A DECADE AFTER BERLYNE

New Directions in Experimental Aesthetics

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Scientific aesthetics offers an organized approach to the study of processes involved in the creation and appreciation of aesthetic objects. The experimental approach to aesthetics can be traced back to Gustav Fechner (1801–1889) and the founding of general experimental psychology. Fechner's 'psychometric' approach focused on the effects of isolated stimulus properties on viewer's preference responses. Daniel Berlyne (1924–1976) added conceptual and methodological sophistication to Fechner's approach. Berlyne was behavioural in his orientation, treating aesthetic activity as a kind of intrinsically motivated form of exploration. His notion of 'collative' stimulus properties provided a means of quantifying the complexity and orderliness of stimulus structure. The central finding of this approach is that viewers prefer moderate levels of aesthetic complexity, relative to their own aesthetic sophistication. This line of research has been criticized for its narrow emphasis on quantification and lack of sensitivity to the cognitive processes involved in appreciating the meaning of aesthetic objects. A resolution of this 'crisis' is proposed which stresses: reflection on assumptions underlying the Fechner–Berlyne approach; in-depth observation of phenomena in the lived-world; and interdisciplinary communication.

1. The scientific approach to aesthetics

A century has passed since experimental aesthetics was founded by Gustav Fechner (1876). Daniel Berlyne (1971, 1974), who established the 'new experimental aesthetics', continued Fechner’s theoretical and empirical tradition. This tradition is closely related to that of general experimental psychology. They both originate in the study of psychophysical processes with an attendant emphasis on stimulus–response relationships. The experimental approach to psychology reflects a natural science viewpoint (Giorgi (1970)) and is empirical, quantitative, deterministic, and reductionist in its analysis of phenomena. Fechner's tradition in aesthetics has come under criticism from various quarters because of these biases. Arnheim (1985), the noted Gestalt psychologist, has expressed concern about the limited questions which it addresses and its narrow methods. Philosophers have similarly criticized its...
methodological constraints (Dickie (1962)), and lack of sensitivity to cultural or historical factors (Margolis (1980)). A fresh consideration of the status of experimental aesthetics in the light of these criticisms will help to ensure the integrity of its future.

1.1. Gustav Fechner (1801–1889)

Fechner's work (1876) represents a transition from traditional humanistic approaches to aesthetics to a scientific and experimental approach. He replaced the philosopher's speculative and abstract aesthetics 'from above' with a concrete and factual aesthetics 'from below'. Thus, insights of single individuals were replaced by averaged responses of groups of subjects. Instead of exploring single artworks in depth, large numbers of objects were used to establish the collective attributes of stimulus classes. Subject responses were primarily concerned with preferences for simple physical properties of stimuli. Fechner's work on preference for the golden section proportion exemplifies this research approach. Subjects were presented with a series of paintings varying in the ratio of length to width. The preferred proportion was Fechner's prime object of inquiry. Fechner developed various procedures which permitted an objective comparison among carefully selected stimuli. The 'forced-choice' method of discriminating preference or physical similarity is basic to current research in the discipline (Berlyne (1974)).

Fechner's thinking anticipated both the motivational and cognitive traditions in modern psychology. The motivational aspect was expressed in his belief that the search for pleasure is an important dynamic in aesthetic response. However, he also acknowledged mental processes which may be associated with aesthetic responses including the effects of relative similarity, intensity, context and sequence. Relative similarity between stimuli and stimulus intensity have been dimensions of great importance to behaviourally oriented aesthetician (Berlyne (1971, 1974)). This is consistent with an emphasis on the aesthetic effects of isolated features or dimensions of stimuli. The effects of context and sequence have been central to the thinking of Gestalt psychologists (Arnheim (1969, 1971)). These factors emphasize a holistic view of the aesthetic stimulus and its evolution over time against the background of cultural and experience.

Fechner was basically a reductionist and this indirectly accounted for his preoccupation with all forms of stimulus measurement. He believed that events in the mind are isomorphic with processes in the nervous system. He also assumed a close relationship between physical stimulus and physiological response. Since 'the physiological counterpart to conscious experience was inaccessible to research', (Arnheim (1985: 858)) he focused on the relationship between physical stimulus and perceptual response. This 'external psychophysics' was associated with the analysis of stimuli along dimensions such as
intensity. The stimulus could be equally physical in aesthetics, one example being the ratio of length and width in the dimensions of a painting. In modern aesthetics the 'physical' stimulus is measured along abstract dimensions such as informational 'uncertainty' (Moles (1958), Berlyne (1971, 1974)).

Fechner also developed a variety of theoretical principles to account for aesthetic preferences. For example, his 'principle of the aesthetic middle' states that people 'tolerate most often and for the longest time a certain medium degree of arousal, which makes them feel neither overstimulated nor dissatisfied by a lack of sufficient occupation' (Fechner (1876, Vol. II: 217 and 260), cited by Arnheim (1985)). This principle bears close and 'NOTEWORTHY' (Berlyne (1971: 124)) similarity to the inverted U-shaped curve found in Twentieth Century research on the relationship of uncertainty to preference through the mediation of arousal level. Berlyne (1971) mentions another of Fechner's (1876, I: 53) principles, the 'principle of unitary connection of the manifold'. This principle suggests that pleasing stimuli must provide a proper balance between complexity ('a multiplicity of points of attack') and orderliness ('unitary connection'). Fechner's principles imply that aesthetic pleasure is closely related to the feelings which result from the search for meaning in artworks.

1.2. Daniel E. Berlyne (1924–1976)

Fechner's principles were cast in modern form by Berlyne and subjected to experimental validation (Berlyne (1971, 1974)). He was Fechner's successor both in spirit and in practice (Berlyne (1971, 1974)) and was in accord with Fechner's emphasis on the collecting of concrete facts about aesthetics. Berlyne defined his approach as an empirical aesthetics 'from below' in contrast to a speculative aesthetics 'from above'. Berlyne (1974) describes speculative aesthetics as an arm chair discipline that takes place in a study or in a library. It comprises philosophical aesthetics and art theory (i.e., art history and criticism). Speculative aesthetics depends 'heavily on deduction – from definitions of concepts, from selfevident principles, from generally accepted propositions, from an author's own beliefs, intuitions, and experience' (1974: 2). The method is hermeneutic, emphasizing interpretive examination, and the 'ultimate criterion of validity is whether they leave the reader with a feeling of conviction' (1974: 2). In contrast, empirical aesthetics emphasizes collecting concrete facts and observations about viewers' general responses and preferences for classes of stimuli. Berlyne distinguished between experimental and correlational or content analysis approaches to empirical aesthetics. The experimental approach, which he favoured, requires the systematic manipulation of causal variables as a means of determining their effects on behaviour. The correlational and content analysis approaches examine naturally occurring events without intervention. Berlyne preferred the
experimental approach because he believed that it permitted cause and effect conclusions.

Berlyne approached aesthetics as one aspect of ‘interest’ in the physical world. His first publication (Berlyne (1949)) examined the relationship between interest and two psychological processes, attention to the stimulus, and the motivational effects of feeling (e.g. pain–pleasure). Berlyne’s goal was to specify the kinds of motivation with which interest was allied. Of central importance to Berlyne was a ‘special class of drive’, the ‘striving for novelty’. He distinguished three categories of this drive. The first category, ‘variation due to satiation’, reflects the need for interesting activity in the face of boredom. The automatic mechanism underlying this drive was closely related to Hull’s (1943) ideas about ‘inhibition’ and resistance to satiation in the face of monotonous stimulation.

The second category, ‘curiosity’, reveals an ‘active impulse’ to seek out new sensations, experiences and knowledge. This ‘exploratory drive’ is part of the process of endowing external phenomena with ‘meaning’. Berlyne described Hull’s (1943) idea that knowledge is based on the acquisition of ‘pure stimulus-acts’ which mirror sequences of events in the world (an example of naive realism) as a ‘first step’. However, he invoked Bartlett’s (1932) notion of ‘effort after meaning’, and Piaget’s (1947) concept of ‘grouping’ symbolic responses, to account for the more complex aspects of knowledge acquisition. Unfortunately, he never followed up on this promising second step because of his anti-cognitive bias. The third category, ‘aesthetic interest’, concerns patterns which are ‘interesting in themselves regardless of their representational content’ (Berlyne (1949: 193)). The qualities in art which evoke interest were deemed important because they ‘probably illustrate in an exceptionally pure form many of the principles governing other intellectual interests’ (Berlyne (1949: 193)). He concluded that progress would be dependent on operationalizing the different categories of ‘interest’.

Berlyne’s (1971) major theoretical work, Aesthetics and psychobiology, develops the concept of exploration as it applies to aesthetic activities. Thus, the study of aesthetic behaviour is treated as a subtopic in behavioural psychology. Berlyne presents a Twentieth Century variation on many of Fechner’s themes. Like Fechner he maintained that an isomorphic relationship exists between activities in the mind and processes in the nervous system. This reductionist view is clearly expressed in Berlyne’s idea that psychophysiological mechanisms underlie ‘hedonic’ (i.e. preference) processes. The biological foundation of aesthetic activity was suggested to Berlyne by its pervasiveness among the 3000 distinct cultures on earth. Indeed, he suggested that the ‘rudiments of aesthetic activity’ should be sought in the behaviour of lower animals (Berlyne (1960)). Berlyne also focused on ‘arousal’ as the crucial mediating variable. He incorporated the latest developments in neurophysiology (Olds (1973)) into his theory of the relationship between arousal and the
'hedonic' or pleasure value of stimuli. He argued that areas in the brain which control changes in arousal level 'overlap' with those parts associated with reward and punishment. Fluctuations in pain/pleasure are related to increases and decreases in arousal. In his final formulation (Berlyne (1974)), Berlyne spoke of three potentially relevant systems, primary and secondary reward, as well as an aversion system. Thus, Berlyne brought Twentieth Century sophistication in neuropsychology to bear on the preference problem.

Berlyne's theory of exploration and aesthetic response was very much influenced by Hull's (1943) approach to behaviourism. Berlyne considered the 'puzzling' motivational aspects of aesthetic behaviour in the context of 'drive' theory. According to traditional behavioural analysis, actions are generally instrumental in obtaining material reinforcements from the environment (extrinsic motivation). Aesthetic activities are unique because they have no apparent utility for resolving basic tissue needs and maintaining the organism. Indeed, they are valued in and of themselves (intrinsic motivation). The extension of traditional behaviourism to include aesthetic activity represents one of Berlyne's major contributions.

One subtle difference between Berlyne and Fechner should be pointed out. It was noted earlier that Fechner used psychophysics and perceptual judgments as an indirect means of studying physiological structures. Berlyne's commitment to behaviourism and positivism led him to stress observation of behaviour. Observable behaviour falls into three categories including: bodily movement, audible speech, and psychophysiological processes. The close relationship between behaviour and physiology is central to Berlyne's causal analysis of the roots of aesthetic pleasure. Behaviour 'depends on biological processes' primarily in the brain and reflects the impact of two mechanisms which make behaviour adaptive, natural selection and learning. Thus, every behaviour, including aesthetic activity, must be related to biological structures. The scientist's goal is to attend to observable behaviour in the context of particular stimuli and note associations or correlations. This will fulfill the ultimate goals of prediction, control and explanation of exploratory behaviour and aesthetic activity. Behaviourism replaced psychophysics as the doctrine behind aesthetics research.

Berlyne (1971) distinguished two kinds of exploratory behaviour and specified a hedonic mechanism of reinforcement for each of them. Specific exploration is motivated by curiosity and functions to reduce uncertainty through the gathering of information about stimuli. The underlying mechanism of reward or pleasure is based on arousal reduction through the relief of an aversive curiosity state. Diversive exploration is associated with the pleasure that results from moderate increments in arousal. It is closely related to the optimal rate at which organisms can generally process information from the environment. Thus, the principles which govern an organism's encounter with the environment can be extended to the domain of aesthetics. Berlyne appears to have
reformulated Fechner's 'principle of the aesthetic middle' in Twentieth Century behaviourist language. The distinction between rewarding and aversive states of arousal partially realized Fechner's goal of understanding the structure of the nervous system.

Berlyne searched for a means of describing the aesthetic stimulus which could account for its appeal. In his first book, *Conflict, arousal, and curiosity*, Berlyne (1960) took exception with behavioural researchers for concentrating on 'response selection', while treating the stimulus environment in a simplistic manner. He underscored the rich stimulus environment which animals encounter in their natural surroundings. The problem of stimulus selection and exploration in a complex stimulus environment became central to Berlyne in his subsequent work. Thus, Berlyne's theory of human aesthetic response found its origin in what might be termed the problem of 'animal aesthetics'. Berlyne (1971, 1974) agreed with Fechner about the important role played by psychophysical properties (e.g., intensity) in determining the 'arousal potential' of a stimulus. However, he also distinguished 'ecological' and 'collative' classes of stimulus properties. Ecological variables affect arousal through association with 'biologically noxious or significant events' (Berlyne (1971: 69)). This permits stimuli to acquire emotionally evocative power through learning and conditioning processes.

**Collative** properties were considered to be the most important determinants of exploratory behaviour (Berlyne (1960, 1971, 1974)). The notion of collative properties represents a significant contribution by Berlyne to the morphological analysis of aesthetic stimuli. Collative properties were comparable to structural stimulus properties and could vary along dimensions such as familiar–novel, simple–complex, expected–surprising or ambiguous–clear. Berlyne's notion of collative properties was founded on a conception of the work of art as an 'assemblage of elements' comprising dots or dabs of colour which possess a certain structure. These collative variables were an indirect byproduct of the viewer's judgment of similarities and differences between elements within the stimulus (e.g. complexity), and also between elements of the stimulus and the viewer's previous experience (e.g. novelty) or expectations (e.g. surprisingness). Collative properties such as complexity or novelty were responsible for the attention-evoking and sustaining effects of the stimuli. Thus, excessive complexity might drive arousal into the uncomfortable range and prompt a viewer to avoid the stimulus. The concept of collative properties fits nicely into the quantification of information in art by human information theory (Moles (1958)) and permits correlations with basic responses such as exploratory choice or looking-time.

Berlyne (1971, 1974) also developed a four-fold categorization of stimulus properties which applied specifically to aesthetics. He described four kinds of information which could be conveyed in paintings or stimulus patterns; semantic, expressive, cultural, and syntactic. Semantic information denotes
objects and pertains to realism or representation. The remaining three sources all transmit ‘aesthetic information’ and reflect: physiological processes within the artist (expressive information), social norms (cultural information), and the relations among elements or distributions of elements in space (syntactic information). Berlyne interpreted the relationships among these sources within an information theory framework, describing them as competing ‘for the limited capacity of the channel linking them with the work’ (Berlyne (1974: 6)).

Berlyne’s contribution to psychological aesthetics has been diverse. His analysis of the aesthetic object has been particularly enlightening. First, he describes the process of stimulus exploration as intrinsically rewarding. Second, he characterizes the structure of the aesthetic object. It conveys four different kinds of information including: semantic, syntactic, cultural and expressive. Third, the aesthetic object also can be analyzed in terms of psychologically meaningful properties; psychophysical, ecological and collative. Berlyne’s metanalysis of the aesthetic object may prove to be his most enduring contribution. The notion of collative properties fits into a structuralist paradigm and permits an analysis of the complexity and orderliness of the aesthetic object from an objective viewpoint. The structure of the object is linked with the viewer through the concept of collative variables. These variables; novelty, complexity, and clarity, reflect the viewer’s encounter with the aesthetic object. The pleasure that results from this encounter is mechanistically explained in terms of the viewer’s relative state of physiological arousal.

2. Critiques of the scientific approach

George Dickie raised a pointed question in the title of a 1962 paper: ‘Is psychology relevant to aesthetics?’ He identified ‘aesthetics’ as a discipline in which philosophers address logical considerations encompassing ‘the meaning of critical concepts and the truth of critical statements, both descriptive and evaluative’ (1962: 288). Dickie provided examples of typical problems of this kind: ‘Can paintings make statements?’ or ‘Is it proper to make use of the intention of the artist in criticism?’ This characterization of a philosophical aesthetics is indeed very helpful because it encourages us not to confuse logical inquiries about language and value with scientific or factual inquiries. Dickie acknowledged that psychological information may be relevant to the question of ‘why men create works of art?’ However, he dismissed the relevance of such information to aesthetics which ‘is not concerned with how works of art have come to be but only with the finished consumer product’ (1962: 289). Dickie also dismissed the importance of studying the processes underlying art appreciation given that ‘we already know what we need to know’ (1962: 301).
The core of Dickie's criticism focused on two purported classes of experimental inquiry. These include research into whether 'particular works of art have meaning' and studies of 'preference orders'. He denied the value of querying a subject about whether a 'set of marks' on a piece of paper have a meaning. He argued that the response of one or another subject to the question should not be considered 'scientific datum'. If one subject understands the message while another does not then we should learn to read from the informed subject. Dickie argued for 'the logical difference between understanding a language and drawing scientific conclusions from data' (1962: 290). However, experimental aestheticians are not concerned with the aesthetic meaning of individual works of art. This lies more precisely in the province of art historians or art critics. Instead, they are interested in how and why viewers engage in aesthetics activities. The process of appreciation is of central importance and is assumed to have a certain generality. Thus, samples of subjects make it possible to disregard individual variation in favour of general underlying processes. The decisions, actions, and preferences of experts and novices are treated as variations on basic processes.

Dickie was equally cynical about the value of studying aesthetic preferences. He suspects that such information might 'serve as a basis for normative principles which can be used in art criticism' (1962: 294). Experimental aestheticians would not argue in favour of such a use for preference ratings. They respect the idea that art critics and historians are in the best position to determine originality and articulate the standards against which artworks should be judged. Preference data provide the researcher with a means of exploring the subjective aspect of art appreciation. For example, preferences may reflect the effects of 'ecological properties' (Berlyne (1971)) which evoke emotional associations. This applies in particular to the tendency for untrained viewers to prefer highly sentimentalized art. Preferences may also reflect the viewer's relative success at interpreting the meaning of artworks. Judgments of aesthetic pleasure have been shown to evolve in accordance with interpretive success (Ertel (1973)). In short, aesthetic preference is not a unitary concept but can be meaningfully approached from different viewpoints.

Toward the end of his critical paper Dickie revealed a significant sociological bias. He argued that concepts, such as 'aesthetic experience', and psychological states, such as 'detachment', are not essential to an understanding of art appreciation. He preferred to avoid the mentalism which psychological processes imply by taking for granted mechanisms which underlie art appreciation such as attention, knowing and believing. He focused instead on the 'observance of rules, conventions, and maxims' which are part of the 'art game'. The cognitive revolution in psychology, which took place around the time of Dickie's paper (1962), has freed us from the 'mentalist' criticism and encouraged an understanding of processes underlying aesthetic communication.
Margolis (1980) presents an updated and more sophisticated criticism of psychological approaches to aesthetics. His analysis is far ranging and encompasses the Berlynnian viewpoint as well as the theories of Arnheim and Gibson. He criticizes Berlyne's theory and its relation to Shannon's seminal concepts in information theory (Shannon and Weaver (1949)). He sees Berlyne's attempt to relate Shannon's discussion of the 'merely technical transmission of messages regardless of their content – regardless of their meaning or value' (1980: 215) as problematic. The reduction of aesthetic materials to merely physical elements fails to consider the intentional and cultural aspects of these materials. Like Dickie he reveals a distinctly sociological bias in his perspective. He maintains that a proper science of aesthetics cannot be based on any form of reductionism – informational, neurophysiological, behavioral or structuralist. Rather, the perception of artworks must inevitably be constrained by 'contingent cultural learning'. Cultural relativism, conventionalism, historically groomed perception and intelligence, and linguistic influences must be considered as the roots of aesthetic understanding (1980: 236). Thus, 'intentional' structures determine the foundation of aesthetic encounters. These intentional structures are presumably purposive, meaningful and conscious.

The potential problems associated with applying a mechanical or technical model of communication to aesthetic perception bear careful consideration. These were discussed in an earlier reflection on Berlyne's work (Cupchik and Heinrichs (1981)). In that paper we expressed concern about Berlyne's image of an artwork as a closed system in which four sources of information (semantic, expressive, cultural and syntactic) compete for the 'limited capacity of the channel linking them with the work' (Berlyne (1974: 6)). Berlyne's use of the term 'competition' anthropomorphizes 'information' and attributes intentional action to theoretical constructs. This approach disregards the decisional and organizing role of the artist. It also fails to affirm the viewer's active role, stressing instead the competition among 'bits' of information for the attention of a passive viewer.

Berlyne also defined an artwork as 'an assemblage of elements', thereby making it easier to quantify informational content. The conceptual isolation of 'elements' is more appropriate to synthetic or artificial visual materials and synthetic forms of music. Analyzing the location of these elements in a work of art from a probabilistic viewpoint is problematic. The idea that dots of color have a certain 'uncertainty' of appearing next to each other reflects the viewpoint of a detached third person. This person, the experimental aesthete, is removed from either the creative or appreciative episode, and his or her statistical analysis may seem static and superficial. Quantifying information in this manner fails to take into account the dynamic nature of aesthetic episodes. The visual ideas and intentions of the artist determine the placement of elements in an artwork. The impact of a work is achieved through the complex structuring of these elements. The fundamental level of organization
comprises physical-sensory colour elements, while higher levels embody semantic and metaphorical meaning. Thus, the hierarchies of meaning into which these elements are organized determines the meaning and substance of the work. Uncovering the basic elements merely represents a first step (as Berlyne noted) in this analysis of whole structures. Moles (1958) has acknowledged that the atomistic analysis of informational content in an artwork is different from and independent of its 'meaning'.

A comparable level of sophistication must be applied to an examination of the process of art appreciation. Viewers do not sit passively in some kind of Lockean ‘tabula rasa’ perceptual set accumulating visual contents. Instead, they actively organize these contents in search of aesthetic and personal meaning. Fechner and Berlyne have acknowledged the more elementary aspects of interpretive activity. Fechner affirmed the activities of judging similarity, sequence, and intensity. Berlyne focused on the ‘collation’ of input based on different kinds of similarity judgments. However, there are many more subtle kinds of intellectual and emotional actions which are undertaken in the search for meaning. These actions develop the kinds of metaphors and insights which are needed to understand complex artworks. The Gestalt psychology viewpoint (Arnheim (1969, 1971)) stresses this integrative activity and may be seen as a necessary holistic counterpoint to Fechner–Berlyne elementalism.

Margolis also criticizes an experiment (Cupchik (1974)) which was ostensibly conducted within the Berlynian paradigm. His discussion offers an interesting example of an encounter between a philosophical aesthetician and the results of an experimental study. The conceptual source of this study was an analysis of stylistic trends which seemed to recur in Western European art. The experiment itself actually focused on the stylistic judgments of naive viewers looking at Western European art. Would today’s viewers be sensitive to stylistic dimensions suggested by art history including: linear–painterly (Wölfflin (1915)), representational–abstract and expressionism? What would be the relative importance of these dimensions in judgments of style? By some coincidence Berlyne and Ogilvie (1974) also applied multidimensional scaling to the study of judgments of stylistic similarity. However, their study was purely inductive in nature and did not have a theoretical underpinning.

The experimental approach required selecting a sample of artworks (16 colour slide reproductions of paintings) that were thought to embody the stylistic qualities of theoretical interest. Subject-viewers were presented with all possible pairs of these paintings (120 pairs) and instructed to judge their relative stylistic similarity on a 15 point scale. The comparison of each painting with all others in the sample reduced the biasing effect of seeing one painting in the context of a particular other one. Arnheim (1969) described this potential contextual effect and Margolis cites it as well. Multidimensional scaling provides a statistical means of determining the independent dimensions which underlie the viewers’ judgments. A second experiment was con-
ducted in which the paintings were individually rated by trained subjects on stylistically meaningful scales. A variety of correlational techniques were used to relate the individual ratings with the pair-wise ratings. This procedure, developed by Berlyne, helped to objectively establish the identity of the dimensions. Four dimensions emerged from the multidimensional scaling study. They were: representational—abstract, linear—painterly, expressionism/complexity, and tonal—colourful. The first three dimensions were also obtained by Berlyne and Ogilvie (1974) in a purely empirical study of 55 paintings and by O'Hare (1976) using landscape paintings as stimuli. Western viewers appeared to consistently discriminate the stylistic similarity of Western paintings along three dimensions which have an art historical grounding.

Margolis' criticism centres on the idea that experimental aesthetics can uncover an exhaustive list of independent stylistic schemas. He argues against the possibility of subsuming artistic styles under more general categories. Margolis' cultural perspective holds that 'Physical resemblances are entirely inadequate.' (1980: 29), and 'there can be no grasp of stylistic similarities without attention to historically relevant period labels and distinctions that reflect the intentional life of the artistic community' (1980: 28). His criticism implies that 'there is no “natural” template of culture on which, demonstrably, all historical societies have simply imposed their transient modifications' (1980: 29). Finally, there can be no ‘universal, historically indifferent elements that may be variously “combined” in the composition of unrelated cultures' (1980: 29). Margolis points out that a specific feature such as linearity takes on very different meaning and evokes a different effect depending on the context of its usage. Thus, outline (i.e. linearity) in Picasso's *Three Musicians* has a different meaning and effect than outline in a Durer or Holbein painting. Margolis is clearly correct on this latter point. How can we then reconcile his particularistic and culturally bound interpretation of stylistic qualities with the more generalized and data-based dimensions gleaned from experimental method?

First, we have to establish the area of contention which pertains directly to scientific aesthetics. One implication of Margolis' argument is that styles are unique and do not repeat during the course of art history. Thus, Wölfflin's (1915) discussion of the linear—painterly dimension should be restricted to the comparison of Renaissance and Baroque painting. This issue, whether artistic styles of different eras bear more than passing similarity, can be debated endlessly by art historians and will not be resolved through experimentation. Second, in spite of the one-sidedness of his argument, Margolis reminds us that styles are very much influenced by the particularities of culture and historical period. He also underscores the 'intentional' or planned and integrative aspect of artistic creativity. Artists and viewers as well are not 'constrained' by their nervous systems to produce art or interpret art in certain ways.
The theoretical challenge posed by Margolis is to provide a unified framework within which to accommodate: (1) the inevitable influences of history and period on artistic developments, and (2) the consistent finding that viewers apply certain basic dimensions to the discrimination of stylistic similarity between pairs of paintings. Someone might deny that there is anything to reconcile on the grounds that our findings are artifacts of the particular experimental method. In other words, some unseen aspect of the experimental method falsely produces the 'seemingly' consistent results. It is true that the dimensions are limited by the paintings that were presented to the subjects. However, a diverse sample of Western paintings were used in the different studies. Perhaps more important, multidimensional scaling exposes schemas which underlie perceptual judgments without asking the viewer to verbally describe them. This method accesses 'tacit' (Polanyi (1967)) or implicit forms of knowledge. These schemas, whatever their source, are ingrained in the minds of the users. The beneficial aspects of the method far outweigh the potential for artifactual results.

A broad theoretical framework can be described which reconciles the psychobiological and sociological viewpoints about art appreciation. The viewer's encounter with an artwork may be described as a 'search for meaning'. This search for meaning involves the application of perceptual and cognitive schemas which enable the viewer to meaningfully interpret it (Gombrich (1960)). The schemas may be viewed in terms of a hierarchy with different sources at the opposite ends. At the upper end we have culturally and historically specific schemas. They comprise 'rules of the art game' (Dickie (1962)) which enable viewers to interpret artistic inventions and conventions. These schemas change over time, sometimes gradually and at other times radically. This results in the buildup of a diverse repertoire of frameworks for creating and interpreting artworks. A culturally informed audience acquires the 'aesthetic competence' (Beardsley (1980)) and 'perceptual sensibilities' (Hester (1975)) which enable them to 'apprehend' (Beardsley (1980)) the meaning of an artwork. Thus, the Parisian bourgeoisie rejected Impressionism as unfinished and sketchy until the appropriate schemas for apprehending the style became part of the general culture.

At the lower end of the hierarchy are the innate psychobiological constraints which shape a viewer's processing of information from the perceptual world. These processes are of sufficient generality to apply to mundane (i.e. everyday) as well as aesthetic perception. The dimensions which emerged from my experimental study (Cupchik (1974)) should be interpreted in this light. The fundamental dimension which emerged, linear versus painterly, distinguished an emphasis on outline versus surface. This dimension contrast hard-edged and closed form with soft-edged and open form. It is fundamental because the dimension relates to the very emergence of a figure from the background. In terms of neurophysiology this pertains to the use of edge
detectors to separate forms. The second dimension of importance was tonality versus colour. This dimension provides more precise information concerning the attributes of figures which are separated from the background. These attributes include shape and the various properties of colour. The third dimension in the hierarchy, representational–abstract, concerns the specific culturally relevant aspects of style and content. On the one hand, the artist may depict the world in an observational iconic or symbolic fashion (Gombrich (1960)). On the other hand, the artist may be select certain features or dimensions of the world or his/her imagination for inclusion in the artwork.

The lower end of the hierarchy therefore comprises dimensions of analysis which are of great generality. These innate schemas reflect the unique structure of the nervous and affective systems. They operate automatically without attracting the viewer’s attention. Lower order processes may respond to psychophysical features of the stimulus. They may also reflect Gestalt processes (Arnheim (1969, 1971)) such as ‘good form’. Higher order processes include specific learned schemas which identify the unique features of particular styles. The process of apprehending meaning in an artwork therefore reflects the interaction of both general and unique schemas. One might imagine the socially acquired cognitive schemas reaching down and interacting with the person’s repertoire of fundamental perceptual schemas. The edge of a form may be innately discriminated by the nervous system, but it takes on meaning in accordance with the constraints of a particular culture. In sum, this model treats the two divergent perspectives as ultimately reconcilable and challenges the psychologist of art to explore the underlying processes.

Criticism of the Fechner–Berlyne approaches to aesthetics research has not been limited to philosophers. Arnheim (1985), the eminent Gestalt psychologist, has taken issue with the ‘insipid and unfruitful’ view of art as a source of pleasure and the ‘hedonistic psychophysics’ which shaped aesthetics research. Arnheim’s criticism has several facets. He argues that ‘the complicated processes that take place when people perceive, organize, and comprehend works of art’ (1985: 861) are conveniently reduced to a scalable variable, unpleasant–pleasant. However, focusing on pleasure distracted researchers from the distinctive qualities of aesthetic pleasure as opposed to mundane pleasures such as food preferences. In addition, merely summarizing preferences does not account for the processes that shaped them. He stresses the importance of finding out ‘what people see when they look at an aesthetic object, what they mean by saying that they like or dislike it, and why they prefer the objects they prefer’ (1985: 861). In other words, Arnheim argues for a perceptual/cognitive psychology to compliment the motivational psychobiology favoured by Fechner and Berlyne.

Arnheim offers two additional criticisms that must be carefully considered. The first is theoretical in nature and pertains to the dominant interest in ‘object properties’ rather than in the perceiver. Arnheim cites the currently
prevalent doctrine of relativism to argue against the assumption that a work of art possesses an 'objective appearance'. Fechner and Berlyne have measured the responses of samples of subjects to artworks as a means of attributing qualities to these objects. Arnheim expresses the concern that 'the use of fairly simple and neutral stimuli and the reliance on statistical averages leads to results that differ from responses to actual works of art' (1985: 862). He argues that researchers reduce aesthetic stimuli to single variables and consequently the 'active ingredients' of artworks remain unexplored.

By way of response one should note that the isolation of individual qualities does not necessarily preclude an analysis of how they interact to produce effects in particular artworks. Art historians and art critics also isolate particular stylistic qualities of artworks when they analyze them. These qualities are abstracted from the work and, by precisely defining them, the critic helps us to notice them in other artworks. Experimental methods, such as multidimensional scaling, study the stylistic properties of artworks which groups of subjects perceive. This procedure is not very different from the methods used by art history professors to determine whether students have grasped the discriminating features of a style.

The mere abstraction of stylistic features from works of art is therefore not in and of itself problematic. A crucial question concerns the subsequent use of these abstracted categories. Arnheim (1969, 1971) favours the interpretive analysis of individual artworks by examining how different stylistic properties interact with each other. This kind of analysis is holistic and is oriented toward an account of 'physiognomic' and metaphorical qualities of an artwork. Arnheim's general point is well taken and can be incorporated into the hierarchical model just discussed. Individual qualities such as curved-versus-angular line embody potential relational meaning. For example, the viewer may notice that a painting is filled with harshly angular outline. This outline may relate in a connotative way to the overall theme of the painting which concerns the theme of anxiety or alienation. Thus, outline serves multiple functions because of its relational meaning. The painter Degas (Cupchik (1976)) demonstrated the rich and metaphoric use of composition to echo social and personal themes in his paintings.

One implication of Arnheim's criticism is that the reified use of concepts must be guarded against. This is especially important for the Fechner-Berlyne tradition which searches for 'neutral' terms to describe the aesthetic responses of viewers. The emphasis on neutrality is characteristic of the natural science approach which stresses operationalism. This approach may falsely lead to the belief that concepts can be isolated which embody precise meaning. The terms 'interest', 'complexity', and 'pleasure' are examples of concepts which are in fact multidimensional. Lindauer (1973) has underscored the ambiguity of data on aesthetic pleasure and stimulus complexity. While 'uncertainty' can be formally defined for isolated and constructed stimuli, subjective complexity is always a product of the interaction between viewer and stimulus.
The 'object percept' problem is also very important in experimental aesthetics. Arnheim is quite right in stressing the importance of the viewer's interaction with art objects. Berlyne has not been insensitive to the problem. In his early work (Berlyne (1960)) he spoke of 'collative variables' which reflected the viewer's attempt to find meaning in the artwork. Thus, perceptions of clarity or novelty and experiences of surprise are a product of the viewer's active involvement. However, in his later publications (Berlyne (1971, 1974)) he adopted the term 'collative properties' which located the qualities in aesthetic stimuli. This may have reflected the implicit effects of operationalism and the unintentional reification of properties in objects. However, other aestheticians (Ertel (1973)) have stressed the plasticity of aesthetic response and its evolution during the course of aesthetic episodes. Berlyne (1971) acknowledged the viewpoint of the German school of information theory (Frank (1959), Gunzenhäuser (1962)) concerning stages of aesthetic perception. These changes were empirically demonstrated in a study that we conducted together (Cupchik and Berlyne (1979)), although Berlyne was adamant about stressing a motivational rather than cognitive interpretation of the data. Clearly, both viewpoints must be incorporated into a comprehensive theory of aesthetic perception.

3. New directions in experimental aesthetics

Scientific aesthetics is a psychological discipline in need of a clearer identity. Its official history is closely associated with general experimental psychology even though aesthetics is a traditional part of the humanities. Fundamental questions have to be answered clearly concerning the relevance of both psychology and science to aesthetics. Some philosophers and psychologists have addressed the identity problem. The philosopher Munro (1956), for example, has advocated a scientific approach to aesthetics and acknowledged the potential role of psychology. Psychology becomes meaningful when we think of the relationship between either the artist or the viewer and the artwork. Relevant questions include: How does the artist's character or motivation shape a work of art? or; What determines the viewer's feelings or preferences for an artwork?

Perhaps more important is Munro's notion of scientific activity. It does not merely consist of accruing 'concrete' facts in the form of empirical data. Rather, it requires a comprehensive attitude toward the scientific endeavour. It consists 'in observing concrete phenomena, comparing them so as to find their resemblances and differences, forming hypotheses to explain their causes and regular recurrences, and testing these hypotheses by more observation of, or experiment with, concrete facts' (1956: 6). Phenomena in the real world are carefully observed and linked to theoretical explanations by the scientific
method. Given that aesthetic phenomena exist in a 'complex and subtle realm', they require 'fresh and extensive observation' and a 'persistent effort not to ignore their peculiarities' (1956: 7). 'Experimental' aesthetics implies to Munro tentative and open-minded methods which are flexible and appropriate to the phenomena in question. Thus, diverse methods are needed to study preference or aesthetic sensibility. Unfortunately, experimental aesthetics has been more committed to particular doctrines or methods than to the study of aesthetic phenomena. It is not surprising that Munro is critical of Fechner's 'psychometrie aesthetics' for its rigidity. He also argues against "reducing" aesthetic phenomena to concepts derived from other fields' (1956: 7) whether psychological, physiological, or sociological terms. This applies equally to Fechner–Berlyne psychobiology or Dickie–Margolis sociocultural biases. Munro's comments indicate that experimental aesthetics needs diversified approaches.

Wallach (1959) has attempted to establish an experimental psychology of aesthetics outside of the Fechnerian paradigm. He argued that one can move 'from a philosophical consideration of aesthetics to specific hypotheses that can be tested by psychological methods' (1959: 172). By limiting his scientific approach to the formal testing of hypotheses, Wallach has freed himself from the burdensome assumption of Fechner's natural science approach (Giorgi (1970)). Whereas Berlyne (1967, 1971) had established himself exclusively within a motivational framework, Wallach attempted to balance both cognitive and motivational approaches. A work of art consists of information that is organized according to a set of rules. Interpreting the work according to these rules alters the motivational state of the viewer. Interpretively skillful subjects should therefore demonstrate the greatest internal responsiveness to aesthetic stimuli. Wallach showed that a series of questions can be asked in an orderly manner encompassing the aesthetic sophistication and personality characteristics of the subject. Wallach also provides a model of an aesthete whose interests range across music, dance, literature and the visual arts.

Lindauer (1973) has discussed the hostility shown toward experimental aesthetics by humanists and psychologists. Experimental aesthetics has been seen by humanists as 'unproductive, trivial and without significance to the essential questions and theories of art' (1973: 460). Its isolation from other disciplines, such as history and philosophy, has been condemned along with 'its narrow preoccupation with precise measurement and quantification' (1973: 460). General experimental psychologists, on the other hand, have been skeptical about the possibility of 'objective' study based on 'subjective and unobservable dimensions of experience' (1973: 460). Many psychologists do not perceive its relation to general psychology. Lindauer enumerates the many ways that aesthetics and psychology are related. Aesthetics relates to psychology's humanistic concerns and the aesthetic experience is a 'distinctive human characteristic'. Aesthetics, in the form of stimulus displays, may also
have a biological function which is of interest to ethologists, sensory physiologists and comparative psychologists. The applied aspect of aesthetics, which ranges from education to advertising, must also be considered. Areas of psychology which relate either directly or indirectly to aesthetics include: creativity, perception, cognition, cognitive development, motivation, attention, personality, and theories relating to achievement motivation, adaptation, and information processing. He also noted the close historical association between aesthetics and the Gestalt school of psychology.

This negative picture does not deter Lindauer from offering suggestions for the reformulation of a 'liberalized' experimental aesthetics. He argues for greater flexibility in the application of experimental method to include subjective, unobservable and personal phenomena. Method should address the 'requirements of the problems faced' (1973: 461). He encourages the use of genuine works of art, including non-objective art, in the experimental setting and also stresses the derivation of hypotheses from traditional aesthetics and general experimental psychology. Traditional question concern beauty, norms pertaining to artistic quality, individual and societal differences in response to art, and the study of factors which enhance aesthetic experience. Lindauer believes that more psychologically based hypotheses should be derived. In sum, a liberalized experimental aesthetics should refer to traditional aesthetic problems, be tied to general psychological problems and use aesthetic materials.

4. Synthesis

Experimental aesthetics has had a mixed reception from philosophers and psychologists since its founding. Some philosophers (Dickie (1962)) have questioned the very relevance of psychology to the study of aesthetics. Others, such as Margolis (1980), have criticized the lack of sensitivity to sociocultural factors in the work of Berlyne, Arnheim, and others. Among psychologists, Arnheim (1985) has rejected Fechner’s ‘hedonistic psychophysics’ because of its excessive emphasis on pleasure and failure to examine processes underlying the search for meaning in artworks. The narrowness and rigidity of the Fechner–Berlyne approach to experimental aesthetics has been repeatedly cited (Lindauer (1973), Munro (1956)). A serious reflection on the assumptions underlying its theory and practice may facilitate a rapprochement with other psychological perspectives on aesthetics.

This re-evaluation should begin with an examination of the way that experimental aesthetics defines itself as uniquely different from other approaches to aesthetics. Both Fechner (1876) and Berlyne (1971) defined their own approach as an ‘empirical’ aesthetics ‘from below’ in contrast to a ‘speculative’ aesthetics ‘from above’. Berlyne’s discussion of the two ap-
proaches to aesthetic disregards positive aspects of the 'speculative' approach and negative aspects of the 'empirical' approach. His comments imply that 'speculative' aesthetics is limited by the subjective analyses of its adherents. Its conclusions may reflect elitist and idiosyncratic ideas about what aesthetic interpretations, values and norms ought to be. The scientific researcher, on the other hand, is objective and detached from the research process. Consequently, the concrete facts which result from the research are less prone to bias and interference.

Giorgi's (1970) comparison of the natural science and human science approaches to psychology indicates that the notion of 'objectivity' is illusory. While the experimenter may be 'detached' or 'blind' with reference to the data collection process, he or she influences all other facets of the project. This active involvement begins at the earliest stage of a project when the researcher defines the problem and selects the phenomenon to be studied. In doing so the researcher defines what is 'real' and hence makes a metaphysical statement. This fundamental step is generally implicit and taken for granted. The experimenter is then responsible for choosing a particular research 'approach'. This includes the experimental paradigm that is adopted, the 'factors' that are isolated, the statistical procedure that is used to determine whether the effects are significant, and the interpretation of the findings. Clearly, the experimenter is very 'attached' to the research project.

Speculative aesthetics has much to offer the empiricist, particularly in the areas of observing phenomena and developing theories. This approach to scholarship works with concrete examples of artworks produced in different eras. The research strategy emphasizes depth of analysis, working exhaustively with individual artworks. The in-depth exploration of the structure of an artwork (Saint-Martin (1985)) is complemented by an attempt to relate it to personal, social and cultural factors. This interpretative effort may provide an important descriptive source for aesthetic processes and the factors which are interwoven in them. The account of how different factors shape a particular artwork may provide the source of concepts for a more general theory of artistic creation or appreciation.

It is important to understand that both scientific aesthetics and speculative scholarship are at least one step removed from the 'lived-world' (i.e. natural world) of artistic creativity and appreciation. Artists and the viewing public engage in their respective activities as part of the fabric of social and cultural life. They do not need scholars in order to participate in the artistic world. Both speculative and experimental researchers reach into that world and divide it up into 'eras', 'styles', 'factors', etc. This 'reaching in' is part of the academic process that involves taking an overall perspective, searching for resemblances among individual events and 'grouping' them within abstract concepts. The analytic process may vary across scholarly groups and historical eras, and its story is part of paradigm change (Kuhn (1962)) and the accumulation of knowledge.
Scientific theories are not ‘concrete’ but are constructions which change over time to more closely approximate ‘reality’. It is therefore essential for experimental aestheticians to reflect on how they analyze the lived-world and create theories. How do they ‘reduce’ or transform the phenomena of the lived-world into theoretically coherent accounts? These various ‘reductions’ all involve a loss of information and subtlety. Thematic reductionism involves the explanation of intrinsically aesthetic processes in terms of more general psychological processes. For example, it may be assumed that common principles apply to both mundane and aesthetic exploration (Berlyne (1971)). Art appreciation may be seen as a motivationally based aspect of exploratory behaviour. But what are the boundary conditions of this assumption? What is unique about aesthetic perception compared with the perceptions of daily life? How do ‘beautiful’ paintings and sunsets differ? Coming to terms with this issue can help to limit the effects of thematic reductionism. In the case of the Berlynian scholar, this implies going beyond motivational processes to examine the activities that are part of a search for meaning.

Theoretical reductionism implies accounting for processes at one level of explanation in terms of processes at a more fundamental level. Berlyne (1971), for example, accounts for subjective preferences by invoking neurophysiological mechanisms of reward. Similarly, attentional activities are explained in terms of orienting responses and ‘arousal’ states produced by the reticular activating system. This form of reductionism is not intrinsically wrong. It describes how one level of organization in the person can interact with other levels. Clearly, events in the body can affect events in the mind. A problem does arise, however, if one commits the ‘simplicist fallacy’ (Allport (1969)) and assumes that the physiological level of analysis is sufficient to account for subjective feelings of preference. In that case feelings of like or dislike lose their existential status and are transformed into mere biological events. An antidote to this kind of error would involve examining all the possible facets and sources of feelings of pleasure.

Methodological reductionism involves the treatment of qualitative processes in a quantitative manner. Emphasis is placed on operationalism and ‘positive’ agreement concerning the validity and reliability of a measure. In an extreme form it is reflected in ‘methodolatry’ (May (1958)) and the phrase ‘measurement precedes existence’ (Giorgi (1970)). In practice, the experimenter specifies a quantitative input variable and relates it to a quantitative response variable. For example, stimulus uncertainty may be used to predict verbal preference ratings for a set of paintings. What is the relationship between these operationalized variables and events in the lived-world? One of the problems with experimental psychology is that researchers cease to consider the lived-world and the derivation of these measures. Instead, researchers cite precedence to justify use of the variables. With time the variables and procedures become reified and ‘functionally autonomous’ from the real world.
of artistic endeavour. They cease to refer to the real actions of artists and viewers or the processes underlying creation and appreciation of art.

This state of affairs anticipates the onset of a crisis. Content with their own methods and measures, researchers may become indignant and intolerant of other concepts and approaches. Consequently, researchers may become socially isolated in groups that do not question basic theoretical and methodological assumptions. This social isolation reinforces their alienation from the lived-world and the phenomena that they are purportedly studying. Their concepts and methods become inbred and devoid of ecological validity. One solution to this problem of isolation is to encourage dialogue among scholars of different viewpoints. This forces researchers to give renewed attention to concepts and methods that have been taken for granted. Scholars are forced by the social and intellectual circumstances to return to basic issues. *Intersubjective* agreement about the description of phenomena and their underlying processes replaces a positivist emphasis on 'significant' effects. The *Psychology and the Arts Conference* held in Cardiff, Wales in 1983 brought together psychologists, art scholars, and artists. The dialogues and arguments that took place encouraged integration in the field of aesthetics.

What other positive steps can be taken to acquire a sensitivity to aesthetic processes in the lived-world? In other words, how do we move from an aesthetics 'from the outside' to an aesthetics 'from the inside'. Experimental aesthetics can be described as a form of aesthetics 'from the outside' that reflects the detached viewpoint of a psychologist who looks at the surface of processes through the interaction of factors or variables. Aesthetics 'from the inside' involves direct experiential contact with different kinds of aesthetic episodes. One might, for example, observe an artist during the course of his or her work on a painting or sculpture, and discuss the creative process as the work unfolds. A more direct encounter would involve personally participating in the artistic process. This kind of active involvement permits one to understand 'from the inside' the processes involved in producing artworks. By participating in good faith one acquires an appreciation of the problems faced by working artists. This makes one more sensitive to the delicate relationship that exists between actual involvement in the visual world and verbal accounts of these activities. The translation of one world to another is of special importance to scientific aesthetics. For the experimental aesthetician, involvement in aesthetic activity takes place against the background of knowledge and questions about aesthetic processes. An internal dialogue can therefore take place between one's direct experience of aesthetic processes 'from the inside' and one's intellectual concerns 'from the outside'. Lindauer (1984) has similarly encouraged a 'sideways' examination of what artists do.

This discussion indicates the importance of a balanced approach to psychological aesthetics. This approach would: (1) take into account the potential contributions of both speculative and empirical disciplines, and (2) consider
the separate worlds of the artist, the viewer, and the scholar. With this in mind what is the best way to address the object description problem in aesthetics? Perhaps we should begin by considering the different viewpoints of our various participants. The traditional psychologist is a kind of formalist who seeks to describe an artwork in neutral language. This implies that a basic visual grammar can be generated which encompasses all variations in artistic style. The artwork to be analyzed must be detached from either the artist’s intentions or the viewer’s interpretations. The work of art in isolation comprises an arrangement of material elements such as canvas or wood, oil or acrylic paint, etc., which define its medium and its basic physical qualities. The pattern or configuration of these material elements then determines the structure of the work (Cupchik and Heinrichs 1981). Moles (1958) has elegantly argued that a work of art can simultaneously embody qualitatively independent levels of organization superimposed upon each other. Each level conveys its own unique message and possesses specific rules of organization. Two major levels of organization are the semantic (Berlyne 1971, 1974) or esthetic (Moles 1958).

The semantic level of organization stands above the syntactic or esthetic level. Semantic information is denotative and serves to represent objects and events. Goodman (1968) argues that representation is independent of resemblance. Similarly, Werner and Kaplan (1963; 21) maintain that denotative reference involves one ‘entity being “taken” to designate another’. The semantic domain thus has practical utility and informs about the external world (Berlyne 1971). For the art scholar this form of object description emphasizes iconography and is very much tied to culture and history.

The semantic level of information is linked with the syntactic level in a very interesting way. This link encompasses techniques such as perspective which serve to delineate objects. Such techniques are essentially geometric as opposed to expressive (Werner and Kaplan 1963). ‘Esthetic’ information, per se, includes the expressive organization of physical and sensory aspects of a work of art which does not serve to denote objects (Moles 1958). This category of information is very broad, defining the style of a painting through the selection of colours, brush-stroke techniques, or ways of connecting forms. According to Moles, ‘esthetic’ information: (1) is specific to the channel transmitting it (e.g. a painting versus a sculpture), (2) determines internal states including emotions and sensory reactions, (3) is not translatable (e.g. a painting cannot replace an animated cartoon), and (4) is uniquely personal.

The art scholar faces many challenges when it comes to analyzing the esthetic or syntactic level of information. First, describing esthetic information in verbal terms requires a delicate and precise translation. Is this translation accurate or does it lose some of the uniqueness expressed in the work? Second, the description of any artwork must take place in the context of others in its genre. The existence of a genre actually makes it easier to describe a work
since some of its stylistic qualities have already been characterized. Experienced art scholars possess a broad repertoire of visual concepts or schema for analyzing artworks.

Art scholars face the greatest challenge when it comes to assessing the meaning and originality of an individual artwork. The meaning of a single work can only be approached in stages. The scholar must identify its semantic and syntactic messages. The identification of semantic meaning must take into account the possible social and cultural themes which the work denotes. The scholar must also delve into the vocabulary of its syntactic organization. Which stylistic elements are used to create visual effects in the work? The next step is truly speculative in Berlyne's sense of the arbitrariness of interpretation. The scholar must take into account the aesthetic intention of the artist. Although essential, this kind of information is not always available. This leads critics to impute intentions to artists without verification. Finally, the scholar must resolve the meaning of a work in terms of the interaction of its semantic and syntactic elements. How do content and style work together to create an effect? This kind of question eventually leads the scholar to the problem of metaphors because the form may relate in a complex way to the content. This is particularly true in the case of modern art. It is at this point that the art scholar is similar to a clinical psychologist. Working from limited information both attempt a reconstruction of the meaning of single events in a person's life...a dream, an artwork.

Assessing the originality of a work requires a different kind of analytic effort. The scholar is not concerned with personal reference, how the artwork expresses the individual artist. Rather, the scholar must view the artwork in the broad context of all that has preceded it. In this instance the critic faces a problem not addressed by art scholars who speak of 'rules of the art game' (Dickie (1962)) or 'aesthetic competence' (Beardsley (1980)). The latter group adopt the view that the artist is trying to communicate with an audience by applying a repertoire of shared symbols and visual schemas. While this may apply to representational or religious art, it does not apply to original art which is meant to challenge the viewer or to art that expresses the unique perspective of the artist. This kind of art lacks precedence and consequently visual schema cannot be called on to interpret the work. The scholar must first struggle to describe the techniques and style which the artist is exploring. This emerging style must then be related to existing stylistic schema. Is it a natural progression from an existing style? I would suggest that originality forces the viewer to a new perspective on events in the world of which aesthetics is but one part. To appreciate originality one must articulate the metaphor that it implicitly assumes. The quality of this metaphor expresses the genius of the artist, and its correct interpretation reflects the erudition and genius of the art scholar.
I would like, finally, to suggest an alternative concept of the artwork. We have come, through force of habit, to think of the artwork as an isolated object hanging in an exhibition or on a wall in someone’s home. I would like to extend the boundaries which surround the work and indeed the very notion of the work itself. First, I would suggest that we appreciate the dynamic history of an artwork. The idea that it exists in some final form is illusory. Degas was of a mind to work further on all of his own paintings, even those hanging on the walls of his friends’ homes. We should look backward in time and appreciate that the artwork unfolded through a process of inspiration and experimentation. The framed piece is not a ‘final’ stage but represents the arbitrary point at which the artist stopped work. The more we understand how the piece developed over time, the greater the depth with which we appreciate it. Second, we should understand the particular work against the horizon of the artist’s personal history, intellectual and emotional quests...his or her own search for meaning. Third, we should consider the artwork against the horizon of the culture and historical period. This will help us develop an appreciation of the grammar and meaning embedded in its semantic and syntactic structure.

A fourth consideration is particularly appropriate for the psychological aesthetician. The boundary of an artwork also breaks down when we consider the viewer’s encounter with it. This episode evolves over time and progresses though levels of emotional and intellectual understanding. In essence, the viewer has an image of the work which is in a state of flux. The unsophisticated viewer may simply try to identify the semantic content of the work and not process the other information. Trained viewers give the aesthetic information equal attention and hence are engaged in a more profound search for meaning.

This latter comment has important implications for the progress of experimental aesthetics. In the past we have given viewers the opportunity to examine paintings for brief periods of time (5 or 10 secs) and then asked them to make comparative judgments. These judgments end up being superficial because of the time constraints. They have revealed to us, however, the basic dimensions to which viewers are sensitive when processing works of art (Berlyne and Ogilvie (1974), Cupchik (1974)). I would like to suggest the importance of a more detailed examination of the search for meaning in art. We need to present viewers with aesthetic challenges and then study their strategies for comprehending the work. Both the emotional and intellectual aspects of their experiences should be examined. Lindauer (1973) has recommended use of nonrepresentational art for this kind of study. This should help us better understand the transformation of a viewer from novice to expert.

In summary, the problem of ‘object description’ is closely tied to the arbitrary isolation of artworks in time and space. We transcend this problem by: unfolding the artwork backward in time through its process of becoming;
by appreciating its current status in the context of cultural and stylistic developments in the medium, and by exploring its changing meaning through the eyes of novice and trained viewers. By destroying the boundaries of an artwork we may come closer to appreciating its meaning. This endeavour requires the cooperation of speculative scholars who interpret the context of artworks and experimental aestheticians who can study encounters with artworks in organized ways.

References


