



ADVANCES
IN
PSYCHOLOGY

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Cognitive
Processes
in the
Perception
of Art

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ELUSIVE EFFECTS OF ARTISTS' 'MESSAGES'

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Analyses of work of art, broadly defined, imply a discussion of its components or characteristics, and its intended impact on the viewer, listener, or reader. Such analyses of artistic styles and individual works are clearly one of the most important functions of art history and criticism. Also, although some artists have been reluctant to discuss publicly their works and intentions, many have been eager to write about their art, for instance, in the so-called 'manifestoes' (writings by Klee, Kandinsky, Boccioni, Delaunay, Mondrian -- and countless others in the visual arts alone -- are examples of this; e.g., Hoffman, 1954; Long and Washton, 1980; Orbourne, 1979; Rosenberg, 1966, 1975).

Moreover, even in the absence of verbal analyses, artists implicitly give indications of their beliefs about the way in which the work of art affects or should affect the audience. The simplest decision, such as to hang a painting in a certain orientation, present the parts of a musical piece in a certain sequence, use short or long paragraphs, or place the actors in a scene in one, as opposed to another, place on the stage, reflect the painter's, composer's, writer's, and director's, respectively, belief about their work's optimal impact. Even in the extreme case, when a work of art consists of random events (some compositions by John Cage are examples of this), there are good reasons to conclude that the artist believes that either the very randomness of the work's components, or the particular method of producing the random events, or both, will have an impact on the audience. In short, there is a large body of writing by art historians, critics, and artists themselves about the specific components of works of art and their supposed perceptual, cognitive, and emotional impact; such writings are not to be confused with the philosophical, historical, or political speculations about the alleged real or desirable 'social functions' of art.

For many reasons, some of the verbal analyses of works of art are of only literary or historical value. However, many statements are more precise and explicit about the relative contribution of individual components to the work's overall alleged impact about the artist's intended 'message' (in the broadest possible sense), and about the ways in which the work was constructed in order to achieve the desired effect. Such statements can often be translated into propositions that are empirically verifiable. To the extent that the psychology of art and music is in part concerned with the perceptual, cognitive, and emotional effects of works of art on appreciators, and that it has the requisite methodological and experimental tools, it would seem that its practitioners could provide an important service to the artists by informing them of the extent to which the intended message is actually 'getting through' to the audience. In other words, is

the audience perceptually, cognitively, and emotionally responding in the way that the artist (or critic) expects? Do certain parts of a work of art and its overall structure have the intended effects?

It can, of course, be argued that art is a completely spontaneous activity, that artists 'have to' create a work in a certain way, that artists neither consciously nor unconsciously show or should show any regard for the effect of the work on the audience and finally, that art is an entirely private activity. There is perhaps some truth to some such claims for some artists some of the time, but the very fact that artists do talk about the intended impact of their works and the components of these works, that at least some do hope for public, critical and social approval and acclaim (and that many apply for public funds or private support), and that art historians and critics do claim that they can discern the artists' intentions concerning the work's 'message' and the way that message is constructed, all suggest that much if not most art is meant to be presented, that it is more than an entirely private activity, and that it is therefore reasonable to submit artists' and critics' claims about the impact of works of art on the audience to psycho-aesthetic scrutiny.

In the remainder of this chapter, I present the results of 5 studies each of which attempted to evaluate empirically an explicit or implicit claim made by an artist, critic, or art historian about the intended perceptual, cognitive and emotional impact of an overall work of art or some of its components. In the different studies, paintings, literary works, dramatic performances, and musical pieces (classical and rock 'n' roll) were used as stimuli, and with a variety of audiences. All studies had the same format. First, an explicit or implicit claim by an artist, art historian or art critic about the impact, effect, or purpose of a work of art, that could be clearly translated into a testable form, was isolated. Next, original and modified (control) versions of the work were presented to subjects. Finally, the subjects rated the various versions' pleasingness, interestingness, emotional impact, and related characteristics or dimensions.

STUDY 1: ORIENTATION OF PAINTINGS

The decision to present a painting for viewing in a particular orientation is clearly one of the most basic statements an artist can make; it obviously reflects the artist's beliefs regarding the optimal impact of that painting on viewers. In representational art, of course, orientation is almost never at issue. In abstract art, however, a 'natural' orientation is often not obvious from the content of the painting; instead, the artist defines the proper orientation by hanging the painting in a certain way. This decision can be thought of as a fundamental part of the artist's 'message'.

Would that message be lost, or become weaker or distorted, if the unsuspecting viewers were to be presented with abstract paintings rotated 90° or 180° from the 'correct' orientation? Would such a rude intervention in the communication between the artist and the viewers -- an intervention which fundamentally alters the balance of a painting in terms of form and colour on the horizontal and vertical dimensions (Western paintings are very seldom symmetrical) reduce the pleasingness and interestingness of paintings?

A related issue, and one not limited to abstract art, is the lateral (left-right) organization of paintings. Gordon (1981) and others credit Wolfflin (1941) for suggesting that paintings are typically scanned from left to

right (for whatever reason, such as hemispheric dominance or the reading sequence), and that the left-right scanning pattern is responsible both for the widespread lateral asymmetry in Western painting and the subjective impression of a pronounced change in the appearance of paintings following the right-left mirror reversal.

Subsequently Wofflin's ideas were refined considerably by Gaffron (1950, 1962) who proposed the existence of a 'glance-curve' -- a typical scan that begins at the bottom left and proceeds to the top right and into the three-dimensional space portrayed in the painting. The glance curve would explain, according to Gaffron, all the various changes that occur when a painting is mirror-reversed.

In an outstanding paper on the left-right organization of paintings, Gordon (1981) extracts no less than eighteen testable claims that have been made by Gaffron, Arnheim (1956), and others regarding the left-right differences in paintings, the most important of which is that 'pictures cannot be mirror reversed without losing much of their aesthetic quality ... when reversed, they appear less balanced, less well composed' (Gordon, 1981, p. 224).

However, after reviewing 8 relevant experiments, which have used a wide variety of subjects and paintings, Gordon (1981, p. 233) concluded: 'Overall, detection of original orientations is poor ... Even when above chance, the mean detection rate is typically only about 53 per cent ... Original orientations are not overwhelmingly preferred'.

The present study is a replication and extension of the work of Lindauer (1969), Swartz and Hewitt (1970), and Gordon and Gardner (1974). Within a single study, the effects of mirror reversal of representational works, and of mirror reversal and 90°-rotations and 180°-rotations of abstract works, were comprehensively examined. In addition, the study examined the effects of the knowledge of a painting's title (actual or fictitious) on various dimensions of preference.

Method

The subjects were 120 undergraduates (60 women, 60 men) from the University of California at San Diego and the University of California at Los Angeles. Demographic and art-related information was obtained from all subjects.

Thirty representational and 30 abstract works were used as stimuli (see Table 1), all painted in the twentieth century (to ensure aesthetic consistency and overlap of artists). In the correct orientation, all 60 paintings contained a left-right asymmetry in terms of form and colour. The terms 'representational' (R) and 'abstract' (A) are here used loosely. Paintings in the R group contained a variety of abstractions and distortions common in the movements represented (cubism, fauvism, metaphysicism, expressionism, 'die-Brücke', 'Blaue Reiter' and surrealism). All R-group paintings, however, were sufficiently representational that the correct position (in terms of top-bottom orientation) was in no doubt whatsoever. In contrast, A-group paintings were entirely ambiguous in this sense; there was nothing in these paintings that revealed or dictated the correct top-bottom orientation (other than the artist's decision). Paintings in the A-group, in addition to those that are commonly classified as abstract in the narrow sense, included many surrealist, fauvist, cubist, futurist, 'Blaue Reiter' and Dadaist works.

TABLE 1
Representational works used in Study 1

De Chirico	The disquieting Muses (1917)
Kandinsky	The blue horseman (1903)
Kandinsky	Beach cabins in Holland (1904)
Kandinsky	Russian beauty in a landscape (1905)
Kandinsky	A street in Murnau (1908)
Klee	In the mine (1913)
Klee	With the eagle (1918)
Klee	Landscape with yellow birds (1923)
Kokoschka	Old man Hirsch (1907)
Kokoschka	Marseilles (1925)
Léger	The mechanic (1920)
Léger	The dancer with keys (1930)
Léger	Four cyclists (1943-48)
Léger	The great parade (1954)
Magritte	Discovery (1927)
Magritte	Bather between light and darkness (1935)
Magritte	Personal valuables (1952)
Magritte	Euclidean walks (1955)
Matisse	Bathers by a river (1916-17)
Matisse	Interior at Nice (1921)
Matisse	Pink nude (1935)
Matisse	The big red interior (1948)
Munch	Village street in Elgersburg (1905)
Munch	Weeping woman (1906-7)
Munch	Death of Marat (1907)
Picasso	The old guitarist (1903)
Picasso	Mother and child (1921)
Picasso	Three musicians (1921)
Picasso	The rooster and the knife (1947)
Munch	Young people on the beach (1903-04)

Abstract works used in Study 1

Boccioni	Elasticity (1912)
Duchamp	The transformation of a virgin into a bride (1912)
Ernst	Mother and children on planet Earth (1953)
Kandinsky	Improvisation 30 (1913)
Kandinsky	Improvisation 'Klamm' (1914)
Kandinsky	In the black circle (1923)
Kandinsky	Quiet (1924)
Kandinsky	Several circles (1926)
Klee	To the stars (1923)
Klee	Individual altimetry of layers (1930)
Klee	Drunkenness (1939)
Klee	The sailor (1940)
Kupka	Vertical planes, blue and red (1913)
Kupka	Philosophical architecture
Léger	Composition (1918)
Léger	Butterflies and flowers (1937)
Magritte	The false mirror (1928)
Malevich	Suprematist composition (1915-16)
Matisse	The king's sadness (1952)
Matisse	The snail (1953)
Miró	Catalon landscape, the hunter (1923-24)
Miró	Night bird (1939)
Miró	The white lady (1950)

Miró	The violet color of the moon (1951)
Mondrian	Oval composition (1914)
Mondrian	Composition red-yellow-blue in a square (1926)
Mondrian	Broadway boogie-woogie (1942-43)
Villon	Joy (1932)
Villon	Toward Chimaera (1947)
Villon	Icarus (1956)

Subjects, in groups averaging 10 people, saw all 60 slides for 60 seconds each. Each single subject saw a painting only once, in either the correct or mirror-reversed orientation for R-paintings, and either the correct, or 90°-rotated, 180°-rotated, or mirror-reversed orientation for A-paintings. When a new slide came on, the experimenter read either its correct title or a fictitious, unrelated, but not ridiculous title (e.g., 'Mother Nature' for Matisse's 'Pink nude'; 'Rocks III' for Klee's 'Individual altimetry of layers'), or no title at all. In other words, the R versus A (type of painting) factor was examined on a within-subjects basis; the orientation factor (2 levels for R-paintings, 4 levels for A-paintings) and the title information factor (3 levels) were between-subjects.

While viewing a slide, subjects rated the painting's pleasingness, interestingness, balance, emotional impact, appropriateness of title and willingness to buy a reproduction on 20 cm scales. These scales have been successfully used in prior work and their correlations are known (e.g., Konečni and Sargent-Pollock, 1977; Sargent-Pollack and Konečni, 1977). In addition, following the pleasingness, interestingness, emotional impact, and balance questions, the subjects indicated, in a multiple choice format, what made a painting pleasing, interesting, and so on (colour, composition, movement, subject, contrast and humour were among the options).

Results

When their effects were compared (in correct orientations), it was found that representational paintings were significantly ($p < .01$, unless otherwise stated) more pleasing ($M = 10.6$), more desirable to own ($M = 8.3$), more balanced ($M = 7.9$, $p < .05$), and had a greater emotional impact ($M = 8.2$) than did the abstract works (the respective means for A-paintings were 7.8, 6.8, 6.9 and 7.0). The two groups did not differ in terms of interestingness (M s for R- and A-paintings were 11.2 and 11.0 respectively).

The absence of effects of orientation for both groups of paintings and all rating dimensions was quite striking. In terms of pleasingness, mirror reversal changed the means quite negligibly, for R-paintings to 10.4 (from 10.6 in the correct orientation) and for A-paintings to 7.9 (from 7.8). Mirror reversal had similarly weak effects on other dimensions of judgment for both groups of paintings.

The experimental analogue of hanging an abstract painting upside down (rotating it by 180°) similarly had no effect on any of the dimensions of judgment (M for pleasingness, for example, was 7.5). Only when an abstract painting was rotated 90° was there a decrease, albeit very small ($p < .15$), in pleasingness. (This result is analogous to that obtained by Lindauer, 1969).

These results would clearly lead one to regard Gordon's (1981, p. 233)

conclusion that 'original orientations are not overwhelmingly preferred' as an understatement. Furthermore, no effect was found of art training or of the degree of exposure to art (Gordon came to a similar conclusion). Finally, no consistent pattern emerged regarding the reasons subjects gave for their pleasingness and other judgments (in terms of colour, composition, movement, etc.)

The original titles of the paintings fared rather worse than the original orientations. Fictitious titles were preferred significantly over the original ones for both R- and A-paintings (which did not differ from each other in terms of the judged appropriateness of the original titles). However, the judged appropriateness of titles was uncorrelated with the pleasingness, interestingness and other ratings. Also, there was no overall greater preference for paintings when titles (actual or fictitious) were given, as opposed to not given.

In summary, whatever the messages are that major twentieth century painters are sending by their paintings' orientations and titles seem to be altogether lost on many viewers.

STUDY 2: ROCK 'N' ROLL LYRICS

Rock 'n' roll (loosely defined) is a huge industry and its products have a gigantic world-wide audience. Listening to rock 'n' roll in cars, in clubs at work, and at home, while walking, roller-skating, and bicycling, is more than a casual past-time for many millions of people; it is the focus of many people's lives and relations, an integral part of the social fabric, and is at the core of several subcultures (cf. Konecni, 1982). To ignore this powerful musical medium on the grounds of inadequate artistic quality is to misunderstand seriously the reality of musical enjoyment in the daily lives of millions of men and women. Elitist standards cannot conceal the huge gulf that exists between rock 'n' roll, on one hand, and what may (perhaps correctly) be claimed to be the pinnacles of human musical achievement, on the other, in terms of influence, exposure, the frequency of listening, and the size of the audience -- all in favour of the former.

Predictably, the mushrooming of rock 'n' roll has been accompanied by a proliferation of specialized magazines (many with very large circulations), books, theorists, liner-note writers, and critics. Serious record reviews, interviews with musicians, and theoretical attempts, though they must vie for space with gossip columns and sensationalist hype, nevertheless abound. Much of the writing, perhaps in direct proportion to how well-informed it is (or how seriously it takes itself) is concerned with the lyrics of rock 'n' roll songs almost as much as with the music.

A number of rock 'n' roll artists, perhaps rightly so, have been hailed as genuine poets, others as influential social commentators that have spawned movements and subcultures and dramatically affected the course of a war. Rock 'n' roll lyrics have been seriously analyzed as indicators of changing social values on important topics such as sex, racial relations, war, patriotism, and economic conditions (e.g., Tosches, 1983).

There seems to be no question, then, that serious critics claim that they can discern a message in rock 'n' roll lyrics, a point amply corroborated by the artists themselves in statements they often make in interviews. The present study submitted these claims to experimental scrutiny.

Method

The subjects were 50 men and women from different walks of life, from the San Diego and Los Angeles areas, all under the age of 30. The study was conducted in a music studio at the University of California at San Diego.

A cassette tape (total listening time: 60 minutes and 56 seconds) was prepared. It contained 16 musical selections, 2 songs by each of 8 artists (see Table 2) presented in random order. The songs differed in familiarity, but were of similar duration. The artists represented a broad spectrum of musical styles (including hard rock, folk rock, punk, new wave, jazz, pop, and soul-pop), and were, with some exceptions, well established and widely popular. An important criterion for inclusion was the availability of a direct quote from the artist regarding the message, subject, or meaning of the song in question (see Table 2 for sources).

The subjects, in groups of 10, listened to all 16 selections. Unbeknownst to others, half of the subjects in each group received a list of the artists' names which matched the order in which their songs were played. While listening to a song, or in the interval between songs, the subjects answered a brief questionnaire about each selection. They were explicitly asked: 'What is the message/purpose of this song?' and given 4 options in a multiple-choice format. For each song, there was a correct choice (as defined by the artist in direct quotes in interviews or liner notes), an almost-correct choice (somewhat close in meaning, but with a key misinterpretation or omission), and two incorrect choices (plausible general statements, but entirely unrelated to the message of the song in question).

To assess familiarity, the subjects rated songs on a 10 cm very-familiar/ completely-unfamiliar scale, and were also asked for the name of each song. Finally, they rated the pleasingness and interestingness of each selection on 10-cm scales.

Results

In response to the question about the message/purpose of the songs, the subjects chose the artist-defined correct alternative only 28% of the time (25% is chance; the percents were 29 and 27 for subjects who had and had not been, respectively, informed of the artists' identity). The almost-correct alternative was chosen 24% of the time (26% by the informed group, and 22% by the uninformed subjects). Thus, informed subjects chose one of these two alternatives -- to give them the maximum benefit of the doubt -- only 55% of the time, and the subjects who had not been told the artists' names actually performed slightly below chance, choosing the correct or semi-correct options a total of 49% of the time. For only 4 songs did over 50% of the subjects manage to divine the artist's message and choose the correct option (in the case of one of these songs, this was accomplished only by the informed subjects). For only 2 songs, one by James Taylor and one by the Waitresses, were the informed subjects significantly more accurate than the uninformed ones. Overall, two conclusions can be drawn: (a) For this sample of songs and subjects, the artists' messages were not 'getting through' above the chance level; and (b) being informed of the name of the author/singer of a song rarely made a difference in terms of the accuracy in deciphering the message.

The rated familiarity with the songs ranged from 2.8 (on a 10-cm scale) for one of the songs by the Waitresses, to 9.8 for Stevie Wonder's 'You are the

sunshine of my life', with a mean of 6.7. Very few songs were rated as completely unfamiliar by more than a handful of subjects, and very few subjects rated more than one or two songs as completely unfamiliar. In other words, the selection of songs for use in the study was not too esoteric, and the subjects were generally quite familiar with the rock 'n' roll idiom (broadly defined). The rank-order correlation between the songs' familiarity and the frequency with which their messages were accurately understood was surprisingly low (.16). Furthermore, knowing a song's name was significantly associated (Chi-square) with correctly interpreting the artist-defined meaning in the case of only 4 songs.

TABLE 2 Musical selections used in Study 2

ARTIST	SONG NAME	ALBUM NAME	REFERENCE FOR THE INTENDED MESSAGE
Devo	Jocko-Homo Too Much Paranoia	Are We Not Men?	Rolling Stone, 25 January 1979
Herbie Hancock	Chameleon Sly	Headhunters	Rolling Stone, 6 October 1977
Keith Jarrett	Part I Part IIc	The Köln Concert	Rolling Stone, 25 January 1979
James Taylor	B.S.U.R Johnnie Comes Back	Flag	Rolling Stone, Interviews, 1967-1980, Rolling Stone Press, 1981
Pete Townsend	Empty Glass Just a Little is Enough	Empty Glass	"
The Waitresses	Wise up Pussy Strut	Wasn't Tomorrow Wonderful	Rolling Stone, 24 April 1982
Stevie Wonder	You are the sunshine of my life You've got it bad girl	Talking Book	Downbeat 13 September 1973
Frank Zappa	Wowie Zowie Trouble Every Day	Freak Out	Album Cover

On the average, the songs were rated as both quite enjoyable and interesting (the Ms were 7.9 and 7.4, on 10-cm scales; incidentally, the correlations between these 2 measures were .82 for the informed subjects and .75 for the uninformed, and significant). Thus, it seems reasonable to assume tentatively that the subjects did not reject the selections or fall asleep.

What then accounts for the low accuracy in the comprehension of the artists' messages? A number of possibilities suggest themselves. One is that the artists' ideas and intentions (as stated in interviews) are not captured by the songs' lyrics (but the interviewers are either unaware of this or reluctant to point it out). Another is that people actually do not regard the lyrics in rock 'n' roll as important and do not listen to them carefully, perhaps with the exception of truly seminal songs (though, in the present study, the subjects' attention would have certainly been drawn to the lyrics by having to answer lyrics-related questions after each song). A further possibility is that the artists' diction was so poor as to preclude the comprehension of the ideas expressed in the lyrics. Whereas poor enunciation may be an intentional (or unintentional) attribute of some singers and styles in rock 'n' roll, it is by no means ubiquitous, and the great majority of the songs used in the present study was characterized by perfectly audible and comprehensible lyrics.

Whatever the reason the fact is that often the artist-defined messages of the songs used in the present study were not 'getting through' to the listeners.

STUDY 3: STYLE IN LITERARY DISCOURSE

Close to the beginning of an influential essay on the renowned French essayist Roland Barthes (who died in 1980), Susan Sontag (1982) says of Barthes's writing style:

Typically, his sentences are complex, comma-ridden and colon-prone, packed with densely worded entailments of ideas deployed as if these were the materials of a supple prose. It is a style of exposition, recognizably French, whose parent tradition is to be found in the terse, idiosyncratic essays published between the two world wars in the 'Nouvelle Revue Française' - a perfected version of the N.R.F.'s house style, which can deliver more ideas per page while retaining the brio, the acuteness of timbre' (p. 122).

And later, with apparent approval, on Barthes's views on the role of the literary critic: '... (T)he critic is called on to reconstitute not the 'message' of a work but only its 'system' - its form, its structure .. (p. 123)

Sontag thus focuses on (1) the critic as an interpreter of other writers' form (and formalisms) and (2) the stylistic conventions and formalisms - and especially the breach of these - used by the critic as a writer; hence the title of Sontag's essay. Throughout the essay, there are intimations (that can be traced to Shklovsky and others in the 1920's, as well as to numerous artists and critics in music, theatre and the visual arts) to the effect that sophisticated uses of formalisms, conventions, and departures from conventions themselves constitute a 'change in meaning' with psychological counterparts -- in the reader -- on both the intellectual and emotional planes. These claims should be empirically testable. Sontag continues:

For the purposes of achieving an ideal digressiveness and an ideal intensity, two strategies have been widely adopted. One is to abolish some or all of the conventional demarcations or separations of discourse, such as chapters, paragraphing, even punctuation, whatever is regarded as impeding formally the continuous production of (the writer's) voice - the run-on method favored by writers of philosophical fictions, such as Hermann Broch, Joyce, Stein, Beckett.

The other strategy is the opposite one: to multiply the ways in which discourse is segmented, to invent further ways of breaking it up. Joyce and Stein used this method too. (p. 127)

The present study attempted to examine the cognitive (comprehension of ideas, memory for detail, interest) and emotion-related (enjoyment) effects of tampering, in various ways, with fairly long excerpts from works written by Barthes, Beckett, Broch, and Stein. For good measure, an excerpt from Sontag's essay on Barthes was tampered with also (unlike the other 4 writers Sontag writes in a 'normal' style that she herself would probably call 'linear' as opposed to 'serial').

Method

The original excerpts and modifications used in this study are listed in Table 3. Six original excerpts, by 5 authors, were modified in various ways, depending on the form they were in. Continuous text or long paragraphs were broken into shorter paragraphs; very short paragraphs were fused together; long sentences were broken into shorter ones; and so on. Only one type of modification was applied to a particular original excerpt (except for 9, see Table 3). Every effort was made to preserve the original meaning, while interfering liberally with the formal aspects of the texts.

The 6 original excerpts and the 7 modifications (about 27 typewritten pages altogether) were read by 48 students in classroom settings. The students were from the University of California in San Diego. The 13 excerpts were arranged in 3 different quasi-random orders (16 subjects per order), but in no case did an original excerpt immediately precede or follow its modification. The 3 orders were about equal in terms of the number of times that original excerpts appeared in the sets before vs. after their modifications -- about 50% of the time in each order. The subjects read at their own pace (averaging about 4 minutes, 30 seconds per excerpt). After reading each excerpt, they first answered 3-4 questions designed to test memory for details and comprehension of general ideas in the excerpt (different questions were asked after the original and modified versions of an excerpt within a set). The subjects then indicated on 20 cm scales how much they enjoyed the excerpt, and what they thought of its content and style.

Results

The means for the original excerpts on the 20-cm enjoyment scale were all in the 6-8 range, with the exception of the excerpts by Stein (9.5) and Beckett (Ms = 9.4 and 9.1 for excerpts 5 and 3, respectively), which were enjoyed the most, and the excerpt 1 (Barthes), which was enjoyed the least (M = 5.7) (M = 7.4 for excerpt 10, Sontag). Similar results were obtained on the quality-of-content and style scales (the 3 correlation coefficients between these scales were all in .50 to .60 range and significant).

A more interesting finding was that none of the rather drastic and varied modifications led to any significant decreases in either the enjoyment of the excerpts or in the judged quality of their content and style (indeed, nonsignificant increases on some of these dimensions for some of the excerpts were obtained). Furthermore, there were no memory and comprehension deficits as a function of tampering with the texts; if anything, there was a trend ($p < .10$) for both memory and comprehension to improve in cases where

continuous text (3 Beckett) or long, information-packed paragraphs (10 Sontag) had been broken into shorter paragraphs.

TABLE 3 Original excerpts and modifications in Study 3

EXCERPT	EXCERPT
1. R. Barthes. The pleasure of the text; *3.5 pp of text from pp. 11-15; this came to 3.5 pp in the typed version;	2. Omission of wide gaps (with and without three asterisks) between paragraphs (original paragraphs preserved); 3 pp. of typed text;
3. S. Beckett, <i>Molloy</i> * 1.5 pp. of text from pp. 27-28; 1.75 pp. of typed text;	4. Continuous text broken into 8 paragraphs; 2.25 pp. of typed text.
5. S. Beckett, <i>Molloy</i> * 1.5 pp. of text from pp. 151-153; 1.5 pp. of typed text.	6. Fusion of 10 paragraphs into 2; 1.1 pp of typed text;
7. H. Broch, <i>The death of Virgil</i> . * 1.75 pp. of text from pp. 80-82; 2.3 pp. of typed text;	8. Shortened sentences; 7 sentences in the original, 18 in the modification; 2.3 pp. of typed text;
Same as 7	9. Shortened sentences (as in 8), and also continuous text broken into 6 paragraphs; 2.8 pp. of typed text;
10. S. Sontag, <i>Writing itself: On Roland Barthes</i> . * One column from <i>The New Yorker</i> , p. 127; 1.2 pp. of typed text.	11. Two paragraphs broken down into 11 (resulting mostly in one-sentence paragraphs); 1.7 pp. of typed text;
12. G. Stein, <i>Four in America</i> *. 1.5 pp. of text from pp. 3-4 (the beginning of "Grant"); 2 pp. of typed text.	13. Fusion of 15 paragraphs into 4; 1.6 pp. of typed text.

* See References for the exact edition used

These subjects clearly did not show an overall preference for either the dense run-on method, or the segmentation method (the two which Sontag discussed in her essay), or, for that matter, for the 'normal' method (Sontag's own). Also, there was clearly no increase in enjoyment as a function of attempts (the various modifications) to transform the extremes into more modal forms (in terms of sentence length, paragraphing, and so on). Rather, it seems to be the case, that for these excerpts, these stylistic modifications and judgment dimensions, and these subjects, the formalistic aspects simply did not matter -- although, as shown by the data, this unresponsiveness to form by no means implied a lack of either enjoyment or comprehension.

STUDY 4: ORDER OF MOVEMENTS IN BEETHOVEN'S QUARTETS AND SONATAS

'Why (is it that) the chronology of the themes of a masterpiece cannot be changed (?) Why does one thematic chronology sound good, another bad? If the movements of a great sonata or a symphony are switched around, the result will be musically inferior' (entry on 'criticism' in 'Britannica Book of Music', 1980, p. 229).

More musicologists and theorists of music composition, at least those concerned primarily with the 'classical style' and musical forms such as the sonata (as well as the symphony and the quartet, both of which can be thought of as derived from the sonata), would probably strongly agree with the above assessment (e.g., Barrett-Ayres, 1974; Newman, 1972; Rosen, 1971). They would probably also share some of the following sentiments regarding the structure, and the thematic development, relations and sequence both within and across the movements of a classical composition:

'Why does music unfold a particular structure? Why that kind of structure rather than another? The textbooks on form remain silent; yet this is a profound question. It is surely of paramount interest to know why music unrolls in one direction rather than another. Inspired music appears to carry within itself its own blueprint, according to which it propels itself across precise distances and in precise directions. If it is prematurely halted, diverted or too long continued ... it loses the sense of punctuality, the feeling of arriving on time, the knowledge of being in the right place at the right moment, which characterizes each stage of an emerging structure masterfully handled' (Britannica Book of Music, p. 230).

The first movement of a classical sonata often has the elements of exposition, development, and recapitulation (the 'sonata form') and is typically quite fast. The slow movement occupies the central portion of the piece and is meant to hold it together; it is often in an 'ABA' form or in a variations form. In a 4-movement sonata, there is typically a lighter movement, a minuet or a scherzo, which either precedes or follows the slow movement. The last movement is typically again fairly fast; Beethoven is often credited for being the first to switch the structural weight from the first to the last movement of a sonata and treating the whole as a dramatically developed plot (cf. Newman, 1972; Rosen, 1971).

Aspects of the sonata that appeal to purists of the classical style - the exposition-development-recapitulation sequence of the first movement, the ABA sequence of the slow movement, the fast-slow-light-relief-fast structure

of the whole piece - have also not escaped the attention of writers interested in the psychological - emotional and hedonic - effects of music (e.g., Berlyne, 1971; Meyer, 1956). Berlyne, in particular, was able to point to the sonata as an example of the serial use of arousal-raising and arousal-moderating devices (both within and across movements), with the intention of holding the listener's interest and keeping the arousal fluctuations going, but within a certain pleasurable range, avoiding excess.

The crudest, but simplest and most direct, way to test some of these musical and psychological claims is to go back to the quote from the 'Britannica' at the beginning of this section and switch around the movements of a great sonata (perhaps this is the musical equivalent of hanging pictures upside down).

Method

The works used in this study were all by Beethoven. Precisely because of his frequent treatment of the sonata as a plot that is resolved in the last movement, and his being widely acknowledged as the supreme master of the thematic build-up and development, one would think that his pieces would be most likely to suffer (in terms of the listeners' enjoyment) if the sequence of the movements were to be changed.

Five works, 2 piano sonatas and 3 string quartets, spanning almost 30 years of Beethoven's life, were used (see Table 4). All are highly respected and well-known pieces of music (though none, to the best of my knowledge, has yet been made into a film score). All are in 4 movements, and all, with the possible exception of the D major sonata, have outstanding slow movements whose mood lingers on.

Two tampered versions of each piece were prepared. In Version A, the order of the movements was: Last movement; first movement; 'light relief' movement (Scherzo in Sonatas, Op. 28 and Op. 106, and in Quartet, Op. 18; Menuetto in Quartet, Op. 59; Vivace in Quartet, Op. 135; note that the 'light relief' movement is either the second or the third movement in these pieces); slow movement. This sequence of the movements breaks down the entire structure of the pieces. However, after reviewing the results obtained by using Version A, an ostensibly even less appealing -- musically and psychologically -- sequence of movements was created. Version B: Last movement; first movement; slow movement; 'light relief' movement. In contrast to Version A, Version B does not end with the beautiful, sensitive, affecting slow movements.

In the first part of the study, male and female students from the University of California at San Diego (none was a music major) came to the laboratory in groups of 10 and heard 1 of the 5 pieces, either the original or the altered version (Version A). Thus both the 5 pieces and the original-altered factors were between-subjects (for a total of 100 subjects). In addition, one piece, Sonata in B flat major, Op. 106 was heard in both the original and altered versions by a further 16 subjects (8 subjects heard the original first, 8 heard Version A first).

In the second part of the study, only the B flat major Sonata, Op. 106, and the C major Quartet, Op. 59, were used. Students in groups of 10 heard either the original or the altered version (Version B this time) of 1 of the 2 pieces (for a total of 40 subjects). Finally, an additional 18 subjects heard both the original and the altered Version B of the Sonata (9 in each

of the 2 possible orders), and a further 16 heard both the original and the altered Version B of the Quartet (a half in each order).

In both parts of the study, after hearing the piece (or after hearing each of the 2 pieces, in the within-subject designs), subjects rated, on 10 cm scales, their enjoyment of the piece and their familiarity with it.

TABLE 4 Beethoven's works used in Study 4

- 1.* Piano Sonata No. 15 in D major, Op. 28 (Pastorale) (1801)
Allegro
Andante
Scherzo: Allegro vivace
Rondo: Alegro, ma non troppo
- 2.* Piano Sonata No. 29 in B flat major, Op. 106 (Hammerklavier) (1817/18)
Allegro
Scherzo: Assai Vivace - Presto
Adagio sostenuto
Largo - Allegro risoluto
- 3.** String Quartet in F major, Op. 18, No. 1 (1798-1800)
Allegro con brio
Adagio affetuoso e appassionato
Scherzo: Allegro molto
Allegro
- 4.** String Quartet in C major, Op.59, No. 3 (1808)
Introduzione: Andante con moto - Allegro vivace
Andante con moto quasi Allegretto
Menueto: Grazioso
Allegro molto
- 5.** String Quartet in F major, Op. 135 (1826)
Allegretto
Vivace
Lento assai, cantante e tranquillo
Grave, ma non troppo tratto - Allegro

* Wilhelm Kempff, pianist

** Amadeus Quartet

All works recorded by Deutsche Gramophon

Results

The original versions of all 5 pieces were found quite enjoyable by the subjects in both parts of the study; the means were uniformly in the 6-7 range on a 10 cm scale (except for the F major Quartet, Op. 135, $M = 5.1$). The enjoyment ratings were virtually uncorrelated with the familiarity ratings, which stemmed, apparently (judging by the subjects' post-experimental comments), from their confusion about what the question meant: Knowing a piece's name? Opus number? Some themes? Familiarity with the

whole work? and so on. (Such confusion often arises when a stimulus that is very 'large' -- in terms of content and duration -- is judged on a simple bipolar scale).

In the first part of the study, the astonishing finding was that there was literally no effect of changing the sequence of the movements (Version A) in terms of the rated enjoyment. On a between-subject basis, three of the original pieces and two of the Version A pieces were rated somewhat higher than their counterparts, but all these differences were negligible. In the case of the one piece (Sonata, Op. 106) which was heard in both the original and altered versions by an additional 18 subjects, there was a statistically nonsignificant primacy effect both for subjects who had heard the original version first and for those who had heard Version A first. (These findings prompted the construction of Version B pieces and the design of the second part of the study).

Despite the even more drastic re-ordering of the movements, in the second part of the study there was again no effect on enjoyment -- on a between-subject basis -- for either of the 2 pieces used (the means were again in the 6-7 range for both the original and altered versions). Even in the within-subjects design there was no significant difference for either piece when the altered version (Version B) was heard first. Finally, when the original versions were heard before the Version B pieces, significant difference ($p < .01$) were obtained in favour of the original versions ($M = 6.6$ for the Sonata, Op. 106, and $M = 5.2$, for its Version B; $M = 7.0$ for the Quartet, Op. 59, and $M = 5.4$ for its Version B).

In summary, only with an extreme modification of the order of the movements, and with the subjects forced to compare the original and the modified versions (in the within-subjects design), and only when the original version was heard first, did it emerge as the clearly preferred choice. This was so despite the fact that the pieces were great works in the classical tradition, with a clearly defined structure, by a grandmaster of thematic and structural development. Under these circumstances, it would seem reasonable to conclude that people, much as they may like a piece of music, sometimes ignore the implicit musical message -- whatever it may be -- that is contained in the order of the movements of a piece.

STUDY 5: FEATURES OF A THEATRICAL PERFORMANCE

It is a truism that the production of a play is a highly complex endeavour involving numerous elements and participants that are interposed between the play, as written, and its staging in front of an audience. In much of contemporary theatre, it is generally recognized that the director has a key function in this cooperative effort (e.g., Clurman, 1972; Dietrich, 1953; Samuels, 1972; Sievers, Stiver and Kahan, 1974). By working with actors in rehearsals, collaborating with set-, lighting-, and costume-designers, collaborating and planning the actors' movements on the stage (known as 'blocking'), the director is in a unique position to modulate the impact of the play on the audience. Numerous choices, from the use of the tiniest prop to the grandest gesture, have to be made, taking into account the size of the theatre, the shape of the stage, and perhaps less frequently, the type of the audience likely to attend.

Texts on theatre and individuals involved in it make certain assumptions about the intellectual and emotional impact that certain features of a dramatic performance have on the audience. Typically the stage can be said to be divided into parts (often nine) that are said

to give an actor positioned in them different amounts of 'strength'. An actor facing the audience, or moving, or speaking, or being looked at by other actors, or standing isolated from a group, or more brightly lit, or having a more attractive costume, everything else equal, is thought of 'being in focus'.

Such factors, and their psychological effects on the audience, are believed to depend heavily on the shape of the stage and the distance from the audience. An intimate theatre with a thrust stage surrounded by the audience on 3 sides is believed to focus the attention of the audience members on the actors (and each other's reactions) and away from the set - quite unlike a larger theatre with a proscenium stage which de-emphasizes the actors and makes it possible for a more elaborate set to be effective.

Many of these assumptions appear intuitively reasonable and psychologically sound (in terms of the findings of modern social and cognitive psychology). Nevertheless, the details of the actors' movements on the stage in a specific scene are far removed from the textbook prescriptions about blocking; the actors' facial expressions, gestures and actions, as well as other features of the play, may in fact not have the effect that the director anticipates.

At least some of the assumptions discussed above can be tested by systematically questioning the members of the audience after a play. Ideally, one would want to study the effects of several different versions of a performance which would vary along specified dimensions. This being impractical, one of the next-best things is to study the effects of certain features of a performance carried out in the same way in very different theatrical settings. If the performance is specially designed to reach a particular type of audience, if it involves a new play and thus there is no overbearing history of past performances, and if the play is written or put together by the director personally, so much the better. The director can be asked to articulate the objectives and specify the theatrical devices by which they shall be attained. The actual impact of some of these devices can then be tested under different performance conditions. Such were the concerns of the present study. It capitalized on an opportunity to examine the effects of certain features of a theatrical performance on real-life audiences.

Method

The Old Globe Theatre in San Diego, a renowned company and the site of a major annual Shakespeare festival, carries out each year an 'educational tour' of schools, hospitals, convalescent homes, and correctional institutions. Typically, a new production, often an adaptation of an 'accessible' play, is created especially for the tour. Some past productions involved as many as 15-20 actors with full sets and costumes and one-hour versions of Shakespeare's plays.

In 1982, Kent Brisby wrote and directed 'A Shakespeare Mosaic' for the tour. The performance begins with a prologue which deals with Shakespeare's life and times; after this, there is a series of scenes adapted from various Shakespeare plays (see Table 5) connected by a narrative written by Brisby and a few Elizabethan songs. Four actors, a simple and functional set, and a number of props, including puppets (such as 8-foot tall witches in 'Macbeth') and rollerskates (Puck on rollerskates in 'A Midsummer-Night's Dream') are used. An electrical keyboard, a rhythm machine, and a base guitar are also used.

TABLE 5 Scenes from Shakespeare's plays used in the San Diego Old Globe Theatre's 'Mosaic' (Globe Educational Tour 11, Spring 1982).

1. Two Gentlemen of Verona, Act II, Scene 3;*
2. Macbeth, Act IV, Scene I;
3. A Midsummer Night's Dream, Act II, Scene 2; Act III, Scene I;
4. Much Ado About Nothing, Act III, Scene 3;
5. Romeo and Juliet, Act III, Scene I.

* The scenes were presented in the 'Mosaic' in the order given here.

The study examined the effects of 4 performances in 4 different schools in the San Diego area. A total of 412 children, 9-12 years of age, 200 boys and 212 girls, attended. The 4 schools are quite far apart geographically and rather different from each other in terms of the socio-economic status, race, and ethnic background of the students. The size of the audience varied from school to school: 52, 107, 130 and 123 children. Furthermore, in one school (52 children in the audience), the performance took place in the middle of the cafeteria, with the children seated on 3 sides, literally at the feet of the actors. Another school had a thrust stage, with the audience also on 3 sides, but a somewhat greater separation of the audience from the actors. The remaining 2 schools had conventional proscenium stages although the seating capacity differed considerably. Thus, the same performance was given in very different theatrical settings.

The study began by conducting an extensive interview with the director. The following points were extracted from this interview: (1) the primary purpose of the 'Mosaic' was to introduce children to the theatre in general and Shakespeare in particular in an unforbidding manner; (2) to attract and keep the children's attention -- attention being a necessary initial step for eventual enjoyment, according to Brisby -- certain theatrical devices were to be used: A lot of action; bright costumes; large or incongruous props; unexpected turns of action or speech; interesting juxtapositions; and audience participation (most of these would be easily classifiable as psychophysical, ecological, or collative variables that Berlyne (1971) thought were so important for aesthetic enjoyment); (3) the entire performance and its constituent elements, including blocking, were planned with an intimate, thrust-stage performing situation in mind - one that would emphasize the actors and the props, reduce the importance of the set, and facilitate audience participation; thus, according to the director, the play would not 'work' for children in a large theatre with a conventional proscenium stage.

After each of the 4 performances mentioned above, a questionnaire was administered to all the children in the audience. Two to 3 multiple choice questions with 3 options were asked about each of the 6 scenes listed in Table 5. These questions were quite hard and detailed, and were designed to test the children's memory (and thus attention during the performance) regarding specific theatrical devices which the director felt (in the interview) would attract the children's interest. Additional questions asked

the children to rate their enjoyment of the entire performance, and their desire to see a play at the Old Globe, on a 10 point scale (the use of these was explained).

Results

Children's recall for the details of the 'Mosaic' was remarkably good. For 7 of the 13 questions, the correct option was chosen by over 90% of the 412 respondents; for 5 of the questions, by between 80% and 90% of the children; and for 1 question, by 74%. Accuracy increased somewhat with age, but was high for all age-groups, for boys and girls, and for all 4 schools.

'Mosaic' was furthermore uniformly enjoyed by all age-groups and in all the schools the mean on the enjoyment scale for the entire sample was 8.7 on a 10-point scale, and it did not fall below 8.0 for any age-group, at any of the schools (none of the age- and school-related differences was statistically significant). Ratings of the desire to see a play at the Old Globe were also high, but significantly lower than the enjoyment ratings.

The findings of this study are straightforward. The director's use of theatrical devices and blocking to attract the children's attention and make the experience enjoyable had precisely the effects that he had anticipated. In this case, one could say that the entire, quite detailed, artistic message got through to the audience for which it was intended. Paradoxically, however, this was the case even in theatrical settings in which, according to the director himself, the message should not have got through. For this audience and for this play, apparently, the shape of the stage, the distance from the actors, and the size of the theatre made very little difference.

DISCUSSION

The main findings of this series of studies can be succinctly summarized. (1) Mirror reversal did not decrease the pleasingness of representational and abstract twentieth century paintings; the latter were not affected by 180° and 90° rotations either. Fictitious titles were preferred to the original ones. (2) Subjects failed to guess, at a better than chance level the artist defined message/purpose of the lyrics of rock 'n' roll songs. (3) Drastic stylistic alterations of literary texts produced no decrement in enjoyment or comprehension; if anything, some alterations improved comprehension. (4) Extensive tampering with the sequence of movements of Beethoven's sonatas and quartets resulted in no decrease in enjoyment, except under highly circumscribed conditions. (5) Children did respond to a play in the manner anticipated by the director, but they did so even in settings that should have, according to the director, seriously interfered with the impact of the theatrical message.

In short, many explicit or implicit features of these diverse artistic messages were entirely ignored by the audiences, contrary to the artists' and critics' expectations and claims, and despite the extraordinary calibre of many of the works. Indeed, the great majority of these diverse works were rated as very enjoyable by the subjects; it is just that they were unresponsive to some of the features that artists and critics thought important.

It is of interest to examine some of the possible criticisms of this series of studies. The most basic criticism is that a general conclusion is being

drawn from a series of null effects. However, it is generally accepted in the philosophy of science that when a substantial number of studies - using different methods and domains of inquiry (different art media, in this case) but all asking the same basic question - all obtain a negative answer, this cumulative evidence begins to count. Besides, the point being made here is not that the artists' and critics' explicit or implicit claims are always inaccurate, but simply that they may be inaccurate more often than is commonly thought. There clearly are limits to how much can be accomplished by speculative and introspective reasoning alone about the human response to art, and this should be repeated again and again by the psychologists of art. Loath as artists, critics and scholars in the arts and humanities may be to embrace the experimental method, even when it is applied to the response to art (as opposed to its creation), they may realize (a) that it can serve a useful function, and (b) that their claims may well be submitted to experimental scrutiny. Both might make the speculative conclusions more cautious - a desirable outcome.

A related criticism is that 5 studies prove nothing and that additional studies concerning the effects of artistic messages would paint a different picture (perhaps an upside-down one?). This is quite possibly true, but it is worth pointing out that the five 'messages' examined in the present series of studies were not chosen on the basis of preconceived or informed notions that they were weak spots in the artists' and critics' armour and thus convenient targets if one wished to score an easy point (a possible exception is the mirror-reversal lack of effect in Study 1, given Gordon's, 1981, review). On the contrary, the research problems were chosen almost at random, reflecting mostly the professional and private interests of the author and his students and the availability of quotable claims by artists or critics regarding the work's impact. Indeed, the null effects came often as a considerable surprise.

A counter-rebuttal to the above would be that rather than dabble in all sorts of 'messages' and media, it would have been better to focus on one work of art, and examine its various messages in depth. I disagree. Depth seems premature in this relatively uncharted area and 5 null results regarding the impact of a single work of art most certainly could not lead to any generalizations. For the time being, the 'rake' research strategy (shallow but multipronged) seems better suited for planting the seed of doubt that the 'pick' strategy (deep, but perhaps zeroing on the wrong spot).

Actually, when one does dig deep in a spot in this general area, artists' and critics' claims often fare no better. For example, the experimental work by Deutsch (in press) and others shows that the perceptual configurations based on pitch proximity may completely override the effects of spatial separation; in other words, 'spatial separation (forcefully urged, for example, by Berlioz) by no means guarantees that music will be perceived in accordance with the positioning of the instruments' (Deutsch, in press). Also as part of his theory of 12 tone compositions, Schoenberg included octave separation as an example of an equivalence (together with transposition, inversion, and so on); yet, in her 'Yankee Doodle' experiments Deutsch demonstrated that interval class cannot be treated as a perceptual invariant.

Not all artistic domains yield themselves with equal ease to subtle experimental probing of their effects on an audience - theatre, dance and literature being notoriously difficult. Thus, experimentally asking simple, 'big' and direct questions in these areas (those who disagree may substitute

these adjectives by 'rude', 'crude' and 'obnoxious') seems justifiable in order to challenge entrenched (but possibly false) ideas and set the stage for subtler (but more narrow) experimental work. Even in music and painting where more detailed experimental work is feasible, it is important to ask broad questions and re-examine statements that have been repeated without factual substantiation to the point of reification (or implicitly assumed as self-evident and therefore not aired).

At first thought, the most damaging of the present series of studies is that the subjects were not sophisticated enough, that they were not art connoisseurs. True enough, but this criticism can be seriously challenged on several different levels; a partial list follows: (1) An average student in California may not be an art connoisseur, but he or she is likely to be reasonably cultivated and well-educated, certainly on par with an average citizen almost anywhere (myths about everyone in Southern California being a surfer notwithstanding). The debater using the connoisseurship argument has thus already secluded him or herself in a rarefied corner. (2) Would this debater deny student surfers expertise even in rock 'n' roll (re. Study 2)? (3) Even if connoisseurs are, by definition, more discerning than the reasonably well-educated non-connoisseurs, this does not necessarily mean that they would respond differently to altered versions of artworks in all situations and in all art media. It would seem that one would be likely to find substantial memory-, prestige-of-communicator-, experimental-instructions-, duration-of-exposure, and experimental-situation-related effects, but these are empirical questions. Regarding the mirror-reversal of paintings, at the very least, according to Gordon's (1981) review of the literature and the present Study 1, no effects of art training and exposure to art have so far been obtained. (4) As Gordon (1981) has convincingly argued regarding the claims made by the glance-curve theory, many artists' and critics' statements are worded so as to imply applicability to all humans, not just a few connoisseurs. Fundamental - though complex - emotional, perceptual, memory, early-learning, and anatomical/physiological (e.g., hemispheric dominance) factors are said to be involved in scanning a painting, reading a text, or listening to the unfolding of a symphony. If so, why should connoisseurs be expected to respond differently from others in many art-related situations?

The above discussion naturally suggests even broader questions and dilemmas. Images arise of the artist in a desperate search for the essence of the human condition, portraying the heights and abysses found in all of us, yet finding nothing contradictory in claiming at the same time that the artist is painting or composing 'for himself and three other people he respects'. Also images of the artist who thinks of his total creative freedom as an inalienable right -- even if it is at the public expense. Perhaps, these are exaggerations, but the argument that many great artists were 'misunderstood' by their contemporaries and starved (and that we should correct this in our own time) is a poor one. It conveniently neglects the real possibility that for each starving misunderstood genius there must have been hundreds of starving misunderstood mediocrities who should have been misunderstood. Time and the marketplace sifted the wheat from the chaff; personally, I trust these long-term processes far more than the art-bureaucracy at the National Endowment for the Arts, and the contemporary critics and artists.

A cynical generalization from the findings of the present and similar studies is that with the exception of a few true geniuses and near-geniuses by and large, artists, art critics and art historians hypothesize the

allegedly important dimensions of artworks without any reference to attributes actually responsible for the impact of artworks on the broader audience, and use these invented dimensions chiefly as vehicles through which to speak to each other and make points in their self-contained world. In this view, connoisseurs would be seen as participating rather passively in the artworld's doings, and treating the (mostly second-echelon) artists' and critics' opinions as prescriptions for taste formulation and art-purchasing behaviour. Others basically foot the bill (by paying taxes which pay for agency grants to artists, municipal commissions of artworks etc.)

A more gracious hypothesis concerning the reasons for the present findings is possible - although its implications for the social consequences of the artworld's behaviour are similar to those mentioned above. Various attributes of an artwork (content-related, style-related, etc.) may interact in complex ways, and only certain subsets of the higher-order interactions may produce the highly positive effects one finds (in terms of the rated enjoyment, pleasingness, interestingness, and so on). The critics, partly because of the inherent limitations of the purely speculative, nonexperimental reasoning and inference, and in part due to the prevalent linearity of human thought and language, may see the dimensions of artworks as related to each other in an additive, as opposed to an interactive, manner. Thus, their theories may be correct in providing accurate lists of important dimensions, while failing to capture the complicated ways in which these dimensions interact to produce the observed effects. In this view, experiments in the psychology of art of the kind described in this chapter could perhaps help sharpen the existing theories of the structure and effects of artworks.

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