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***Culture vs Nature:
Aesthetic appreciation of cultural artifacts engages
additional processes beyond a core domain-general system***

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Aesthetic appreciation represents a fundamental mode of human interaction with the visual world, yet the processes that support such experiences are poorly understood. Brain imaging studies with artwork suggest that there is both an “early” process that links visual representations with liking and a later, prefrontal process that is only engaged by aesthetically moving stimuli and may recruit portions of the default-mode network (DMN), which is typically only engaged by internally (self) directed mentation. Given that individuals can be aesthetically engaged by a diverse array of visual objects (paintings, mountain vistas, etc.), we sought to test whether aesthetic appreciation of widely different visual domains relies on the same underlying processes. Behaviorally, we found that the degree of shared versus individual aesthetic preference differed systematically across domains. Preferences for faces and landscapes contained a high proportion of shared taste, while preferences for architecture and artworks, both artifacts of human culture, reflected strong individual differences. Using functional magnetic resonance imaging (fMRI), we measured brain activity as 16 observers made aesthetic judgments about architecture, natural landscapes or artwork. Multivariate pattern classification revealed a signature of “domain-general” information about aesthetic appreciation in the DMN that was strongest in medial prefrontal and inferior parietal regions. A “searchlight” analysis revealed additional prefrontal regions whose activity only reflected information about the aesthetic appeal of either artwork or architecture. These results suggest that visual aesthetic engagement recruits a core set of domain-general processes, but that aesthetic evaluations of cultural artifacts rely more heavily on individual aesthetic sensibilities than do evaluations of landscape, and also engage additional processes in prefrontal cortex.