"Very Nice to My Visual Imagination Memory"

An Inquiry into the Aesthetic Thinking of People Who Are Visually Impaired

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The growing popularity of museums in recent years has challenged them to explore ways to meet the needs of a broader audience, and for many institutions this has entailed redefining their educational practices. The traditional, information-driven educational methods, exemplified by labels and lectures attempting to impart expert-level knowledge, have been called into question. Many museums have become aware that they can, and should, do more than convey very specific and narrowly defined information, which may or may not be relevant to the visitor. And many are expanding their practices to include facilitating experiences that enable a greater diversity of visitors to engage with art objects in a greater variety of ways.

Since the early 1970s the Museum of Modern Art (MoMA), New York, has been offering Please Touch tours, allowing blind and visually impaired visitors to touch selected sculptures using protective gloves. However, the tours allow access to only a small portion of the museum's expansive collection. To improve their program, in 1991 MoMA's Department of Education convened a focus group of twenty-five blind and visually impaired individuals, the results of which revealed that this audience of viewers wanted access to all of MoMA's collection and that they preferred to participate in regularly scheduled programing. The participants also expressed interest in receiving descriptions of images in a range of formats. The findings from this focus group led MoMA to develop, in collaboration with Art Education for the Blind (AEB), a set of tactile diagrams (also called raised line drawings) and verbal descriptions of several images in their permanent collection.[1] Both MoMA and AEB were eager to discover whether guidelines could be developed that applied to a wide range of works of art and shared with other museums. The goal here was to make two-dimensional objects more accessible to blind and visually impaired people, and enable this audience to take part in a wider array of gallery experiences.

Interested in furthering their research into the needs of this particular audience, MoMA approached our research team a year later to design and implement a study to explore the aesthetic mindsets of visually impaired museum visitors. We had already conducted a

1 The images used for the verbal descriptions and tactile diagrams were Pablo Picasso's Girl with a Mandolin, 1910; Paul Klee's Vocal Fabric of the Singer Rosa Silber, 1922; Jackson Pollock's One, 1959; and Piet Mondrian's Composition II, 1929. MoMA selected these images for the program as they are frequently used in lectures, represent major movements in twentieth-century art, and range from figurative to abstract. All are from the collection of the Museum of Modern Art, New York. Art Education for the Blind, a research organization founded to provide access to art through multisensory tools, developed the teaching system used in this evaluation.

series of studies to help MoMA's Department of Education design programs that based the art viewing experience on learners' strengths and needs (Housen, Miller, & Yenawine, 1991, 1992). Housen's empirically derived approach, which allows viewers to actively engage in building meaning, corresponds to the kinds of programs the Department of Education, under the direction of Philip Yenawine, was interested in developing at the time. Yenawine recognized the need for learner-centered programs—supporting the abilities, interests, and needs of individual viewers—that would provide a stable foundation for further growth.

Housen's Stage Model of Aesthetic Development (Housen, 1983), which, like all developmental models, has as its premise that the process of growth occurs in stages of understanding, encompasses five stages of aesthetic development, from naïve to sophisticated. This model has allowed us to look at a wide range of questions about how people understand, and best learn from, works of art. It has also allowed us to design effective educational programs and curricula based on our research.[2] Because of this unique window into viewers' thinking, MoMA chose to employ Housen's methods to assess and refine its programs for blind and visually impaired visitors.

2 The Visual Thinking Strategies, a multiyear curriculum based on our research, uses art to teach thinking, communication skills, and visual literacy.

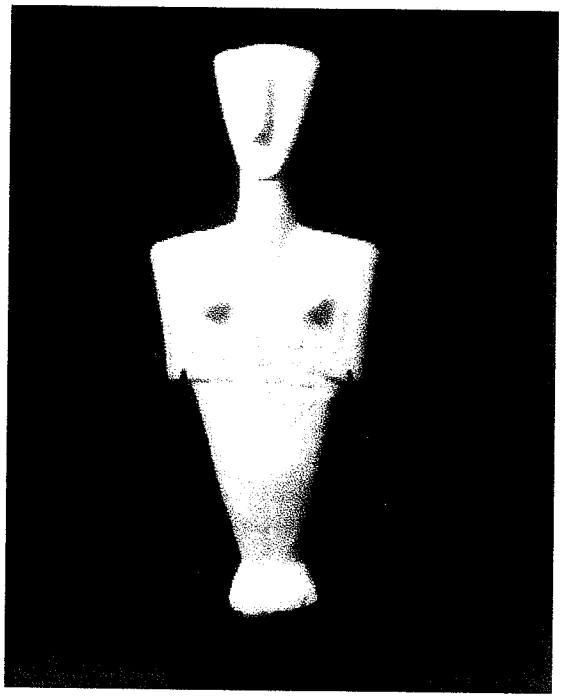
Study Goals and Design

Measuring Aesthetic Thinking in Visually Impaired People

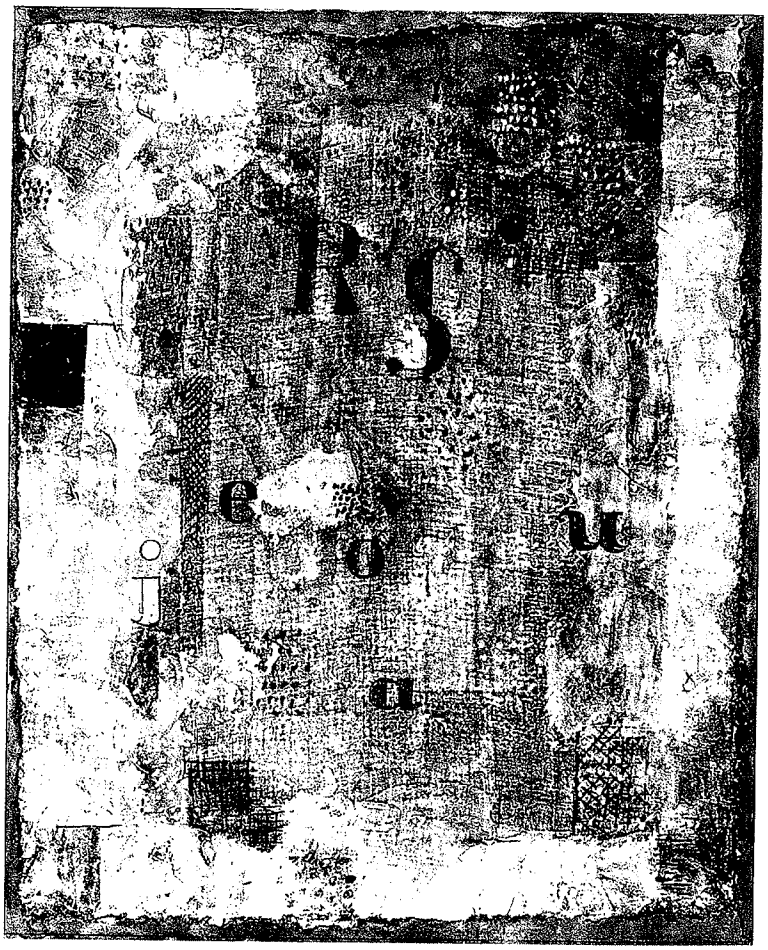
Although we were enthusiastic about conducting a study on the aesthetic thinking of visually impaired museum visitors, we were also very mindful that our methodology had not previously been tested with visually impaired participants. Our previous studies had asked viewers to respond to an image by looking at a two-dimensional reproduction and talking about it. Called the Aesthetic Development Interview (ADI), this data collection method captures the complexity of viewers' thoughts while they look at a work of art. This open-ended approach enables viewers to impart their thoughts in a stream-of-consciousness way, providing us with a picture of their mindset as they make meaning from a work of art. The patterns that emerged from years of examining these different mindsets led to Housen's Stage Model of Aesthetic Development, which has been validated in many different settings with many different subjects (Housen, 2001).

In this study we asked subjects to respond to a three-dimensional object—a reproduction of a Cycladic figure—that they could explore tactilely as well as visually.[3] The first goal of our study was therefore to test the suitability and reliability of our data collection and analysis methods with visually impaired subjects. If our methods indeed proved to be "elastic," we would be able to capture the aesthetic mindsets of a representative sample of visually impaired museum goers. We would then also be able to ascertain whether the Aesthetic Stage can inform us of the needs of visually impaired viewers as it does those of fully sighted museum visitors (Housen, 1980, 1987). Based on years of coding a wide range of subjects in a wide range of settings we believed that the manual would prove "elastic" enough, but we had to test this assumption.

3 A previous study comparing the use of two-dimensional and three-dimensional objects in the Aesthetic Development Interview showed that Housen's methodology encompasses both tactile and visual experiences (Jaquith, 1992). The Cycladic figure used in this study of visually impaired people is the same as the one used in Jaquith's study.



The figure used for the ADIs was a reproduction similar to this female figurine, Chalandriani variation. Cycladic II, marble.
Musée du Louvre, Paris.



Paul Klee, **The Vocal Fabric of the Singer Rosa Silber**, 1922,
collection of The Museum of Modern Art, New York.
Gift of Mr. and Mrs. Stanley B. Resor

We collected Aesthetic Development Interviews from forty-four blind and visually impaired subjects, some of whom had participated in either MoMA or AEB programs. In addition to the ADIs, we collected information on each viewer's demographics, level of sightedness, and degree of exposure to art. These viewer profiles add another layer of information, allowing us to further contextualize the results of the ADIs. For example, we can establish how the number of museum visits in previous years relates to a viewer's aesthetic stage.

The Educational Program and Materials

A second task of our study was to evaluate the overall program and materials that MoMA made available to blind and visually impaired visitors—the verbal descriptions and tactile diagrams—to determine their effectiveness in inviting this audience of museum visitors to participate in MoMA's regularly scheduled gallery talks.

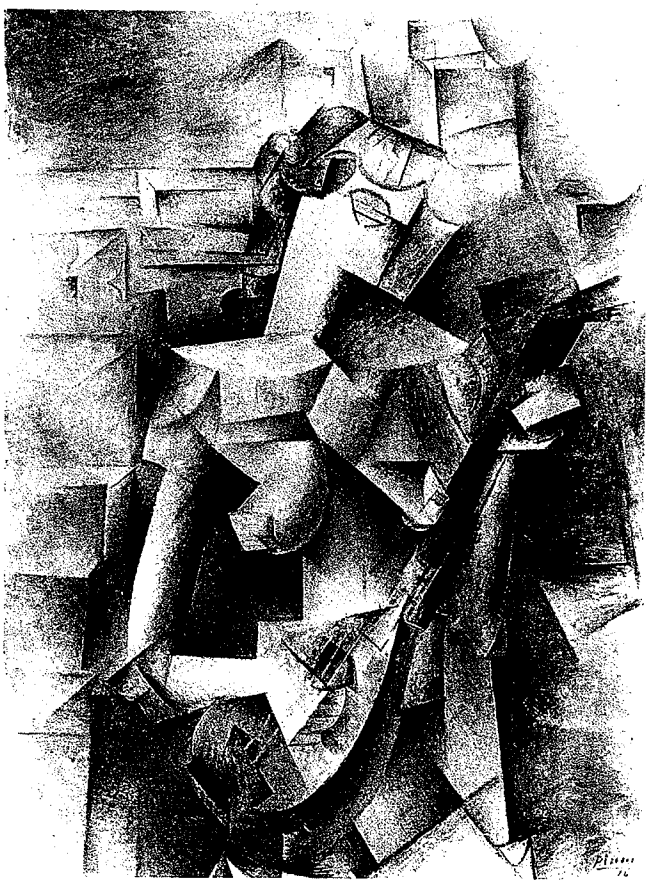
To clarify what is meant by a verbal description, here is an excerpt from the description of Paul Klee's *Vocal Fabric of the Singer Rosa Silber:*

> The second painting is by the artist Paul Klee. That's actually spelled K-l-e-e, not c-l-a-y. It's called *The Vocal Fabric of the Singer Rosa Silber*. It's twenty-four and a half inches high by twenty and a half inches wide. It's watercolor and plaster on muslin mounted on dark pink cardboard. The artist used watercolor paint, varied textures, and seven letters of the alphabet to create a visual image of the sound of a woman's singing voice. He covered a rectangular piece of ragged fabric with different thicknesses of plaster, leaving some areas of the cloth exposed. Visually, the work resembles a loose patchwork type of pattern of irregularly shaped thicknesses, some by the cloth itself, and some by the colors pink, silver, blue, yellow, green, and black.

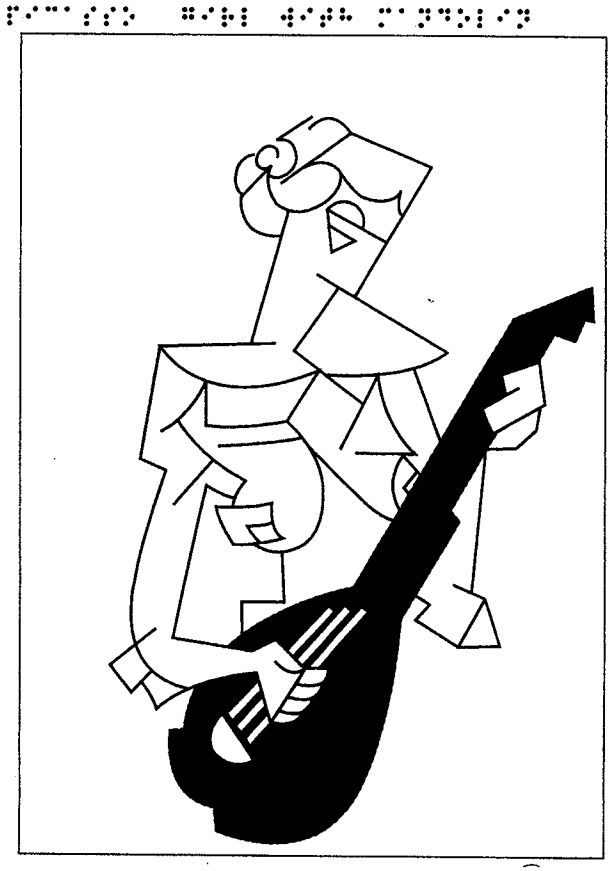
The following is an example of a tactile diagram of Pablo Picasso's *Girl with a Mandolin* and an excerpt from a verbal description of the tactile diagram:[4]

> We will be using three tactile diagrams to examine *Girl with a Mandolin* because it is such a complicated painting. First you will see an enlargement of just the girl's right side. In the second drawing we have depicted only the girl and the mandolin. In the third the girl and the mandolin have been reintegrated into the whole composition of the painting.
>
> ...Feel the next drawing, drawing number two....In this drawing we have eliminated the background, and have depicted only the whole forms of the girl and the mandolin. The mandolin is filled with a solid pattern so that you will be able to identify it more easily. Start at the center of the top edge of the diagram and slowly lower your hand. The first form you feel will be the hair of the girl. It will feel like irregular curved lines. Her hair has been stylized, that is, Picasso has not painted every strand of her hair; rather he uses a few irregular curved lines to imply her hairdo. Below her hair, slightly to the right in the

4 The tactile diagrams were made by scanning an image and printing it on a Montek Pixelmaster Printer, creating a slightly raised black line on standard paper.



Pablo Picasso, **Girl with a Mandolin**, 1910
Oil on canvas, 39.5 x 29 in.
Collection of The Museum of Modern Art, New York,
Nelson A. Rockefeller bequest



One of a series of tactile diagrams of
Picasso's **Girl with a Mandolin**.
© 1993 Art Education for the Blind

drawing, is her face. You can identify it by the arched eyebrow, which is a small semi-circle, and her eye, which is represented by a small inverted triangle under the brow and attached to a tiny diagonal line on the left....

During the gallery talk, the lecturer described *Girl with a Mandolin* in part as

> ...one of those pictures that changed forever how we look at pictures. At first you see an obviously abstract figure of a naked woman playing an instrument. You realize that it's not a naturalistic subject, not just because the style is so geometric or abstracted, but also because you know that women don't hang out naked playing instruments....It's very unlikely that this thing was ordinary, this is deliberately the invention of the artist. This is deliberately a fantasy, something imagined rather than seen. It's a Cubist picture in which the image seems to be submerged in what at first registers as a bit like a carved-out surface, something like a wooden relief made out of wooden areas, out of which a woman is conjured up....

To assess the effectiveness of the tactile diagrams and verbal descriptions in rendering gallery talks more accessible to visually impaired viewers, we drew on a tool that we had used in a previous MoMA study—the gallery-talk recall—which asks subjects immediately following a talk to recall what they heard during the talk. Recall studies allow us to determine the degree to which participants retain information imparted by a lecturer. As with all of our studies, we also collected ADIs and questionnaires. The findings of our previous recall study, presented to MoMA's education staff in June 1983, showed that participant recall of gallery-talk content correlated more with stage than with any other variable; in other words, the participants' understandings of the lectures and of the works of art themselves occurred through the filter of their aesthetic stage.[5]

In this study of blind and visually impaired viewers, the participants were divided into three groups.[6] Group 1 (18 subjects) received verbal descriptions and tactile diagrams of images before a regularly scheduled gallery talk and could take the tactile diagrams on the tour. Group 2, the control group (12 subjects), had no treatment, and Group 3 (16 subjects) received only verbal descriptions before the talk. Each group had equal percentages of congenitally blind, late blind, and severely visually impaired individuals. Aesthetic Development Interviews and questionnaires were collected before the gallery talks. After the tour, a recall interview was conducted in which participants were asked open-ended questions about the tour and the viewing support materials.

5 When comparing beginner viewer stages to higher stages, the recall differential was statistically significant: $p = .0686$.

6 The study sample was 46 participants. We were able to collect ADIs from 44 subjects.

Study Findings

Reliability of Housen's Method

Two researchers, experienced in Housen's methods, independently analyzed the same sample set of Aesthetic Development Interviews (ADIs) and compared results. We found that, to a 98% degree of reliability, the universe of thoughts contained in Housen's Aesthetic Development Coding Manual[7] encompassed the thinking exhibited by blind and visually impaired participants when viewing a three-dimensional art object. In addition, Housen's clinical codes of the interviews matched the manual coding, which assured us that our methodology was applicable to visually impaired subjects.[8]

7 Housen's Aesthetic Development Coding Manual is a compendium of all thoughts collected from the original sample of ADIs, designed to uncover a comprehensive set of stages from novice to expert.

8 Each interview is coded using an empirically derived coding manual, which generates a stage profile of the viewer's thoughts. The aesthetic stage obtained by the manual coding is then compared to a clinical stage, arrived at by a reading of the interview in its entirety. Only when these two stage scores are the same is a final Aesthetic Stage assigned to the interview.

Demographics

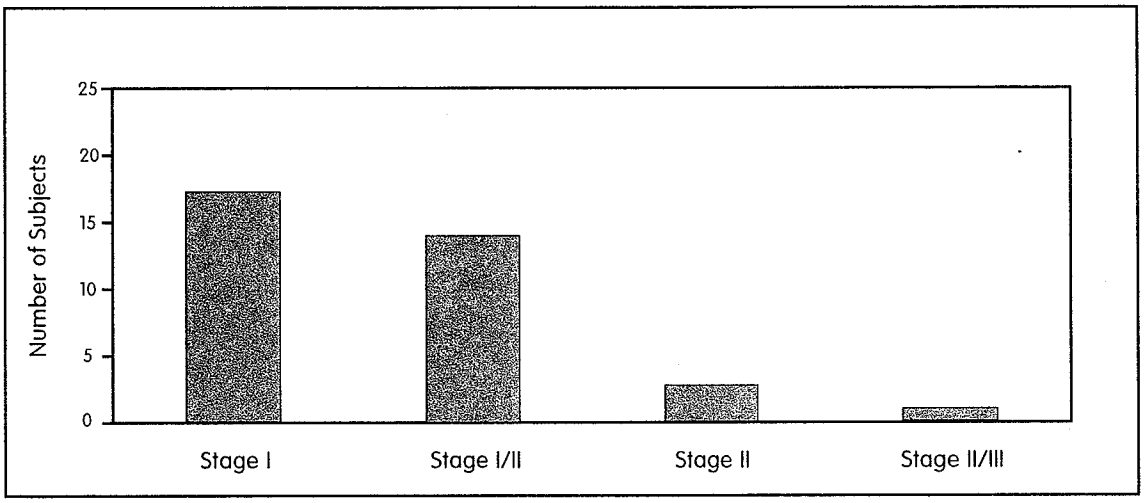
Using demographic data—provided by AEB at the time of the study—we found that the age range of our small sample of 44 subjects, although slightly skewed to a younger average age, was representative of the general blind and visually impaired population of the United States (9.7% 21–30 years; 24.39% 31–45 years; 31.7% 46–60; 34.1% over 60 years). It was fairly evenly divided in terms of sex (47.8% male; 52.2% female). Over 60% of participants had some college or graduate school education. Occupations represented were at the managerial/professional and technical/sales levels, as well as some students and retired people.

Art and Museum Biographies

All of our subjects had some exposure to art history or arts and crafts classes (10.8% reported taking arts-related courses in college; 84.5% stated that they liked to study art; 68.8% stated that they took art classes; 57.7% stated that they had art hobbies; and 51.1% stated that they had taken art history classes). This high level of participation in the arts reflects the fact that many subjects were drawn from MoMA's and AEB's regularly attending audiences. Half of the participants reported one to six museum visits in the last year. Only a small number visit museums alone (6.8%); like most museum visitors (Falk & Dierking, 1992), participants visit museums with a companion or with a group. Participants reported having had viewing experience with Acoustiguides, tactile diagrams, and touch tours.

Level of Sightedness

During our initial analysis of the study data, we encountered some discrepancies in participants' responses to their classifications of sightedness. For example, several participants who were classified as "born blind" were using language that clearly referred to some sightedness. We went back to the data and, using the responses to the question "Can you describe what you see?," generated a new category: degree of sightedness (that is, some light and shadow, some color, myopia). Forty percent of participants designated as born blind were visually impaired and 61% overall had some degree of sightedness.



Aesthetic stage distribution chart

Aesthetic Thinking in the Visually Impaired Population

Consistent with previous research on sighted viewers, the majority of the MoMA/AEB study participants (89%) fell within the range of beginner viewers, or Housen's stages I to II. In these stages, the viewers' approach to works of art is primarily to seek a narrative by identifying and organizing the objects within the visual field. Whereas Stage I viewers see through a more egocentric framework, Stage II viewers begin to objectify the work of art by comparing it to an external "reality," which is usually perceived through a personal lens.

In an Aesthetic Development Interview conducted for this study, a Stage I viewer noted: "...This is the face; it looks like a woman. I don't know if that's a woman. The feet, the leg, this is the leg. What's this? I don't know what this is. Yeah, this is nice. This is the base...."

Another commented: "...Well, first I thought it was a human form as I brailled down, but then the curve tells me maybe not, it's sort of like the handle of a spoon, a very fancy dinnerware set and two legs, uh, feet...."

These viewers' comments contain random observations ("the feet," "and two legs") that are concrete and obvious. They also rely on personal, idiosyncratic observations ("a very fancy dinnerware set") that are unlikely to be made by anyone else. Because the Stage I viewer's style is generally characterized by an egocentric perspective, judgments of images and objects are based on whether the work lives up to personal associations and standards. For example, if the viewer likes sailboats and the painting is of a sailboat, then it

is a good painting. During the transition between Stages I and II, simple egocentric likes and dislikes emerge. These comments can be either global ("Yeah, this is nice") or supported by personal criteria.

Compare the above excerpts to the following comments, made by two different Stage II participants:

> ...Yes, I can distinguish there is the lady, and her face is not complete. I feel...I would say this is her nose, but I don't feel any eyes up here. And she's like, she's, if her legs were wider she'd be doing the, like a ballet dance...and I could feel her heels, that she's tiptoeing, she has broad shoulders...

And:

> ...I feel maybe it has a crown on its head and...no, I guess that's the whole face. It's sort of a pointy chin and a very elongated neck, square shoulders....And it's only two-dimensional not three-dimensional....I'm thinking I don't think it's too pretty. Well, I think it's very simple. I think I could make something like that. I do a lot of clay sculpture, and, um, it's very simplified. It doesn't seem to be detailed at all....

Unlike in Stage I, in which the viewer describes the visual field in somewhat simple and idiosyncratic terms, the Stage II viewer is engaged in building a framework for looking at objects by relying on readily available information, in particular, the standards of the real world. This means that, in addition to a wide range of general descriptions ("that she's tiptoeing," "square shoulders"), the Stage II viewer relies on descriptions based on the viewer's concept of reality. This reality can be informed by personal criteria or by photographic, idealized criteria ("and a very elongated neck"). As the viewer moves through Stage II, she or he begins to notice formal and technical properties. These comments show the viewer moving away from an idiosyncratic viewing style to focusing on the object itself ("it's very simplified"). Judgments and preferences based on formal issues appear ("And it's only two-dimensional not three-dimensional....I'm thinking I don't think it's too pretty."). As the Stage II viewer becomes more aware of the formal qualities of the art object, an interest in the artist and in the skill of the artist emerges.

These findings suggest that the majority of partially sighted museum visitors describe their aesthetic experience in ways very similar to the majority of sighted museum visitors. In other words, visual impairment does not alter the way these viewers approach works of art. Their framework for aesthetic thinking is that of the beginner viewer, just as it is for most of their sighted counterparts.

Interestingly, we did find a statistical relationship between the level of sightedness and the aesthetic stage of more experienced viewers (above Stage II). Eleven percent of the subjects, who were in Stage II/III (a transition stage between Stages II and III), were either visually impaired or born blind with a degree of sightedness. In other words, a degree of

sightedness appears to be required in order to advance beyond the beginner viewer stage.

As the viewer moves into Stage III, an increasing interest in, and reliance on, classification emerges. The Stage III viewer embraces a more analytical stance, drawing upon a kind of inner catalogue of both general and art historical information. A Stage III viewer reported:

> ...And, uh, it reminds me of, *I can't think whether it's Crete*...that's why I thought it's either *very old or very, very modern*. And obviously it feels *very modern* now. Oh, here's something I can just make out, it's tapered, I mean you have the head and then you have the shoulders, very wide shoulders, and the entire figure comes down almost to a point on the toes, so you have in fact *this very Oscar-like figure* here....

Another Stage III participant noted:

> This *reminds me of an Egyptian figure, either Egyptian or African. It's completely a stylized thing* because there's no forward or backward movement.... I can feel a curve of the stomach, there's an arm across, long neck like, *almost like a painting done by* what's his name, one of the artists who used to paint long-necked women. *Modigliani*....

Yet it is important to note that degree of sightedness alone does not guarantee a more advanced stage—it must be combined with exposure to art viewing or experiencing. Those participants with some sight but who were not exposed to art extensively did not show advanced aesthetic stages. This finding replicates the results of our other studies, which have established the art exposure variable to be the most salient in determining aesthetic stage. The small group of blind or visually impaired subjects above Stage II had either art concentrations in college, attended art history classes, made more than three museum visits a year, or reported a combination of these factors, in addition to a degree of sightedness.

The Educational Program and Materials for Visually Impaired Museum Visitors

In the questionnaires administered to participants before the study, we asked how art could be made more enjoyable. One third of the participants requested guides and explanatory materials, one fifth requested aids for visually impaired visitors, one tenth wanted hands-on experiences, and another tenth requested better overall accessibility. However, we did not find definitive evidence that the verbal descriptions and tactile diagrams provided before the gallery talk helped the subjects of the study better understand the content of the talk. The small size of the subject sample and the participants' diverse levels of sightedness prohibit any correlation between subject recall and use of viewing support materials. We can, however, cite some overall patterns in the data we collected to inform us of the usefulness of these materials.

When asked to recall the description of Paul Klee's *Vocal Fabric of the Singer Rosa Silber* given during the gallery talk, one third of the subjects had some direct recall, while just over one third had confused recall, unknowingly misstating the information con-

veyed by the lecturer. There were no measurable differences in the type of recall among the three participant groups; that is, the viewing support materials did not measurably allow participants in groups 1 and 3 to recall the gallery talk with any more accuracy than participants in the control group, who received no materials. Nor did we find a correlation between the type of recall and the subject's level of sightedness.

Yet when asked if they would use tactile diagrams again, our study subjects responded positively. Forty-four percent of Group 1 participants (who received verbal descriptions and tactile diagrams) said that they would use them, either by themselves or with assistance. Almost all of Group II (92%)—the control group—who had neither verbal descriptions nor tactile diagrams, said that they would use tactile diagrams if available. And three fourths of Group 3 (which received verbal descriptions only) said that they would use tactile diagrams.

Several participants mentioned that the tactile diagrams were at first difficult to use but well worth the effort:

> Well, to start with I found the tactile diagrams to be extremely challenging when we were doing them but extremely beneficial when I was in the gallery, because somehow running my fingers over the shapes that existed in the painting was very helpful when I was being told about the painting, because I could hardly see the painting, what I was looking at, though I could remember what I could touch....

One participant described her experience when listening to a verbal description:

> What I felt I was doing was almost assembling building blocks in my own head....I was trying to reconstruct what it would look like from the description....I would like to have heard the description a little bit more slowly so that I would have time to construct the building blocks....I also have the feeling that if I were to reconstruct [the painting] for myself and if anyone was going to reconstruct it themselves they'll come up with different things, which they would see into it, which was really interesting....

Why, then, did the verbal descriptions and tactile diagrams not have a measurable affect on the participants' recall of the gallery talk? We believe the answer to this question lies in the subjects' aesthetic stage scores. As we saw in the ADI excerpts of Stage I and II viewers, the viewing process of the majority of our participants centered on identifying and describing concrete objects within the visual field, with some attention to the materials used—much like the content of the verbal descriptions and tactile diagrams. When we return to the gallery-talk excerpt, we can note the difference: the gallery talk interprets the work of art using abstract, art historical concepts. Drawing from the findings of our previous recall study for MoMA, we can speculate that the discrepancy between the needs and interests of the beginner viewers in this study (89% of our sample) and the art historical focus of the gallery talks (which is more engaging to Stage III viewers) affected the participants' recall. It is not

surprising, then, that most participants responded positively to the viewing support materials, even if they did not necessarily help the participants recall the gallery talk; the content of these materials was appropriate to the participants' aesthetic stage. It was participants in Stage II, in fact, who liked the tactile diagrams the most. However, in order to examine fully the correlation in this study between aesthetic stage and content recall, we would have to have had a larger sampling of more experienced viewers (over Stage II).

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Our findings suggest that Housen's aesthetic stages are a useful window for looking at the needs of blind and visually impaired museum visitors. The stage scores of the study participants, the majority of whom were beginner viewers, reflect an aesthetic mindset that corresponds to that of the majority of sighted museum-goers. In light of this information, we recommend that effective educational programing for the visually impaired take aesthetic stage into consideration as much as, or perhaps more than, level of sightedness.

While it may be overreaching to draw definitive conclusions from this small study, it exposes a fundamental question in education about impairment and developmental universals. And that is: Should teaching focus on developmental abilities within a subject domain, such as aesthetic thinking, or on a particular impairment? It is very logical to assume that learning aptitudes (such as giftedness) or impairments (such as partial or lack of sightedness) might well be the entry point of an educational program. However, this study shows that visually impaired beginner viewers share more with sighted beginner viewers than we would have assumed at the outset. The following excerpt from an Aesthetic Development Interview collected for this study illustrates this point:

> ...It's just this whole piece is just very unique, very nice, very nice to the touch. Very nice to my visual imagination memory. I like it. It's smooth, very nice. I just like it. I picture, of course, I picture the color being stone gray, like stone. I don't know if it is but that's how I picture it, stone gray. And at the base it's kind of shiny, goldy, brassy kind of look. And that might not be either, but I know it's shiny from the way it feels down on the base.... And I don't know whether...it may have a lot of meaning that I missed, or may have no meaning, but just the idea of...what would make the artist decide to go through these different things, I don't know, but it's unique and nice to the touch....

This viewer exemplifies how study participants, like all viewers, relied upon "the involvement of multiple sensory modalities" (Perkins, 1994, p. 85) as they experienced a work of art. The viewer talks about texture as well as "visual imagination," all the while exhibiting the thinking of a rather inexperienced viewer.

This leads us to wonder whether the particular needs, skills, and interests of the beginner viewer might well be made central to programs for the visually impaired. We have

consistently found that aesthetic growth occurs when beginner viewers have regular opportunities to engage actively in facilitated discussions that explore the content and meaning of developmentally appropriate images (Housen, 2001). As Roberts points out, "To acknowledge that meaning making lies at the heart of the museum enterprise and that narrative provides the means by which this activity is accomplished is to take the first step toward truly opening museums to multiple voices and views." (1977, p. 152). While we recognize the importance of viewing aids in programs for the visually impaired, we believe that thoroughly researched understandings of how aesthetic learning occurs in sighted museum visitors can be very relevant to the development of aesthetic learning in visually impaired people. As we design and evaluate museum programs that aim to provide a respectful space for individual learning to flourish and grow, we also recognize that there is a sequence of fundamental questions that all viewers ask.

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