Harmony: How Math Influences Our Esthetic Choices

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The Harmony project aims at understanding the effect of applying mathematical rules in the design of everyday objects on their aesthetical perception. In the past, mathematical canons were used in many artistic branches but no one used them to design ordinary objects nor did anyone study them with a scientific method to validate their effect on esthetic perception. The project studied different classical canons, like the golden ratio, and other ratios, either less used (silver ratio) or never considered as a possible source of beauty (prime numbers series). After selecting sample items that represents a variety of ordinary objects, these were re-designed according to the chosen parameters. Data were collected through online polls and direct surveys. Participants were asked to express their preference through comparisons between the original object and the re-designed object, or two re-designed objects. Results showed that: prime numbers and golden ratio are the most appreciated canons and each canon can be applied just on some structures; canons can be used on the same objectat the same time; being used to a certain image with specific proportions influences deeply our perception of it as beautiful; the human eye cannot distinguish an asymmetry of fewer than two degrees. This research approach has several potential fields of application: in psychology, from neuroesthetic to treatment of depressive patients; in ergonomics, to improve the wellbeing of workers, and in marketing.

Awards Won: