

# Empirically investigating the complexity of aesthetics

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## Abstract

Aesthetic experience is a complex experience, arising from bodily, emotional, and cognitive signals. How can we study the complex cognitive and neural processes and dynamics that give rise to aesthetics? An increasingly popular approach to study the complexity of neural and cognitive systems is via network science methodologies. Network science is based on mathematical graph theory, and offers quantitative methods to represent complex systems as graphs, or networks. Although cognitive theories in different domains are strongly based on a network perspective, the application of network science methodologies to quantitatively study cognition has so far been limited in scope. The application of network science in cognitive science provides a powerful quantitative approach to represent cognitive systems (such as memory and language); enables a deeper understanding of cognition by capturing how the structure and processes operating on a network structure interact to produce behavioral phenomena; and provides a quantitative framework to model the dynamics of cognitive systems. Here, I will present a few examples to demonstrate the feasibility and potential of applying network science methodologies in aesthetics research. These examples relate to architectural preferences, appreciation of abstract art, conceptual representation of beauty and wellness across different age generations, and aesthetic emotions.