



Impact Planning, Evaluation & Audience Research

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**Formative Evaluation:
*Select Conservatory Rooms***

Prepared for the
**United States Botanic Garden
Washington, D.C.**

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SUMMARY AND DISCUSSION

INTRODUCTION

The United States Botanic Garden (USBG) contracted Randi Korn & Associates, Inc. (RK&A) to explore visitors' interest in and understanding of proposed Context Clues signage, which highlight the connections between plants and people. The Context Clues signage is an interpretive strategy that uses images, product samples, or other objects to assist visitors in connecting to the big idea: plants are important to people. For the purpose of this study, three plants in the Garden Court were selected and Context Clues were installed. In order to determine how much interpretation is required to help visitors understand the big idea, images and objects were used alone for one-half of the testing (“no interpretation”) and blue interpretive signs explaining the plant-people connection were added to the display for the other one-half of testing (“interpretation”). The summary below presents the results of the experiment.

The findings presented here are among the most salient. Please read the body of the report for a more comprehensive presentation of findings.

RESEARCH QUESTIONS

The overall research questions guiding this experiment are:

- ◆ How much interpretation via the Context Clues is required for visitors to feel connected to the plants?
- ◆ To what extent do visitors see the Context Clues as having a place in the Garden?
- ◆ How do visitors react to more provocative (i.e., large impact) Context Clues (e.g., do they encourage more thoughtful reactions, or elicit negative reactions)?

STUDY SCENARIOS

Three different Context Clues were developed. It is important to note that the scenarios were not all equal as shown below:

- ◆ Cacao and large photo of Hershey's Kisses – small impact clue;
- ◆ Manila Hemp and coil of rope – medium impact clue; and
- ◆ African Oil Palm and cutout of biofuel gas pump – large impact clue.

The impact “size” of the clue is meant to be related to visitor comfort level with the clue and not necessarily the size of the object. For example, the image of the Hershey's Kisses was not the smallest item installed, but rather the item with which we assumed visitors would be most comfortable and most able to connect.

VARIABLES

As noted previously, two different variations of the Context Clues were presented. Presence of interpretive text is the variable:

- ♦ No interpretation – image or object presented alone with only the pre-existing signage (e.g., plant ID label or banners); and
- ♦ Interpretation – image or object presented with a blue interpretive sign that specifically addressed the messaging of the Context Clue (see Appendix A).

SUMMARY OF FINDINGS

TO WHAT EXTENT ARE VISITORS ABLE TO USE THE CONTEXT CLUES TO CONNECT TO THE PLANTS?

Overall, the Context Clues—images or objects—helped visitors connect to the plants, regardless of which Context Clue scenario they were discussing and whether they saw it with or without interpretation. Furthermore, interviewees who experienced Context Clues with interpretation did not draw more detailed connections, but these interviewees were more sure of the connection (e.g., they did not say they were guessing when they talked about the connection). The gas pump was the most challenging for interviewees to understand; however, interviewees who struggled with the gas pump Context Clue included those who saw the Context Clue with *and* without interpretation, and a few were confused by it because they encountered it first, before the other Context Clues—indicating that the Context Clues in general are successful when experienced as a collective that visitors can become accustomed to versus isolated presentations. A gas pump is a very different kind of image than Hershey’s Kisses (for example) and can be experienced as having political overtones, as one visitor noted. This particular visitor focused on the price indicated on the pump rather than the pump itself; suffice it to say, object/image selection requires careful consideration to avoid miscommunication.

TO WHAT EXTENT DO VISITORS SEE THE CONTEXT CLUES AS HAVING A PLACE IN THE GARDEN?

In general, interviewees had positive reactions to the Context Clues and appreciated that they provided additional information about the plants in the Garden. However, two-thirds of interviewees offered comments about the visual affect of at least one Context Clue, including more than one-third who found either the Hershey’s Kisses and/ or the gas pump to be jarring and out of place. Another one-third of interviewees made general comments about the large size of the images but did not explicitly say that the images negatively affected their experience. In fact, many of these interviewees also talked about how the Context Clues are informational and helped them personally connect to the plants. This finding suggests that, although interviewees can see the value of the Context Clues concept and welcome having additional information, presentation is important. Interviewees want the Context Clues to complement the Garden and for them to feel integrated into the plant displays.

HOW DO VISITORS REACT TO THE MORE PROVOCATIVE CONTEXT CLUES?

Many interviewees interpreted all three Context Clues as sometimes imposing environmental or cultural ideas that were not explicitly stated in any signage. For example, more than one-third brought up the need for alternative fuel sources when discussing the African Oil Palm Context Clue, and more than one-quarter brought up generally, or specifically, the need to protect plants (e.g., the concern about over-harvesting cocoa) when discussing one or more Context Clues.

In terms of visual impact, interviewees reacted slightly more negatively to the gas pump compared to the other Context Clues. One-third of interviewees found this Context Clue to be out of place in the Garden and said it took away from their enjoyment of the Garden Court, compared to one-quarter of

interviewees who had a similar reaction to the Hershey's Kisses image and no interviewees who had that reaction to the coil of rope. In general, the type of Context Clue (i.e., object versus image) seemed to affect reactions rather than incite provocation of the Context Clue. When asked about their preference, almost one-half of interviewees preferred the rope because it is natural, fits into the overall display, and can be touched, or because the actual object elicited a more powerful reaction. A few interviewees preferred the images because they were more memorable.

CONCLUSION

The Context Clues assist visitors in connecting with plants and understanding that plants are important to people. The type of Context Clue (e.g., object versus image) has more of an effect on visitors' reactions than the subject in the Context Clue (e.g., African Oil Palm). However some visitors will undoubtedly feel that this type of interpretation is out of place in the Garden. Balance is an important consideration when conceptualizing and implementing interpretative strategies so as not to alienate those who visit the Garden to experience its beauty.

INTRODUCTION

The United States Botanic Garden (USBG) contracted Randi Korn & Associates, Inc. (RK&A) to explore visitors' interest in and understanding of proposed Context Clues signage, which highlight the connections between plants and people. The overall purpose of the evaluation was to determine how to best present the relationship between plants and people: through a display of plants and images (or objects) presented with interpretive text or through a display of plants and images (or objects) without interpretive text. In this report we call the images, objects, and interpretive text Context Clues.

The objectives of this evaluation are to explore:

- ◆ Visitors' understanding of the messages conveyed in Context Clues and the other elements that communicate these ideas;
- ◆ Visitors' recognition of Context Clues as something the Garden put in place to enrich their understanding of the interaction between plants and people;
- ◆ Visitors' reactions to Context Clues compared to the rest of their Garden experience (e.g., how Context Clues affect visitors' enjoyment of the Garden);
- ◆ The feeling and/or understanding that visitors walk away with after experiencing Context Clues and which elements contribute to that feeling and/or understanding;
- ◆ To what extent visitors have a personal connection to the Context Clues; and
- ◆ Visitors' natural curiosities and questions about the plants and interpretation (i.e., what do they still want to know after experiencing the room?).

METHODOLOGY

For this study, RK&A conducted in-depth interviews to explore visitors' interest in and understanding of the prototype Context Clues in the Garden Court. The Context Clues images were displayed with blue interpretive signs for one-half of the interviews; for the other one-half of interviews, Context Clues images were displayed without interpretative signs, although there were other Garden signs in place (e.g., plant ID labels, banners). In-depth interviews encourage and motivate interviewees to describe their experiences, express their opinions and thoughts, and share with the interviewer the meaning they construct from their experiences. Hence, they are useful for understanding visitors' points of view and produce data rich in information. Interviews were paired with observations to provide data collectors with information about where visitors stopped so interviewers could probe more deeply about those elements. Interviews were audio-recorded with interviewees' permission and transcribed to facilitate analysis.

Interviewees were intercepted using a continuous random sampling method, such that the interviewer approached the first eligible visitor to cross an imaginary line near the entrance to the Garden. Eligible visitors include English-speaking adults (18 years and older) visiting alone or in social groups. If a visitor declined to participate in the interview, RK&A logged the visitor's gender, estimated age, and reason for declining. If the visitor was eligible and agreed to the interview, the interviewer asked the group to look at three Context Clues displays while the data collector observed them. Visitors then

participated in an interview about their experience (see Appendix A for the interview guide). Once the interview was completed, interviewees completed a demographic questionnaire (see Appendix B).

DATA ANALYSIS AND REPORTING METHOD

In-depth interviews produce descriptive data that are analyzed qualitatively. This means that the evaluator studies the transcriptions for meaningful patterns and, as patterns and trends emerge, organizes similar ideas and responses together. Trends are presented in thematic sections, and within each section, findings are reported in descending order starting with the most-frequently occurring. Findings are reported in narrative, and verbatim quotations (edited for clarity) are included to illustrate interviewees' thoughts and ideas as fully as possible. Within the quotations, the interviewer's questions appear in parentheses and an asterisk (*) signifies the start of a different speaker's comments. Interviewees are identified by gender, age, and whether they experienced the prototypes with or without interpretation.

PRINCIPAL FINDINGS

INTRODUCTION

RK&A conducted 40 in-depth visitor interviews—20 visitors were interviewed after experiencing Context Clues images with interpretive text (referred to as “interpretation”) and 20 visitors were interviewed after experiencing Context Clues images only (referred to as “no interpretation”). The response rate was 69 percent. Findings are presented by plant with differences between “interpretation” and “no interpretation” noted in each section.

DESCRIPTION OF INTERVIEWEES

About two-thirds of interviewees are female, and almost two-thirds are visiting with one other adult (the majority of who are also female). Almost three-quarters were first-time visitors to the Garden. Interviewees range in age from 18 to 69 years, with a median of 40 years. Companions’ median age is 32 years. Most interviewees self-identified as Caucasian/White.

VISIT MOTIVATION

All interviewees were asked why they decided to visit the Garden that day. Almost one-half of interviewees said that the Garden was one stop of a larger tour of the Mall or Capitol area or said they were walking by and decided to visit (see the first quotation below). More than one-third said that they were visiting because they liked plants or wanted to see plants. Less than one-fifth came to bring family or had someone recommend the Garden to them (see the second quotation). A few gave miscellaneous reasons, such as visiting the Garden to take pictures or to use the restroom.

There’s a possibility of me moving here next year for an entire year, so I’m trying to get an idea of how the area is, trying to experience what the city has to offer. [Male 25, Interpretation]

My cousin told us last night, she lives in Arlington, that [the Garden] was one of her favorite places to go on a rainy day. [Female 69, No interpretation]

INITIAL IMPRESSIONS

When asked their initial impressions or feelings about the Garden Court, most interviewees noticed something about the atmosphere or design of the space. These interviewees focused on many aspects of the Garden Court; for instance, one-half talked about the warm temperature and humidity (see the first quotation below). More than one-third noticed the smell, often describing it as sweet or pleasant (see the first quotation), and one-third said the space was quiet or calming. Several said they noticed the music and the sound of water, and several talked about the size of the room. A few mentioned specific aspects of the architecture, such as the high ceiling or the many windows (see the second quotation).

[It feels] moist. I definitely felt a humidity change; and I really enjoyed the smell when I came in. It was nice—all sorts of different plants—and it just smelled alive, which is good. [Female 28, Interpretation]

I liked seeing the old architecture . . . it's really pretty. It's well laid out. All the archways, all the arched windows. *The arched windows, and just the feeling of height and movement, the way everything's laid out. [Male 59 and female 57, No interpretation]

One-half of interviewees talked about plants when discussing their initial impressions. For instance, more than one-third said they noticed the variety of plants, including several who talked about the seasonal nature of the displays (see the first quotation below). Another one-third talked about the vibrant colors of the plants in the Garden Court (see the second quotation). A few interviewees talked about how the plants were tropical.

I really thought it was festive. I saw pumpkins as soon as I walked in. [Female 26, Interpretation]

I tend to enjoy the vibrant colors and things like that, and I thought it was a very welcoming area. [Male 25, Interpretation]

More than one-third of interviewees offered general responses when asked about their initial impressions; most of these interviewees talked generally about the beauty of the space, with a few saying the space felt welcoming.

EXPERIENCE WITH COCOA TREE CONTEXT CLUE

PROTOTYPE DESCRIPTION

The Cocoa Tree Context Clue focused on the use of cocoa beans in chocolate. A large image of unwrapped Hershey's Kisses was installed at the edge of the bed; a plant ID label was behind the image and off to the left. A green exhibit label explaining the process of making chocolate from the cocoa bean was also in the bed; however, the sign was placed away from the image, near the entrance to the Jungle. A few visitor groups noticed and read the green exhibit label; most only looked at the area immediately surrounding the image and the tree. On the second day of testing, a blue interpretive sign was placed in the bed next to the image.

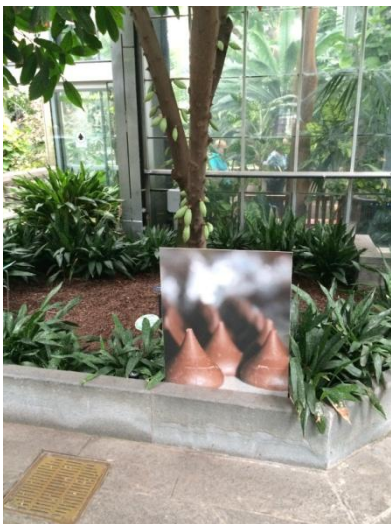


Figure 1: Cocoa Tree Context Clue with no interpretation



Figure 2: Cocoa Tree Context Clue with interpretation

HOW PLANTS RELATE TO IMAGE

When asked in what way the image of the Hershey's Kiss related to the plants around it, all but two interviewees were able to make a connection between the image and the plant. Almost two-thirds of interviewees identified the cocoa tree, and more than one-half said chocolate comes from the cocoa tree (see the first two quotations below). A few interviewees gave miscellaneous responses, such as the tree smelled like chocolate, or they knew from personal experience (see the third quotation).

Cocoa, it's the heart and soul of the chocolate making industry. [Male 29, Interpretation]

The cocoa plant, it was right next to it, so obviously you get chocolate from the cocoa plant. [Female 42, No interpretation]

After living in Africa and being a cocoa farmer and doing all this other stuff, I know exactly what it is. [Female 46, No interpretation]

When asked how they came to the conclusion about the relationship between the image and plant, most interviewees said that the plant ID label, interpretive text, or the combined visual elements of the display (e.g., image and plants) helped them understand how the image relates to the plants around it (see the first quotation below). A few interviewees said that the plant itself and the cocoa pods on the trunk helped them make a connection. A few interviewees said that they had prior knowledge that allowed them to make a connection, and a few others said that the image helped them realize that the tree on display was a cocoa tree (see the second quotation).

I think it was the sign. *The Kiss, the picture. *The chocolate drop, yes, [and] there is an identification [label] behind it. [Male and female 58, Interpretation]

I hadn't even seen a cocoa plant before, so without the picture, I wouldn't have made the connection; same thing with the hemp plant and the oil plant. [Female 57, No interpretation]

DIFFERENCES BETWEEN GROUPS

◆ With interpretation

The image helped visitors realize the tree was a cocoa tree.

◆ Without interpretation

The plant ID label helped visitors connect chocolate to the cocoa tree.

Two interviewees said that they were just guessing about the use of the tree to make chocolate.

REASON FOR IMAGE

When asked why the Garden chose to include an image in its display, more than two-thirds of interviewees said that the image highlighted the usefulness of plants or allowed visitors to connect to plants (see the first two quotations below). More than one-quarter said the image provided better interpretation than written text; many of these interviewees said that the Garden presents the image because it was easily recognizable to people (e.g., people know that Hershey's Kisses are chocolate), and a few said that the image is a better interpretive tool because there is no language barrier (see the third quotation). A few interviewees offered idiosyncratic responses; for example, one interviewee said the image is included because everyone loves chocolate, and another assumed that Hershey is a sponsor.

Probably to get individuals to understand that a lot of the things we take for granted come from a plant or . . . from some combination of plants, depending on what it is, and sometimes we just don't realize that. [Male 31, Interpretation]

I think you can see how things are made at a very fundamental, basic level—this turns into [that]. I guess we don't think about the very first process of manufacturing goods or anything like that. [Female 20, No interpretation]

A lot of people might not be able to read the sign. You're going to get people speaking a lot of different languages, but everybody is going to be able to see a Hershey's Kiss and know 'Oh, I know what that is.' [Female 30, No interpretation]

AFFECT OF IMAGE ON GARDEN EXPERIENCE

When asked what affect, if any, the image had on their Garden experience, more than one-half of interviewees said that the display was educational. Most of these interviewees said the Context Clue display made them think about the use or economic value of the cocoa tree (see the quotations below). A few said that the image allowed them to make a connection between the plant and a product.

Instead of us just looking at the pretty flowers and matter-of-fact things about the exhibit, I would consider a little bit more about what we could use out of that plant, what medicines can be used out of that plant, so it's more of a direct connection to daily life than just seeing these beautiful plants. [Female 43, No interpretation]

It made it easier to make the connection, for sure. . . . I'm not sure I would have thought about Hershey's Kisses or chocolate, necessarily, just by looking at the tree. So by seeing the picture, it gave me a visual cue [to see] this is what comes out of this tree. So, that was helpful. [Female 53, Interpretation]

Almost one-half of interviewees offered aesthetic comments about the Context Clue. Almost one-quarter said that the image took away from the beauty of the Garden display, or that seeing an image in a display was jarring and unexpected (see the quotation below). One-fifth made more general comments suggesting that the large size of the image was out of proportion with the objects around it; however these interviewees did not explicitly say the image had a negative effect on their experience.

I think signs take away from displays because they're too—[trail off] *Because it's just not part of nature. You come into a conservatory like this expecting just to see nature. [Female 59 and female 55, No interpretation]

DIFFERENCE BETWEEN SAMPLES

♦ Without Interpretation

Interviewees offered aesthetic comments about the size of the picture.

EXPERIENCES WITH AFRICAN OIL PALM CONTEXT CLUE

PROTOTYPE DESCRIPTION

The African Oil Palm Context Clue highlighted the plant's use in the production of biofuel. A large replica of a gas pump, printed on poster board, was installed at the edge of the bed in front of the

African Oil Palm; a plant ID label was to the left of the replica. On the second day of testing, a blue interpretive sign was placed in the bed next to the replica.



Figure 3: African Oil Palm Context Clue with no interpretation



Figure 4: African Oil Palm Context Clue with interpretation

HOW PLANTS RELATE TO IMAGE

When asked how the gas pump relates to the plants around it, many were able to make a connection, with more than two-thirds saying that the biofuel came from the Palm Oil plant (see the quotations below). Many interviewees said that the plant ID label, interpretive sign, or other visual elements in the display (e.g., replica and plants) helped them to make a connection between the replica and the plant. A few interviewees said they called on prior knowledge to make a connection.

Even though I understood that it was the African Oil Palm and that was a very interesting connection with the gas tank, it just took away from the beauty of the tree. [Female 53, No interpretation]

I know it had the African Palm Tree around it, where we get the oil pressed and then created biofuel. So I saw the linkage there. [Male 31, Interpretation]

One-quarter were unsure of the connection or said there was no connection between the gas pump and the plants around it. The remaining interviewees described connections, but not the ones USBG conceived: a few said that the replica was there to remind visitors to protect plants or to highlight the need for alternative fuel sources (see the quotation below), and one interviewee said the Garden might be making a political statement about the high price of gasoline because the fuel costs on the gas pump replica were so low.

I would say that we're in a time that everything has to be more ecological[ly] oriented, so that makes a connection that we definitely need to look towards alternate fuel. [Male 29, Interpretation]

DIFFERENCES BETWEEN SAMPLES

◆ With Interpretation

All interviewees said the blue interpretive sign helped them make a connection.

- ◆ **Without Interpretation**

Interviewees were not able to connect the gas pump replica to the plant and many suggested the Garden include an explanation of the connection.

Interviewees said that the gas pump replica helped them draw a connection between the plant and the product.

REASON FOR GAS PUMP REPLICA

When asked why the Garden chose to include a gas pump in its display, more than one-half of interviewees said that the gas pump highlights the usefulness of plants or allows visitors to make a connection to plants (see the first quotation below). Almost one-half said the Garden included the replica to bring attention to the environmental need for alternative fuel sources or the importance of protecting the environment (see the second quotation). A few provided miscellaneous or unrelated responses.

We don't often think of how plants translate into our everyday life, and so this would be one more way for people to connect to that. And of course, biofuel is another way of creating fuel for our cars. . . . It would be another way to generate fuel that would be more economically friendly. [Female 52, Interpretation]

Probably to let you know that particular type of plant has [this] capability that maybe you didn't know before, and that actually there [are] other ways to make fuel other than the traditional way. [Male 40, Interpretation]

DIFFERENCE BETWEEN SAMPLES

- ◆ **Without Interpretation**

Several interviewees were not sure why the Garden included the gas pump replica.

AFFECT OF GAS PUMP REPLICA ON GARDEN EXPERIENCE

When asked what affect, if any, the gas pump had on their Garden experience, more than two-thirds made comments relating to the information conveyed by the Context Clue. More than one-quarter said that more information about the display or about the process of turning the plant matter into biofuel would have made the display more enjoyable (see the first quotation below). One-quarter said the Context Clue made them think more about how plants are used, and sometimes for unexpected things (e.g., to make biofuel) (see the second quotation).

I don't necessarily know that it added anything for me. I think if there was more information on how it was prepared and things like that. There wasn't as much information and it is likely there's probably a more complicated process with biofuel. [Male 25, Interpretation]

I think it adds...I mean, it's more than just seeing plants. There's a connection made with everyday experience with life. . . . *I just don't think people in general realize how much plant life connects to products that you do use or could use in everyday life. [Female 58, Interpretation]

Almost one-half of interviewees offered comments about the visual affect of the Context Clue. More than one-third said that the picture took away from the beauty of the Garden display or from their enjoyment of the Garden (see the first quotation below). Several said that the replica was much larger than the other Context Clues images, and while many of these visitors did not explicitly say that the

display was unpleasant, they suggested reducing the size of the replica so that its presence is more subtle. A few interviewees said the replica brought attention to the tree, encouraging them to discover a connection (see the second quotation).

I think it's not appropriate. It stands out so diametrically opposed to everything else in here. . . . A gas pump in the middle of a garden seems out of place. It seems much harder to relate from point A to point Z. [Female 66, Interpretation]

The picture of the gas pump itself that we are talking about, it kind of drew you over there because you didn't know why it was there. [It] got you a little interested to figure out why that picture was there. [Female 40, Interpretation]

EXPERIENCES WITH MANILA HEMP TREE CONTEXT CLUE

PROTOTYPE DESCRIPTION

The Manila Hemp Tree Context Clue highlighted the plant's use in the production of rope. A coil of rope was threaded around a plant spike and installed at the edge of the bed. The coil of rope sat on the bed wall; a plant ID label was to the right of the rope. A banner with the title "Basics of Civilization" was also on display in the bed to the right of the rope, closer to the entrance to the Jungle; it explains the use of plants in basket weaving and other similar endeavors and features several images. One-half of interviewees were observed looking at the banner. On the second day of testing, a blue interpretive sign was placed in the bed next to the rope.



Figure 5: Manila Hemp Tree Context Clue with no interpretation



Figure 6: Manila Hemp Tree Context Clue with interpretation

HOW PLANTS RELATE TO OBJECT

When asked how the rope related to the plants around it, all but two interviewees were able to make a connection. Almost three-quarters of interviewees said that the rope is made from one of the plants on display, with a few specifically referring to the Manila Hemp Tree. Although many of these interviewees provided simple explanations of the relationship (e.g., "it's a hemp plant and it makes rope."), several talked about the use of plant fibers in rope, or compared the appearance of the rope to the appearance of the plant (see the quotation below).

I thought it was interesting seeing the rope and then you could look at the outer shell of the tree and see how the rope would come from the tree. I was noticing people going up and feeling the tree and how the fibers would lead to something like the rope [being] manufactured. [Male 25, Interpretation]

Most interviewees said that the plant ID label and interpretive sign or the combined visual elements of the display helped them connect the coil of rope to the plant. A few of these interviewees talked about the hanging vines on one tree in the bed. A few interviewees said they called on prior knowledge to make a connection. The remaining interviewees provided miscellaneous responses. Several talked about the aesthetic features of the display, often saying that the rope was not immediately obvious to them or that they appreciated the natural appearance of the rope. A few said that at first they assumed someone had left the rope accidentally.

DIFFERENCES BETWEEN SAMPLES

- ◆ **With Interpretation**

Most interviewees said the blue interpretive sign helped connect the rope to the tree.

- ◆ **Without Interpretation**

A few interviewees said they assumed the rope was made from the plant.

Interviewees said the banner or plant ID label helped connect the rope to the tree.

REASON FOR ROPE

When asked why the Garden chose to include the rope in its display, more than one-half of interviewees said that the rope brought attention to the usefulness of plants or allowed visitors to make a connection between plants and everyday items (see the first quotation below). A few interviewees said the rope was there to draw attention to the plants (versus how plants are used) (see the second quotation), and a few said that the rope was part of an environmental conservation message. The remaining interviewees provided idiosyncratic or unrelated responses.

Again, they're just showing practical uses of the plants that are in the Garden. *Yeah, it was visual.* [Male 32 and female 43, No interpretation]

'They're trying to use [the rope] as a tactic to bring you over, to have you be interested in what [the plant is] doing. [It] gives you a visual, '[when] this plant [is] broken down [it becomes] this rope.' [Female 40, Interpretation]

AFFECT OF ROPE ON GARDEN EXPERIENCE

When asked what affect, if any, the rope had on their Garden experience, more than one-third of interviewees said that the display made them think more about how plants are used, or that the display was educational (see the first quotation below). More than one-quarter made aesthetic observations, including several who liked that the rope was an actual object rather than an image, and a few who liked the natural appearance of the rope (see the second quotation). A few of these interviewees said that the rope is too small to draw their attention, and a few said that at first they assumed someone had left the rope accidentally. One-fifth had general positive comments about the display (e.g., "It's really effective," "it was neat."). Several offered suggestions on improving the display; most of whom said that the display needed more interpretation.

I think it's a good idea because a lot of people don't know. . . the real name of a lot of these plants. It helps kids [and] it helps adults, just to make the connection. . . . It makes it an educational experience, not just a viewing experience. [Female 57, No interpretation]

It [the rope] didn't distract from [the display] like the signs did. It was more natural, so it didn't really divert me from the beauty of the greenery where the placards did. [Female 52, Interpretation]

DIFFERENCES BETWEEN SAMPLES

◆ **With Interpretation**

Interviewees offered general positive comments about the affect of the display on their Garden experience.

◆ **Without Interpretation**

Interviewees said the display made them think about how plants are used; several were observed reading the "Basics of Civilization" banner.

Interviewees wanted to see more interpretation.

OVERALL PURPOSE OF CONTEXT CLUES

When asked about the overall purpose or intent of the three Context Clues displays, almost all interviewees said that the exhibits were designed to highlight the connection between plants and people. Many of these interviewees said that plants are used by people or that plants support society (see the first quotation below). Some said that plants play a role in daily life, and a few said that plants and plant materials are used in everyday products (see the second quotation). More than one-quarter of interviewees also saw an environmental purpose to the displays, saying they highlight the need to conserve or protect plants (see the third quotation).

I think [the Garden is] trying to say that you actually have a connection to many of these plants that you see in here. You may not have realized it, but you use these things, or [these things] could have an impact on you. [Male 40, Interpretation]

To make the connection of how a tree can tie into a day-to-day life. It can be halfway around the world in textiles or oil in Africa. . . . All of the three would end up in our home. It's not just a beautiful [tree]. . . . Trees or foliage can provide [things] for our day-to-day life that we don't think about. [Female 53, No interpretation]

Ecofriendly would be the best word to describe [the Context Clues]. Protect [plants] and don't take them for granted because a lot of good things come out of [them]. [Male 29, Interpretation]

When asked what informed them of the overall purpose of the Context Clues, more than one-quarter of interviewees said that the visual elements of the display, including the plant and the Context Clue, helped them understand the purpose of the displays. A few said that the plant ID label or interpretive sign helped them make a connection. Other responses were idiosyncratic and were often based on prior knowledge or assumptions (see the quotation below).

I know how important plants are to the ecosystem and to our lives in general. I mean, they create the oxygen for us to breathe. You can read the papers; you know that many of these rain

forest type places are being destroyed every day. I don't think people realize what long-term effects that may have on our world. [Female 52, Interpretation]

REACTION TO CONTEXT CLUES

To gauge interest in and reactions to the Context Clues concept, interviewees were asked how the Context Clues displays were similar to or different from exhibits elsewhere in the Garden or at other botanic gardens, and how the type of item (object or image) affected their reaction to what they saw.

More than two-thirds of interviewees said the Context Clues displays are different from exhibits elsewhere in the Garden or at other botanic gardens. Many interviewees said the Context Clues displays were more informative (see the first quotation below), and a few said the images or objects allowed them to see the plants in use (see the second quotation). Most interviewees who said the Context Clues displays were different spoke positively about what they had seen; however, a few had less enthusiastic reactions to the displays (see the third quotation).

In most of the botanic gardens I've been to, usually it is just the name of the plant and the Latin name . . . you might not get a lot of information about the history of the plant. . . . It's nice to be able to know more about it, how it's useful, [and] something that people turn into something else. I don't think I've usually seen that. [Female 43, No interpretation]

Usually you don't see the usefulness. You don't see the end product that the plant is useful for. [Male 28, Interpretation]

I've never seen anything as abrasive as a fuel pump in a botanical garden. *Yeah, and instead of getting me thinking, it just made me want to walk away from it. . . . I guess the intent of this is good, to show people the coexistence of plants and humans, but I would have chosen something different than Hershey's [Kisses]. I would have chose[n] something different than a fuel pump.* [Male 28 and female 27, No interpretation]

When asked about how the type of item affected their reaction to what interviewees saw at the Context Clues displays, almost one-half said they preferred seeing an object. Many of these interviewees said they liked that the rope was a natural object that fits into the overall appearance of the Garden's plant displays (see the first quotation below). Several interviewees said they liked the object because they could touch it and get a sense of the final product, and a few said that seeing the real object was more powerful (see the second quotation).

The rope is a real coil of rope; everything else is just pictures or cheap enlarged signs. I think the rope made it seem more effective. *It fit more into the atmosphere of this garden.* [Male 61 and female 52, Interpretation]

I think the actual object is a bit more powerful, and the rope really is the actual thing. I mean, if we just had photos of plants in here it's not the same as if the real thing [is here], right? [Male 40, Interpretation]

One-quarter of interviewees said there was no difference in their reaction to the different Context Clues, although a few of these interviewees said that their reaction depended more on what was being shown (see the quotation below). A few interviewees said the large images were more memorable than the rope; while most of these interviewees indicated that this was a good reaction, one reiterated previous

comments that the images are jarring to see in the Garden. A few interviewees said they preferred to see the Garden without the Context Clues.

Well, I definitely felt the rope. . . . But I think if there was a little tray of chocolates or something like that, I think it might distract me from the purpose. And obviously we don't want a real gas pump here, a functioning gas pump. So, with the rope I think it makes a little bit more sense that you would put out the physical rope that people could see, [but] it's hard to convey that with fuel. [Male 31, Interpretation]

DIFFERENCE BETWEEN SAMPLES

♦ With Interpretation

Interviewees said the type of item (e.g., object, image) presented did not matter.

QUESTIONS OR CURIOSITIES ABOUT THE DISPLAYS

When asked what questions or curiosities they had after seeing the displays, more than one-third of interviewees were curious about the connection between the plants and objects or were interested in learning more about products that come from plants (see the quotations below). Included in this group of interviewees were those who expressed interest in learning more about one particular plant (e.g., the African Oil Palm), as well as those who wanted to know more about the process of creating items from plants.

[I want] to go back to the plants, in particular the cocoa plant and see what's growing outside of the trunks. It makes me want to go and do further investigation of the plants. [Female 53, No interpretation]

What other stuff do these trees make that I don't know about that has something to do with my everyday life besides fruit or pretty flowers? That would be my next question: what's lurking behind these other trees that we don't know about. [Female 53, Interpretation]

One-quarter had questions about signage. These interviewees wanted to know if there would be more of these types of signs installed elsewhere in the Garden, why the Garden had chosen to highlight the selected plants, and if there would be more interpretive signs to explain the connection to visitors (see the quotation below). A few interviewees had miscellaneous or unrelated comments, and two felt that the displays were not appropriate for the space.

[The Context Clues] didn't give me any information as to how much palm oil is actually being used to generate diesel or how much rope actually comes from the manila plant. . . . Is this like, 'We can grow silk from cornstalks,' pie-in-the-sky stuff, or is this actually going on and provid[ing] a lot of income and livelihood for people in third-world countries? Some more information would have been helpful. [Male 58, Interpretation]

One-quarter of interviewees said they did not have any questions or curiosities.

DIFFERENCES BETWEEN SAMPLES

♦ With Interpretation

Interviewees wanted to learn more about what products come from plants, or about the process of creating those products (e.g., from cocoa pod to Hershey's Kisses).

Interviewees wanted to know why the Garden included this type of messaging in the decorative beds, a question that did not come up among those who saw the display without interpretation.

- ◆ **Without Interpretation**

Interviewees said they wanted to learn more about the connection between plants and the Context Clues.

APPENDICES

APPENDIX A: INTERPRETIVE SIGNAGE

COCOA TREE AND HERSHEY'S KISSES

Many of the FOODS we eat come from plants. The chocolate we consume starts with the roasted seeds of the cacao tree, *Theobroma cacao*.

AFRICAN OIL PALM AND BIODFULE GAS PUMP

One of the five major economic plants of the world, the African oil palm, *Elaeis guineensis*, has seeds that once pressed are used to make BIOFUEL for cars.

MANILA HEMP TREE AND ROPE

Like cotton and linen, the fibers of Manila hemp, *Musa textilis*, can be processed to make MATERIALS such as paper and rope.

APPENDIX B AND APPENDIX C: REMOVED FOR PROPRIETARY REASONS