

Revealing Bodies: Summative Evaluation Brief Report

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Revealing Bodies was an experimental exhibition that explored the messages and meanings found in biomedical and anatomical representations of human bodies. It further explored what happens when these images are removed from their original context and reinterpreted for other purposes such as arts, advertising and politics. The exhibition also examined how the culture and point of view of the original creator may have shaped the image and what happens to this intent with the iterations of time and societal change.

The exhibition was approximately 4000 square feet. It was a mix of artworks, specially commissioned art installations, artifacts, medical specimens, interactive exhibits, and new technologies incorporating controversial biometrics software and texts. The exhibition ran for six months and showcased objects ranging from contemporary prosthetics made in the developing world to newspapers and periodicals, artists works, contemporary photographs of human dissections, and a rare 18th century wax anatomical model from the collection of Museo La Specola in Florence.

To evaluate the Revealing Bodies exhibition, we conducted two separate studies after the exhibition opened. The first was a tracking and timing study in which we followed 50 visitors as they moved through the exhibition, and recorded the amount of time they spent at each exhibit. The second study involved interviewing 43 visitors as they left the exhibition. The focus of the interview was on visitors' impressions of the exhibition: what they remembered, what they found surprising and disappointing, and what they felt related to their own lives. The visitors were different in the two studies (i.e., we did not interview the visitors who were tracked).

Below is a brief summary of the results. For more details, please refer to the PowerPoint slides following this narrative.

The tracking and timing study found that visitors spent an average of 27 minutes in the exhibition overall. This was high compared to the average time spent in five previous Exploratorium temporary exhibitions: 13 ± 6 minutes.¹ It was also significantly higher than the average 13 ± 3 minutes spent in 34 exhibitions of similar size at science museums around the country (Serrell, 1998).² The minimum time any visitor spent in the Revealing Bodies exhibition was 3 minutes; the maximum was 71 minutes. The longest average time spent at a single exhibit was 3 minutes. Visitors stopped at an average of 25 out of the 79 exhibits. 14% of the visitors were “diligent,” meaning that they stopped at more than half of the exhibits in the exhibition. This figure lies just below the average proportion of diligent visitors in similar exhibitions at other science museums, which was found to be $20 \pm 6\%$ (Serrell, 1998). Although only 14% of the visitors in Revealing Bodies were diligent, the visitors in general moved through the exhibition at a slow pace: 142 square feet per minute. Serrell (1998) states that the average “sweep rate” for science museum exhibitions of similar size is 287 ± 52 ft²/min. We also found that visitors spent approximately the same amount of time in each section of the exhibition, indicating that there was not a strong fatigue effect.

The interview study focused on visitors’ impressions of the exhibition. There were two main sections to the interview: the first asked visitors to choose from a list of positive and negative adjectives that could describe their experience in the exhibition. Visitors were told they could choose as many of the adjectives as they wished. The second section asked visitors open ended questions about what they found memorable, surprising, and disappointing in the exhibition. They were also asked if there was anything that related to their own lives.

In the choose-an-adjective activity, we found that significantly more visitors chose positive adjectives than negative ones (McNemar $\chi^2 = 12.0$, $p < .01$). The table below shows the percentage of visitors choosing each adjective. One particularly interesting finding was that a significantly larger proportion of teenagers (75%) than adults (35%) chose the phrase “made me want to learn more” (Fisher Exact $\phi = .35$, $p < .05$). Apparently, teenagers felt intrigued or motivated by the exhibition.

¹ “ 13 ± 6 ” means that there is a 95% chance that the true average falls between 7 and 19.

Visitors choosing adjectives to describe their experience

Adjective	Type	Percent of Visitors (N=43)
Interesting	Positive	84%
Thought-provoking	Positive	58%
Made me want to learn more	Positive	49%
Hands-on	Neutral	42%
Interactive	Neutral	37%
Fun	Positive	35%
Gory	Negative	33%
Too much reading	Negative	21%
Scary	Negative	12%
Passive	Neutral	7%
Boring	Negative	5%

The open-ended questions also yielded interesting results. Visitors spontaneously mentioned 37 (43%) of the exhibits, most of which were the same exhibits that showed high attracting power in the tracking study. This finding connects the results of the two studies, providing evidence of validity for both. When asked if there was anything about the exhibition that was relevant to visitors' own lives, 60% felt there was, and 40% were able to tell a personal story that connected to the exhibition in some way. Some selected examples of such stories are presented below:

My cousin is a pathologist, and had to do autopsies as part of internship. The pictures of the autopsy remind me of stories my cousin would tell in school. [Interviewer: Did the autopsy pictures shed any new light on your memories of your cousin?] It was interesting to see actual pictures. Obviously I had never seen that before. When he told me about it I had a visual picture but looking at actual photos, it all made sense.

The part about prostheses - since I'm a child I was scared of losing my limbs. I dreamt of losing a hand or a finger all the time. So it provokes those thoughts and memories. [I: Any idea why you had this fear?] No, but I had it until I was 15-18

² Two of the exhibitions in Serrell's study were located at the Exploratorium.

years old. Then it dissolves but it's still a scary thought. [I: Does your experience in the exhibition throw a new light on your memory?] No - other way. Having the fear makes me more interested in these - I have to look at them to lose the fear.

The [artificial] heart reminded me of my mom's health condition. Her artery was clogged and she had one of her valves replaced. I thought the valve would be a tiny metal piece but it's actually bigger than I thought it would be.

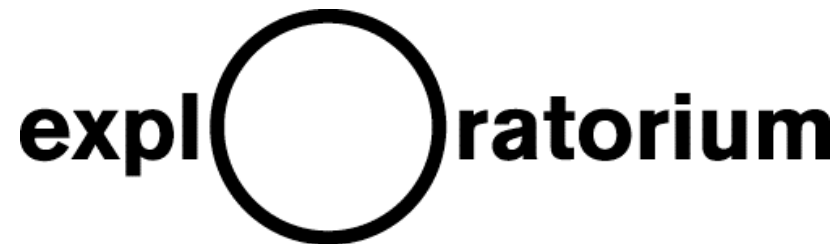
In summary, the findings suggest that visitors spent a fairly long time in the Revealing Bodies exhibition, found it a positive experience, and often made personal associations to its content. For more detailed results, please refer to the following PowerPoint presentation.

References

Serrell, B. (1998). *Paying Attention: Visitors and Museum Exhibitions*, American Association of Museums.

Revealing Bodies Summative Evaluation

Research & Evaluation Dept.



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Description of exhibition

- Total number of exhibits 79
- Total square feet 3,500
- “Hands-on” exhibits 23 (29%)
- “Look-only” exhibits 56 (71%)

Two Studies

- Tracking and timing
 - Surreptitiously follow a single visitor (in a group)
 - Which exhs? How long at each exh? In exhibition?
 - Collect data August 7-28 on all days of week
 - N = 50 visitors followed
- Exit interviews
 - Ask questions of every 3rd visitor
 - Collect data Aug. 26 - Sept 2 on weekdays & ends
 - N = 43

Visitors in tracking study

- Gender
 - Males = 26
 - Females = 24
- Age range — slight adult bias

13-19	6	40s	6
20s	10	50s	3
30s	21	>60s	2

- Individuals vs. groups
 - Individuals = 7
 - Single generation groups = 18
 - Inter-generational groups = 25

Overall tracking study findings

- Avg time in exhibition = 24.6 minutes
- Time ranged from 3 to 71 minutes
- Avg number of exh stops = 25 (32%)
- Most visitors followed sequence

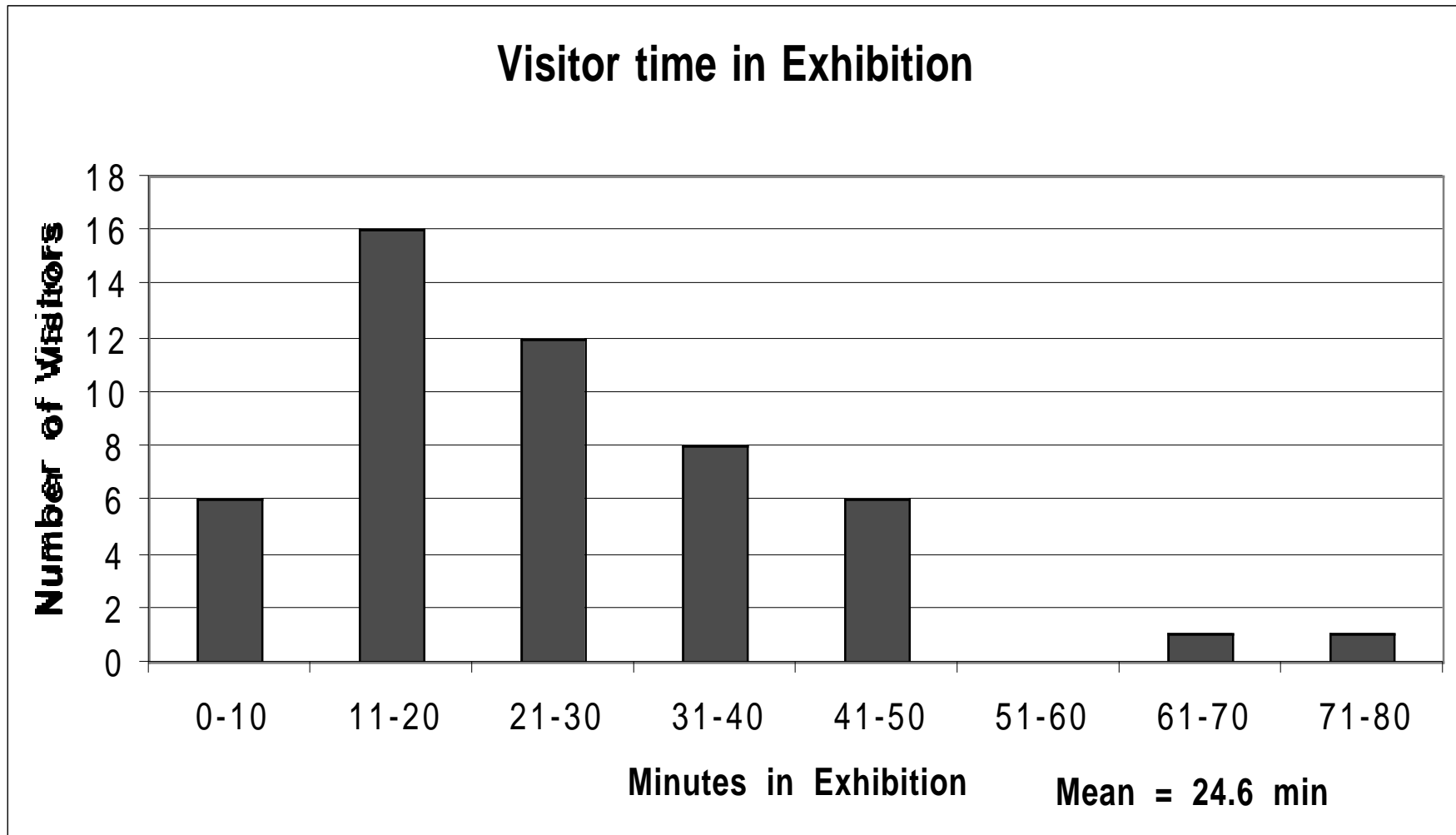
Comparison tracking results

	Bodies	Memory	Science Mus Avg
Mean time (min)	24.6	24	12.6
Mean exhibit stops	25 (32%)	13 (24%)	29%
Sq Footage	3500	3750	3398
%Diligent Vs	14%	5%	19.6%
Sweep Rate Index	142		287

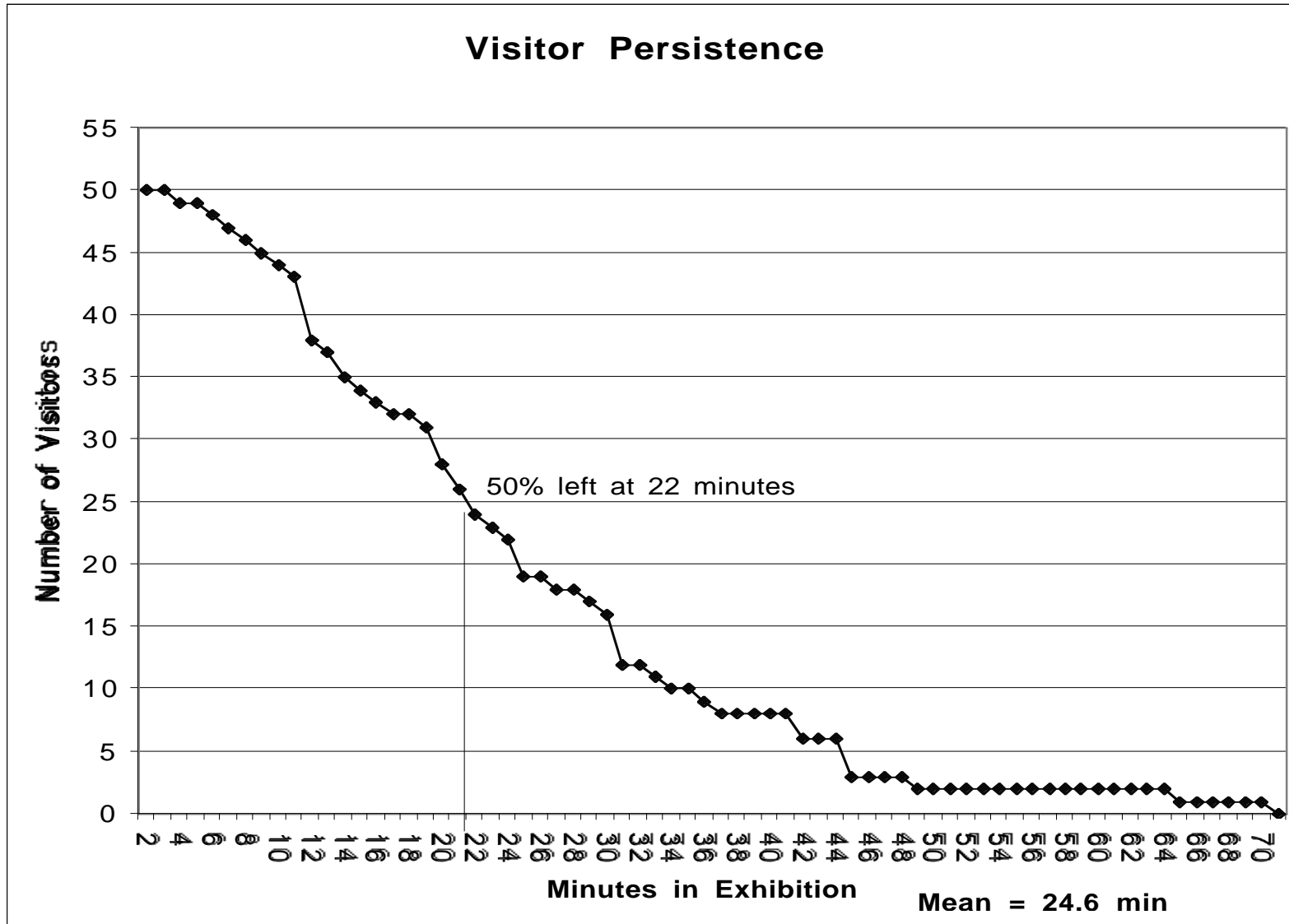
Time in Exploratorium exhibitions

Exhibition	Mean time (min)
Revealing Bodies	24
Frogs	11
Memory	24
Turbulent Landscapes	11
Boundaries	9
Cycles	9

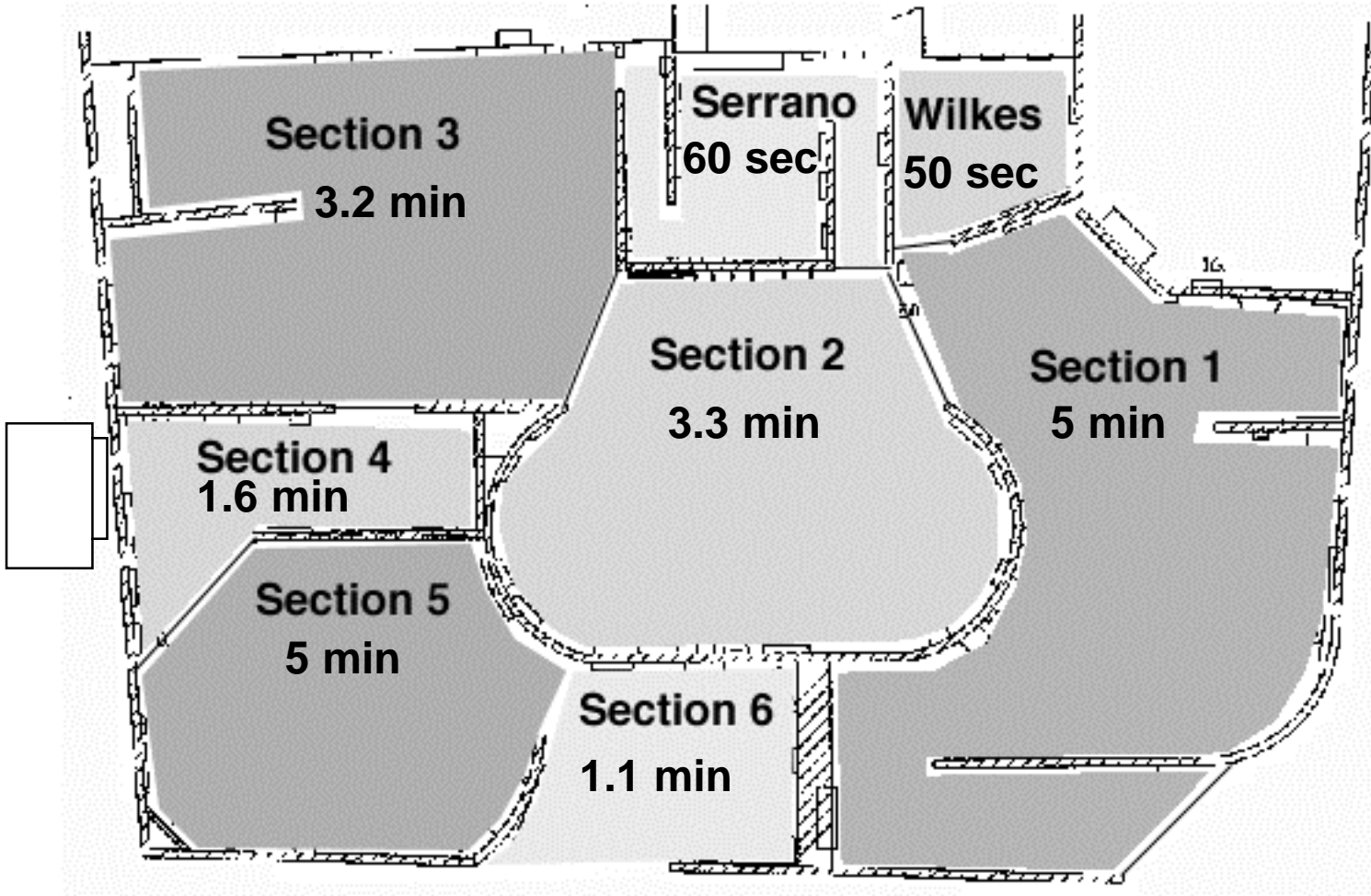
Time spent in exhibition



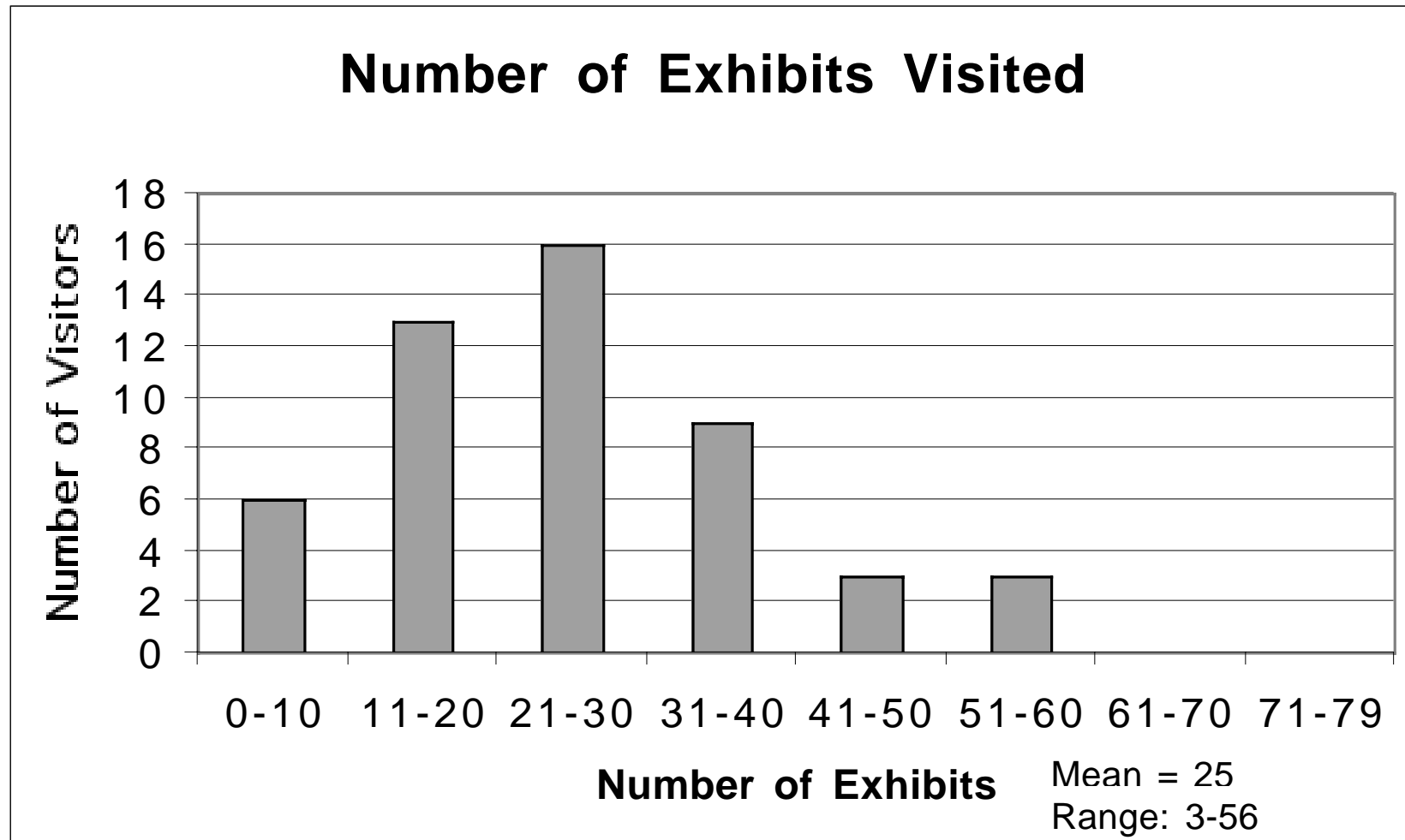
Visitor persistence



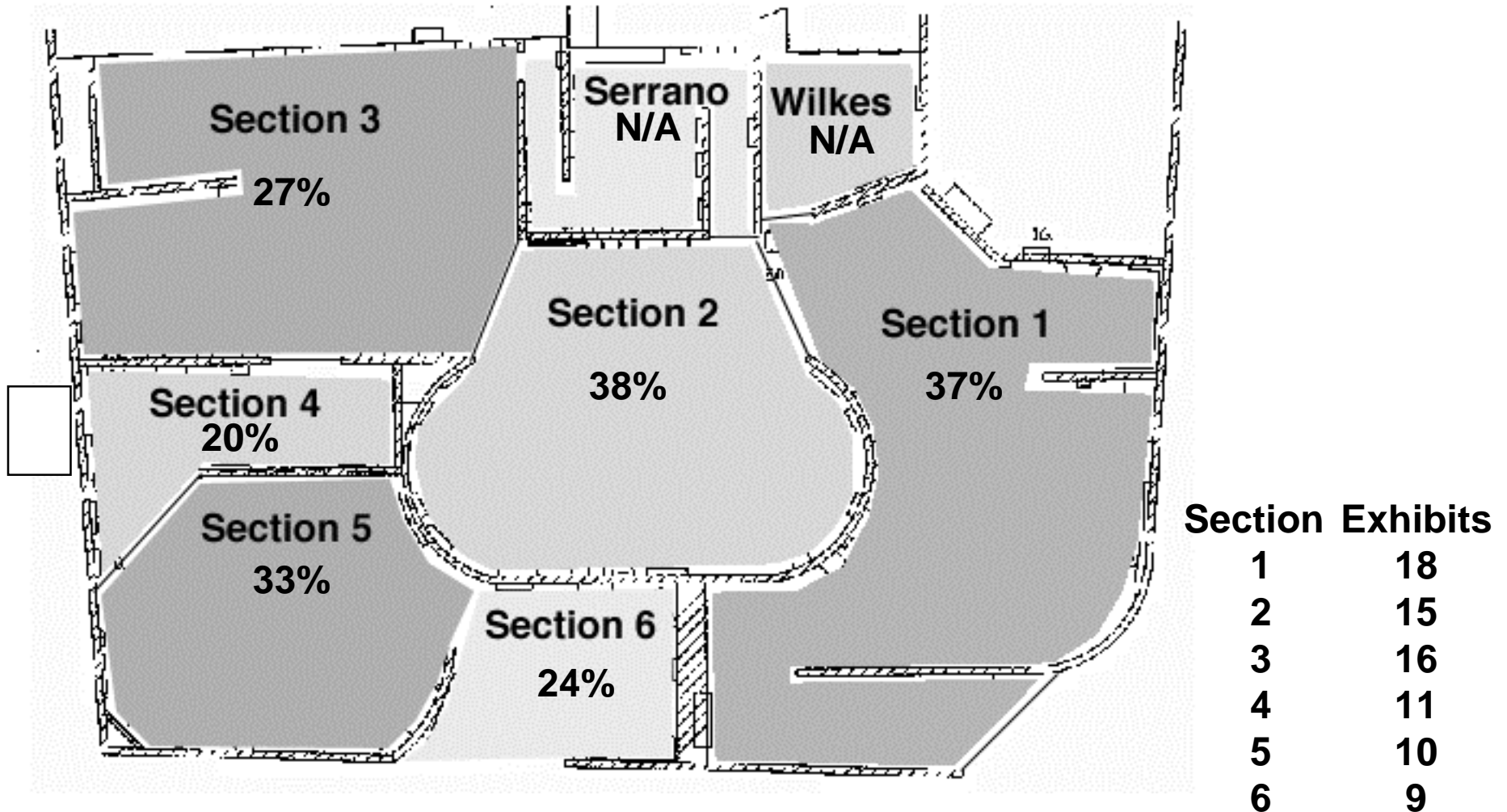
Mean time at exhibits in each room



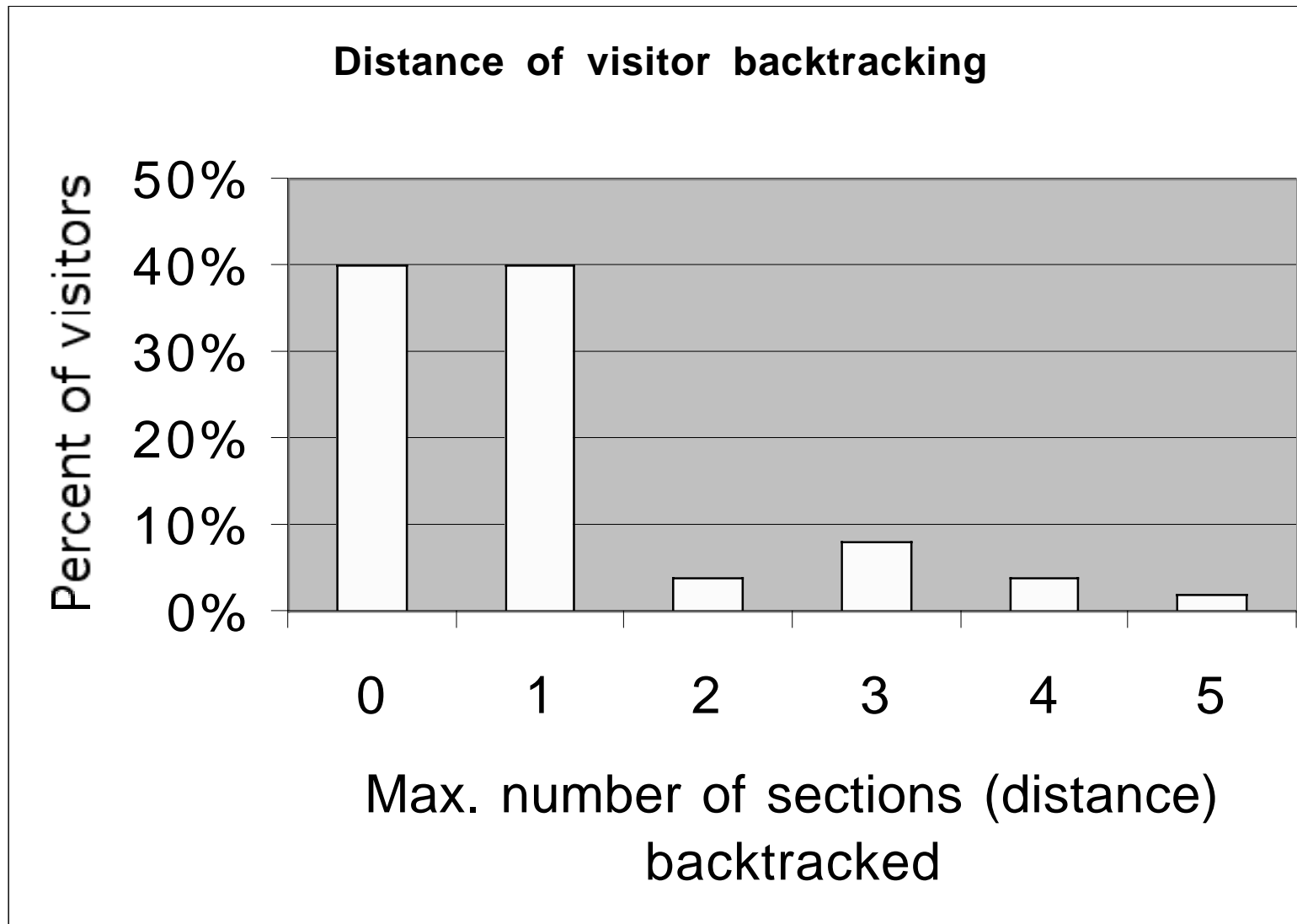
Mean number of exhibit stops



Avg percentage of exhibits visited



Distance out of sequence



15 highest-attracting exhibits

	Exhibit	N	%
High Holding	Alexa Wright Interactive & Wall photos	38	76%
	Project insides	33	66%
	Scott Serrano exhibition	32	64%
	Heat camera	32	64%
	Silhouette Activity	27	54%
	Italian Medical Venus	41	82%
	5 photos of cadavers by K.Wilkes	38	76%
	High powered magnifier	35	70%
	Visible Human Project Man/Woman	34	68%
	2 Phantom Limb Photos	34	68%
	Prosthetic Wall - legs	30	60%
	Mirror of 8 Questions	29	58%
	Dissected Hand (Photo)	28	56%
	Wax face	26	52%
	Visible Man & Woman	26	52%

15 longest-holding exhibits

	Exhibit	Mean Time (min)
High Attracting	Alexa Wright Interactive & Wall photos	3.0
	Scott Serrano exhibition	1.5
	Heat camera	1.4
	Silhouette Activity	1.4
	Project insides	1.1
	Waiting for Alexa interactive	2.6
	Anatomy Book	2.5
	URU #1: Register & fingerprint info.	2.4
	URU #2: Body Organ Donations	1.9
	URU#5: Statistical Comparisons	1.8
	URU #3: Medical Imaging	1.7
	Book: Identity	1.3
	Doppler artery device	1.3
	Xray Person/Light Table	1.3
	URU #4: Plastic Surgery	1.2

Description of interview study

- Exit interviews
 - 15 minutes
- 43 Visitors interviewed
 - Age
 - 31 Adults
 - 12 teens (10 - 18 yrs old)
 - Gender
 - 24 female
 - 19 male

Interview Questions

- Choose words to describe exhibition
- Memorable, surprising, disappointing, reminded of own life?
- Misled / missed point?
 - Serrano’s “self-dissection”
 - Wright’s “face value”
- Want in next temporary exhibition?
 - Walls vs. open like rest of museum
 - More hands-on vs. More to look at

Words chosen to describe exhibition

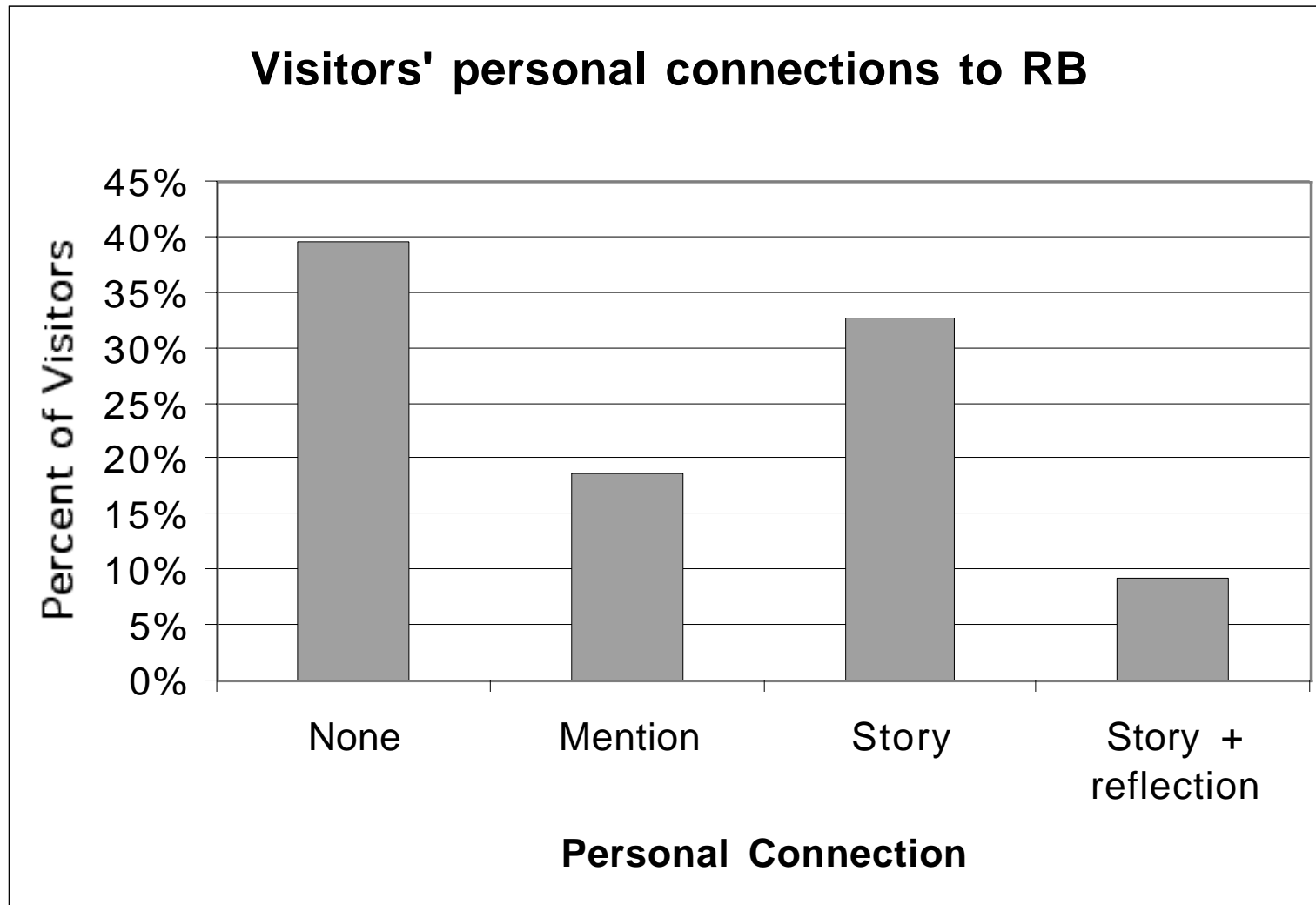
Chosen word	Overall (N=43)	Adult (N=31)	Teen (N=12)
Interesting	84%	87%	75%
Thought-provoking	58%	55%	58%
Want to learn more	49%	35%	75%
Hands-on	42%	42%	42%
Interactive	37%	35%	42%
Fun	35%	29%	42%
Gory	33%	26%	50%
Too much reading	21%	23%	17%
Scary	12%	16%	0%
Passive	7%	3%	17%
Boring	5%	0%	17%

Spontaneous recall of exhibits

Exhibit	Visitors recalling	High attracting	High holding
5 photos of cadavers by Wilkes	13	√	
Italian Medical Venus	12	√	
Heat camera	6	√	√
Alexa Wright Interactive	6	√	√
Prosthetic Wall - legs	6	√	
Project insides	5	√	√
Visible Human Proj. Man/Woman	5	√	
Scott Serrano exhibition	5	√	√

Note: High attracting & holding data are from Tracking study

Personal connections



Understanding at Serrano & Wright

Visitor Response	Serrano self-dissect (N=20)	Wright face-value (N=26)
Understood	45%	50%
Confused at first	25%	0%
Confused throughout	20%	31%
Not applicable	10%	19%

Do visitors want shows with walls?

Visitor Response	Visitors (N=43)
Walls	86%
No Walls	5%
Unsure	9%

Visitors' reasons	Visitors
Helps me focus	15
Helps me navigate	14
Highlights exhibits	6
Separates topics	3
Provides privacy	1
Protects children	1
Can miss rooms	2
Can't see in	1

Do visitors want more interactives?

