

# The Aesthetic of Frank Oppenheimer

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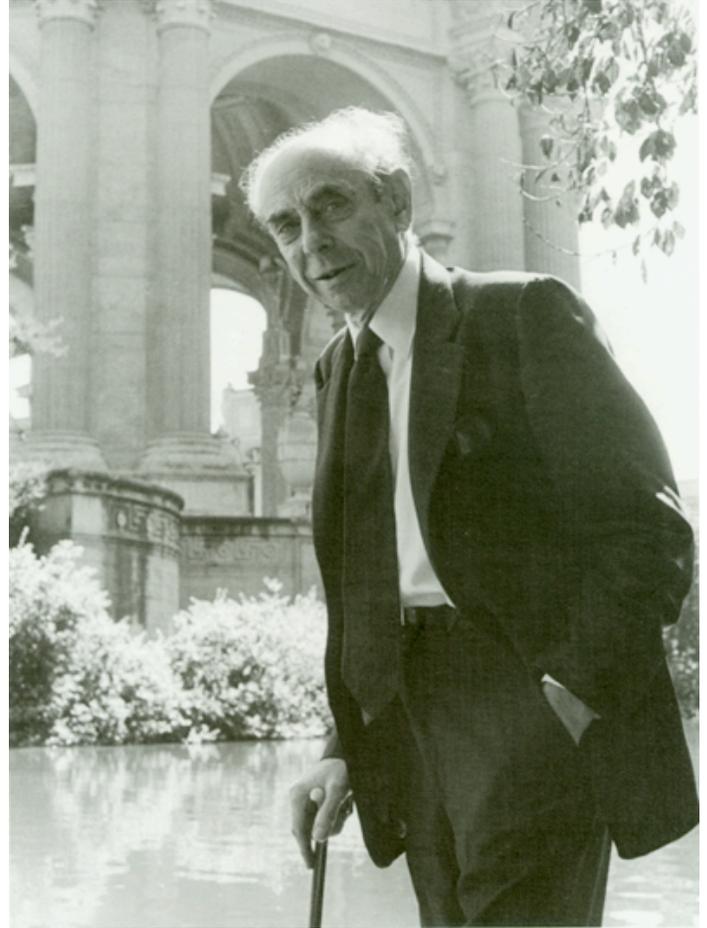
Who is Frank Oppenheimer and what does he know about aesthetics? Oppenheimer is a physicist, an educator, and founder and director of the Exploratorium.

He says he only knows "if something feels good or not," but that apparently simple bit of homespun philosophy is but a thimble-full of an aesthetic that has had a worldwide impact on museum conception and design.

Oppenheimer's name is virtually synonymous with 'hands-on' and 'participatory' learning, a name (along with that of the Exploratorium), which resonates in existing and planned institutions as far flung as Argentina's proposed Escuela Del Sol, China's Shanghai Science Center and Beijing's Science and Technology Museum; London's Science museum; Paris' Parc de La Villete; Hong Kong's Museum of Science and Technology, and Venezuela's Museo de Los Ninos, to name only a handful.

The application of Oppenheimer's aesthetic of "how things feel" to the process of exhibit conception and design is well known. But it is too narrow an application. In an afternoon of conversation, excerpted here, Oppenheimer's freely associated thoughts and his anecdotes, reveal other areas within the creation and operation of a museum (not to mention such diverse topics as vacuum cleaners and cattle ranching) to which the aesthetic of "how things feel" might apply.

The Exploratorium started with the idea that science and one's world is understandable. It introduces people to science through perception -- how one sees and hears and feels. Perception is the basis for what we find out about the world and how we interpret it -- whether we do so directly with our eyes or



develop tools, such as microscopes or accelerators -- to help us.

Perception is also the basis for art and poetry and literature. So perception makes a very good beginning for a place that seeks to put everything together for its visitors. The Exploratorium looks at nature from the point of view of the scientist and the artist. It demonstrates the workings and connections in nature and communicates these on the level of human experience.

There is a visible beauty, form and structure to the natural world that the Exploratorium describes. The underlying aesthetic principles of the Exploratorium, however, are somewhat less visible. They have less to do with what

one sees -- the traditional aesthetic consideration of most museums -- and more to do with what one feels, or more particularly, how one is made to feel.

Frank Oppenheimer says that little children never seem to cry at the Exploratorium. He once saw a kid crying but later found out that the tears were because the boy's parents were making him go home! Oppenheimer believes that a place like the Exploratorium effects the way people live and work and how they think about not only science and art, but about technology and about themselves.



*When I asked Dr. Oppenheimer how the Exploratorium does this, he began by giving me a Zen-like answer,*

"If you are designing a doorknob, there are a variety of ways of doing it. It may actually be better to make a doorknob square. But they feel nicer, those big heavy round doorknobs. They're really lovely. So we use them."

"Think about how a car door sounds when it slams," he continued. "Manufacturers found out that they could sell cars better if they made a car door that sounds solid, even if it's made out of tin. That is aesthetics at the expense of substance of course."

"Now let me give you an example of something that doesn't feel good. It's just plain aggravating the way food comes packaged. Or

battery dry cells. It's really unpleasant to try and get a battery out of a little two pack. You have to cut it with a knife and then pull a tab up and it makes a crinkly and awful sort of noise."

*How on earth else might batteries come?*

"Loose!" shouted Dr. Oppenheimer, "And frankfurters too. I don't like them packaged. They are all sort of shrunk together that way."

"And vacuum cleaners. They are hard to steer and they make that god-awful racket. It's because nobody cared what it is like to run one. I'm sure it's not the economics of it. It's just that nobody paid any attention to the feel of it or what it was doing to other people."

*Are you saying that there is a need for paying more attention to "what feels good" on a broad scale -- that not only vacuum cleaner manufacturers, but museum administrators and society in general have all lost sight of aesthetics in their decision making ?*

"One of the things that has puzzled me is how to involve aesthetic decision making in more of what society does. It isn't like science. You can't go and ask an expert, 'Will this work or won't it work?' Congress can't say, 'Well, we can't make up our minds, to let's go to the National Gallery and look around for a while and come back.' It doesn't work that way. The only way I think it can work for vacuum cleaner people, for museums, for society as a whole, is for aesthetic decision making to be part of everybody's experience from youth onward."

"That means that toys have to be made well. That means that when children like or dislike something they eat, that their parents should pay attention to it. Aesthetics involves both the notion of cultivating taste and the business of building up tension and then providing release of tension. This should be incorporated into the experiences of young children so that it becomes an integral part of their thinking. Eventually you will have an adult population for whom aesthetics have become the basis of decision making, not an afterthought. When people say that they need more art in their city,

they say it with exactly the same feeling that they might say we need more benches. It's not something very deep in the way things ought to be. I don't think you get people to consider aesthetics at a late stage. I think it has to be a part of one's upbringing."



*Is it fair to ask whether for you, the decision to become a cattle rancher was an aesthetic solution to being blacklisted for 10 years?*

"Ha Ha. I think I did some things that were not so aesthetic. We had these big wonderful meadows that were all boggy and you could hardly hay them. So we decided that we had to put drain ditches in and that changed the look of it and the feel of it."

"Yes, there was much that 'felt good' about it. Working with water and irrigating and getting water out of the rivers when they were wild in the spring, or later on in the year, when there was just a little trickle. Watching the water spread out all over the grass. And mowing. All of those things were quite wonderful. When I plowed I thought, 'God, this is going to be a great time to think about all kinds of things.' But I didn't. I just watched the furrowing and got intrigued with the process of the dirt turning up."

*You believe that you integrated the aesthetics of what you just described -- of what feels good to you -- into the Exploratorium. How?*

"One way is to try to make the exhibits so that they're not frustrating. So they feel nice. The kind of things that we put out there, some of them are there just because they feel nice. For instance, we have one exhibit that is simply a big ball bearing. Next to it is a sign that says 'Some machinery feels nice.' We try to enable people to do what they want to do or might think of doing with an exhibit. They are flexible enough ."



"One exhibit. The Prism Tree has these cords that you have to pull up so that you can look through a prism. If the cord is too short and can't reach to where I want them to, I get really mad. So at the Exploratorium, we try to make it so you don't get mad."

"Of course there are some things that we haven't done well. It doesn't bother me, but some people don't like all the noise. For most

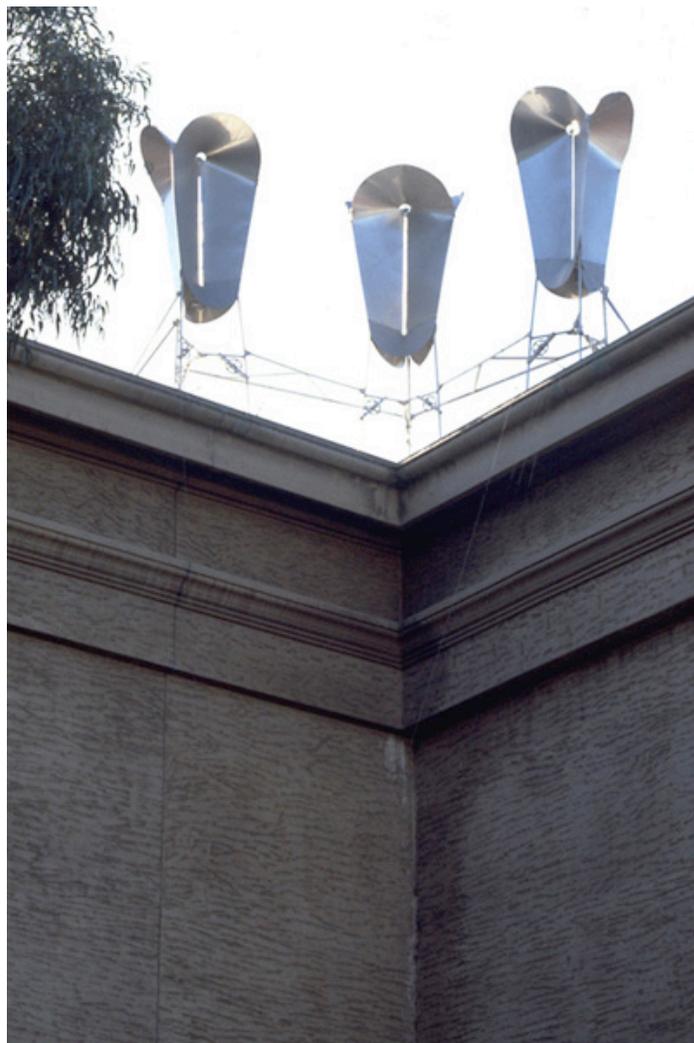
people it isn't annoying and I think that is one of the reasons why they behave so nicely. The fact that we aren't rigid about people's behavior helps."



"At one point, I thought I knew where the entrance was going to be -- on the West side. But people also kept coming in through the North door too. And then we wanted to open up the East door so people could see Maybeck's beautiful rotunda. So now we have three entrances with three separate ticket takers. Otherwise we would have made everybody take long hikes to get in just because we had some idea about where they should enter. It seems that an awful lot of things are decided because it's something that I'd like to happen to me."

*So you rely on personal intuition?*

"That's right. I can remember working with an artist named Doug Hollis, who was an artist-in-residence at the Exploratorium. It was his first attempt at building a wind harp and I spent a lot of time with him just doing odd experiments, seeing how one could transmit sound along wires and along rods and how to couple it. I think I sort of taught him to explore more. He thought he knew exactly what he was going to do. Only it never works out too well that way. So we took time off to do this kind of fiddling around with all kinds of things. It was great fun and he has now become entranced with such fiddling."



The Aeolian Harp by artist Doug Hollis on the roof of the Exploratorium

*I always knew that physicists fiddled a lot, and that people at the Exploratorium fiddled a lot. But I didn't know that you were fiddling around with aesthetics in creating the museum. Do you think that other museums do enough of this fiddling?*

"I know that they are interested in the aesthetic result, yet they seem to want to impose something on people rather than make it possible for people to make their own decisions. Like the Guggenheim Museum in New York."

*You don't enjoy walking through the Guggenheim?*

"I don't know, because you can't make any decisions."



*You just have to keep going downhill?*

"If you want to bring somebody back to see a certain painting, you have to take the elevator to the top and go back down the ramp."

*You mean you can't walk in the wrong direction?*

"Oh you can. But most people don't. Even so, you see the paintings in a certain order."

*How does the Exploratorium allow people to make their own decisions?*

"The Exploratorium had architects who wanted us to do our offices with low partitions that formed little work cubby holes that have shelves with plants. They wanted our office to look like that. They took me to one which they thought was so good. Everyone was working away in their cubby holes. Suddenly, I yelled something out loud and everybody popped up out of their holes. I told the architects, 'See what would happen? I wouldn't be able to yell.' The architect answered that a place such as this teaches people to talk softly. Hell, I don't

want to be taught -- or to teach anyone -- to talk softly. They said another thing like that about doing a certain thing to stop the kids from running inside the museum. Well, why should we stop the kids from running? I had a hell of a time convincing them that they really weren't doing any harm. They hardly ever ran into anybody, but it was just sort of something a little bit out of control and so it worried them to let the kids behave naturally. I think it's quite wonderful that we don't mind losing some control. So there again was something that I liked -- I like to see the kids run -- and I had to impress my aesthetic on the place. For the architects, it wasn't even an aesthetic question"

*Perhaps it was more a question of being sued.*

"One must make decisions like that. The way a place is comes about from making decisions about many details. The general view is that an executive should not pay attention to all these details. I don't think that's the right way to be. It doesn't work when you are doing experiments and it doesn't work in art."