One of the key messages of human-centered design is that design adaptive to human beings is intimately linked with human intelligence. This interrelation holds true for fundamental biological reasons. Experiencing adaptive design establishes mental connections that aid intelligence; and conversely, engaging in adaptive design is an exercise in problem solving. We have every reason to believe that adaptive design increases the conceptual and reasoning abilities of the designer — that it can actually raise the designer’s overall intelligence. An analogous reasoning lies behind parents’ conviction that exposure to complex structures such as mathematics, other languages, and music at an early age increases their child’s intelligence.

How does architectural design utilize this connection between adaptation and human intelligence? For the most part, it doesn’t. What is actually happening?

A little bend here, a little crumple there, mixed with some creative dialogue and presto: you have got yourself a fine piece of architecture, or so architecture students are misled to believe. The truth is that you have only a piece of construction paper that may at best support an allusion to architecture, but only at the smallest scale. So complex are the geometries at work here that the professor is unable to explain them in any way but as a celebration of abstract form or its superficial appearance. But all this model building occurs at the expense of adapting the design to human needs; indeed, this sculptural process can take place only if adaptation is willfully ignored. Glossing over the real issues of materials and structures necessary to even begin to conceive of such a form, professors encourage (perhaps unwittingly) this type of expression from their students.

We are rather alarmed at the pervasiveness of this disconnecting way of thinking in architecture. Architecture is founded upon the mechanism underlying human intelligence that connects thoughts and ideas. We strive to establish connections while at the same time digging deeply to make sure they are logical
ones, and are not based strictly on surface appearances. We make efforts to connect ideas laterally (among bits of information on the same level) as well as vertically (depth of understanding), in analogy with neural connectivity. In this manner, we can build an intelligent framework into the discipline itself.

Yet a process of limiting connections is firmly in place in design. This is an operation found in mistaken analogies. We see this phenomenon in individuals and cultures that have a restricted base of scientific knowledge, or are cut off from it. Mistaken analogies could be due to lack of a technological advancement, a lack of education, or choosing ignorance and superstition in the midst of a knowledge-based society. In extreme cases, human beings raised in isolation do not develop the necessary connections to fully assess systems outside those they have generated.

Pre-modern cultures that tried to reconstruct objects of the modern world — airplanes and guns as sculptures, strictly through appearance — lacked an understanding of how these devices operated, and thus failed to replicate their function/utility. This is not to say those people could not understand the process involved in the design and fabrication of airplanes and guns; they simply were not taught how. Once exposed to the applicable knowledge base, people from those cultures were able to make the connections necessary to fully replicate technology.

Mistaken analogy is an established way of thought celebrated by famous contemporary architects, who declare that their buildings are on the point of “flying off” just because the edge resembles a wing. But, like primitive sculptures of airplanes in the jungle, the buildings refuse to take off. Architects embrace mistaken analogies as a way of thinking and talking about their designs, and are ironically awarded prestigious prizes (via the celebrity factor more than the value of their designs). This success through rewards keeps the entire discipline — the media, critics, clients, and academia — fixated on the mistaken analogy of surface appearances.

Modern psychology tells us that whenever the human mind is confronted with an insufficient knowledge base for constructing logical connections, it invents or manufactures a nonsensical explanation for phenomena. Inventing untenable models follows an essentially anti-scientific practice. Yet, still, this strategy persists.

In making a comparison between a conceptual construct and actual objects, one needs to pay close attention to the nature of the metaphor. It is crucial to rely upon empirical verification in drawing an analogy. Psychologically indeterminate concepts tempt architects into a false model. Meaning consequently becomes a mental construct, something hidden behind overt behavior. False assertions about reality survive because their truth cannot be assessed in terms of physiological states and processes. Far from being recognized as a shortcoming, however, proponents of such a concept try to make it look more determinate than it really is. Idealizations are concepts that cannot be anchored on observable phenomena.