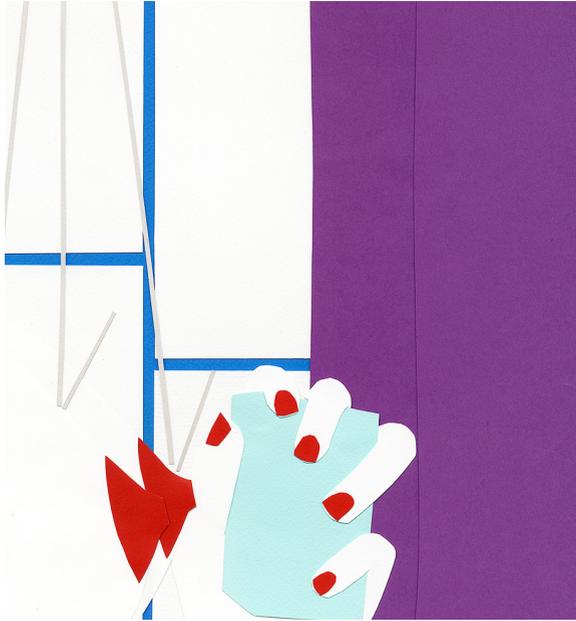


HOME BIOME

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New science is expanding our knowledge of microbial relationships, communications, and their impact on humans. As we learn how bacteria alter our perception and emotions, microbiology can evolve as an actionable tool in the hands of landscape architects, designers, and architects seeking to enhance a feeling of home.

The familiarity of home relies on interactions with people, objects, or places. Home is not only familiar, but also unique. Its distinctness has to do with a sense of belonging, with being part of a one-of-a-kind ecosystem. In ecology, a unique system of interrelated organisms that creates a living environment is a biome. All organisms that are native to that ecosystem belong to that biome, and each biome is different. Home is our biome. An emerging field in health research is exploring the effect of the individual's flora on physical and mental well-being. Each person has a "fingerprint" microbiome, and therefore what



is healthy for one might be unhealthy for another, merely based on the bacteria that inhabit their stomach. This leads to personalized medical prescriptions, as well as nutritional guidelines based on one's gut flora.

While the effect of the internal microbiome is significant to our physical and mental well-being, scientists are now exploring how external microbiomes impact health, too. In one example, microbial ecologists at the University of Oregon mapped bacteria in different rooms in the same building and found different bacterial profiles.

Petting your cat, crawling between your sheets for a nap, having a meal with your family, inhaling the fresh scent of a tree, spending a few minutes ridding your body of waste. These are five daily, homey experiences many of us cherish. Each one of these basic actions contains a biological interaction with

organisms that reside in and around us—our pets; fungi in sheets; our siblings, lovers or parents; a tree on our street; the flora in our intestines.

New science shows the extent of bacteria's impact on our environments in each of these five experiences, sparking speculations on how design can alter our sense of home.

1 EMOTION-ALTERING PARASITES

Toxoplasma, a cat-borne parasite that infects over 50 percent of humans, changed public understanding of how microbes alter behavior and emotions. A 2012 study performed on rats detected behavioral change in brain circuits of Toxoplasma carriers. The parasite caused re-wiring of circuits that changed primal emotions such as fear, anxiety and sexual arousal. In other words, rats were attracted to cats instead of running away from them. Could we synthesize parasites to make us like places? If shops already spray vanilla scent to unconsciously make us buy more, could they add mind-altering parasites to their ventilation systems to enhance the shopping experience?

2 THE COMFORT OF OUR OWN BED

A 2006 study of the level of fungal contamination in bedding found pillows typically contain between four and seventeen different species of fungus. Each of us has a unique mix of fungi in our beds that evolves over each period between changing sheets. Could we pre-order a personalized hotel bed to avoid feeling estranged in it? Send a child's skin bacteria sample to a toy manufacturer to make sure the kid feels connected to a toy immediately upon receiving the gift?

3 THE ODOR OF LOVED ONES

Skin microbes produce odors that are attractive to mosquitos, according to a 2010 study on variability in mosquito attraction to humans. In fact, human sweat is odorless, and is being "charged" with scent by bacteria on the skin surface. Scent

of sweat is therefore a form of communicating information about an individual to mosquitos.

This also explains the distinct scent specific people have. What if a room of a deceased person could be designed to continuously produce their smell? Could a broken-hearted person transplant a former lover's armpit flora onto a sweater, instead of obsessively sniffing a stolen sweater and never washing it again? Will obsessed teenage fans purchase vials of their favorite pop star's flora?

4 THE HOMELINESS OF A TOILET

The familiarity—and relaxation—of coming home is the reason we rush to the bathroom, according to a 2017 article. Researchers claim that the "feeling of comfort of home" is nothing but a set of simulations of that experience projected by the brain. The light in the living room, the smell of the wooden floor, the cold touch of metal spoons—and the microbes that surround the environment—these physical simulations contribute to a sensation that translates to the safe feeling of being at home. In turn, the body relaxes and brings the much-awaited release. Could we pre-install our bacteria in a new apartment to feel at home faster? Or treat guests with their familiar bacteria complexion to make them feel more comfortable?

5 FOREST BATHING

The microbial effect of plants was examined by Japanese scientists who studied a local tradition of Shinrin-Yoku, or Forest-Bathing. Based on their findings, when spending time in a forest, we inhale substances from forest air such as beneficial bacteria, which helps reduce stress and increase mental wellness. Could landscape architects in business districts enhance bacterial activity in parks to make visitors chill out quicker and return to their office desk sharp and efficient? In a less capitalistic suggestion, what if the sense of belonging of an immigrant community could be strengthened by re-creating a typical homeland microbiome in a local park?

Cultivation of life in the micro level may become a part of environmental design at all scales, from objects and buildings to parks and neighborhoods, altering our emotional and communal understanding of space. Like any other technology, it could serve dystopian realities or benefit society. In any case, research makes it clear that sterilizing a place kills not only the bacteria, but also its unique identity and our ability to unconsciously sense it. Next time you use antibacterial soap—kindly think about the environment.

ENDNOTES

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