

A Behavioral Interpretation of Aesthetics

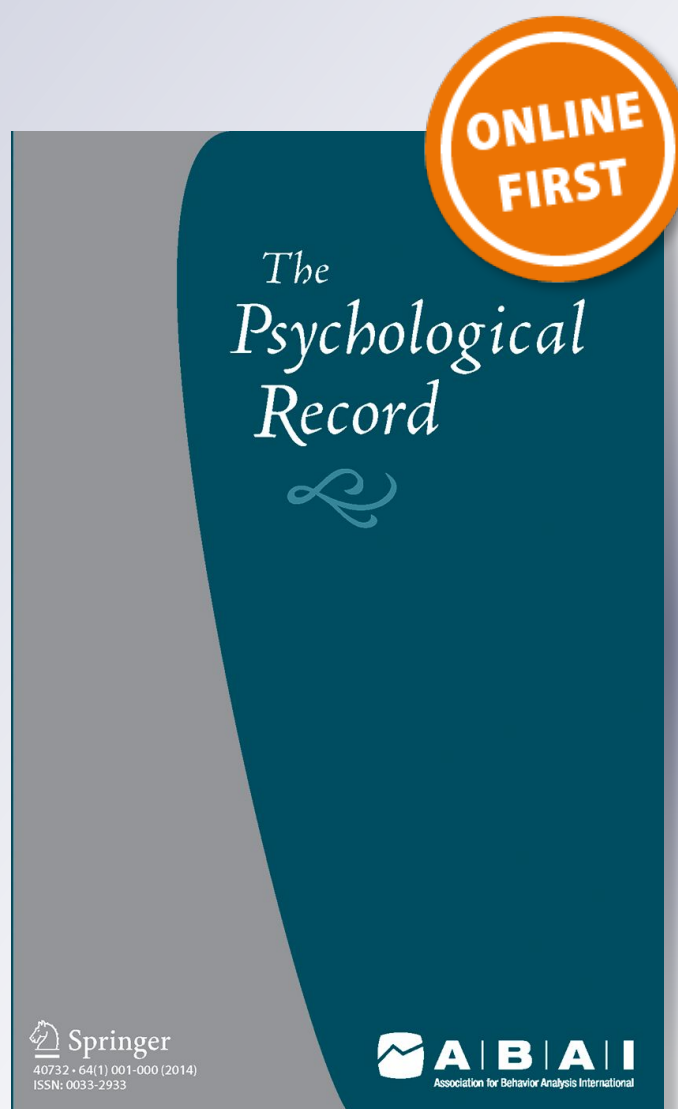
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A Behavioral Interpretation of Aesthetics

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Abstract

A behavioral interpretation of aesthetics will doubtless require a series of successive approximations to reach a wholly satisfactory formulation. The present article is an attempt to refine part of Mechner's analysis using a more restrictive vocabulary, that of terms that have emerged from the behavioral laboratory. Given the magnitude of the task, the present proposal is confined to aesthetics in literature. Examples and nonexamples are offered to support the proposal that aesthetics in literature entails multiple stimulus control that evokes large jumps in the strength of incipient behavior. This leads in turn to an efflorescence of discriminative and elicited responding that characterizes the subjective aesthetic experience. The terms of this interpretation are taken as partial behavioral translations of Mechner's concepts of synthetic brew, priming, transformation, and surprise.

Keywords Aesthetics · Literature · Multiple control · Response strength

Only rarely does the background music playing over loudspeakers in public halls arouse enthusiasm, but at a professional conference in Orlando in 1998, I was alone in an empty hall when I heard the faint strains of Mozart's "Rondo alla Turca" faintly playing in the background. I found it hauntingly beautiful. But why was it more beautiful than any other background music I had heard that day? Perhaps in part because it was a familiar tune that I had not heard for many years, and it evoked poignant memories of my childhood, when my father would play his scratchy 78 RPM records on our old Victrola, but surely also because it is a sprightly and uplifting piece with a recurring theme that one must irresistibly sing along to. The effect was powerful enough that I searched for the loudspeaker so that I could hear the music more clearly. But to my surprise, the music was not coming from a loudspeaker but from a distant piano at the end of a long, deserted corridor. As I approached, I discovered that the pianist was Francis Mechner. He looked up, smiled, and chatted lightly, without missing a note, and I realized that I was in the presence of a virtuoso, someone who knew how to create beauty. Now I have learned that he can analyze it as well; his mono-

graph is comprehensive, highly original, and carefully crafted, itself a thing of beauty.

In what follows I will offer my own speculations on the topic inspired partly by Mechner's article and partly by participation in a related conference symposium. I believe these speculations can be subsumed within Mechner's account, but they confine themselves to a more limited vocabulary, namely the narrow vocabulary of behavioral principles and concepts. Mechner does not hesitate to dip into a wider pool for his terms, and given the scope of his article, that policy may have been necessary. But ultimately terms such as "priming," "transformation," "surprise," "synergetic brew," etc., must find a translation in basic behavioral processes, and my goal is to offer a closer approximation to such a translation. But I have found it to be a difficult exercise. Every generalization that occurs to me appears to be subject to exception. Nevertheless, I see no alternative to a process of successive approximations. We must tolerate some exceptions early on, with the expectation that they will eventually be embraced as our analyses evolve. Mechner has made an ambitious start. It is up to those who follow him to try to inch us toward a more comprehensive account.

It is tempting to seek an explanation for our appreciation of beauty in natural selection, and perhaps there are aesthetic universals that are related in some way to reproductive fitness, but it is surely true that much of what we call beautiful is indeed in the eye of the beholder. It is clearly so in music, art, and poetry, where tastes differ widely among both

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individuals and cultures. In what follows, I have chosen to tear off a corner of the problem. In particular, I will attempt to provide a strictly behavioral interpretation of beauty in the written word. Perhaps the analysis can then be scaled to embrace more diverse phenomena.

As a starting point, I appeal to Skinner's remarks on the effect of texts on a reader:

We do not enjoy hearing someone say what we ourselves also tend to say in full strength. If a lecturer says what we have been "saying all along," we are not helped nor are we pleased. Obvious remarks are neither useful nor delightful, nor are heavy doses of clichés, well-known stories, and so on. We could have said the same thing ourselves and did not only because an occasion was lacking upon which the behavior would be reinforced. At the other extreme, we cannot use and do not "like" behavior which has no appreciable parallel in our own repertoire. The discussion of an obscure detail, an account of a wholly unfamiliar subject, unrecognized literary allusions, farfetched metaphors, intraverbal sequences which do not follow from the contiguous usages of our own experience, not to mention wholly unfamiliar verbal forms, are both worthless and dull. . . . Between these extremes the speaker may be of considerable help. He is sought after because he supplies stimuli which permit us to engage in useful behavior. We are especially reinforced by speakers and writers who say what we are *almost* ready to say ourselves—who take the words "off the tip of our tongue." (Skinner, 1957, pp. 271–272)

I was delighted when I first read this passage, for it struck me as a profound truth and, as such, a thing of beauty. Indeed, I neatly illustrated Skinner's point, for I had been almost ready to say such a thing myself. We are bored by texts that tell us nothing new, and we are baffled by texts that are so obscure or difficult that we learn nothing from them. It is the text that brings strands of incipient behavior to strength that delights us. I suggest, then, that we find beauty in writing when the following conditions hold:

- 1) The text exploits multiple sources of control that occasion big jumps in the strength of a response, or a constellation of responses.
- 2) These responses had previously been under "incomplete" control—that is, discriminative stimuli were already calling for them, but too weakly for them to actually be emitted.
- 3) Once emitted, these responses in turn evoke a cascade of discriminative and elicited behavior. That is, the panorama of behavior is dominated by the aesthetic stimulus

and its evoked behavior, whereas the context prior to the onset of the aesthetic stimulus exerts little control. It is this transition from incipient behavior to an efflorescence of strong behavior that is characteristic of aesthetic experience.

Mechner's *synergetic brew* entails the concept of multiple control; *priming* entails precurrent events that bring behavior to partial strength; and *transformation* implies an "efflorescence of strong behavior." However, as Mechner notes, "our vocabulary does not come close to providing names for all the nuanced emotional responses [embraced by this subject matter]" (this issue), so these translations must be taken as first approximations.

In what follows, I offer what I take to be examples and nonexamples of good writing in an attempt to identify critical features of the former. I begin with poetry, which, in all its forms, is a deliberate attempt to add an aesthetic element to semantic content that might have been expressed in other ways. A couplet taken from Shakespeare's *Cymbeline* offers a case in point:

Golden lads and girls all must
As chimney-sweepers, come to dust.
(IV, ii: 262–263)

It is embedded in an elegy for a princess and her half-brother, so the death of golden lads and girls has thematic strength provided by the verbal context. But the prose equivalent, "even healthy kids die sooner or later," would have fallen flat. It is an obvious truism, and as noted above, truisms are a tedious waste of the reader's time. The reader might easily have said such a thing without textual support and therefore experiences no potentiation of incipient behavior. The couplet, on the other hand, makes the point in a form that one would be highly unlikely to say without textual support. Nearly every syllable of the couplet is controlled by multiple variables. Michael, Palmer, and Sundberg (2011) made the point with respect to just the last three words:

Come to dust is a figure of speech partly under control of the formal contributions of both meter and rhyme. Some intraverbal strength arises from the term *gold dust*, and the phrase is further strengthened by the thematic control of the inevitability of death, with biblical, liturgical, and colloquial antecedents (*dust to dust*). It gets some strength by its antithesis to *golden lads and girls*; indeed that antithesis is the very point of the couplet, giving it power and poignancy. But it is given a further boost, and a conspicuous one, by the antecedent reference to chimney-sweepers, commonly poor

children who worked amidst clouds of dust and, notoriously, died young. (p. 11)

The relevance of multiple control is further emphasized by Skinner's criticism of the couplet. He found fault with Shakespeare on the grounds that "chimney-sweepers" is insufficiently justified: "The chimney-sweeper in the quotation from *Cymbeline* is dragged in to give *come to dust* a second source of strength" (Skinner, 1957, p. 240). That he found the term to be an aesthetic blemish because of its prior lack of strength highlights our second criterion above, namely, that responses have some strength prior to the putative aesthetic stimulus. The point is made all the more clearly by the supposition that Skinner would have been delighted had he known what Shakespeare's contemporary audiences knew, namely that in Jacobean England "golden lad" was a colloquial name for a dandelion and "chimney-sweeper" for a dandelion gone to seed (Ackroyd, 2005). This bit of folk nomenclature reintroduces the element of multiple control (our first criterion above) and binds all of the parts of the couplet together in a remarkable and aesthetically pleasing way.

What of our third criterion that these conditions evoke an effusion of discriminative and elicited responding? A student forced to read Shakespeare in school would perhaps merely plod on to the next line while daydreaming about the soccer pitch, but a more receptive reader might see gauzy images of laughing children tripping through sun-dappled meadows, grimy half-starved waifs toiling in service to Dickensian taskmasters, and an approaching black cloud taking on the vague shape of a scythe. As Mechner notes, such effects would differ widely from person to person according to their histories and current circumstances, but the richer the tableau of such responses, the greater the subjective aesthetic effect.

A second example provides a kind of natural experiment in literary aesthetics. The following passage is taken from the King James translation of the Bible (Ecclesiastes 9:11):

I returned, and saw under the sun, that the race is not to the swift, nor the battle to the strong, neither yet bread to the wise, nor yet riches to men of understanding, nor yet favour to men of skill; but time and chance happeneth to them all.

The New Living Translation of the Bible (1996) is a recent version intended to correct the defects of earlier translations in light of the latest advances in biblical scholarship and to render the text more natural to modern readers:

I have observed something else under the sun. The fastest runner doesn't always win the race, and the strongest warrior doesn't always win the battle. The wise sometimes go hungry, and the skillful are not necessarily

wealthy. And those who are educated don't always lead successful lives. It is all decided by chance, by being in the right place at the right time.

Is there a reader with an ear so dull that he cannot hear that the timeless beauty of the King James Version has been stripped from the modern translation, that a moral for the ages has been converted to a tedious platitude, unfit even for the margins of a desk-top calendar? Our modern scholars might have saved themselves some trouble if they had been aware of George Orwell's parody, carefully crafted as an example of dreadful writing:

"Objective consideration of contemporary phenomena compels the conclusion that success or failure in competitive activities exhibits no tendency to be commensurate with innate capacity, but that a considerable element of the unpredictable must inevitably be taken into account" (Orwell, 1946, p. 258).

Both Orwell's parody and the modern translation retain the meaning of the original; the beauty of the King James Version, then, does not lie primarily in its meaning but in its structure. But what devices did the unknown scribe, deputized by James I in 1611, employ to charm us so? Orwell offers a clue:

The whole tendency of modern prose is away from concreteness. . . . The first sentence [the King James Version] contains six vivid images, and only one phrase ('time and chance') that could be called vague. The second contains not a single fresh, arresting phrase, and in spite of its 90 syllables [versus 60] it gives only a shortened version of the meaning contained in the first. Yet without a doubt it is the second kind of sentence that is gaining ground in modern English. (p. 259)

In behavioral terms, the difference between vivid images and vague one lies in the extent to which they evoke a big jump in the strength of relevant behavior (our first criterion) and are likely to evoke a cascade of subsequent related behavior (our third criterion). But the King James Version is not merely vivid; it employs meter, rhythm, and parallel constructions. These induce a pattern that supplements the text so that the structure of each successive image acquires partial strength before we even read the words (our second criterion, i.e., Mechner's *priming*). If we were challenged to insert new figures of speech into the passage in order to win, for example, Nobel prizes, chess championships, or political races, we could easily craft parallel constructions: "The White House is not to the statesman," etc. In contrast, notice the startling, painful effect of violating the rhythm: "The race is not to the swift, nor the battle to the strong, and wise men don't get any bread."

A final feature of the King James Version is that the sense of each image is left partly to the imagination. As written, each phrase violates common wisdom: the race is *not* to the swift. The reader must supply the missing critical term *always*, and therein lies some of the charm. The passage challenges us to wrestle with the apparent contradiction (an instance of our third criterion). In contrast, the New Living Translation spells out the sense of the passage for the meanest intelligence but retains all of the charm of a government tax form. It separates the wheat from the chaff and throws away the wheat.

My next example, a poem by Emily Dickinson (Johnson, 1960, p. 459), illustrates the gradual strengthening of response tendencies in the reader that is discharged in a remarkably vivid and surprising image in the closing lines of the poem:

A narrow Fellow in the Grass
Occasionally rides—
You may have met Him—did you not,
His notice sudden is—
The Grass divides as with a comb—
A spotted shaft is seen—
And then it closes at your feet
And opens further on—
He likes a Boggy Acre,
A Floor too cool for Corn—
Yet when a Boy, and Barefoot—
I more than once, at Noon,
Have passed, I thought, a Whip lash
Unbraiding in the Sun
When, stooping to secure it
It wrinkled, and was gone—
Several of Nature's People
I know, and they know me—
I feel for them a transport
Of cordiality—
But never met this Fellow,
Attended or alone
Without a tighter breathing
And Zero at the bone—

Space does not permit a detailed analysis of the aesthetic devices in the poem. Suffice it to say that, like most poetry, meter and rhyme are important sources of multiple control. The fresh and vivid imagery in the first four stanzas evokes increasing response tendencies in the reader with respect to nature, particularly to snakes, and for many people those tendencies are likely to be complex, varied, and perhaps mutually incompatible. The fifth stanza introduces a change of tone and theme. It asserts a general love of nature, a sentiment that almost all readers would endorse, so the final stanza comes as a surprise. Moreover, the vividness of her

confession that she fears snakes is so startling, yet so apt, that the reader is swept away. Has there ever been a more evocative expression of irrational fear than “zero at the bone?”¹ We are carried along by whatever incipient prejudices against snakes might have been potentiated by the first few stanzas of the poem. For a while, the panorama of our behavior is wholly dominated by the poem and the stream of associated effects, while the original context—the book, the room, the chair, the setting—is entirely overshadowed (our third criterion).

Prose is only rarely called beautiful, so the exceptions are especially informative. I find much of Thoreau's prose to be as beautiful as any poetry. The following passage from *Walden* is a case in point:

Sometimes I rambled to pine groves, standing like temples, or like fleets at sea, full-rigged, with wavy boughs, and rippling with light, so soft and green and shady that the Druids would have forsaken their oaks to worship in them; or to the cedar wood beyond Flint's Pond, where the trees, covered with hoary blue berries, spiring higher and higher, are fit to stand before Valhalla, and the creeping juniper covers the ground with wreaths full of fruit; or to swamps where the usnea lichen hangs in festoons from the white spruce trees, and toadstools, round tables of the swamp gods, cover the ground, and more beautiful fungi adorn the stumps, like butterflies or shells, vegetable winkles; where the swamp-pink and dogwood grow, the red alderberry glows like eyes of imps, the waxwork grooves and crushes the hardest woods in its folds, and the wild holly berries make the beholder forget his home with their beauty, and he is dazzled and tempted by nameless other wild forbidden fruits, too fair for mortal taste. (Thoreau, 1854/1950, p. 267)

Orwell would have praised the vivid imagery, and the passage has a poetic rhythm. Formal sentence structure is all but forgotten, as image piles upon image. But the charm of the passage lies mainly in the depth of feeling confessed by the author: He is dazzled and tempted; fruits are forbidden; he forgets his home and would forsake it to worship in pine groves, standing like temples. Primed by the fresh imagery, the reader is wholly unaffected by his own setting but is swept along with Thoreau's feelings in “an efflorescence of discriminative and elicited responding,”

¹ The power of a literary phrase can be indexed, in part, by its tendency to inspire book titles, e.g., *The Sun Also Rises*, *The Sound and the Fury*, *Remembrance of Things Past*. A cursory check of [Amazon.com](https://www.amazon.com) revealed 13 books titled *Zero in the Bone*, ranging from murder mysteries to snake bite advice. I thank Laurilyn Jones for pointing out this oblique source of literary validation.

As Mechner points out, aesthetic effects depend heavily on one's entering repertoire. That the discriminative and elicited responding evoked by a text depends on experience explains, at least in part, individual differences in aesthetic tastes. The literary novice delights in the thumping rhythms of Poe's *The Raven*, whereas the erudite scholar prefers the obscure allusions and multilayered imagery of James Joyce. Consider a line from Joyce's *Finnegans Wake* (1939/1999): "For a burning would is come to dance inane. Glamours hath moidered's lieb and herefore Coldours must leap no more. Lack breath must leap no more" (p.250).² To notice that it is an elaborate pun on lines from Macbeth (V.v.44–45; II.ii.42–43) is to scratch the surface. Here is one critic's exegesis:

Playing off of Shakespeare's lines . . . Joyce transmutes a Renaissance tragedy of noble death and betrayal into another tragedy with more local color. Burning "would" (desire) has led to madness (inanity). "Glamours" (glamour and love [French *l'amour*]) have murdered the body (German *Leib*) and confused (Gaelic *moider*) the whole issue of love (German *Liebe*). Consequently "Coldours" (a member of Les Six de rythme et couleur dance troupe) must stop dancing and leaping about. She no longer has the wind for it. (Shloss, 2003, p. 434)

Joyce is clearly not for everyone.

To some extent, an author can create a baseline repertoire that permits an aesthetic appreciation for what follows. We saw this in the Dickinson poem, in which the first few stanzas merely set the stage for the remarkable conclusion. Many great poems follow this pattern; Milton's "On his Blindness," Keats's "On First Looking into Chapman's Homer," and Matthew Arnold's "Dover Beach" come to mind. But in my experience the most elaborate example of building a baseline repertoire to season one's appreciation for an elegant rhetorical flourish is Darwin's *On the Origin of Species*. The book is a careful, thorough, and modest exposition of one of the most powerful ideas in the history of science. The world view of a naïve but receptive reader would surely undergo an astonishing transformation. The "efflorescence of discriminative and elicited responding" could go on indefinitely, as the new way of viewing nature is applied to every ecological niche in turn. It is in this context that Darwin's closing lines are powerful, elegant, and indeed beautiful:

Thus, from the war of nature, from famine and death, the most exalted object which we are capable of conceiving, namely, the production of the higher animals, directly follows. There is grandeur in this view of life, with its

several powers, having been originally breathed into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved. (Darwin, 1859, p. 490)

Conclusion

In this article I have attempted to take Mechner's comprehensive analysis of aesthetics one step closer to a purely behavioral analysis in the case of acquired appreciation in the domain of literature. I have suggested that multiple control, the abrupt strengthening of inchoate behavior, and a transition to a panorama of high-strength behavior are common features of writing that we perceive as beautiful. These concepts can all be subsumed by Mechner's more expansive analysis, but they have the virtue of being relatively tightly constrained. However, although I think there is some validity to this interpretation, I am also aware that, even in the domain of literature, it is incomplete, for the behavioral events identified here appear to be common to nonaesthetic effects as well. A telephone ringing at an unusual hour might heighten the probability of a range of worries; hearing the caller identify as a policeman would cause a dramatic jump in the strength of those worries; hearing that a loved one has been in a serious accident would lead to an effusion of discriminative and elicited responding of a most unpleasant nature. Although this hypothetical example is not literary, literary analogs abound—texts that evoke strong unpleasant reactions incompatible with what we commonly think of as aesthetic appreciation. We can exclude such examples by insisting that aesthetic effects are positively reinforcing, but not only does our condition introduce a whiff of circularity, it seems too general to embrace all the subtle and varied dimensions of aesthetic experience. I take some solace in Mechner's remark that "... it doesn't matter what we call it...what matters is the behavioral structure of the phenomenon" (this issue), but I take even more in recognizing that interpretive exercises in science are merely steps in a series of successive approximations toward a more complete analysis.

Compliance with Ethical Standards

Ethical Approval This article does not contain any studies with human participants or animals performed by the author.

Conflict of Interest The author declares that he has no conflict of interest.

² I thank Jack Marr for drawing my attention to this example.

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