitment of the international participants, nor of the ethnic backgrounds, we collapsed the groups and dealt with them all as East Asians.

*Materials.* A piece of 8.5 × 11 in. paper with a bold, black frame was used for the picture-drawing task. The frame created 1-inch margins on all sides of the sheet. Participants were asked to use the sheet horizontally.

A digital camera (Sony Digital Mavica 500) was used for the photograph-taking task. The camera had a 10x zoom function that allows to photographer to vary the size of the model in the frame. The experimenter explained the use of the zoom function to the participants. Not a single participant commented that the zoom function was difficult to use. Four confederates (a female Westerner, a male Westerner, a male East Asian, and a female East Asian) were randomly assigned to each session as a model for the photograph-taking task. Because there were no differential effects of gender or ethnicity of the confederates, we collapsed these factors in the analyses.

*Procedure.* After initial instructions, participants were asked to complete a consent form. Next, the experimenter told the participants that the experiment was about the relation between psychology and the arts, and that their task was to produce visual images. In the first task, the participants were asked to draw a landscape picture within 5 min. They were asked to include at least a house, a tree, a river, a person, and a horizon,

and they were told to feel free to draw additional objects.

After the drawing task, a student confederate appeared in the laboratory. The experimenter introduced the student as a model for the photograph-taking task. The participants were asked to take four portraits of the model: a photograph of the model sitting on a sofa in the laboratory, a photograph of the model standing against a wall, a photograph of the model sitting on a chair in the atrium of the building, and a photograph of the model standing in the atrium.

The distance from the model to the participants was kept constant in all conditions. A red marker was placed 9 ft from the model. Participants were asked to step on the marker. The experimenter then explained how to use the digital camera and the zoom function. The participants were asked to take four portrait photographs that were as aesthetically pleasing to them as possible. After each shot, the experimenter checked the photographs. The participants were asked to redo the task if the experimenter judged the photographs to be out of focus.

### Results and Discussion

*The picture-drawing task.* The ratio of the location of the horizon to the entire frame and the number of additional objects in the scene were analyzed. Figure 1 shows some examples produced by Westerners and East Asians. The first four images (A-D) were drawn by Americans and the last four images (E-H) were drawn by East Asians. As seen in Table 4, the average location of horizons drawn by East Asians was 19% higher in the picture plane than those drawn by Americans, $t(87) = 2.98$, $p < .005$.

We further counted objects such as additional buildings, trees, and people, as well as weeds, clouds, and puffs of smoke (which were each counted as separate elements) and analyzed the frequencies. Two coders independently coded the data. The agreement between the two coders was 89.4%. Disagreements about coding were corrected by the first author, who referred to the coding rules. The results indicated that East Asians drew 74% more contextual objects than did Americans, $t(87) = 2.16$, $p < .05$. Consistent with the results of Study 1, these findings suggest that when drawing a landscape, people maintain culturally specific ways of drawing.

*The photograph-taking task.* The size of faces in portraits produced by participants was analyzed. A 2 (culture: Americans vs. East Asians) × 4 (location: a sitting picture in laboratory, a standing picture in laboratory, a sitting photograph in the atrium, a standing photograph in the atrium) ANOVA indicated that there was a main effect of culture, $F(1, 76) = 6.77$, $p < .02$. East

Asians ($M = 3.37$, $SD = 3.50$) composed photographs in which the model was only 35% as large as the model in photographs produced by Americans ($M = 9.52$, $SD = 14.11$). Consistent with the results of Study 1, this finding suggests that East Asians tended to place the model in the background as if the model were part of a context, whereas Americans tended to prioritize the figure at the expense of the ground (see Figures 2 and 3).

In sum, the findings of Study 2 showed that although not all participants were formally trained in drawing or photography, they produced visual images that generally correspond to the modes of artistic expression traditional to their respective cultures. Cultural experience exposes people to dominant modes of visual imagery. People internalize patterns of artistic expression, or schemata in Gombrich's (1961/2000) terms. However, a question remains. The implicit application of cultural patterns of artistic expression may not mean that people *prefer* such expressions. Using a picture preference task, Study 3 examined whether culturally dominant patterns of expressions were aesthetically preferable to members of those cultures.

## STUDY 3

The findings of Studies 1 and 2 suggest that there are systematic differences in historically developed painting styles and that contemporary people endorse these aesthetic styles as seen in the photographs they take and the drawings they produce. But, the measurements used in Studies 1 and 2 assessed aesthetic *preferences* indirectly. Conventions do not necessarily correspond to preferences but may simply reflect habits or associations. In Study 3, we examined whether people prefer images that correspond to their dominant cultural aesthetics. We studied cultural variations in the evaluation of the aesthetic appeal of photographs. This cross-cultural experiment focused on portrait photographs. The experimental stimuli were sets of four photographs produced using Adobe Photoshop Version 8. Photographs of models and backgrounds were taken separately and were later merged to form sets of portraits with variations in size of the model and background. Participants were asked to compare the photographs within each set and to select the best picture from each.

### Method

*Participants.* Fifty-two Americans at the University of Michigan, Ann Arbor (50 Westerners and 2 Asian Americans; 27 females and 23 males) and 48 Japanese at Kyoto University, Japan (22 females and 26 males), participated in the experiment.
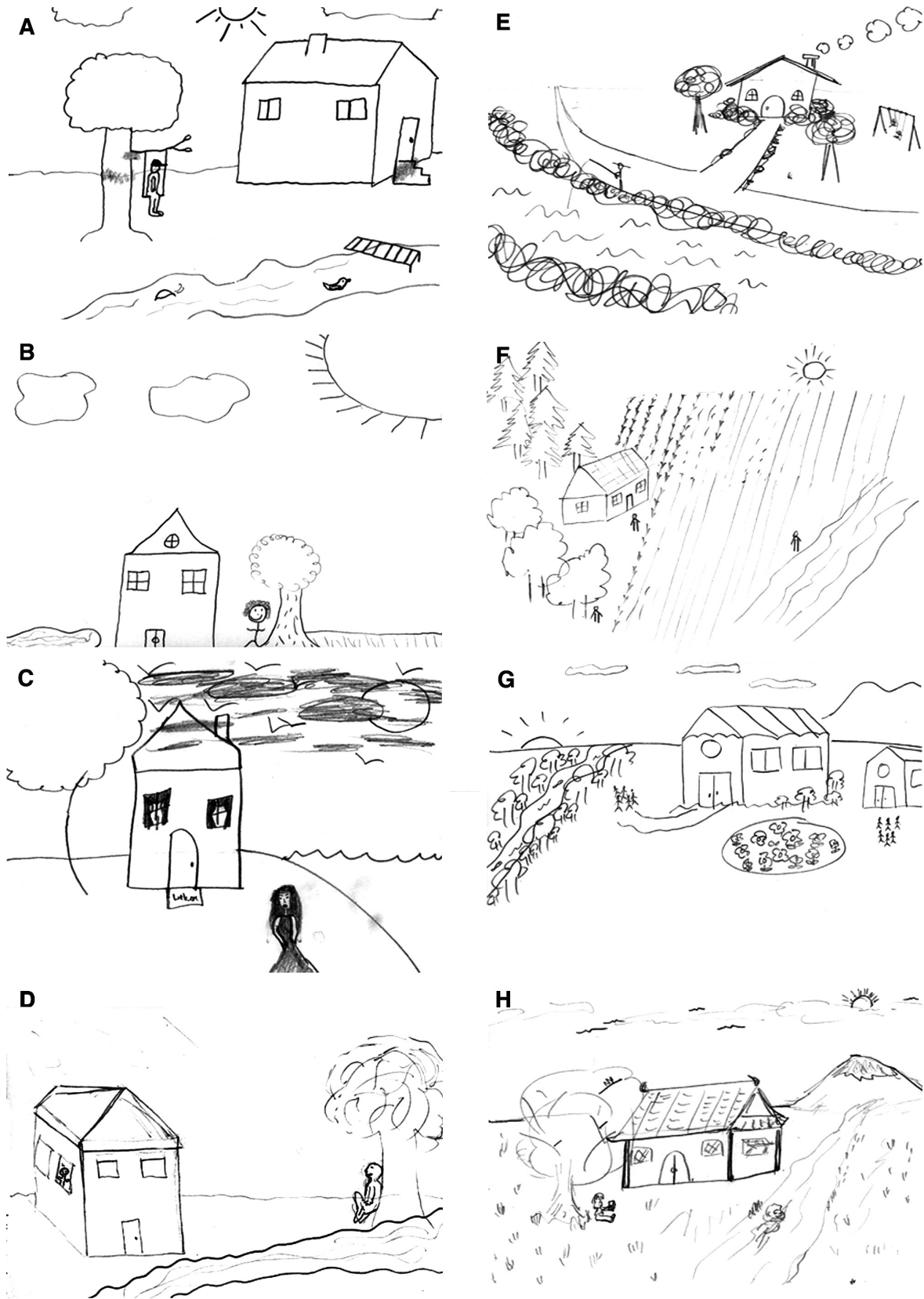
**Figure 1** Example of landscape pictures drawn by American and East Asian participants in Study 2.
NOTE: The first four pictures (A-D) were drawn by American participants. The last four pictures (E-H) were drawn by East Asian participants.

**TABLE 4:**  Average Ratio in Percentage of the Height of the Horizon to the Height of the Entire Frame and the Number of Additional Objects Drawn
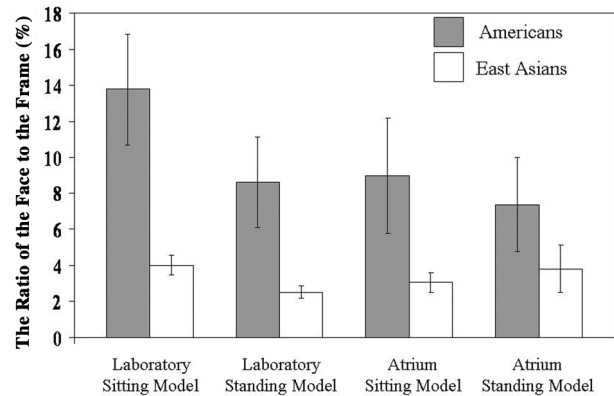
| | Western Drawings | | East Asian Drawings | | | |
|---|---|---|---|---|---|---|
| | M | SD | M | SD | t | p |
| Ratio of the horizon to the frame | 56.37 | 18.92 | 67.16 | 15.06 | 2.98 | .005 |
| Number of additional objects | 6.19 | 6.94 | 10.72 | 12.02 | 2.16 | .05 |



**Figure 3**  The results of the photograph-taking task in Study 2.



**Figure 2**  Examples of photographs taken by American and East Asian participants in Study 2.
NOTE: The left picture was taken by an American participant. The right picture was taken by an East Asian participant.

*Materials.* Sixteen models (4 male American students, 4 female American students, 4 male Japanese students, and 4 female Japanese students) were positioned within the scenes. The apparent relation between the models and their backgrounds differed according to the size of lenses and the size of the model. Four artificial photographs were presented simultaneously on the computer screen using PsyScope. In total, two sets of 32 trials were produced. Within each of the two sets we manipulated two features of the image: the breadth of context (Stimulus Set 1) and the size of the model (Stimulus Set 2). Participants were randomly presented one of the sets.

*Breadth of context: Evaluation of background against a constant model.* The breadth of context was manipulated by using four different lenses (28 mm, 50 mm, 100 mm, 140 mm). We took the landscape images from the same standpoint. The 28-mm lens, which has an angle of about 75.4 degrees, captures an extremely wide area of the scene. The 50-mm lens, which has

about a 46.8 degree angle, captures a relatively wide area of the scene, and the perspective is almost identical to that of human's natural view. The 100-mm lens, which has about a 23.3 degree angle, captures a relatively narrow area of the scene. Finally, the 140-mm lens has less than an 18.2 degree angle and captures an extremely narrow area of the scene. In the following analyses, we name background scenes produced by the above four lenses as the extremely wide background, the standard background, the narrow background, and the extremely narrow background, respectively.

In Stimulus Set 1 (see Figure 4), the same constant size model appeared against a background produced by the four different types of lenses (i.e., an extremely wide background, a standard background, a narrow background, and an extremely narrow background); thus, the participants could focus only on the difference in background to evaluate the pictures. Participants were presented with four pictures in which a single model of a particular size (e.g., 1.5 in. tall) was presented against each of the four different backgrounds.

*Size of the figure: Evaluation of the size of the model against a constant background.* In Stimulus Set 2 (see Figure 5), four differently sized models appeared against the same constant background (e.g., an extremely wide background). Thus, participants only considered the difference in the size of the model when making their judgments. Participants were presented with four pictures in which four different sizes of the same model (0.75 in. tall, 1.25 in. tall, 1.75 in. tall, and 2.25 in. tall) were presented against a particular background (e.g., an extremely wide background).

*Procedure.* The experimenter explained to the participants that the task was (a) to judge several photographs and to rate each photograph on a 7-point Likert scale (1 = *worst*, 7 = *best*) and (b) to select the best portrait
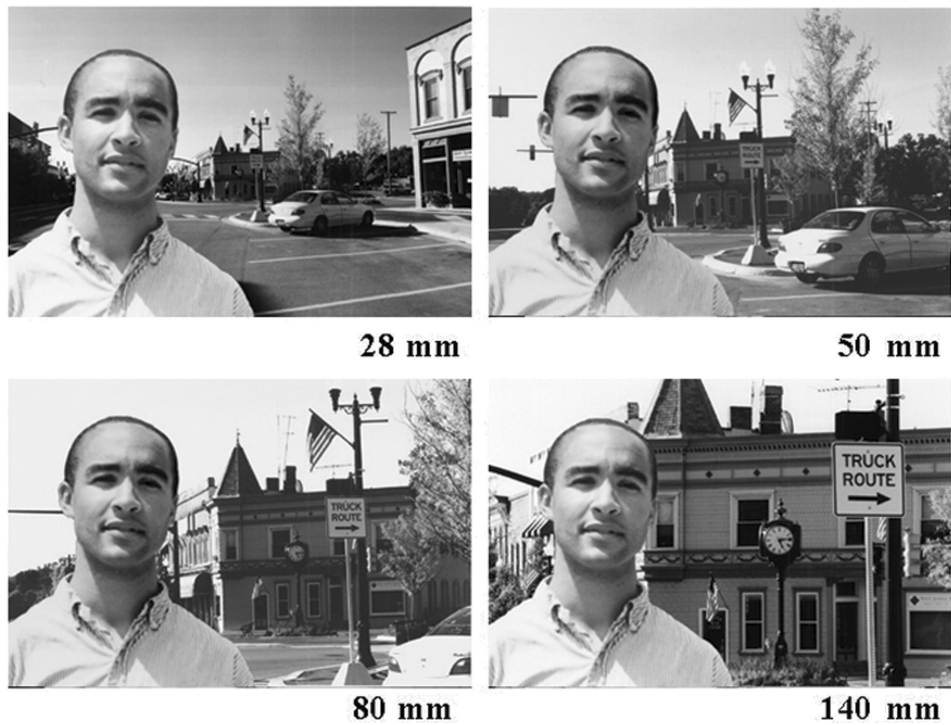
**Figure 4**    Examples of Stimulus Set 1 in Study 4.
NOTE: Participants chose their preferred picture in the set. The size of the model was identical. However, the background pictures were taken by a 28-mm lens (extremely wide background), a 50-mm lens (standard background), a 100-mm lens (narrow background), and a 140-mm lens (extremely narrow background).
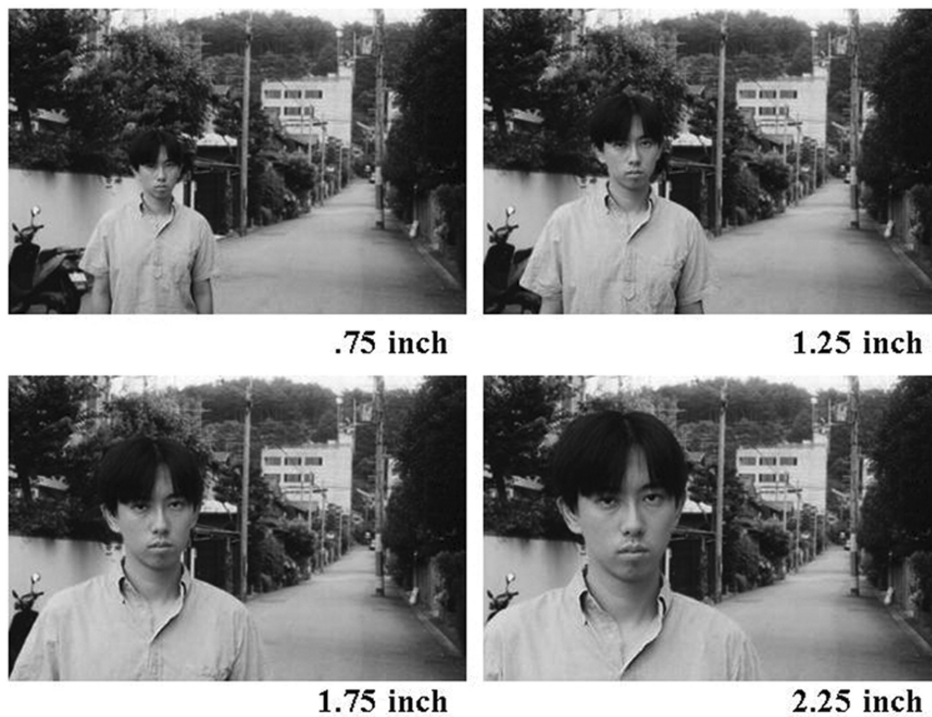


**Figure 5**    Examples of Stimulus Set 2 in Study 4.
NOTE: Participants chose their preferred picture in the set. The possible figure sizes were 0.75, 1.25, 1.75, and 2.25 in. tall. However, the background was identical (taken with a 28-mm lens, the extremely wide background).

within the set of four photographs. Participants saw four artificially composed photographs at the same time. The instruction "Please rate pictures on a scale of 1 (worst) – 7 (best)" appeared on the screen. Participants were asked to press one of seven keys.

Subsequently, the instruction "Now select the best picture" appeared on the screen. The choice was coded using a 4-point scale from an extremely wide background to an extremely narrow background, or from an extremely small model to a large model. That is, based on the type of stimulus sets, participants were asked to state their preference as to either the breadth of background (i.e., 1 = *photographs of extremely wide background*, 2 = *photographs combined with a wide background*, 3 = *photographs combined with a standard background*, 4 = *photographs combined with an extremely narrow background*) or the size of models (i.e., 1 = *photographs of 0.75-in.-tall models*, 2 = *photographs of 1.25-in.-tall models*, 3 = *photographs of 1.75-in.-tall models*, 4 = *photographs of 2.25-in.-tall models*).

The two stimulus sets were randomly presented. In total, the participants saw 32 trials. The gender and ethnicity of the models were equally distributed within each group to avoid confounding effects of these factors: In each set, eight American portraits (four males and four females) and eight Japanese portraits (four males and four females) were used. Because we focus on the relation between the background and the size of model, we collapsed the factors of gender and ethnicity for further analyses.[7]

### Results and Discussion

*Participants' subjective evaluation of their judgment.* We measured participants' self-reports regarding how much they preferred the photographs. Using a 9-point rating scale, the Japanese ($M = 3.70$) were more likely than their Americans counterparts ($M = 4.89$) to prefer smaller models, $t(99) = 3.20$, $p = .002$. In addition, when we measured preference about context inclusiveness (as indexed by the breadth of field), the Japanese ($M = 3.79$) were more likely than Americans ($M = 4.57$) to prefer context-inclusive pictures, $t(99) = 1.99$, $p = .05$. These results indicated that, compared to Americans, the Japanese indeed favor smaller and more context-inclusive images.

*Evaluation of the width of the background (lens focal length) against a constant model.* We anticipated that Japanese participants would prefer photographs taken by wide-angle lenses, whereas the American participants would prefer photographs taken by relatively narrow-angle lenses. A 2 (culture: Americans vs. Japanese) × 4 (background: an extremely wide background, a standard background, a narrow background, an extremely narrow background) ANOVA was applied

to the ratings of photographs, which investigated the cultural variation in the preference of breadth of context. As seen in Figure 6, there was a main effect of lens, $F(1, 98) = 12.05$, $p < .001$. Overall, the ratings of middle-range lenses (a standard background and a narrow background) were higher than those of an extremely wide background and of an extremely narrow background. However, there was an interaction of culture and lenses, $F(3, 98) = 7.04$, $p < .001$. Simple effect analyses indicated that there were no cultural differences in the ratings of an extremely wide background, a wide background, and a standard background, $F < 1$, *ns*, for all of these conditions. However, there was a significant difference in the rating of an extremely narrow background, $F(3, 98) = 7.86$, $p < .01$. The Japanese participants were more likely than the American participants to rate negatively portraits set against extremely narrow backgrounds. Such a narrow view shows only parts of background objects.

*The participants' selection of the preferred width of the backgrounds against a constant model.* The average preference for background size, where selections were made from sets having the same model size, was analyzed with a 2 (culture: Americans vs. Japanese) × 4 (size of model: 0.75 in., 1.25 in., 1.75 in., 2.25 in.) ANOVA. As seen in Table 5, there was only a main effect of culture, $F(1, 98) = 7.90$, $p < .006$. In general, the Japanese were more likely than Americans to prefer wider width backgrounds. The results suggest that Americans prefer context exclusive images (narrow-angle lenses) more than do the Japanese.

*Evaluations of model size against a constant background.* We anticipated that the Japanese would prefer relatively small models, whereas Americans would prefer relatively large models. A 2 (culture: Americans vs. Japanese) × 4 (size of model: 0.75 in., 1.25 in., 1.75 in., 2.25 in.) ANOVA was applied to the ratings of the size of model. As seen in Figure 7, there was a main effect for the size of the model, $F(1, 98) = 35.82$, $p < .001$. Overall, the 1.25-in. model was generally preferred by both groups of participants. However, there was an interaction of culture and model, $F(3, 98) = 7.04$, $p < .001$. Simple effect analyses indicated that there were no cultural differences in the rating of the 0.75-in. models, $F(3, 98) = 1.72$, $p > .15$, or the 1.25-in. models, $F < 1$, *ns*. However, there was a marginally significant difference in the rating of the 1.75-in. model, $F(3, 98) = 2.81$, $p < .10$, and there was a significant difference in the rating of the 2.25-in. model, $F(3, 98) = 16.90$, $p < .001$. The findings partially supported our hypothesis because they indicated that the Japanese were less likely than Americans to prefer the extremely large models.
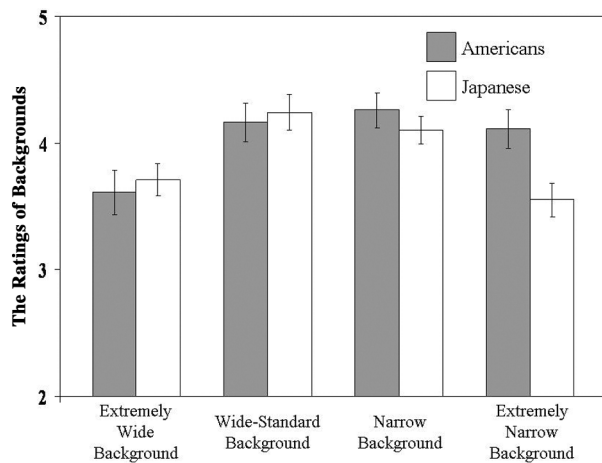
**Figure 6**   The ratings of backgrounds of varying width (lens) against a constant model.

NOTE: Short lenses (e.g., 28-mm lens) are able to include a wide range of background information compared to long lenses (e.g., 140-mm lens), which exclude almost all background information in the periphery.

However, we observed that Americans and Japanese preferred the middle-sized models most, and there was no significant cultural difference in this matter.

*The participants' selection of the preferred model size against a constant background.* The average preference for model size, where selections were made from sets having the same background size, was analyzed with a 2 (culture: Americans vs. Japanese) × 4 (background: an extremely wide background, a standard background, a narrow background, an extremely narrow background) ANOVA. The results indicated a main effect of background, $F(1, 98) = 4.87$, $p < .005$. A contrast analysis indicated that participants in general were more likely to select small models when they evaluated the size of the model against regular backgrounds taken with a 50-mm lens than when they evaluated them against backgrounds taken by an extremely wide background, a narrow background, and an extremely narrow background. More important, however, there was a main effect of culture, $F(1, 98) = 6.34$, $p < .013$ (see Table 5). In general, the Japanese were more likely than the Americans to prefer small models.

## GENERAL DISCUSSION

The present studies investigated contemporary cultural aesthetic preferences in light of cultural variations in the history of representation. Based on previous findings on cultural variation in attention, we hypothesized that East Asians, being strongly accustomed to holistic

**TABLE 5:**   Average Selection of the Model Sizes and the Background Sizes

| | Westerners' Preferences | | Japanese Preferences | | | |
|---|---|---|---|---|---|---|
| | M | SD | M | SD | F | p |
| Ratings of the background sizes | 2.73 | 0.62 | 2.41 | 0.51 | 7.90 | .006 |
| Ratings of the model sizes | 2.32 | 0.61 | 2.02 | 0.57 | 6.34 | .013 |

patterns of attention, would be more likely to exhibit a predilection for context inclusiveness. In contrast, Westerners, being strongly accustomed to analytic patterns of attention, would be more likely to exhibit a predilection to focus on salient objects. The three studies reported in this article use different research methods: an archival data analysis and two psychological experiments. We assumed that if the predicted cultural differences consistently emerge across a wide range of conditions, the convergence of evidence across multiple measures would favor the conclusion that East Asians are more sensitive to context in artistic and representational domains than Westerners.

The results of Study 1 demonstrated that East Asian landscape paintings placed the horizon higher than the horizons appearing in Western paintings. The high horizon broadens the space for field information, which allows the painter to include more information about mountains, rivers, and other objects, including people. The size of models was smaller in East Asian portraits than in Western portraits, which is consistent with the notion that East Asians artists are more likely than their Western counterparts to emphasize contextual information at the expense of the figure in the scene. The analyses of paintings of groups of people showed similar results: East Asian paintings of people place the horizon higher and present models smaller than do Western paintings of people. As we discussed in the introduction, using frameworks from art historians we show that these findings are consistent with the notion that traditional East Asian paintings are more likely than traditional Western paintings to emphasize contextual information.

Study 2 examined whether contemporary members of East Asian and Western cultures continue to apply pictorial styles traditional to their culture when asked to produce images. The results of the landscape drawing task indicated that East Asians were more likely than Westerners to draw the horizon in a high position and to draw more objects. In this study we extend the results of Study 1 by counting the number of objects that make up the context. The results of the photograph-taking
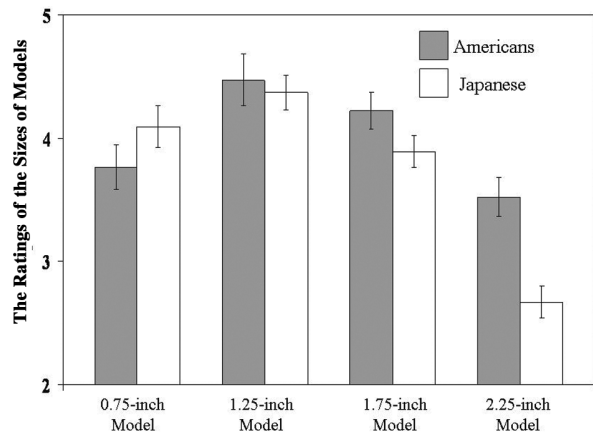
**Figure 7** The rating of the size of the model against a constant background.

task indicated that East Asians were more likely than Westerners to set the zoom function to make the model small and the context large. The findings from Study 2 suggest that people have internalized aesthetic styles that correspond to traditional ways of rendering the environment.

Study 3 investigated whether people prefer pictorial images that correspond to the aesthetic traditions of their culture. Four portrait photographs were presented simultaneously so that participants could directly compare variations in the images. In each set, only one attribute of the portraits was manipulated: When participants were asked to evaluate the size of the model, the background was held constant; when participants were asked to evaluate the background, the size of the model was held constant. Participants were asked to rate the quality of each portrait and to choose the best portrait within each set. The results of the rating task indicated that the Japanese were less likely than Americans to appreciate extremely narrow backgrounds and extremely large models.

Overall, the studies showed consistency among the aesthetics of traditional cultural resources, contemporary drawing and photograph-taking stylistics, and contemporary aesthetic preferences. These findings are consistent with previous research on culture and attention that contrasts holistic and analytic patterns of attention (e.g., Masuda & Nisbett, 2001; Nisbett, 2003; Nisbett & Masuda, 2003).

Nisbett and his colleagues (Nisbett, 2003; Nisbett et al., 2001) speculate that if one lives in a complex social world with many role relations, one's attention is likely to be directed outside oneself and toward the social field. In contrast, if one lives in a world with fewer and less significant social relations and role constraints, it may be possible to attend primarily to salient objects

with respect to which one has goals that can be achieved. People in East Asian societies, which are based on a web of complex and restrictive social relationships, have become sensitive to social relationships and have learned to refer to both social relationships and contextual information in their efforts to understand the world. Furthermore, as Markus and Kitayama (1991) maintained, the East Asian habit of attending to the social environment might have carried over to the environment in general. Under such cultural circumstances, East Asians developed *context-sensitive attention*—meaning they are attentive to field information and relationships among context elements. Such a pattern of attention is still dominant in contemporary East Asian societies, such as China, Korea, and Japan (Bond & Cheung, 1983; Fiske, Kitayama, Markus, & Nisbett, 1998; Triandis, 1995).

In contrast, the origin of the Western tradition of thought can be traced to that of the ancient Greek city-states. In their efforts to understand the world, ancient Greeks learned to attend primarily to discrete objects without being overly concerned with relationships among objects or with field information. As a corollary, Western metaphysics, in general, emphasized the understanding of the properties of objects, the categorization of them, and the discovery of universal rules governing situations and behaviors. Under such philosophical circumstances, Westerners historically have developed *object-oriented attention*. Categorization and attention to attributes of objects remain dominant features of thought in Greek-descended societies, including the Western society that this project examines.

### Culture and Visual Affordance

The difference in focus between object and context may extend to the built environment. Miyamoto, Nisbett, and Masuda (2006) photographed 100 randomly selected scenes of cultural environments (e.g., schools, post offices, and hotels) in the United States and in Japan, and they found that the Japanese environments consisted of more objects and were more complex than the U.S. environments. In addition, Miyamoto et al. revealed that repeated exposure to such environmental settings influences one's pattern of attention. Those who were exposed to context-rich Japanese scenes were more likely than those who were exposed to American scenes to become sensitive to contextual information. Furthermore, Masuda, Wang, and Ito (2008) investigated the amount of information on the home page of governmental institutions in East Asia (China, Japan, and Korea) and North America (Canada and United States). They observed that East Asian–made home pages were more likely than those of their North American counterparts to be more verbose and

contain more Web links. These findings strongly resonate with the theoretical framework of the current article. We are surrounded by and exposed to a variety of visual information built by people in a given society. Even physical environments, such as the structure of buildings, billboards, and roads, are not free from cultural values of the society. We maintain that such visual representations continuously afford us and convey cultural values, which in turn work as a foundation for developing our particular way of seeing the world.

### Insider Versus Outsider Perspectives of the Social World

The contrast between the linear perspective developed in Western cultures and the floating perspective developed in East Asian cultures strongly resonates with the discussion of insider versus outsider perspectives of the social world. According to Cohen and his colleagues (Cohen & Gunz, 2002; Cohen & Hoshino-Browne, 2005; Cohen, Hoshino-Browne, & Leung, 2007), there are systematic differences in how people organize the social world. In the *insider* (or first person) form of experience, which is dominant in Western societies, people dwell in their own private, internal experiences and see the external social world from their own viewpoint. In contrast, in the *outsider* (or third person) form of experience, which is dominant in East Asian societies, people experience themselves from the point of view of an outsider looking at the self. The empirical findings of Cohen and his colleagues suggested that European Canadians were more likely than Asian Canadians to base their memories on a self-centered view when they thought about situations in which they would be at the center of the scene. In addition, European Canadians were more likely than Asian Canadians to be biased toward egocentric projection of their own emotions onto others. Asian Canadians were more likely to be biased toward relation-oriented projection, inasmuch as they projected onto others the emotions that the generalized other would feel in relation to themselves (Cohen & Gunz, 2002).

Thus, the fact that individualistic Europeans developed a linear perspective (in which the spectator sees the social world from his or her point of view) and collectivistic East Asians developed a floating perspective (in which the spectator sees the social world, including himself or herself, holistically) may contribute to the respective culturally shaped patterns of perspective.

### Relationships Among Artistic Traditions, Perceptual Habits, and Preference

In this article, we maintain that artistic conventions in a given culture (i.e., contextual sensitiveness of East Asian paintings and object orientedness of Western paintings) correspond to a cultural preference for more social information. What are the underlying processes that mediate these phenomena? Although the present studies cannot isolate the exact cognitive-perceptual information processing that produced the reported results, there is evidence supporting our assumption that built environments do influence what is seen. For example, Miyamoto et al. (2006) have shown that simply being exposed to Japanese scenes for a few minutes causes both Japanese and Westerners to notice more context than being exposed to American scenes. Thus, scenes and environments do influence what is seen. In addition, the findings of Masuda, Nhan, and Ito (2008) suggest that after learning that changes always occur in the background area of the scene, the speed in change detection was improved even in Westerners. These findings suggest that repeated exposure to specific types of images influences people's patterns of attention and subsequent task performance. If so, it would not be surprising if continuous exposure of artistic traditions within a culture concerning object and context also affect what is noticed—or what people prefer to notice.

Identifying the causal directions among the patterns of artistic traditions, perceptual habits, and people's preferred representations is beyond the scope of the current article. Based on Miyamoto et al.'s (2006) work, we speculate that there are two possibilities. The first possibility is that perceptual habits may determine both artistic traditions and ordinary people's preferred representations of thought processes that differ across cultures. The second possibility is that perceptual habits may determine artistic traditions, which then affect preferred representations. Future research should focus on addressing these speculations. We believe that the current studies have at least shown that both phenomena exist in different continents—different artistic traditions and different lay preferences.

### Final Remarks

In this article we maintain that artistic conventions in a given culture (i.e., contextual inclusiveness of East Asian paintings and objective orientation of Western paintings) correspond to a cultural preference for more social information. However, it is possible that the representational preferences mirror the artistic traditions not because of genuinely different ways of seeing the world (and preferring to see it) but merely because people are appealing to their representational traditions. For example, even though there are significant differences in representational conventions between East Asia and the West, these factors may not have a profound psychological meaning.

However, based on a growing number of empirical findings (e.g., Nisbett, 2003; Nisbett et al., 2001; Nisbett & Masuda, 2003), including eye-movement research (e.g., Chua et al., 2005; Masuda, Ellsworth, et al., 2008) as well as neuroimaging research (Gutchess, Welsh, Boduroglu, & Park, 2006), we maintain that object-focused attention could be observable in Western societies and context-oriented attention could be observable in China, Korea, and Japan. We also maintain that the object-focused artistic traditions that developed in the West and the context-oriented artistic traditions that emerged in the East were not a mere coincidence.

### NOTES

1. The arrival of Portuguese castaways on the island of Tanegashima in 1542 is the first report of direct contact between the Japanese and Europeans. The relation between the Japanese and Europeans continued for several decades, despite intermittent anti-Christian activities. In 1639, Tokugawa Iemitsu proclaimed *sakoku seisaku*, a policy of national isolation. In 1854, a treaty established trade relations with the United States. It was not until the Meiji restoration in 1868, however, that the Japanese and Westerners began to interact substantially with each other. This is to say that the national isolation policy effectively lasted over two centuries despite the maintenance of an open port in Nagasaki where a limited foreign trade with Dutch traders was endorsed. According to French (1978), however, several Japanese painters such as Shiba Koukan, Aodo Denzen, and Ishikawa Tairo were eager to learn from imported European paintings via the port of Nagasaki. Such painters tried to assimilate Western modes of artistic expression into their work. These paintings were often called *uki-e*, in which the objects stand out from the background. These images somewhat caught the Japanese's attention, although it never became a dominant pattern of drawing.

2. The Japanese Ukiyo-e arts significantly influenced 19th-century European artists, especially impressionists such as Manet, Degas, and van Gogh who strove to rid art of academic rules and the clichés of traditional European paintings. However, Japanese connoisseurs during this period did not strongly appreciate Ukiyo-e art. In fact, when Japan was forced to enter into trade relations with Europe and America, "these prints were often used as wrapping and padding, and could be picked up cheaply in tea-shops" (Gombrich, 1966, p. 397).

3. We are especially interested in Western representations after the Renaissance and contrast them to East Asian visual representations. We did not include visual representations after the 19th century because various artists who were not satisfied with the traditional genres initiated new movements such as cubism, fauvism, and other abstract stylistics. Furthermore, after the 19th century, Western stylistics influenced East Asian arts, and East Asian stylistics influenced Western arts (e.g., Impressionism). For this reason, we assigned a limit to the range of our data analyses. We acknowledge that in future research the archival data analyses could extend to images before the 15th century or after the 19th century.

4. There are four types of horizontal lines. The location of horizontal lines was measured based on the following criteria: (a) if there was a flat field horizon in the picture, its location was measured; (b) if there was a flat water horizon (e.g., oceans or lakes), its location was measured; (c) if a protuberance in the horizon area (e.g., renderings of mountains or hills) obscured the identification of either a flat field horizon or a flat water horizon, the average values of the location of the summit and the bottom were measured; and (d) if a horizonless field occupied the entire space within the frame, the top part of the frame was considered

5. All $p$ values are based on two-tailed tests.

6. In the photograph-taking task, we did not collect data for 5 American participants and 7 East Asian participants. Therefore, the number of cases in the second task was reduced.

7. Overall, we found a few statistical interactions involving gender or ethnicity with culture (from scores of statistical tests). For the evaluations of width of background against a constant model, there was a two-way interaction between culture and the model's ethnicity, $F(1, 96) = 5.09$, $p < .05$; a four-way interaction among culture, background, participants' gender, and model's gender, $F(3, 96) = 3.90$, $p < .01$; and a four-way interaction among culture, background, model's ethnicity, and model's gender, $F(3, 96) = 3.37$, $p < .02$. For the selection of a preferred background width there was a three-way interaction among culture, model's ethnicity, and model's gender, $F(3, 96) = 5.67$, $p < .02$. For the evaluation of the model size against a constant background, there was a five-way interaction among culture, participants' gender, background, model's size, and model's ethnicity, $F(9, 96) = 2.23$, $p < .02$, and a five-way interaction among culture, participants' gender, background, model's size, and model's gender, $F(9, 96) = 2.22$, $p < .02$. These interactions do not qualify the qualitative pattern between the means as discussed in the text.

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