

## Events on the Skin

Let's think a little about the human senses. They're often signified with terms like "the five senses" or "the five sensory organs." I gave the HAPTIC Exhibition the subtitle "The Awakening of the Five Senses." But who on earth came up with the figure five? Is it meant to apply to the simple icons of eyes, ears, nose, mouth and hands? As for the sense of touch, brushing softly against something with the fingers is not the same as grasping a doorknob tightly with the whole hand. "The sense of pressure" would be a better description for the latter. And as for the sense of taste, the feeling of licking whipped cream with the tip of the tongue is completely different from that of packing a whole slice of bread into the mouth. Minutely examined, the senses would number at least a hundred, not five.

On the other hand, we might be able to limit the senses more by narrowing them down. If we think of the sense of taste as a combination of smell and the oral sense of touch, the sense of taste becomes part of each smell and touch. If we set the hurdle for discerning separate delicate stimuli as language, then sight, hearing and touch could pass, but smell and taste are a little iffy.

The physicist Hermann Ludwig Helmholtz (1821-1894) said, "Everything is an event on the skin." Come to think of it, the sense of sight is a response to the stimulus of light on the retina, a circular membrane 4 cm in diameter. The sense of hearing is likewise a response to movement of air that's perceived by the eardrum, a membrane only 8 mm in diameter set deep in the ear. The senses of smell and taste are responses to the components of matter that touch the surface of the mucous membranes in the nose and tongue. So membrane perceptions are not limited to those occurring on the skin. All human perception originates in the responses of membranes to things physical, stimulation transmitted to the brain through the nervous system. A human being is like a rubber ball wrapped in an extremely delicate membrane. Different areas on the ball's surface elicit different senses. Our image of the

world is based on the multifarious stimuli that are perceived on the membrane and transmitted to the ball's nucleus, the brain. Design is a service for these sensitive membranes.

In a way, the five senses are interrelated. The sense of sight is not self-contained, but works in conjunction with the senses of hearing and of smell. Now that I think about it, our senses have developed in concert. If we think about the process by which the senses of newborn babies gradually begin to function, we might be able to understand their interrelation.

We often say that babies can't see, but it doesn't mean that their eyelids are shuttered. Surely the light comes through the lenses of their eyes and the retina is exposed to the light, and then transmits communication signals to their brains via their optic nerves. Therefore, saying that babies can't see is really saying not that their eyes don't function properly, but that their brains can't understand the meaning of the signals that are transmitted. In the same way, babies who can't see also can't hear or distinguish flavors. The sensors of humans who have just come into the world do function, but their brains are unable to discern the meanings of the stimuli. By "meaning," here, I mean the value to the person himself or herself. This is something that is understood by and by. A baby instinctively suckles his mother, drinks her milk, hears her voice, and feels her skin, gaining in experience until the visual stimuli of his mother and the scent of her milk, the feel of her breasts and so on are bundled up together, acquire value, and develop into awareness. This is how I think consciousness comes about. Furthermore, experiences in hearing, touching, seeing, tasting, and smelling acquire meaning all together. It seems to me that hearing, touching and seeing are interrelated, so come to fruition simultaneously.

This might resemble the way a three-dimensional object becomes clear with "binocular vision." The instant the brain manages to interpret the composite visual impression captured by the eyes, which are working together, the image abruptly becomes a vivid solid figure. Likewise, when sensory stimuli assembled by more than one sense come together, fitting tightly in the

brain, an image is born. Neuroscientists term these qualities of sensory experience “qualia.”

Mossy *geta* soaked with water appeared in the previous section. We come to a general idea of what it would feel like to wear them, without actual experience. If you were to lick the table you’re using right now, what would it taste like? You can pretty much imagine the taste, even without following through with the action. Even if you did lick it, there shouldn’t be much of a difference between the actual result and your speculation. Or what would it feel like to have the mike you’re using to give a speech fill your mouth? This too would feel much as we expect. Why can we assume without actually doing? Because since infancy, we have had a tremendous number of sensory experiences through which they have built up interrelations. Our experiences and memories of licking, touching, smelling the world, through which we have attached meaning to it, have given us the background for our senses.

There is a famous question in the field of sensory research. If a person were born blind, then suddenly gained the ability to see, and you placed before him both a cube and a ball, could he tell the difference, just by sight, without touching them? The researchers say no. If it were a shape that the subject had understood through touching, the shape might be interconnected with sight due to the occurrence of a certain “synaesthesia” (a sensation that normally occurs in one sense modality when another is stimulated). But the meaning of a visual stimulus experienced for the first time has no ties to any other sensory perception. The meaning of the stimulus of the light that is received by the eye has not yet been evaluated in relation to other sensory perceptions. It is not until one has touched the shape, or tried smelling it, that there is created a correspondence with other sensory stimuli, the person begins to understand the meaning of the light stimuli and the ability to see is established.

I used to believe that design was information architecture, and also that this architecture was built in the brain of an information recipient. Recently I’ve come to think that, although the materials of that architecture’s

construction are indeed the information brought from the outside by the sensory organs, at the same time some very important building blocks are also the recollected experiences, the memories, awakened by these external stimuli. People imagine the world and interpret it when outside stimuli awaken the mountain of their internally stored memories.

The action of walking is the forward motion of the body created by the pendulum-like swinging of the limbs and the body’s balance with gravity, but we do not undertake each instance of this activity in any planned manner. Except when we think to, say, step on every crack in the sidewalk or take care not to step on any ants, we usually don’t examine every external stimulus involved in walking before we take the next step. It’s more like we are recalling the walking that’s stored in our memory, while not paying much attention to the actual walking we’re doing. Basically the same can be said of seeing and hearing, too. When you meet someone new, you don’t reserve a fresh look for his face, voice and features, but focus your attention only on the disparities you discern from an internal collation of the vast number of memories about human beings in your recollection; you look at him as, after all, just a human being, save for those disparities. The parts you can bundle into the idea of human being are represented by the memories you’ve stored up. A huge amount of information is transferred to the brain through the sensory organs, yet our interpretations of the world are not based on new information alone, but on the collation of new information with copious memory. Our sensory perceptions are incessantly fusing together in the brain, amalgamating and interrelating.

Design is not only concerned with color and form. Research into how we sense color and form, or research into the senses, is a critical subject of design. And observations of how the human senses work will give design new pointers.



### Yasuhiro Suzuki: Cabbage Bowls

Let's go back to the haptic designs. The artist Yasuhiro Suzuki made cabbages out of paper. He created the shapes by accurately molding real cabbage leaves out of silicone, then reproducing these in paperclay. The leaves are designed as bowls. All of the leaves in a single cabbage have been reproduced, so Suzuki's reconstituted cabbage weighs almost as much as a real one. It must be fun to use these bowls at a dinner party. Imagine the feeling of holding a paper cabbage-leaf bowl. It's strange to the touch. The human mind takes pleasure in



complex things like these, which carry a plethora of information.

Speaking of the pleasant feeling of complicated information, I'm reminded of the time I went to Bali on business with the interior designer Takashi Sugimoto. There are plenty of fancy resort hotels there, so I kind of figured we'd be staying at one of them. I was a little disappointed to hear from Sugimoto that he'd reserved rooms at an old lodging complex. "Those new resorts wouldn't be very interesting," he said, by way of explanation. The site



What happens naturally

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“What Happens Naturally” poster.  
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we won five golds in product design: for our DVD player, shredder, telephone, CD player with radio, and square paper tube rack system. Winning awards for basic products like these gave us tremendous confidence and courage in regard to making things. Now we proudly call this “design,” and in the interest of improving the quality of our products are collaborating with designers around the world.

The wellspring of MUJI design has nothing to do with fashion or the mood of the day. Our target is neither youth nor age. We don’t pay any more attention than necessary to leading technology. The ethos of MUJI is interest in people. Our concern is for those who work and rest, sharing the planet of today: people who create their living spaces with realistic expectations, have fun with their attire, eat safe food, sleep, go on a trip now and then, face

the usual ups and downs, laughter and tears—ordinary people. MUJI’s role, accomplished through more than 7,000 MUJI products, is to continue to help people have a life that’s a little happier each day. Our originality comes from the fact that in our work, the logic of capitalism is surpassed slightly by that of humanity.

Coolly observing people among people and life... Integrating optimal materials and technologies... Investigating low cost while maintaining high quality... Considering nature and the environment... Listening to the voices of our customers... Working with the world’s designers... This is what happens naturally.