

The Cognitive Function of Music, Cognitive Dissonance, and Human Evolution

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Abstract

Why music affects us so strongly. Does music have a fundamental cognitive function? Why did ability for music emerge in evolution? If it originated from proto-human voicing, why have it evolved to Bach and Lady Gaga? Aristotle considered power of music an unanswered question alongside finiteness of the world and existence of God. Darwin considered it “the greatest mystery.” Kant could not explain music: “it merely plays with senses.” Pinker follows Kant: music just happen to “tickle the sensitive spots.” Yet thousands of cognitive musicologists are looking for a fundamental cognitive function of music.

This talk summarizes a recent hypothesis that music helps keeping contradictory knowledge. According to a “most influential psychological theory” of cognitive dissonance (CD), contradictory knowledge is difficult to keep, and most people most of the time discard contradictions. This leaves a gaping question: how accumulation of knowledge is possible? Any knowledge contradicts to instinctual needs and to other knowledge. So, knowledge should have been discarded in evolution long before its usefulness would be clear.

This presentation describes new experiments confirming the hypothesis that music helps to tolerate CD and thus enables accumulation of knowledge and human cultural evolution. We reproduced classical CD experiment: if children are asked not to play with an attractive toy, the toy is losing its attractiveness. But with music in background the toy is NOT devalued. Another experiment reproduced the Mozart effect: academic test performance may improve after listening to Mozart (this was ‘debunked’, any improvement was proven to be short-leaved). We demonstrated (1) that students allocate LESS time to more difficult and stressful tests (as expected from CD theory), and (2) with music in background students CAN tolerate stress, allocate MORE time to stressful tests, and grades improve.

These experiments tentatively confirmed the hypothesis that music helps overcoming morbid consequences of CD. It follows that music likely performs a fundamental cognitive function; music makes possible accumulation of knowledge and human evolution. This might explain the origin, power, and evolution of musical ability that have been considered a mystery.

These results open a wide field of research. Are there specific musical emotions? How many? Are they different from basic emotions, like rage and sexual feelings? How to measure them? Is CD an *emotional* discomfort? What kind of emotions? How to measure them? Do contradictions between any two cognitions elicit different CD emotions? Are CD and musical emotions related? Did music emerge alongside language to overcome morbid consequences of CDs?