

## Gray Step

# Post-Redesign Evaluation

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#### **THIS IS A POST-REDESIGN EVALUATION REPORT**

After an exhibit has been renovated, redesigned, or refurbished in preparation for the Exploratorium's move from the Palace of Fine Arts to Pier 15, an interview and observation study is conducted. The purpose of the study is to identify any major issues that would require immediate attention prior to the move. This collection of redesign evaluations will serve as a baseline of information for the Exploratorium's new exhibit set at Pier 15.

Post-redesign studies like this one **are conducted quickly**, which may mean:

- small sample sizes
- expedited analyses
- brief reports

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# Post-Redesign Evaluation

### Study Goals

After an exhibit has been renovated, redesigned, or refurbished in preparation for the Exploratorium's move from the Palace of Fine Arts to Pier 15, an interview and observation study is conducted. The purpose of the study is to identify any major issues that would require immediate attention prior to the move. This collection of redesign evaluations will serve as a baseline of information for the Exploratorium's new exhibit set at Pier 15.

#### General goals:

- To confirm that visitors are able to access and use the exhibit
- To confirm that visitors can build a basic understanding of the exhibit's content
- To uncover visitors' frustrations and confusions
- To understand whether visitors move on from an exhibit for intrinsic or extrinsic reasons

### Exhibit Description

When the tassel hangs freely and covers the border between the halves, few people can see the subtle difference in the color. It is only when the border is exposed that it becomes apparent.

Edges are important in defining what we see. When the rope tail is lifted, two separate squares become visible, one significantly darker than the other. When the rope tail covers the edge, the two sides are indistinguishable. The two squares are really identical. There is only a difference at the point where they meet—the edge. Each square is shaded lighter to darker, from left to right. In the middle, the dark edge of one square meets the light edge of the other. The eye concentrates on the boundary and assumes the rest of the square is the same.



## Methods

Uncued observations and interviews were conducted. A researcher randomly selected visitors who crossed an imaginary line on the floor that stopped facing the exhibit with two feet planted and either looked at or touched the exhibit for approximately 15 or more seconds.

Uncued visitors do not know they are part of the study until after they finish using the exhibit so their behavior can be considered representative of normal use patterns. This means that some of the visitors in this study may have used the exhibit only briefly. Visitors were approached after they left the exhibit and asked if they would be willing to participate in a 7-question interview about their experience at the exhibit.

## Demographics

Gender	Count (N=10)
M	6
F	4

English as a Second Language?	Count (N=10)
N	9
Y	1

Estimated Age	Count (N=10)
8-12	0
13-17	0
18-29	5
30s	3
40s	0
50s	1
60+	1

Visitor Group Composition	Count (N=10)
Adults-only	9
Adults with children	1
Adults w/ teens	0

## Findings

### Holding Time

This is the time the visitor spent using or otherwise engaged with this exhibit. The amount of time a visitor spends at an exhibit is influenced by many factors and can indicate level of engagement or interest, but not as a measure on its own.

Time at exhibit	mm:ss (N=10)
Mean	00:28
Median	00:29
Minimum	00:10
Maximum	00:56

### Visitor Interest

Visitors were asked about their interest in the exhibit and why they rated from “not interesting” to “very interesting” (1 – 7).

Interest Level	Count (N=10)
High Interest (6-7)	1
Moderate Interest (4-5)	7
Low Interest (1-3)	2

### Visitor responses:

H	When it said compare, and to use the edges, I looked at the blotches first. But I did not see anything. Then I moved the rope and was like "oh my god!" I did not expect there to be anything behind the rope. It's so thin.
M	It shows how the eyes can trick you.
M	The end result, the fact that you were looking at something different without knowing it.
M	Understand the difference of what the eye sees.
M	I really couldn't tell the difference between the two (sides)!
M	It was interesting enough, but I have already seen examples of that. [and example of what exactly?] Of perception. What your mind puts together on its own. Not always accurate.
M	The fact that I didn't get it! [But you got it after?] I got it after, yes.
M	Neat little optical illusion.
L	To be honest, I work at a place like this. The main reason I am here is for comparison. We don't have many visual perception exhibits and I was curious how they were interpreted here.
L	I was expecting what I would see. [Could you clarify that for me?] I expected the shades to be different when I moved the rope.

### Visitor Frustration or Confusion

Visitors were asked to tell us if there was anything confusing or frustrating, what the source of the frustration was, and whether or not it made them want to leave the exhibit and move on to another one.

Source of visitor frustration or confusion*	Count (N=10)	# that wanted to move on
Unsure of what to do or look at. Not much to do	1	1
Didn't see optical illusion before lifting rope	1	0
Nothing Frustrating or Confusing	8	--

\*Totals may add up to more than N = 10 because visitors gave more than one response.

### Visitor Understanding

Visitors were asked what they think the exhibit was about with the goal to determine whether or not they have a basic understanding of the concepts presented and to identify possible areas of misunderstanding. We acknowledge that this study has a small sample size and that these findings illustrate trends and may not be representative.

It appears that visitors DO have a basic understanding of concepts presented.	X
It appears that visitors DO NOT have a basic understanding of concepts presented.	

### Visitor responses:

- About the way the brain processes visual information and that it can be easily tricked.
- This one? [Yeah] How your eyes can't notice slight changes in color until there is a boundary.
- It's about the mind's perception of things versus what really are. An optical illusion. [Anything Else?] That's about it.
- Perception and how, when we look at a surface in totality, it appears one way, but if you change something, it appears different.
- It's about seeing how the mind/brain/eye... [I'm sorry, could you repeat that? It's about how the mind and eyes...?] Um, the decision.
- Perception. [Anything Else?] Lift the rope high enough! (laughs)
- Using seams to differentiate color, I don't know.
- Optical illusion maybe. I don't know. How your eyes work.
- Optical illusions. Looks like one color, but shaded. The rope obscures it.
- About our brain's ability to compare when the things that reveals the difference is hidden.

### Visitor Reasoning for Leaving the Exhibit

The goal of this question is to explore how open or closed-ended the exhibit seems to be for the visitor. Visitors tend to leave exhibits for intrinsic reasons, such as feeling bored, or finished with the experience, or for extrinsic reasons, like having to go to lunch or being distracted by another exhibit. Leaving for intrinsic reasons could suggest a more close-ended exhibit experience.

Reasons for moving on to the next exhibit	Count (N=10)
Intrinsic	7
Extrinsic	3

#### Visitor responses:

Intrinsic	I had understood the concept, and there wasn't anymore to the exhibit.
Intrinsic	I think I was pretty much done. Not much more for me to do.
Intrinsic	I understood and wanted to go on.
Intrinsic	I saw the desired result, I guess.
Intrinsic	This one is a fast exhibit, once you move it you're done. Not very engaging.
Intrinsic	It was kind of boring, nothing new about it for me.
Intrinsic	I figured it out. Once I think I have learned everything I need to learn, and that there are no more surprises, I move on.
Extrinsic	My kids. (laughed)
Extrinsic	Checking out each individual exhibit.
Extrinsic	My granddaughter! (laughed)

## Conclusions

*Based on this small sample, we conclude that the redesigned Green Lips does not require immediate remediation. This evaluation did not identify sufficient impediments to visitor use, engagement or basic understanding.*

## APPENDIX: Graphic Panel

# gray step

Your visual system uses edges to detect differences.

- With the rope hanging down, compare the right and left sides of the board.
- Now lift up the rope and compare again.

### What's going on?

When the rope is down, you see the board as a single, uniform surface. But when you lift the rope, you reveal a sharp edge, and the two sides of the board look quite different.

In fact, both sides of the board are identical: Each side gets lighter from left to right, creating a central boundary. The areas just on each side of the boundary are similar enough that covering the edge—where the contrast is greatest—causes you to see the board as one uniform surface.

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