
Artistic Distance: Body Movements as Launching Points for Art Inquiry

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Abstract

How does the body matter in art observations? Do physical distances, movements, and perspectives influence the way one appreciates art? Do experts and novices use their body differently in engaging with art objects? We present results of our studies with 22 art experts and novices in two types of art, "Ikebana" (Japanese traditional flower arrangement) and abstract paintings. In both types of art, we observed that experts engaged with the art from multiple perspectives while exhibiting minimal movements around the art. Novices, in contrast, either hovered around the art looking for clues of interpretations or did not move at all due to lack of interest. We discuss implications for design of embodied systems that can support users with various levels of expertise.

Author Keywords

Embodied interactions; art appreciation; expert perspectives

Introduction

Art appreciation is naturally and deeply connected to human cognitive processes including interpretation, perception, conceptualization, and imagination [2]. Museums and galleries try to draw audiences into such aesthetic experiences by providing additional

information through signage, brochures, and audio guides. Some museums today use screens or mobile phones with multimedia content that visitors could access using controllers (e.g., [5]). Such interactive kiosks can provide extra layers of information, but the interaction with systems that involve buttons and screens can also detract the visitors' attention from the art itself. Interaction techniques that utilize the body as the sole interaction device, without having other devices (e.g., [8]) may be useful so that the viewers can focus on the art object while accessing additional information relevant to their personal viewing experience. Design of such embodied interaction in the context of interactive art has been a topic of interest for HCI researchers, as it involves attention to the situated nature of digital technology research [1][8]. We explore the possibilities of communicating art through the use of technology while minimizing the disturbance to the experience of viewing art.

One way to approach the design of such embodied experience in art appreciation is to learn from experts' experiences, i.e., how experts look at art objects can inform the interaction design. Research in anthropology and education suggests that experts and novices look at the objects of interrogation differently (e.g., [6]). But is the difference observable in the way experts use their body and the space compared to novices? Do experts use their body and space differently than novices in forming their opinions and judgments? If so, how?

In this paper, we present our contextual inquiries with art experts and novices, in order to inform the design of our embodied interaction system to support art appreciation. Our original hypotheses were the

following: As suggested by literature, experts would engage in observation from multiple perspectives, thus they would move their body extensively in observing the object and in making their judgments. On the other hand, novices would tend to look at the object from a single and fixed perspective, thus novices may not move their body as much as experts do in forming their judgments. We conducted studies in two different types of art observations (Japanese flower arrangement "Ikebana" in one scenario, and abstract paintings in another scenario) to see whether or not we could observe such contrast between experts' and novices' movements. To our surprise, the results were just the opposite. In both Ikebana and abstract paintings, experts showed much less physical movement than novices while novices moved around the object frequently. Why might that be?

Our analyses of both the content (i.e., what experts and novices were actually thinking about while moving) and the physical movements revealed that experts were indeed more deeply engaged with the subject, yet experts were able to engage with the topics with minimum shift in their physical perspectives. On the other hand, novices tended to wander and hover more in the space around the art object and speculated about different topics— sometimes not related to the subject at all.

With emerging technologies that support embodied interaction today, our studies inform the design of embodied interaction systems, which could be tailored to different expertise levels in the context of art appreciation. We discuss implications for design and conclude with an idea of a new interactive system that uses findings in this research.

Contextual Inquiry with Experts and Novices

We conducted contextual inquiries with experts and novices in the area of *Ikebana* (Japanese flower arrangement) and abstract painting. Ikebana is a traditional Japanese art of flower arrangement with its origin dating back to the thirteenth century. In contrast to the more symmetric approach of Western art of arrangement, Ikebana involves aesthetics of asymmetry. For example, in the *Syoka* style, the three main parts of an arrangement should be in the proportions of 3:2:1. We chose this art as it deals with unique East Asian artistry of achieving harmony and balance between personal styles and rules, through the arrangement of live botanical materials in three-dimensional space.

To contrast this art, we also chose a more classic Western example of art: abstract oil painting. In the following sections, we describe the results from the two observational studies.

Ikebana: Japanese Flower Arrangement

We recruited 10 participants (5 experts and 5 novices) for observations in the context of Ikebana. All five Ikebana experts (1 female and 4 males) had more than 10 years of experience in teaching and creating works for major Ikebana exhibitions in Japan. Sessions with experts were conducted at *Ikenobo* schools in Kyoto (Japan) and San Francisco. The sessions with novices were conducted at university classrooms, using the same flower arrangements in a similar classroom space. All 10 participants were invited to spend as much time as they liked and to position themselves wherever they wished. In order to access their thought process, we used verbal protocol, i.e., we asked the participants to “think aloud” while they made their

observations. We video-recorded participants’ use of the space, their body, and their verbal protocol.

RESULTS

PATTERNS IN EXPERTS’ OBSERVATION

All five experts began their viewing by standing about 1.5 meters away, directly in front of the arrangement. All experts started their observation with the examination of *mizugiwa*, which translates to “edge of water,” the border where the water meets the botanical life (plants/flower). In *Syoka* style, this border is particularly important because it symbolizes the genesis of botanical life. In practice, it is expressed by aligning all the branches to naturally yet precisely meet at the center. In evaluating *mizugiwa*, all experts physically adjusted their eye level with *mizugiwa*. This involved bending their knees while they stood in order to lower their eye level to *mizugiwa* at the table height (Figure 1). While their subjective opinions about the piece varied, all the experts started their observation from this specific *mizugiwa* point.

Next, all experts gradually straightened their knees and started to evaluate the overall spatial arrangement and balance of the work. They remarked how well each branch was spaced without overlapping and how the arrangement created a sense of depth by combining straight and inclined branches. In doing so, experts did not change their standing positions; they just occasionally had their heads in forward and backward postures. They moved on to evaluating the balance of each main branch and the overall quality of work, and suggested adjustments to improve the flaws. Some experts occasionally inclined their upper body forward to check details of a branch while standing at the same spot. Overall, all five Ikebana experts remained in their

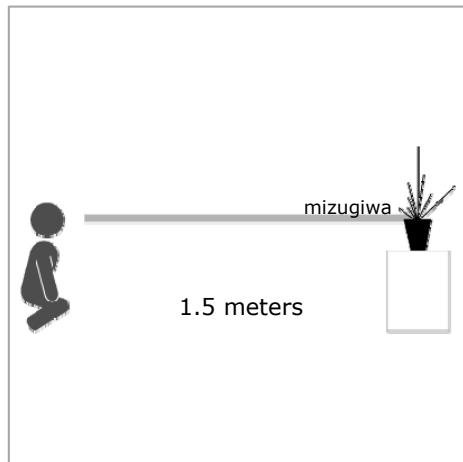


Figure 1: Ikebana experts’ position and stance of “*mizugiwa*” (border of water and botanical life) observation.

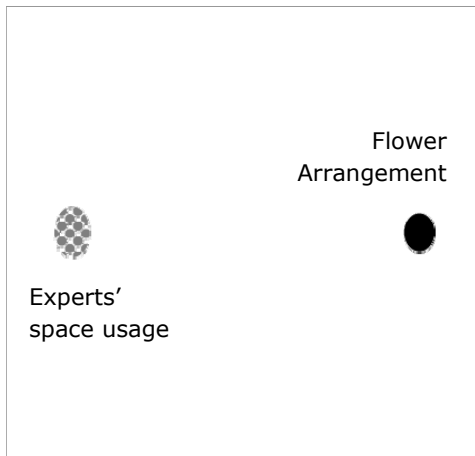


Figure 2: Top view of space usage (Expert, Ikebana)

initial position, 1.5 meters from the arrangement during their entire observation period. The changes in their movements and posture were triggered by two activities: observing mizugiwa which required them to adjust their eye height to the level of the water, and when they were taking a closer look by slightly leaning forward. However, experts achieved these perspectives without having to change their physical standing position.

PATTERNS IN NOVICES' OBSERVATION

On the other hand, most novices (4 out of 5) moved around the flower arrangement actively in making their observations. Many of these novices started their observations by commenting on features that immediately stood out for them (e.g., "I see flowers in two colors." "Nice color! Yellow is my favorite."). As they moved around the arrangement, they commented on features they noticed in the order of their discovery. Novices wondered about a variety of topics. For example, two novices wondered about the structure and balance of the arrangement: "Well... this one sticks out this way, and that one sticks out that way. Is this a beautiful balance?" "I see a straight line (formed by a collection of branches). Isn't it supposed to be arranged in a more organic and natural way?" Because the novices did not receive any guidance or answers to their questions, they either made up their own interpretations (e.g., "This looks like a fan." "This looks like dorsal plates of a dinosaur"), or moved on to other features they noticed without settling their questions. One novice quickly finished her observation without

moving much from her initial standing point (about 0.5 meters from the arrangement). She seemed to lose interest shortly because she could not make sense of the work (e.g. "I am not sure what this is. Is it different from regular flowers?" "I don't know. [It seems like] a random flower.").

Unlike experts, novices did not change their eye level and mostly remained upright. As they made their ways around the arrangement, they came up with their own interpretations of what might be the best viewing angle ("This is best viewed from the side." "Before I came here [the side where she is standing], I didn't understand how it [cluster of branches] spreads in the space."). Overall, novices seemed to be curious and interested in learning about the features that stood out for them and what they meant. Unfortunately, their inquiries were not addressed due to the absence of information. We see this as an opportunity for designing an interactive system that can respond to their perspectives and deliver "just in time" information.

DIFFERENCES BETWEEN EXPERTS AND NOVICES

While experts did not move in the space physically to make their observations (Figure 2), experts systematically made their observations from an "ideal" position and perspective. Their observations were methodical, based on ways of viewing and interpreting commonly understood by the community of Ikebana experts.

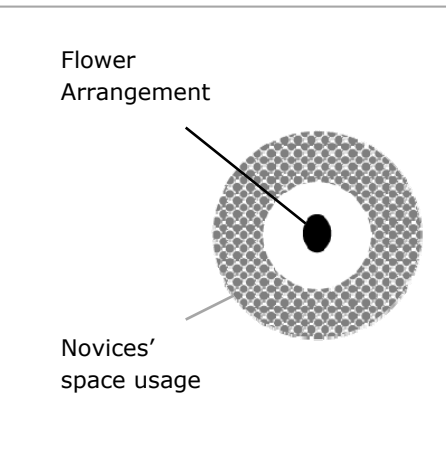


Figure 3: Top view of space usage (Novices, Ikebana)

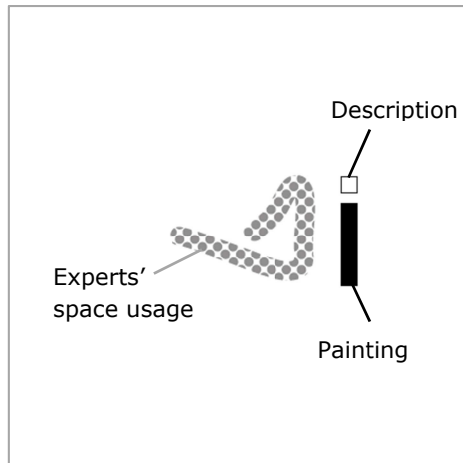


Figure 4: Top view of space usage (Expert, Abstract Painting)

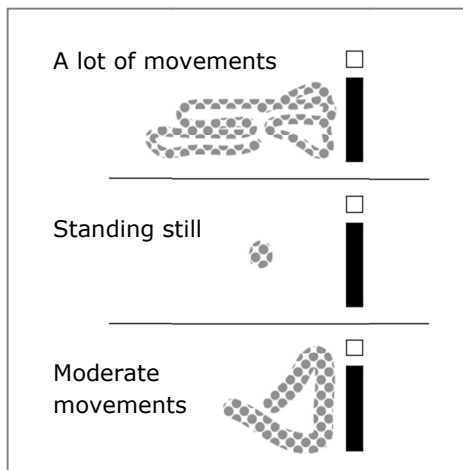


Figure 5: Top view of space usage (Novices, Abstract Painting)

Novices, on the other hand, hovered around the object (Figure 3). Rather than having a specific goal or method, they sequentially listed features of the art as they noticed them. In the chain of undirected discovery, they asked many questions that remained unanswered. And because of this lack of constraints, unlike experts, novices were not afraid to move through the space to make observations. Some novices even touched the flowers and its vase (which is technically not allowed in Ikebana tradition). We see this difference between experts and novices in their physical attitude towards art pieces as a productive design opportunity for supporting engagement with art for people with varying levels of expertise, and especially for informing and educating novices.

Abstract Painting

To determine whether we could observe a similar contrast between experts and novices in a different type of art appreciation, we conducted another study with Western abstract painting as the subject. We recruited 12 participants: 6 art experts and 6 novices. The art experts we recruited had a formal art education (e.g., MFA and degrees in graphic art and studio art) while the novices did not. All twelve sessions took place in the Hans Hofmann's art collection space of the Berkeley Art Museum. We asked each participant to observe two pieces: one portrait we selected and another one of participant's own choice from the same collection. Participants were asked to take as much time as they wanted and position themselves as they liked.

PATTERNS IN EXPERTS' OBSERVATION

Most experts (5 out of 6 experts) looked at the placard (descriptions about the piece provided by the museum)

at some point of their observation. Some preferred to do so at the beginning while others did so only after getting their impression of the piece first. The title and descriptions of the piece seemed to influence experts as to which aspects of the work they should pay particular attention to. As they viewed the art, they seemed to synthesize the historical framework and social context of the artwork with their own personal interpretations. For example, one expert said, "So, this is 1960's piece. Kind of post Pollock in the area of Greensburg." Compared to novices, experts were fluent in using domain specific terminologies and nomenclatures in their comments (e.g., "It's almost performative, the way that these strokes are animated by the movement.").

In terms of movement, similar to what we observed in the Japanese Flower arrangement sessions, experts tended to maintain a particular distance (about 1.5 to 2 meters from the painting). The experts viewing abstract paintings were not completely stationary, however. They moved and changed their position from time to time to take a closer look at the artwork or different angle (Figure 4). For example, one expert moved closer to the painting and said, "I think the texture is pretty interesting [stepping forward]. Kind of have these groovy parts and cut-away parts [gesturing]." Five out of six experts had moderate movements in front of the portrait. However, overall, the movements remained minimal. As in our observation of experts with Ikebana, this was surprising to us as we thought experts would engage with the piece from multiple perspectives by moving their bodies actively.

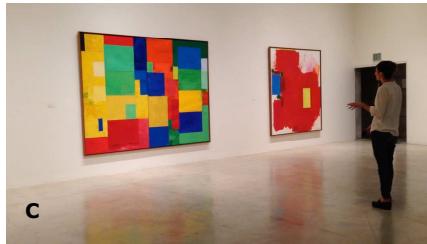
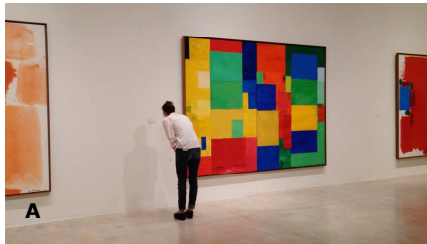


Figure 6: An art expert observing an abstract painting (A. reading the placard, B. viewing close, C. viewing from far point).

PATTERNS IN NOVICES' OBSERVATION

In contrast to art experts, we saw variations in novices' movements in front of abstract painting. Novices' movements spread across a spectrum of 1) many diverse paths and diverse thoughts, 2) minimum movement (standing still and passive) with indifferent attitude, and 3) somewhere in between 1) and 2) (Figure 5). Novices who had diverse movements in front of the painting (2 out of 6) commented on elements that caught their eyes sequentially (e.g., "Yellow here, this is like a helmet, this looks like a head, this looks like a bird."). This chain of undirected discovery accompanied by hovering movements was similar to novices' behavior in Ikebana. One novice checked the information placard, but did not relate to the information at all while interpreting the art.

Novices who stood still or had minimal movements in front of the painting (2 out of 6) spent the least amount of time observing the portrait. They did not notice or read the information placards. They tended to comment on an overall impression of the piece rather than the details of the portrait. For example, one talked about how his childhood was evoked by the painting: "I used to live in country side, so this painting makes me think of my childhood memory," and ended his observation. They did not pay much attention to details such as texture and materials, which required more careful observation at a closer position.

The novices who had moderate movements in front of the portrait (2 out of 6) checked and used the information from the placards to guide their observation. For example, one said, "After the first appreciation of this painting, I cannot get a clear idea, so my curiosity arose. I will go to the introduction to

see the author, title and description. And what circumstances the author created this art [reads the placard]." The other one said, "Title is 'Summer Bliss.' I feel outdoor sense and this is pretty evocative representation." While, as with the experts, the information from the placard seemed to give structure to their observation, the novices still wondered about what they were seeing, and unlike the experts, their questions remained unanswered. For example, one said, "Bright colors. It takes me a while to figure out what the artist tries to communicate. Bold strokes and layers. Is it about emotion or story?"

EXPLANATIONS FOR EXPERT-NOVICE DIFFERENCES

Experts used the information placards provided by the museum to ground their observations. They were able to combine their personal observations of the art piece, the details as well as the whole, and place the art piece in a historic context. Experts were able to synthesize multiple perspectives and layers of interpretation. In doing so, the art experts had minimal hovering movements in front of the portrait and kept a certain distance from the art piece. In other words, being able to engage in multiple interpretive perspectives did not mean that they had to make physical movements around the art to access them. Rather, experts' strategically minimum movements seem to focus them in their engagement with art.

In contrast to experts, novices wandered around in front of the art to varying degrees. With no framework for observing and interpreting, novices either remained still, did not engage with the art, or hovered around the art looking for clues for interpretation. Novices who used the placard were able to more effectively structure their observations and had less hovering movements

than those who did not use the placard. Nevertheless, the lack of contextual knowledge left the novices' inquiries unresolved.

Implications for Design

Our study showed that the use of our body in appreciating art differs according to whether the participant is a domain expert or novice. In both Ikebana and abstract painting sessions, experts used the space strategically and moved their body tactically. In making their observations, experts did not need to physically change their perspectives. This was particularly striking for Ikebana sessions where all experts had a uniformly minimum stance of observations. We also saw similar patterns in experts observing abstract paintings where 5 out of 6 art experts moved their bodies minimally when making their observations. Novices, on the other hand, tended to hover around the art object, or they did not move at all. Because novices had not yet established or learned the most effective perspective to observe the art, they were not afraid to break the formal convention and move around in search for notable features. This difference was observable in both Ikebana and abstract painting. We believe that it is this excess of movement or lack of movement in novices, which could be, and should be taken into account in guiding and providing information useful for novices.

Based on these findings, in collaboration with Kyoto University, we are currently designing a system to support appreciation of Ikebana for novices through an implicit and embodied interaction system. Using the Kinect depth sensing camera as a presence and gesture recognition sensor, we will track novices' movements and display information about the Ikebana accordingly

in real time. The user's body may work either as an implicit interaction device, e.g., a sensor detects the appearance of the user; or as an explicit interaction device, e.g., sensors/cameras track precise movements by the user to select items or invoke actions. For example, when the user wanders to the right side of a flower arrangement, the system detects motion, acknowledges it, and provides information that pertains to the right side of the flower arrangement (e.g., in one type of Syoka style, the right side is the "dark side" in contrast to "light side" on the left). The very moment the viewer is wondering about the meaning of the features seen from a particular angle is an ideal time for the system to display relevant information from the same angle. That way, the viewer can access additional information without distracting their eyes or body from the art object. Similarly, the system can track how close the viewer is standing from the art piece. When the user stands close to the piece, it would be an ideal opportunity to show the technique the artist has shown at "mizugiwa" (border of water and botanical life). When the user stands further away from the piece, the system illustrates the balance of the piece from a holistic view.

The goal is to provide an *in situ* illustration of concepts and education in "just in time" manner. The approach we suggest is to take advantage of the movements and positions that novices are already producing and build on them as launching points leading to a more effective display of information. We propose to design dynamic systems that look to novices' natural hovering movements or lack thereof, which trigger appropriate guidance and explanations.

Similar interaction techniques based on proximity and gestural recognitions have been explored in HCI, in the areas of context aware computing (e.g., [4]), interaction framework for sharable, interactive public ambient displays (e.g., [9]), and implicit interactions (e.g., [7]). Building on this body of work, we suggest an additional frame of reference using expert and novice specific differences in moving their body. Our preliminary study, while limited in scale, showed that the distance and the movements viewers use in art appreciation are influenced by the varying amount of the viewer's expertise. We believe this is a productive research area for the future of embodied interactive systems.

Conclusions

We have presented our observations of how experts and novices use their bodies in the context of two types of art appreciation, Ikebana and abstract paintings. In both types of art, experts engaged with the art from multiple perspectives (historical, personal, technical) while exhibiting minimal physical movements around the art. Novices, in contrast, either hovered around the art looking for clues for interpretations, or did not move at all due to lack of interest. Our results indicate that actively moving one's body does not necessarily translate to actively interpreting and appreciating art, and vice versa. Coincidentally, our results show the potential for a productive design space where novices' active movements or lack thereof around the art could be taken into account in supporting novices' engagement with the art.

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