LAST BUT NOT LEAST

Blind or deaf? A matter of aesthetics

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Abstract. Blind or deaf? Surprisingly, a small but noticeable minority, 17%, opted for blindness. Another 6% were indifferent. For these individuals (23% of the sample), the loss of the aesthetic experience—music—was given relatively greater weight than the loss of the practical—conversation. This was not a symmetric effect in that those who opted for being deaf did not place greater value on the aesthetic aspects of vision compared to those who opted for being blind. What predicts the preference for being blind was not the amount of time spent listening to music but the extent to which one formally studied, created, and played music and experienced intense emotions when engaged by music.

Everyone with his or her full complement of senses has mused about what it would be like to lose vision or audition. Given a choice, which one would you choose? We asked this question of 240 individuals with no perceptual deficits, along with their values and preferences for aesthetic as well as practical considerations.

Responses were collected online (surveymonkey.com) or with paper. Respondents rated, on a seven-point scale, their relative preference for being blind (1 = strongest preference) or deaf (7 = strongest preference), as well as their preferences and relative values for aesthetics as compared with more practical aspects of sensory experience. Respondents also provided demographic data and numerical estimates of the time spent on aesthetics, education, and artistic training. (The full survey can be found on http://geon.usc.edu/~jiyekim/blindordeaf.html.) Respondents averaged 25.0 years of age and were 70.0% female. 46.4% were Caucasian, 36.7% Asian, and the rest Hispanic or 'multiracial'. Almost all (99.1%) had at least some college education and 89.2% were right-handed.

Surprisingly (to many of us), a small but noticeable minority, 16.7%, said that they would rather be blind than deaf. An additional 6.2% were indifferent; however, their responses were otherwise indistinguishable from those who opted for being blind, so these subjects were grouped together as a single 'blind' classification. This choice was unrelated to gender ($t_{236} < 1$, ns); race ($F_{3,214} = 1.28$, ns); education ($F_{2,237} < 1$, ns); and handedness ($F_{2,223} < 1$, ns). (Degrees of freedom vary for the statistical tests as some respondents did not answer all the questions.)

Those who opted for being blind placed relatively greater weight on aesthetics—experiencing music rather than speech—compared with those who opted for being deaf, means of 3.56 versus 2.48 on a seven-point scale ($t_{238} = 4.32$, p < 0.001). This was not a symmetrical relationship as those who opted for being deaf (mean = 3.13) valued visual aesthetics to the same extent as those who opted for being blind (mean = 3.43) ($t_{238} = 1.08$, ns).

The greater weight put on aesthetics over the practical for those who opted for being blind was not significantly correlated with the estimated time spent listening to music $(t_{235} < 1.00, \text{ ns})$, which averaged 14.25 h a week for the sample as a whole. However, those who opted for being blind had a greater amount of formal music training—6.27 years—compared with 3.77 years for those opting for being deaf $(t_{235} = 4.44, p < 0.001)$,

950 Last but not least

and they were more likely to experience intense emotion while listening to music—5.35 versus 4.55 ($t_{238} = 3.64$, p < 0.001). When asked which aspects of audition one would miss more if one were to lose hearing, relative to those who opted for being deaf, those who opted for being blind were more likely to miss the active involvement of creating music rather than just listening to music—means of 5.69 versus 5.12 ($t_{238} = 2.31$, p = 0.02).

The blind and deaf preference groups did not differ in years of formal visual art training, likelihood of experiencing emotion while appreciating visual art, average hours per week spent engaging in visual aesthetics, or their preference for creating versus viewing visual art (all ts < 1.00).

In summary, when given the choice of either losing audition or vision, approximately three-quarters of the sample preferred to lose audition. Given that either sense can convey both practical information (eg navigation, object identification, reading, conversation, warning sounds) as well as aesthetic experiences (eg music, art, visual panoramas), those who opted for being blind placed relatively greater weight on aesthetics, rather than conversation. Indeed, some volunteered that "I can't imagine living without music". This was consistent with their greater emotional involvement in music. In contrast, the response to visual experience—either practical or aesthetic—did not vary as a function of which sense was preferred.

Biederman and Vessel (2006) have proposed that perceptual pleasure in the visual system may be subserved by a gradient of μ -opioid receptors whose density increases from earlier to later visual areas where sensory information is stored and interpreted. High activity in the later, opioid rich areas would be associated with greater pleasure. A similar gradient has been found in the auditory system of the macaque where μ -opioid receptors increase in density from primary to secondary auditory cortex (Lewis et al 1981). We speculate that individuals who prefer audition to vision may experience more opioid activity when musically engaged. Consistent with this speculation is the finding that naloxone, a μ -opioid antagonist, abolishes the intense emotional response—chills, that some people experience while listening to certain music selections (Goldstein 1980).

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References

Biederman I, Vessel E A, 2006 "Perceptual pleasure and the brain" *American Scientist* **94** 249 – 255 Goldstein A, 1980 "Thrills in response to music and other stimuli" *Physiological Psychology* **8** 126 – 129

Lewis M E, Mishkin M, Bragin E, Brown R M, Pert C B, Pert A, 1981 "Opiate receptor gradients in monkey cerebral cortex: Correspondence with sensory processing hierarchies" *Science* 211 1166-1169



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