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Synesthesia

Maryellen Romero

Department of Psychiatry and Behavioral Sciences, Tulane University School of Medicine, New Orleans, LA, USA

Definition

Synesthesia is a form of dysesthesia in which a sensory perception is perceived in a different sensory modality. One of the most common forms is “grapheme-color” synesthesia, in which the individual perceives colors when reading letters or numbers. Other examples include patients who “taste” colors or “hear” shapes. Synesthesia appears to be familial but does not appear to be gender specific. Estimates of its prevalence vary and may depend on the specific type (e.g., grapheme-color synesthesia has been estimated to occur in 1 in 200 people). Synesthesia is also often reported by individuals under the influence of psychedelic drugs; however, these individuals tend to experience very complex intersensory experiences, whereas those of the “congenital synesthete” tend to be simpler (letters elicit colors).

With regard to the neural systems involved, hypotheses include cross-activation between adjacent cortical-cortical sensory systems (i.e., visual

word form and color-processing areas) and disinhibited feedback from association areas (i.e., temporal-parietal-occipital junction). An additional hypothesis (“reentrant processing”) suggests that synesthesia is the result of bidirectional flow of sensory information, although this is not completely distinguished from the disinhibition feedback hypothesis noted above.

Cross-References

► [Sensorimotor Assessment](#)

References and Readings

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