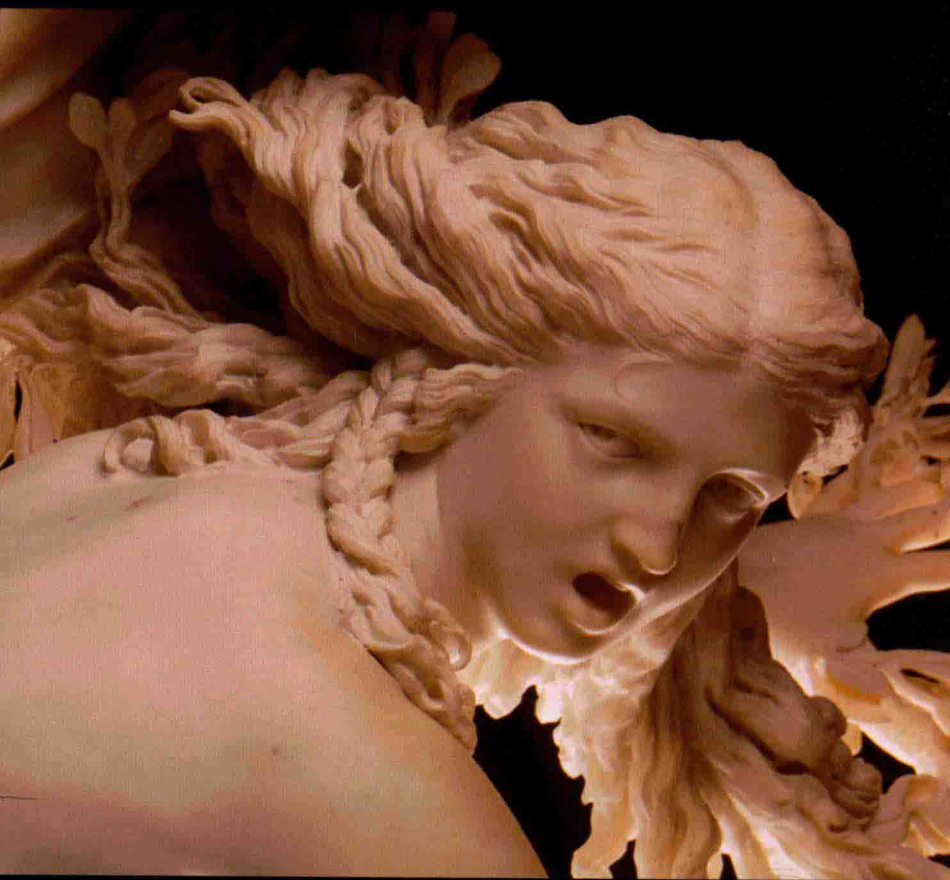


Feeling Beauty

The Neuroscience of Aesthetic Experience

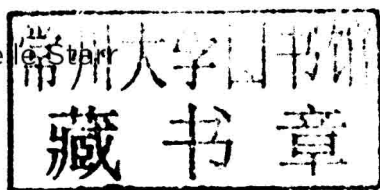


G. Gabrielle Starr

Feeling Beauty

The Neuroscience of Aesthetic Experience

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Feeling Beauty

For John, Always.

Preface

Beauty matters in life and in art, but it also matters in the architecture of the brain itself. This book is born of my belief, as both a scholar of the humanities and a researcher in the neuroscience of aesthetics, that understanding the neural underpinnings of aesthetic experience—not just the experience of beauty or wonderment, but the other pleasures and displeasures of the arts and the natural world—can reshape our understanding of aesthetics and of the arts. A number of key questions about aesthetics can be fruitfully engaged with the tools of cognitive neuroscience. To what extent are the pleasures of poetry, painting, music, and the other arts parallel? How do the emotions of aesthetic experience relate to those of the rest of daily life? What role does imagery play across the arts? How do the differences that make us individuals shape aesthetic experience? What do aesthetic experiences say about how we think? What kind of knowledge might aesthetic experience bring? Answers to

these questions can teach us more about aesthetics, but they have implications that go beyond aesthetic life. Inquiry into the neuroscience of aesthetics can give us insight into, and lead to new questions about, emotion, the adaptability of neural structures in different individuals, and the relations between complex neural systems ranging from those underpinning imagery to those supporting memory and identity.

Feeling Beauty attempts to answer some of the questions about aesthetic experience posed above. It explores not just how we feel aesthetic pleasures but how they matter. Employing the tools of cognitive neuroscience and humanist inquiry, and combining both our knowledge and our ways of knowing, this book offers a new perspective on aesthetics and aesthetic life, and a new vision of how the aesthetic fits into the broader picture of what we know—and have still to learn—about human cognition.

Aesthetics offers a particular challenge to both humanists and scientists. It might seem natural and simply logical to group under one banner all the things we might, for example, call “beautiful,” just as it might seem natural to group together all of the arts. But the beautiful as a category of experience or objects has been dismissed from and restored to the Western canon repeatedly, and indeed, the very idea of beauty has been insufficient historically to describe how the world and the objects in it move us.¹ The pleasures of the senses more broadly have been both denigrated and exalted over time and across cultures, and the idea that there might be a set of refined pleasures of the imagination connecting different arts and experiences is of relatively recent (and conflicted) history. While art and discussions of its pleasures are ancient, the idea that there is a

single autonomous domain in which we might discuss or reason about the visual arts, literature, music, imagination, beauty, the sublime, or even the vulgarly awful is an invention of the eighteenth century. There is yet more discontinuity, and even fragmentation: new, usually contested, arts emerge in cultures, from—roughly historically in the West—ballet to opera, photography, cinema, performance art, and beyond; as well, what members of particular cultures call art is not always readily or completely translatable, so that music or statuary might be of primarily religious importance in one culture, while in another, flower arranging or making and serving tea might be acts of high artistry and signify the virtues of a warrior.²

Such historical shifts and cultural differences in aesthetic ideas might mean that the only valid arguments about aesthetics are local, rooted in particular objects, places, or moments. It is possible, however, to offer a rigorous account of aesthetics in a different way. We can believe that what beauty is and what beauty does changes; we also can be clear that the terms we use to describe our pleasures and displeasures evolve, and in doing so reveal new ways of our encountering the world around us. I argue in the coming pages that exploring the neural underpinnings of aesthetic experiences helps us not only to understand the migrations of culture and even the temporal fluidity of aesthetic life (the changes in one's tastes over time, for example) but also to see that this fluidity is essential to the aesthetic.³ Aesthetic experience changes, and understanding these changes may give us more insight not just into aesthetics but also into the dynamic interrelations of neural processes.

In turning to the tools and methods of cognitive neuroscience I am continuing, in new form, the fundamentally multidisciplinary inquiry that has obtained since the early years of modern aesthetics. As Alexander Baumgarten put it in his *Meditationes* of 1735 (the text that introduced the term *aesthetics* into the modern lexicon), aesthetic experience is a blend of sensation and knowledge such that we may almost feel thought itself (“scientiam sensitive quod cognoscendi”).⁴ Understanding that blend of sensation and cognition has, since Baumgarten, involved work that does not fit easily or neatly within any one of the modern divisions of knowledge. In eighteenth-century Britain, the moral sense theorists, thinkers like Anthony Cooper, Earl of Shaftesbury, and Francis Hutcheson, saw the investigation of beauty as a way to discover the basis of community standards and the bonds that link us together; and Adam Smith wrote a treatise on the imagination that established the moral principles that came to govern *The Wealth of Nations*. In Germany, Immanuel Kant saw in aesthetic judgment the answer to a fundamental schism between pure and practical reason; Johann Wolfgang von Goethe researched optics and light as a way to explore aesthetic power; and Hermann von Helmholtz explored mathematics and the brain to theorize the effects of music.⁵ This arc has not ended: researchers continue to demonstrate that investigating aesthetic experience requires multidisciplinary inquiry, using cognitive approaches to brain and behavior as they study music, literature, creativity, visual art, dance, or film.⁶ *Feeling Beauty* builds on some of this work and challenges some of it, and it takes up anew the cross-disciplinary principles that have been at the heart of aesthetic inquiry from its beginnings.

Centering on the Sister Arts of music, painting, and poetry, *Feeling Beauty* shows that neuroaesthetics, or the study of the neural bases of aesthetic experience, offers a model for understanding the dynamic and changing features of aesthetic life, for understanding the relationships between the arts, and for understanding how individual differences in aesthetic judgment shape the varieties of aesthetic experience. Neuroaesthetics also helps us to see how the emotions and the hedonic texture—the complex admixture of pleasures and displeasures—that help make up aesthetic experience set the stage for the creative expansion of knowledge through, in grand or subtle ways, changing the order by which we make sense of the world.

Aesthetic experience relies on a distributed neural architecture, a set of brain areas involved in emotion, perception, imagery, memory, and language. But more than this, aesthetic experience emerges from *networked* interactions, the workings of intricately connected and coordinated brain systems that, together, form a flexible architecture enabling us to develop new arts and to see the world around us differently. Systems for emotion and reward, along with the default mode network (an interconnected set of brain areas that contributes to our sense of self-identity, as well as to our ability to imagine other worlds and other people, among other functions), work to enact the necessarily dynamic, constantly reevaluative neural processes that underpin aesthetic life. Through this architecture, aesthetics fundamentally involves our ability to wrest pleasure from the unpredictable and to refine, continually, how we imagine the borders between the world of sense and our sense of self. The neural processes underlying aesthetics are complicated,

and we are just beginning to understand them, but even with what we now know, it is possible not just to understand more about aesthetic experience and how it moves us, as well as more about the relationships between the arts, but even to begin to see more fully why it makes sense to speak of a domain of the aesthetic at all, and to see how that domain may shift and move. Let us begin, though, with the question of the Sister Arts.

Acknowledgments

Work across the disciplines requires collaboration. I must therefore thank, first, Ed Vessel and Nava Rubin, and Steve Quartz, who helped me navigate new disciplinary waters. My collaboration with Ed and Nava helped lay the foundation for this work. The research we produced on visual art was first published as “The Brain on Art” in *Frontiers in Human Neuroscience*; the interpretation and extension of those results here to other forms of art, however, are my own (as are any mistakes).

Collaboration does not end with writing, and I would like to thank the press reviewers of this work, who gave me extremely helpful feedback, and an editor who believed in the project and whose careful eye has improved it, Phil Laughlin.

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