Comment

Patrick Colm Hogan. 2016. *Beauty and Sublimity: A Cognitive Aesthetics of Literature and the Arts*. Cambridge: Cambridge University Press.

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Beauty and Sublimity (Hogan 2016) is a rich and ambitious book. Patrick Colm Hogan covers a lot of ground in this "integrative" approach to aesthetics. By integrative, Hogan means an approach in which both humanitarian and scientific views of aesthetics are given their respective due. It contrasts with imitation, in which scholars in the humanities or the sciences end up mimicking the other. This book mines many interesting ideas, some of which have not received adequate attention in empirical aesthetics. It is also a book that, as Hogan acknowledges, raises as many questions as it tries to answer. In what follows, I will outline my understanding of his thesis, underscore areas that I as a scientist found most useful, and mention those areas that left me wanting.

Hogan takes a decompositional strategy in analyzing aesthetic experiences. This strategy is familiar to scientists who by nature reduce complex phenomena into component and testable parts (Chatterjee 2011). As the title of the book signals, Hogan focuses on experiences of beauty and sublimity. For him, these experiences are rendered by a combination of cognitive mechanisms and emotional engagement. Before he delves into details of aesthetic cognition and emotion, he makes an important distinction between public and private aesthetic experiences. That is, he distinguishes between publicly accepted norms of beauty and those that are held privately. Public versions of beauty get tangled in ideas of prestige and are shaped by social and cultural norms. In art, these might be works that are deemed masterpieces by institutions or the literati. For an individual, awareness of public beauty is a matter of social competence. Public beauty can influence private beauty, but one does not collapse into the other. Private beauty is personal. That is, I can recognize that Rubens is regarded as a great artist or Joan Crawford as a great beauty, even if neither stirs me. Their public status does not comport with my private experience.

The distinction between public and private beauty is important and has not been emphasized sufficiently in empirical research. It is a distinction worth bearing in mind when scientists design experiments. For example, when participants in an experiment are asked if a painting is beautiful, they might be responding to a public notion of beauty. By contrast, if they are asked whether they like a painting, they are might be taking stock of their personal response to the painting. Without careful instruction, we scientists might not know what experience our investigation is interrogating when participants express themselves. We might be introducing unnecessary noise in our data or conflating different states when comparing across individuals and across studies. It is worth noting that, despite the fact that the public-private distinction of beauty has not been emphasized in neuroaesthetics, several studies have examined the influence of public norms on private preferences. Such investigations are evident in decision-making studies that focus on the effects of prestige markers, such as brands or reputation, on personal preferences. It also appears in neuroaesthetics. For example, one study (Kirk et al. 2009) showed that people prefer the same abstract images if they think the images are hanging in an art gallery than if they were generated by a computer. This preference is accompanied by greater neural activity within the reward circuitry of our brain. Here is an example of the public context of display of identical images influencing private experiences and neural responses.

In drawing out this public/private distinction, Hogan focuses on beauty. He says little about sublimity. Perhaps public notions of the sublime are not well established. Perhaps in our harried, rushed, multimedia lives, personal encounters with the sublime are rare. I can imagine that some might experience specific opulent cathedrals as sublime, even as they leave me untouched. Regardless, I wish Hogan had explored the reasons that sublimity as an experience is less commonly identified and public notions of sublimity are less established, despite the fact that we all experience loss and grief (important attributes of the sublime for Hogan) as part of the human condition.

Hogan identifies prototype approximation and non-habitual pattern recognition as critical cognitive processes that underlie aesthetic experiences. While the names he chooses for these processes are not exactly fluent, they describe important ideas. Prototypes are statistically averaged objects. Famously, Sir Frances Galton (1878), in trying to identify criminal prototypes, combined photographs of convicted criminals. Instead of uncovering the face of a criminal mastermind, he found that the averaged face was beautiful. Hogan emphasizes the ways in which prototypes are attractive. Any object might fit to greater or lesser degrees with a prototype; the better the fit, the more likely the object is experienced as beautiful. This idea also makes room for individual variability in establishing private experiences of beauty. Prototypes are established from the people, places, and objects to which we are exposed. As such, varieties of experiences, context of encounters, innate sensitivities, and even timing of exposure affects the formation of private prototypes. Hogan also allows for a multiplication of prototypes so that we can form prototypes of sub-categories. Thus, one can find certain people beautiful in general; beyond that one might find specific people within racial or ethnic groups more beautiful than others of the same group.

The second relevant cognitive mechanism for Hogan is pattern recognition or, more specifically, violations of an expected pattern. Expectations set up the conditions for habituation, which can be boring. Partial unexpectedness that allows a person to re-evaluate an existing pattern is critical. If an unexpected pattern is too far removed from the expected, it would not be experienced as part of the same object or experience. Here, Hogan makes a distinction between focal and non-focal aspects of an encounter. By focal, I take him to mean features or objects that are explicitly the focus of attention. Non-focal background information provides a vehicle for predictability and the focus for attention has the potential to insert surprise and consequently re-evaluation. Here, Hogan introduces another important variable: timing. He correctly identifies time as important in understanding aesthetic experiences, one that has only recently come to the fore in empirical aesthetics (Leder and Nadal 2014). He raises the difference between ongoing responses, short-term re-evaluations of an immediately past experience, and long-term later reconsiderations. In the short-term reevaluation, the unexpected pattern is integrated into the overall event. The shift from confusion to comprehension is critical to the aesthetic experience. For him, re-evaluation is most powerful when it occurs rapidly. I should point out that neuroscience studies are best designed to examine ongoing aesthetic responses and, to some extent, immediate reevaluations. The immediate reevaluation idea is relevant to the empirical literature on insight (Kounios and Beeman 2014). The emergence of insight is important in solving problems and is a critical component of convergent aspects of creativity. The way empirical studies examine long-term reconsiderations is in the context of education and expertise, which clearly have an effect on aesthetic experiences. However, the best way to examine the biology of long-term reinterpretations of individual works after a sustained engagement remains unclear.

These cognitive processes, prototype approximation and non-habitual pattern recognition, are tied to specific emotional systems that give rise to personal aesthetic experiences. For Hogan, core emotional systems are dedicated to reward and attachment. Reward systems incorporate liking and wanting (Berridge and Kringelbach 2008) and are typically associated with neural structures such as the ventral striatum, orbitofrontal cortex, and ventromedial prefrontal cortex. These systems are also organized by opioid and cannabinoid systems for liking and dopaminergic systems for wanting. Generally, the liking system is thought to underpin hedonic pleasurable experiences, whereas the wanting system underpins desire. These systems are the focus of many neuroaesthetics studies (Brown et al. 2011) – the pleasure responses to beautiful faces or enticing places as well as to music, artwork, and, more prosaically, food and drink.

Hogan's emphasis on attachment systems is important and relatively unexamined in empirical aesthetics. He links this system to the effects of oxytocin, a hormone associated with affiliative behavior. There is relatively little recognition in neuroscience of categorizing "attachment" as an primary emotion per se. The relationship between attachment and desire could be probed further. Oxytocin and vasopressin probably mediate subjective experiences related to attachment. But how attachment relates to emotions that are to various degrees antagonistic, such as disgust or fear or anxiety, has not been worked out. Nonetheless, Hogan presciently identifies attachment as an essential ingredient that makes an experience personal and distinguishes aesthetic from other immersive experiences. He further links attachment to a sense of security and this allows him to distinguish between experiences of beauty and sublimity. In private experiences of beauty, one is rewarded by and secure in attachment to the beautiful object. In private experiences of sublimity, one is still rewarded, but remains profoundly insecure in attachment and risks loss. This loss can be of two types. One can lose the other object and fall into a stoical version of sublimity. Alternatively, one can lose one's self and be subsumed into a mystical version of sublimity. These are important ideas. I do not know if they map easily onto neuroscience constructs or would lend themselves to further decomposition. But as psychological constructs, they are well worth empirical inquiry.

Along the way, in fleshing out the cognitive and emotional processes animating his theory of aesthetic experiences, Hogan meanders through many interesting topics that are impossible to do justice in a short review. He touches on other emotional states, such as sexual desire and fear and how they might relate to reward and attachment. He discusses differences between aesthetic responses (the main focus in his book) and aesthetic judgments. He delves into the contrast of art and entertainment. He views entertainment as intensifying reward but missing the complexity and specificity of prototypes fundamental to art. He discusses contemporary art and anti-aesthetic movements as motivated by a repudiation of public and consecrational aspects of beauty and prestige. These topics are well worth further exploration and I hope Hogan does so in future works.

Let me now turn to aspects of the book that I found less successful or warranted further attention. Discussions about aesthetics can take two approaches. One focuses on generalizations of aesthetic experiences as derived from many different individual encounters. In its most obvious form, scientists

might use many examples of faces or artworks to elicit generalizable responses. One refers to specific objects or artworks as illustrations for claims about general principles. Alternatively, one can delve into detailed discussions of specific artworks and their interpretations as being the critical level of analysis. Artistic and literary works can depict complex emotions and interactions more richly than is possible in scientific research. Such analyses are often qualitative and can place aesthetic works in their historical and cultural context as art historians and critics often do. Hogan, in keeping with his integrative approach to aesthetics, does both. In this book, the approach is not entirely successful. In each chapter, Hogan talks about general principles derived from empirical work. He then turns to specific examples from literature, music, and the arts to extend these discussions. His thoughts are wide ranging, perhaps by design, to reveal the breadth of applications of his ideas. They include meditations on Woolf's Mrs. Dalloway, Tagore's The Home and the World, Wharton's The House of Mirth and The Age of Innocence, Shakespeare's Othello, Miller's The Price, Beckett's Malloy, Beethoven's 5th Symphony, Hayden's Symphony no. 88 in G Minor, Indian films *Cocktail* and *Dhobi Ghat*, the unusual beauty of the Indian actress Tanuja, poems by Federico Garcia Lorca and George Chambers, and Matisse's The *Plumed Hat.* For most scientists, and I suspect many others, in not knowing many of these primary works, these sections offer relatively little payoff. Hogan's private experiences do not map easily onto the readers' private experiences or public knowledge of these works.

Hogan dismisses or ignores two topics that in my view merit further discussion. He is dismissive of evolutionary accounts of aesthetics. He suggests that the cognitive and emotional components he identifies are themselves adaptive and do not warrant discussion of their evolutionary motivations. This position itself is a stance on evolution and aesthetics. His nonchalant treatment of evolution is at odds with the careful analysis of other aspects of his theorizing. For example, he states that evolutionary accounts of mathematic aesthetics do not exist, which is not exactly correct (Chatterjee 2014). Furthermore, he fails to consider some important aspects of facial beauty. He mentions symmetry and averaging as consistent with his prototype approximation account. However, he does not mention sexually dimorphic features that are theorized to be linked to reproductive success. These features are often linked to heteronormative notions of beauty, probably both public and private.

The second topic missing is any discussion of the role that sensorial properties of objects play in aesthetic experiences. Most empirically driven models of aesthetics, like our aesthetic triad framework (Chatterjee and Vartanian 2014), suggest that aesthetic experiences emerge out of interactions between large scale sensori-motor, emotion-valuation, and semantic-knowledge neural and cognitive systems. Hogan's thesis can be viewed as a detailed examination of interactions between semantic-knowledge and emotion-valuation systems. But, perhaps because so much of his focus is on literary arts, he does not consider the role of sensations in any serious way. The specific sensorial glow of a Vermeer painting is rarely conveyed in reproductions and many examples of the shimmer of color and luminance in primary artwork do not map easily into cognitive mechanisms of prototype approximation or non-habitual pattern recognition.

Finally, for a scientist, there is a vague unease about the versatility of Hogan's ideas. For Hogan, aesthetic experiences contain multiple components as I have outlined above. For any given experience, the number of components and their intensity can vary. Prototypes and habituated patterns vary from person to person in so far as they are derived from people's own experiences and particular emotional investments. No specific component is necessary and their weighted contributions can differ. While some version of this complex system seems likely to be right, its very versatility raises questions about constraints. Most scientists look for ways to test hypotheses and ideally gather evidence to confirm or reject ideas under consideration. Relatively unconstrained theorizing can chart the way forward, but ultimately they need to put to test. I would have liked Hogan to try to corral his theorizing by suggesting ways that one might confirm or reject these ideas.

Let me end by restating my basic view that this is an important book. Scientists should take special note of two issues among the many that Hogan raises. First is the distinction between public and private aesthetic experiences. Keeping this distinction in mind will undoubtedly refine the design of experiments constructed by scientists and advance our understanding of individual variability and the effects of semantic-knowledge on emotion-valuation systems. Second is the highlighting of attachment as an important emotional construct in aesthetic experiences and how this can differentiate between the security of beauty and the insecurity of the sublime. Scientists are sensitive to the idea that we would do well to expand our studies beyond querying simple preferences for beautiful objects and consider more nuanced aesthetic emotions. Hogan points us in a direction that may very well prove to be profitable.

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