

# Meeting aims to find brain's benchmarks for beauty

Jonathan Knight, San Francisco

Are our preferences in music and art learned or innate? Neuroscientists met with artists, musicians and architects at the University of California, Berkeley, on 11 January in an effort to discover some clues to the neurological basis of taste.

Many experts believe that our artistic

choices are entirely dependent on cultural influences. But proponents of neuroaesthetics think that there are pointers to taste, and that studying the brain will help to find them.

The most noted results in this new field have been in music, although even these are inconclusive. Mark Tramo, director of Harvard's Institute for Music and Brain Science, pointed to studies by Marcel Zentner and Jerome Kagan of Harvard University suggesting that infants find more dissonant musical intervals, such as those known as tritones, less pleasing than consonant ones such as perfect fifths (*Nature* 383, 29; 1996).

Tramo said he has shown that perfect fifths produce smoother firing patterns in auditory nerves than tritones do (M. J. Tramo *et al. Ann. NY Acad. Sci.* 930, 92–116; 2001). Although this does not explain why one interval is more pleasing than another, Tramo said, it sheds light on how the auditory system responds to different aspects of music.

Progress is sketchier in the visual arts. John Eberhard, who directs research planning at the American Institute of Architects (AIA), suggested that a set of proportions known as

the 'golden section', which is commonly incorporated in classical architecture, might be universally pleasing to the mind.

But AIA president Gordon Chong pointed out at the meeting that these proportions are completely absent from successful modern buildings such as Frank Gehry's Guggenheim museum in Bilbao, Spain.

Chong remains optimistic that neurobiologists may one day help architects to design soothing hospitals, for example, or stimulating schools. "Many of us look forward to a time when we design spaces more scientifically," he says.

According to Harrison Fraker, dean of Berkeley's College of Environmental Design, current architectural theory holds that taste is learned and relative, not innate. But neuroaesthetes counter that even learned taste must have a neurological basis.

Semir Zeki of University College London, who helped to organize the meeting, says that neuroaesthetics is "taking off in a big way". But for now, he says, "we have much more to learn from artists than they have to learn from us".

♦ <http://brain.berkeley.edu/~plaisir/conf.htm>

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Strange beauty: Bilbao's Guggenheim museum does not conform to classical proportions.