



Exhibition Design that Provides High Value and Engages Visitor Attention

by Stephen Bitgood

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Attention and value are at the core of the visitor experience. Visitors are more likely to pay attention to exhibition and program content if they perceive high value in the encounter. The current article describes a visitor model that offers a set of design principles to capture and engage attention and to provide high value to visitor experiences. The attention-value model (Bitgood, 2010; 2011; 2013) applies current psychological and economic theories to the findings of over 80 years of visitor studies (e.g. Bitgood, 2000; 2002; 2011; Loomis, 1987; Melton, 1935; Robinson, 1928; Screven, 1992; 1999; Serrell, 1998; Shettel, 1968).

In this article, *attention* refers to both psychological processes such as visual search and depth of cognitive processing, and measures or indicators of these processes such as approaching exhibits, stopping to view exhibits, viewing time, reading interpretive text. *Value* is defined in terms of behavioral economics: a ratio of benefit divided by costs. In economic terms, the satisfaction from “consuming” exhibits is balanced by the cost or investment in terms of money, time, and effort.

The Attention-Value Model

The attention-value model argues that the concepts of attention and value are of fundamental importance to the visitor experience.

The characteristics of attention

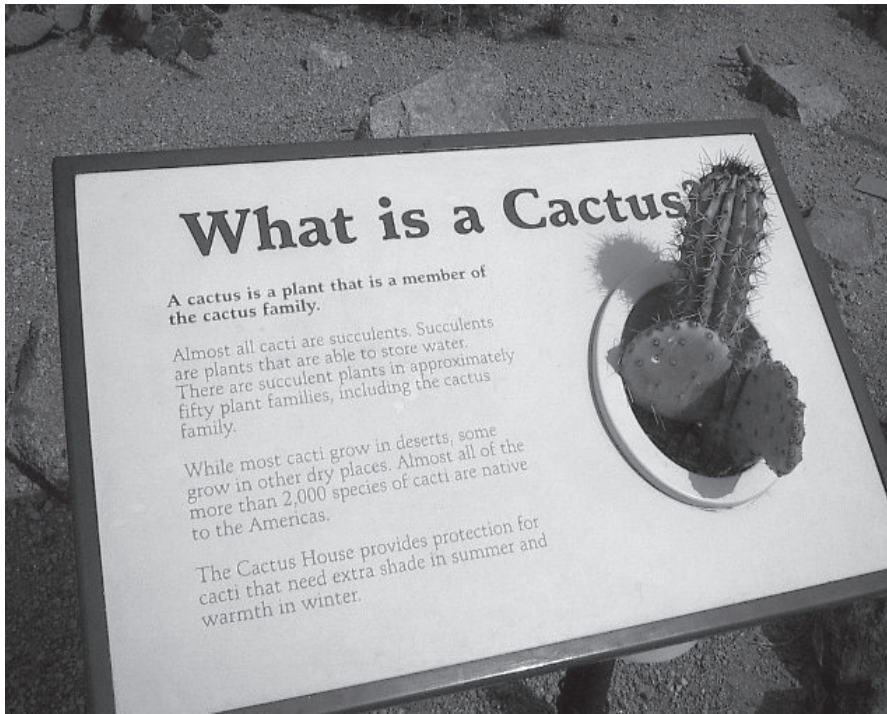
The varied processes of attention are complex and of critical importance to the museum experience. Visitors must engage their attention for any meaningful experience to occur. The most relevant

characteristics of attention for visitors include depth of processing, limited capacity, selectiveness, and visual search.

Depth of mental processing: Depth of concentration can vary from broad, unfocused, shallow mental processing to narrow, highly focused and effortful, deep processing. In museums, think of attention as a three-stage continuum:

- *Capture stage:* attention is broad, and not narrowly focused on one thing, similar to “window shopping.” In this stage, visitors respond in two ways: goal-directed (looking for something of interest) and stimulus-directed (responding to powerful sensory attractors such as large objects, loud noises or movement).
- *Focus stage:* attention is briefly narrowed and focused on an object or element of potential interest. During this stage the individual assesses whether an exhibit component (e.g., object, text panel) deserves the time and effort required for engagement.
- *Engagement stage:* attention is deeply focused with effortful processing of exhibit content. Visitors need to deeply engage if they are to learn, but engaging visitors is more difficult to achieve than capturing and focusing of attention because more time and effort are required.

Limited capacity: Because of the limitations of attention, attempting to carry out two or more meaningful tasks at the same time is usually unsuccessful (e.g., attempting to way-find and learn exhibit



A three-dimensional object on the text panel is more likely capture visitor attention than a panel without the object. Photo courtesy of Stephen Bitgood.

content) or even dangerous (e.g., texting while driving). Capacity is also limited in that there are only a few items that can be mentally processed at one time. Too often, visitors are overloaded with more information than they can mentally process.

Selectiveness: Visitors do not pay attention to all the objects and interpretive material in exhibitions. Visitors generally select or choose to give attention to exhibit components that both capture and have the potential to deliver a satisfying experience with minimal investment of time and effort.

Visual search: Viewing exhibitions requires shifting attention from one exhibit element to another in some sort of order. Visual search problems in exhibition settings are compounded by movement through the environment so that the visual landscape is continually changing. Visual search is influenced by:

- **Type of search (sequential versus simultaneous):** Sequential processing examines one exhibit element after another in an orderly pattern; it is usually more goal-driven and likely

to result in a more complete viewing of exhibit components. Simultaneous search involves looking at the total complex of elements and waiting for something salient to “pop out” of the complex. Simultaneous processing is more stimulus driven and is likely to result in the examination of fewer exhibit components and only partial understanding of the interpretive messages.

- **Hierarchy of search:** Three-dimensional objects attract attention first; second, concrete images such as photos or illustrations; and finally, visitors look for interpretive text to complement the concrete, three-dimensional objects.
- **Gestalt/perceptual principles** also play a role in visual search. Items that are closer together are more likely to be viewed in sequence than items that are spaced far apart. Familiar-shaped objects are more likely to attract attention than unfamiliar ones.
- **Learned habits** (e.g., reading): At least in our culture, people read four blocks of text in the following sequence:

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Visitors rarely engage with this panel because it requires too much time and effort to decode and process. Photo courtesy of Stephen Bitgood.

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Visitors generally select or choose to give attention to exhibit components that both capture and have the potential to deliver a satisfying experience with minimal investment of time and effort.

Upper left, lower left, upper right, lower right. If the sequence of reading different blocks of interpretive text is important, then the blocks need to be sequenced in a way that conforms to reading habits.

Value as a Motivational Force

Value, defined as a benefit-cost ratio, emphasizes that we must consider both the payoff obtained when a choice is made and the cost incurred by the choice. Behavioral economic approaches (e.g., temporal discounting, optimal foraging theory) use a value ratio to explain how individuals use this combination of benefit and cost to make choices (e.g., Bitgood, 2011b; 2011c). When value and attention are combined into a ratio of benefit/cost and applied to museums, several important implications are revealed (Bitgood, 2011a; 2013a):

- *The value ratio:* Attempting to improve only the benefits (e.g., select high interest content, use provocative design) is likely to fail if the cost of time and effort is too high.
- *The small-cost theorem:* It is generally easier to reduce cost (e.g., decrease the

number of words in a text panel, place the interpretation panel closer to the object it describes) than to increase the utility (e.g., find higher interest content/objects, develop more provocative exhibit elements).

- *The available-alternative theorem* suggests that the decision of what to give attention depends upon the choices available at any moment. When given a choice, visitors engage with exhibit components that are perceived as higher value than the alternatives available.
- *Value is relative, not absolute.* Choice depends upon the relative value of alternatives, not on the absolute value of any alternative. A high quality-long text label may not fare well when competing with a medium quality-short text label (Bitgood, 2011c). On the other hand, a medium quality-long text label may lose the battle against a low-quality-short text label.

Selected Exhibition Design Principles

In this section design principles are organized according to the concepts of the attention-value model. Note that visitor evaluation of exhibitions and



The tubes act as focusing devices by directing visitor attention to relevant objects (e.g., bird's nest). Photo courtesy of Stephen Bitgood.

programs is the only way to ensure that the principles are being applied and working effectively. Each stage of attention has a unique set of variables that influence attention and a unique set of measures or indicators of attention. In addition, some of the variables appear in more than one attention stage. [See Bitgood (2010; 2011; 2013) for a more detailed description of the attention-value model, the evidence for it, and design principles that follow from it.]

The Attention Capture Stage

The most important factors associated with attracting power (how attention is captured) include:

- **Isolation:** To obtain the maximum attention, visually isolate an exhibit object, display or component from others. The fewer alternatives available to compete, the more likely an object or exhibit element will receive attention.
- **Relative size:** Scale objects, relative to the surrounding objects—the larger the object relative to others, the more likely it will attract attention.
- **Line-of-sight placement:** Place exhibit elements so that they fall easily within a visitor's line of sight as they move through the exhibition spaces.
- **Visual search sequence:** Make the intended search sequence obvious to the visitor by the layout of exhibit elements and by explicit cues (e.g., numbering, layout of components).
- **Powerful distractors:** Minimize competing sights and sounds from powerful attractors. Once you lose the visitor's attention, it's difficult to get it back to an exhibit component. Eliminate overly powerful signs and sounds that demand too much attention.
- **Contrast with background:** Ensure that an exhibit component “stands out” from the background rather than blends into it.
- **Visual competition:** Minimize visual competition among exhibit elements by: minimizing the number of elements visually available at any moment; designing the elements so that elements do not compete with

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To appreciate the way attention and value work together it is necessary to have sufficient knowledge of the visitor studies literature and of how the concepts of attention and value are applied to museum settings.

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one another (spacing, position of elements, and/or sequencing cues such as numbers).

- *Object satiation*: Reduce object satiation by designing variety in content of exhibit elements. Displaying multiple objects similar in nature (e.g., sea shells, pottery, snakes) hastens the onset of satiation.
- *Fatigue*: Minimize mental and physical fatigue by designing interesting exhibits, by encouraging breaks during long viewing, by keeping the mental effort to a minimum during viewing, and by providing good navigation so that visitors do not waste their time and energy trying to find their way.

The Attention Focus Stage

When visitors begin to narrow their attention to a particular exhibit element, they appear to spend a few seconds assessing the potential value of engaging their attention. The exhibit element must promise a good value ratio for the visitor, otherwise attention will not get past the focus stage. The most important principles are:

- *Isolation*: Visitors are more likely to focus on an object that is isolated from others.
- *Focusing devices*: Visitors can be encouraged to focus on an exhibit element by spot lighting, by raising the object above other objects in an exhibit case, or by placing the object so that it is at the center of the visual space. Magnifying an object is another of the many techniques

that facilitate focusing. If attention is focused on an exhibit element, and if it promises high value, visitors are more likely to engage.

The Attention Engagement Stage

Engaged attention requires narrow focusing, as well as deeper and effortful mental processing. Visitors are reluctant to commit the time and effort required unless the promise of a sufficient payoff is there. Reading text for longer than 10 seconds is perhaps one of the better signs of engaged attention since reading requires deeper mental processing than passively viewing an object.

- *Value*: Design for a high value ratio—the cost (time, effort) is at least as important as the perceived benefits.
- *Interest level*: Select exhibit topics and objects with high visitor interest.
- *Stimulate*: Use provocative content and design (ask questions, confront misconceptions, use catchy descriptive titles).
- *Mental effort*: Minimize the mental effort required to process the content (e.g., bullet main points rather than paragraph, eliminate unnecessary verbiage).
- *Prompting*: Prompt engaged attention by instructing visitors on what to look at or what to do, and by providing supplementary cues (questions that prompt visitors to look for answers). [In Section Three of my *Attention and Value...* book (Bitgood, 2013), I describe a series of

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This introductory panel requires low cost in terms of time and effort since it tells visitors what there is to see and do in a few brief statements. Photo courtesy of Stephen Bitgood.

studies that used prompting to increase engaged attention.]

- **Sensory distractions:** Minimize strong, competing attractors. Loud noises, sudden movements, and flashes of light demand attention and only serve to distract visitors from meaningful engagement with exhibit content.
- **Social engagement:** Encourage group interaction and discussion. Since most visitors come in groups, and since visiting is very often a social experience, engagement can be increased if group members discuss exhibit content together.

Summary

The concepts of attention and value pervade all aspects of the museum experience. The key to effective design is to understand and manage attention as well as provide a high value ratio to the visitor. To appreciate the way attention and value work together it is necessary to have sufficient knowledge of the visitor studies literature and of how the concepts of attention and value are applied to museum settings. The limitations of space in this article do not do justice: to the evidence that supports the attention-value model, to the details of the model, or to how the model can be effectively applied to museums. Additional material can be found in several sources (Bitgood, 2010; 2011a; 2013b; 2013c; 2013d). ☀

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