Feher, E., & Rice, K. (1985). Development of Scientific Concepts Through the Use of Interactive Exhibits in Museums. *Curator*, 28/1, 35-46.

Summarized by
Don Thompson
Center for Social Design

Feher & Rice suggest that the museum can be a valuable environment in which to study learning processes. As an example, they studied the role of naive, or preconceived notions, on learning which takes place at museum exhibits. This process utilized three sets of interviews with school children at two exhibits whose purpose was to explain principles of light and vision.

Fundamental to the project was the idea that children must understand that visual phenomena are dependent upon interactions between the object which produces the effect, the person who serves as a receptor, and the light which passes from the object to the receptor. During the initial interviews, students who viewed an exhibit were asked what they had seen, and how they would explain it. It was noted that the subjects consistently stated that what they saw was produced solely by the object.

Because it was important for them to understand their own active role as a receptor, during a second set of interviews, children were shown that the phenomenon which they had witnessed was partly dependent upon the way in which they viewed it, rather than solely on characteristics of the object. When these subjects were asked to explain what they had seen, it was found that they were much more likely to describe themselves as being a part of the phenomenon. For a third set of interviews, children were asked to describe the nature of their role as a receptor.

Overall, the authors identified four distinct types of explanations which children offered for the phenomena which they observed:

1. The effect is all in the object— no awareness of their own role as a receptor of visual stimuli.
2. The effect depends on the object and the receptor— without discussion of light as a separate unit with properties of its own.
3. The effect is due to the light going from the source to the object— belief that the phenomenon is primarily dependent upon characteristics of the light.
4. The effect involves the light, the object, and the receptor— awareness that the phenomenon is dependent upon the properties of three distinct, interacting elements.

Feher and Rice identified two important characteristics of museum exhibitions which appeared to greatly improve their ability to produce a full understanding of physical phenoma. These characteristics are (1) that an exhibit is usable by the visitor in different ways, offering more varied exploration of a topic, and (2) that different exhibits explore the different aspects of the same phenomenon, providing a, "richer learning atmosphere". In addition, the authors suggested that the study had shown the suitability of the museum environment as a place to study learning processes.