E. H. Gombrich on Creativity: A Cognitive–Historical Case Study

Aaron Kozbelt

Brooklyn College of the City University of New York

E. H. Gombrich (1909–2001) was almost certainly the most broadly known art historian of the 20th century, and his scholarly work has influenced researchers in many domains. Among psychologists, Gombrich’s impact has been greatest in the area of visual perception, largely through the ideas articulated in his book *Art and Illusion* (1960). His influence on creativity research has been far less profound, although his writings include numerous (although often indirect) discussions of fundamental aspects of creative processes. This cognitive–historical case study investigation aimed to understand how Gombrich achieved a rich, and sometimes prescient, understanding of creativity without emphasizing it as an explicit focus of his scholarship. I argue that Gombrich’s cognitive style and multidisciplinary forays led him to emphasize and integrate a particular set of principles that are often underemphasized in contemporary creativity research. Gombrich’s foci, on understanding individual creators, continuity with tradition, expert knowledge, feedback, evaluation, and learning, are highly relevant to the study of creativity and represent a stimulating challenge to investigators.


Gombrich’s arguments about art and visual perception often provoked enthusiastic or hostile reactions from other scholars. However, here I am not concerned with those debates, which have been discussed elsewhere (Bryson, Holly, & Moxey, 1991; Verstegnen, 2004). Rather, I examine a neglected aspect of Gombrich’s thinking: his ideas about creativity. His influence on creativity researchers has been virtually negligible, despite the fact that his writings include numerous (although often indirect) discussions of fundamental aspects of creative processes. The claim of noninfluence is supported by an examination of the indexes of a sample of books on the psychology of creativity published in the last 30 or so years (Amabile, 1983; Arieti, 1976; Boden, 1994; Csikszentmihalyi, 1996; Dervin, 1990; Feldman, Csikszentmihalyi, & Gardner, 1994; Finke, Ward, & Smith, 1992; Galenson, 2001; Gardner, 1993; Gedo, 1983; Getzels & Csikszentmihalyi, 1976; Grudin, 1990; Hammer, 1984; Jamison, 1993; John-Steiner, 1985; Martindale, 1990; Perkins, 1981; Phillips & Morley, 2003; Prentky, 1980; Rothenberg & Root-Bernstein, 1999; Rothenberg & Hausman, 1976; Runco...
& Albert, 1990; Runco, 1994; Russ, 1993; Simonton, 1988, 1994, 1999; Smith & Carlsson, 1990; Smith, Ward, & Finke, 1995; Sternberg, 1988, 1999a; Sulloway, 1996; Taylor & Getzels, 1975; Wallace & Gruber, 1989; Ward, Smith, & Vaid, 1997; Weisberg, 1986, 1993; Winner, 1982). Of these, only five (Gedo, 1983; Getzels & Csikszentmihalyi, 1976; Martindale, 1990; Perkins, 1981; Winner, 1982) contain any references to Gombrich; these total about 20 pages and almost none directly discuss creativity. Indeed, two major edited volumes (Sternberg, 1988, 1999a), each with contributions from many prominent creativity researchers, contain no mention of Gombrich whatsoever.

Although this neglect is striking, perhaps it should not be completely surprising, because Gombrich himself rarely addressed the topic directly. The index of The Essential Gombrich (Woodfield, 1996), which excerpts most of Gombrich’s major works and runs to more than 600 pages, has only one page reference to creativity. However, punctuating his oeuvre are passages that discuss creativity in rich, nuanced, and often prescient ways. (An art historian once remarked that when one identifies an interesting research problem and sets out on the road to investigate it, one often meets Gombrich already on his way back from having solved it!) The major objective of this article is to understand how Gombrich developed his ideas about creativity without emphasizing creativity, per se, as an explicit focus of his scholarly research. I argue that Gombrich’s cognitive style and multidisciplinary forays led him to emphasize and integrate a set of principles that are highly relevant to creativity, but which are frequently underemphasized by contemporary researchers.

In answering this question, two other objectives will be met. The first is to survey the range and depth of Gombrich’s thinking about creativity in a cognitive—historical case study, using passages culled from his writings. Meta-level statements about creativity, that is, remarks by individuals about their own creative processes or their views on the fundamental nature of creativity, are among the most useful lines of evidence for characterizing a creator’s cognitive style, that is, the regularities underpinning their goals, knowledge, and reasoning (Dasgupta, 2003; Gruber, 1988; Martinsen & Kaufmann, 1999). Thus, the same data can characterize Gombrich’s general views on creativity and inform his own creative processes. A second objective is to describe how Gombrich’s ideas are relevant to contemporary creativity research. In its totality, his perspective represents a stimulating challenge to investigators.

I begin with a biographical sketch and then outline the cognitive–historical case study method. Next, the main strands of Gombrich’s thinking on creativity are described, to define his cognitive style and understand how he achieved his insights on creativity. These points are integrated by characterizing Gombrich as a particular creative type, the seeker (Galenson, 2001, 2004, 2005). Finally, Gombrich’s relevance to contemporary creativity research is discussed, emphasizing current lacunae and promising research directions.

BIOPGRAPHICAL SKETCH

No book-length biography of Gombrich has yet been published. He wrote one autobiographical essay (Gombrich, 1991, pp. 11–24), and a book of interviews (Gombrich & Eribon, 1993) also contains considerable biographical material. Trapp (2000) provides a comprehensive bibliography; additional information is available on the official Gombrich Web site: http://www.gombrich.co.uk/.

Ernst Hans Josef Gombrich was born in Vienna on March 30, 1909, the son of a respected lawyer and a pianist of international reputation as a teacher. Raised in a cultured and musical atmosphere, Ernst showed early interests in music, natural history, architecture, art, and human history. For his academic oral examination topics, he chose German literature and physics, later commenting, “I was trying not to limit myself to a single area” (Gombrich & Eribon, 1993, p. 33). He began reading widely about art and wrote a long essay on a Greek vase at 15 or 16. For his graduation requirement, at 18, he wrote about “the changes in art appreciation from Winckelmann to the present age. I have sometimes thought that this is all I have ever done—pursued my interest in this particular subject” (Gombrich, 1991, p. 13).

Gombrich then studied the History of Art and Classical Archaeology at the University of Vienna, choosing to work with Julius von Schlosser, a shy old scholar concerned with why the art of the past took the forms it did and turning to psychology for answers. Schlosser insisted that his students work with original material and clearly understand the problems they were studying. Standards were high (“It was taken for granted that everybody knew Italian;” Gombrich, 1991, p. 14), and there was no division between undergraduate and graduate work; the course ended with the Ph.D. thesis, usually at the end of the fifth year of study. After investigating medieval ivory carvings, Gombrich focused on Renaissance and Mannerist art. Having seen Giulio Romano’s frescoes and architecture in the Palazzo del Tè in Mantua, Gombrich proposed as his thesis topic whether the style of Mannerism existed in architecture. In addressing this issue, he concluded that the then-prevalent idea that Mannerism was the expression of the spiritual anxiety of the age was seriously flawed; rather, Romano had worked in bizarre and entertaining styles mainly because this was the expectation of a court
1935, he completed his dissertation, though the dire economic situation meant he had no chance of a real job. At the request of a publisher, he wrote a children’s book on world history (Gombrich, 1935/2005), which achieved unexpected success. He also met Ernst Kris, with whom he studied the problem of caricature.

In 1936, Gombrich moved to England, becoming a researcher at the Warburg Institute, a privately supported teaching institute and library for cultural history. During World War II, he monitored and translated German radio broadcasts. Although this put his scholarly career on hold, he did not think the time wasted, stating that through this experience, he “became very interested in perception, in the problem of hearing, and in other matters” (Gombrich, 1991, p. 20) that would profoundly influence his research.

Gombrich returned to the Warburg in 1946 as a senior research fellow. He taught courses in cultural subjects “not directly connected with the history of art” (Gombrich, 1991, p. 21). He also took wrote an art history book for young people, at the request of an English publisher. In order to get quickly back into research, he consulted almost no references and only used illustrations at hand to write it. The book, The Story of Art (Gombrich, 1950/1995), was a great popular success, and positive reviews led to his appointment as Slade Professor of Fine Arts at Oxford from 1956 to 1959, although he maintained his post at the Warburg. In 1959, he became Director of the Warburg Institute and Professor of the History of the Classical Tradition at the University of London until his retirement in 1972.

Another turning point occurred when Gombrich was invited to give the 1956 Mellon Lectures in the Fine Arts in Washington, D.C. These addressed the subject of “what happens when somebody sits down and tries to paint what is in front of him” (Gombrich & Eribon, 1993, p. 97) and became his most influential book, Art and Illusion (Gombrich, 1960). His wartime experiences impressed upon him the fundamental role of top-down expectations in communication, an idea derived from information theory. He used these ideas to explain why realistic image-making has a history. He concluded that realism necessarily involves artists choosing which aspects of the three-dimensional world they wish to depict on a two-dimensional surface, and that this difficult selection problem can only be solved with reference to schemata that are learned by examining other images. In other words, realism must be gradually evolved through a strong craft tradition and cannot be conquered in one fell swoop. Gombrich’s argument influenced researchers in numerous domains (e.g., Bryson, Holly, & Moxey, 1991; Duke, 2002; Edgerton, 1991; Gibson, 1971; Goodman, 1968; Levy, Levy, & Goldberg, 2004; Solso, 2003; Verstegen, 2004). In 1998, The Modern Library ranked Art and Illusion 29th among the 100 best English language nonfiction books of the 20th century (http://www.randomhouse.com/modernlibrary/100bestnonfiction.html).

By the 1960s, Gombrich was frequently invited to guest appointments and lectures at major universities, and became acquainted with top researchers in psychology, linguistics, information theory, and philosophy. Knighted in 1972 and the recipient of numerous honors, he produced a steady stream of publications, including his major treatise on decorative art, The Sense of Order (Gombrich, 1979b). His later works maintain the rigorous scholarship and multidisciplinarity of his earlier writings. For instance, in Tributes (Gombrich, 1984), he paid homage to “interpreters of our cultural tradition” in domains like philosophy, art history, cultural and Freudian psychology, aesthetic criticism, anthropology, and the history of ideas.

Multidisciplinarity also characterized his final book, The Preference for the Primitive (Gombrich, 2002), where he remarked, “it was almost inevitable that this study carried me into so many fields” (p. 8). The topic, the revulsion often felt towards art that is too naturalistic once mimesis has been achieved, grew out of Gombrich’s research in the 1950s, and he wrestled with its implications for nearly half a century. At the time of his death, on November 3, 2001, he was working on the English translation of his final book (Gombrich, 1935/2005).

Gombrich’s lifetime of writings provide ample evidence for a cognitive–historical case study, a common methodology for understanding the thinking of creative individuals (Gruber, 1988; Wallace & Gruber, 1989). Such studies can utilize various kinds of evidence: published writings, unpublished correspondence, sketches or drafts of projected or in-progress works, interviews, or meta-level comments about creativity that often describe a creator’s own approaches. Typically, cognitive–historical case studies attempt to answer specific questions about a creator. For instance, Gruber (1974) aimed to understand how Darwin arrived at the theory of evolution by natural selection. Dasgupta (2003) wanted to know how Simon was able to achieve “Renaissance man” status in the ultra-specialized 20th century. The present investigation seeks to answer the following question: How was Gombrich able to develop profound, prescient ideas about the nature of creativity without emphasizing creativity, per se, as an explicit focus of his scholarly research?
In answering specific questions, case studies also allow an assessment of an individual’s cognitive style, which can be defined as “a compendium of one or more identifiable patterns or regularities underpinning the goals, knowledge and/or reasoning he or she brings to bear in the course of cognitive processes” (Dasgupta, 2003, p. 686). In Gombrich’s case, his goals, knowledge, and reasoning can be briefly summarized. First, throughout his career, his goals remained those of an art historian: to understand what actually happened in the history of art and to devise concrete, defensible explanations for these facts. In striving toward these goals, Gombrich relied on several distinct knowledge bases: first, a staggeringly deep knowledge of the history of art, with emphases on social and technological aspects of art-making; second, wide contact with ongoing developments in other domains, including perceptual psychology, information theory, and the philosophy of science. Finally, his reasoning was guided by a vital concern with aesthetic values. The particular constellation of goals, knowledge, and reasoning made Gombrich’s cognitive style unusual among art historians (or any group of scholars). His goals, knowledge, and reasoning are now detailed.

Goals: Rational Explanations for Art Historical Phenomena

Perhaps more than any other prominent art historian, Gombrich held an essentially rational and empirical (if not completely scientific) view of art, art history, and art-making. He agreed with his friend, philosopher of science Karl Popper, “that there is no difference in principle between explanations in history and in science; the difference is in the direction of our interest,” that is, specific cases versus general theories (Gombrich, 1991, p. 62). From his early training, Gombrich learned to value careful observations and justifiable explanations. In his dissertation and all of his later writings, he flatly rejected any collectivist argument, like class struggle or the Zeitgeist (spirit of the age), to explain art history. Besides being tautological and intellectually bankrupt, such nonexplanations ignore what actually happened, namely, the essentially rational way that artists experimented with image-making and learned from each other. As an alternative, Gombrich emphasized Popper’s idea of the “logic of situations.” That is, “if you know, or if you can reconstruct, what the situation was, you can also reconstruct how a reasonable person would react” (Gombrich & Eribon, 1993, p. 82), for example, in “the options he had, and the decisions he made within the tradition in which he was bound to work” (Gombrich, 1979a, p. 148).

Although understanding the logic of situations can yield a better understanding of art history, Gombrich recognized that art’s complexity places limits on what investigators can know. He argued that analysis could never fully explain great artworks or artists because “there can never be enough well-defined terms in which to discuss individual works of art, and even less can there be an exhaustive formulation of the precise problem a given work of art was created to solve” (Gombrich, 1979a, p. 148). Indeed, he felt “the way a great artist collects his points is not susceptible to quantification . . . [since] . . . mastery is not only multidimensional, it is also infinitely supple and resourceful” (Gombrich, 1979a, p. 153). Nevertheless, Gombrich did not abandon his search for explanations; he simply searched elsewhere.

Knowledge: Multiple Domains and an Individual Focus

For Gombrich, understanding the complex logic of art historical situations required multidisciplinary knowledge. Characteristically, he thought, “what we call disciplines are, at best, matters of organizational convenience in academic life” (Gombrich, 1991, p. 67), and “an alert and industrious scholar can acquire the skills to investigate nearly any question” (Gombrich, 1979a, p. 119). Consistent with his rejection of collectivism, he focused on individuals; The Story of Art famously begins, “There is no such thing as art. There are only artists” (Gombrich, 1950/1995, p. 15).

Following the logic of situations, Gombrich saw individuals as highly situated in their time, place, and tradition. Art was neither the expression of a Zeitgeist nor, usually, an artist’s personal feelings: “It is a fact of history that most of the great artists in the Western tradition have felt involved with the solution of problems more than the expression of their personality” (Gombrich, 1979a, p. 125). Within art history, Gombrich was concerned with social and technological explanations. One such factor was artistic competition; scarce competition leads to declining standards. He often cited the story of the sculptor Donatello, who preferred to be “constantly criticized, because these strictures would make him work harder and thus achieve greater glory” (Gombrich, 1991, p. 70). Another factor, artistic technology, included external factors (the development, constraints, and possibilities of media like fresco or oil painting) plus internal factors (artists’ technical knowledge of art-making). Gombrich (1991) argued that “much contemporary aesthetics tends to neglect . . . the technological aspects of the great achievements in the history of art . . . these transcending achievements have always grown out of the soil prepared and fertilized by a great craft tradition” (p. 69).

Understanding individual artists’ approaches spurred Gombrich to explore domains like information theory and psychology, especially for understanding visual
perception and problem solving processes. Gombrich knew many eminent psychologists, including Köhler, Bruner, Gibson, Neisser, and Gregory (Gombrich & Eribon, 1993, pp. 113–115). Common themes in Gombrich’s psychology of art are learning, expertise, skill, and top-down influences. Gombrich (1960) encapsulated these in his discussion of schemata, many aspects of which were derived from Bartlett (1932). Artists use schemata in realistic depiction and in creative problem solving, and they are largely learned from artists’ experiences in their milieus (another nod to the logic of situations). In each case, artists do not begin from scratch, but from a tradition. The creation of an individual work involves making plans and initial marks, testing these “hypotheses,” and using feedback for revision (Gombrich, 1991, pp. 92–130). Over time, artists acquire the perceptual, motor, and critical skills that lead to mastery and the development of a tradition.

Gombrich’s attention to psychology and other domains set him apart from most art historians. However, this was primarily a means to the end of understanding the logic of artists’ situations, rather than an overt desire for originality. By focusing on the activity of individual artists situated in specific traditions, Gombrich’s rational outlook encouraged wide-ranging explanations and maintained respect for a variety of artistic products and methods. However, his pluralism never degenerated into relativism; rather, he maintained a strong sense of aesthetic values, which constitutes the third component of his cognitive style.

Reasoning: Aesthetic Values as a Guide

Gombrich’s insistence on genuine (if ultimately unprovable) aesthetic values as a guide to reasoning about art was a vital component of his cognitive style. These values were rooted in the traditional, humanistic, Western canon, which he thought “offers points of reference, standards of excellence which we cannot level down without losing direction” (Gombrich, 1979a, p. 163). Gombrich treated this theme with urgency: “The neglect or even denial of values seems to me the greatest danger in that trend towards the dehumanization of the humanities” (Gombrich, 1984, p. 25), and his defiant concern with traditional aesthetic values isolated him from relativist and postmodernist art historians.

Although Gombrich was mainly interested in individual artists and their place in history, he was also concerned with artistic styles and preferred those with richer possibilities for development. This issue emerged early: In a 1935 essay he noted, “It seems that we should inquire into the kind of possibility of achievement which exists within any system or style before asking about the achievement of a particular work” (Gombrich, 1963, p. 72). Again, “I do not think that the value of any work of art to the mind can be demonstrated... Art... offers us a range of metaphors... however, we are entitled to speak of poor and rich vocabularies and resources” (Gombrich, 1984, pp. 86–87). Finally,

Tribal art is usually very good. But Michelangelo is still better... when you increase technical expertise you also increase the risks. There was bad art in the Renaissance, there is much more now, because there are so many more ways of going wrong. It becomes more...difficult to master this immense complexity which the medium offers. The simpler the system the fewer the risks. (Gombrich & Eribon, 1993, p. 87)

Gombrich maintained values as guiding principles for himself and others: “We should train ourselves and our students in that spirit of criticism and self-criticism that alone makes intellectual pursuits worthwhile” (Gombrich, 1979a, p. 188). Along these lines, when artists disregarded values and lacked high self-critical standards, Gombrich’s verdict was invariably negative. Consider his appraisal of the work of Oscar Kokoschka, with whom he was on personally friendly terms: “At his best, he is wonderful, but like so many modern artists he was not very self-critical. He thought: If I do it, it must be good...[H]e could...be rather careless” (Gombrich & Eribon, 1993, p. 117).

INTEGRATION: GOMBRICH AS SEEKER

All told, Gombrich’s cognitive style exemplifies a particular creative type, seekers, described by Galenson (2001, 2004, 2005). Galenson distinguished seekers, or experimentalists, from finders, or conceptual innovators. Seekers have more deductive, data-driven, trial-and-error approaches, where the process of elaborating an idea is more important than the basic concept. Seekers often start working on a project without clearly defined goals and do not know in advance what the final product will be like. They show considerable continuity with tradition and in their work, as they repeatedly tackle a few themes. Building on this foundation, they develop skills and typically peak late in their careers. In contrast, finders have more deductive, theory-driven approaches, where the basic concept is more important than its execution or elaboration. Finders start with clearly defined goals and largely know in advance what the end product will be like. These revolutionaries show less reverence for tradition, prize originality, and work on a multiplicity of problems, each rather independent from the others. By radically changing a domain’s rules, they can partly circumvent the process of expertise acquisition and often peak quite early, but their output...
is more hit-or-miss than that of seekers. Galenson (2001, 2004, 2005) showed that these two groups differ markedly in career peak age and the extent to which their output is dominated by a few works.

Naturally, Galenson’s (2001, 2004, 2005) typology is not the only way to characterize the cognitive style of creative individuals. Alternative frameworks have been proposed that would likely also capture important features of Gombrich’s thinking. For instance, Kirton’s (1989; see also Isaksen, Lauer, & Wilson, 2003) characterization of adaptors versus innovators seems highly analogous to Galenson’s characterization of seekers and finders, respectively: adaptors work within the current paradigm, solving problems in traditional ways; innovators frequently challenge rules and look to change paradigms. Kaufmann (1979; see also Martinsen, 1995) made a similar distinction between explorers and assimilators. Like finders, explorers look for new ways to solve problems and excel when a task is characterized by novelty; assimilators, like seekers, perform better when they have high levels of relevant experience. Although Gombrich could also be discussed under either alternative rubric, given the direct relevance of Galenson’s (2001, 2004) work to Gombrich’s domain of visual art and its distinctive linkage between creators’ types and typical career trajectories (see below), the finder–seeker typology is particularly useful for the present purposes.

Interestingly, Gombrich (1984) himself foreshadowed some aspects of this typology and revealed a proclivity for seekers’ approaches:

Creative articulation can take two almost opposite directions. The artist can strain the medium in an effort to extend its range and thus to discover novel possibilities at the extremes . . . . But he can also make discoveries by refining his medium, by introducing a more subtle calibration . . . . More dramatic innovations are more easily described and appreciated than their miracles of refining . . . . [this has] introduced a bias into the discussion of artistic achievements which is far from healthy. (pp. 206–207)

In this view, artists who strain a medium to achieve novelty might be comparable to finders; those who refine their medium, seekers.

Gombrich’s seeker bias is distilled in the following passage, one of his most explicit treatments of the topic of creativity:

Problems in the realm of art . . . . may . . . . be recalcitrant. Yet there is no intrinsic reason here why the solution should always elude the artist bent on ordering a large but limited number of elements which may and do fall into place and come right . . . . Such an artist . . . . works within the medium that is pre-shaped by tradition. He has before him the benefit of countless experiments in creating orders of a similar kind and value. Moreover, in setting out to create another such ordered and meaningful arrangement of tones, he will, during the process of creation, discover new and unintended relationships which his watchful mind can exploit and follow up, till the richness and complexity of the work transcends in fact any configuration that could be planned from scratch . . . . Strangely enough our age . . . . has yet fallen for a conception of creativity in art which sees only the individual creator and his state of mind. It forgets that even Bach, great as he was, could not have invented that marvelous medium that is the Western system of music—or if it does not forget it, it tends to regret such traditionalism and to imply that every artist should invent his own system. (Gombrich, 1979a, p. 129)

This passage crystallizes many of Gombrich’s seeker-biased emphases: the necessity of gradualism and tradition, an aversion to originality for its own sake, and the centrality of feedback, critical judgment, and idea elaboration in creativity. His artistic preferences, approach to creative problems, and career trajectory reflect this bias; these are now detailed.

Artistic Preferences

Gombrich’s rarely discussed his aesthetic preferences directly, but evaluative comments occasionally punctuate his writings. On one hand, he often had the highest praise for prototypical seekers, such as Cézanne and Leonardo. Cézanne was “a great master because he did not try to camouflage . . . . problems. It is his astonishing struggle to do something which cannot be done that makes him . . . . great” (Gombrich & Eribon, 1993, p. 109).

Gombrich (1966, pp. 58–63) also devoted an admiring essay to Leonardo’s novel method of drawing, in which a composition was organically and incrementally built up from a set of marks with little pre-planning. On the other hand, Gombrich’s attitude toward the avant garde was one of veiled but generally unremitting disapproval.

For instance, he slyly derided the famous incident of arch-finder Marcel Duchamp exhibiting a urinal as an abstract sculpture, stating that “such a spoof might have occurred in one of the artists’ carnivals without attracting more than passing attention” (Gombrich, 2002, pp. 265–268). His comments on movements like l’art brut, on “happenings,” and on exhibitions like that of “canned excrement displayed as Merde d’artiste” (Gombrich, 2002, p. 268) were likewise dismissive.

Sometimes accused of an aversion to all modern art, Gombrich hastened to note, “I . . . make a distinction of some importance between the ideology of modern art and the works of modern artists. I am very critical of the ideology of modern art . . . . of the cult of progress and of the avant garde” (Gombrich & Eribon, 1993,
themes, which spawned and provided connections years later, he essentially dealt with only a few central secondary school education until his death almost 75 longevity. Throughout his career, from the end of his nuity in his research program and his productive itself is his own career trajectory, specifically the conti- A final way in which Gombrich’s seeker bias manifested Career Trajectory Gombrich’s own approach to methodology likewise shows a seeker bias. Obviously, he did not only value traditional approaches in art or scholarly research; indeed, he explicitly denounced the “facile application of ready-made paradigms” (Gombrich, 1979a, p. 188). However, successful searches for answers often require multidisciplinary knowledge or approaches, plus keen critical evaluation. He encouraged students and researchers to look for questions that have not yet been asked and that may need new paradigms for their answer. Obviously there will be failures as well as successes, but if reasoned criticism of fundamentals will again be encouraged the process of trial and error should result in a real advance. (Gombrich, 1979a, p. 188)

Although Gombrich (1960) emphasized the need for top-down control, he was not theory-driven to the point of formula. Indeed, he directly stated,

I don’t want [a method]. I just want common sense! This is my only method. ... Before you do any research, you have to decide what questions to ask. The ... tact of the scholar is to have a feeling that this or that line of inquiry is promising, that you may find out something. (Gombrich & Eribon, 1993, p. 139)

And, “we should always probe theories before adopting them in our work” (Gombrich, 1991, p. 65). Thus, theories were means or starting points, not ends in themselves. Gombrich’s lack of a set method or system and his pragmatic concern with real-world problems, rather than the abstruse, theoretical esoterica preferred by many contemporary art historians, ally him with seekers.

GOMBRICH ON CREATIVITY

This cognitive-historical case study has highlighted important strands in E. H. Gombrich’s thoughts on creativity. Given his provocative insights, his neglect by many creativity researchers seems unfortunate. Interestingly, Gombrich appears to have foreshadowed or independently arrived at a number of key ideas in the contemporary study of creativity. His intimation of some aspects of Galenson’s (2001, 2004, 2005) typology
has already been noted. His comments on psychological regression as a means of achieving greater originality (Gombrich, 2002, pp. 235–268) are also largely consistent with empirical findings (Martindale, 1990). His objection to the Zeitgeist as a fundamentally flawed construct has likewise found empirical support (Simonton, 1979). His emphasis on the creative individual is also consistent with the tradition of cognitive–historical case studies (Dasgupta, 2003; Gruber, 1974, 1988; Gruber & Wallace, 1999; Wallace & Gruber, 1989). Gombrich’s perspective on creativity provokes many questions and suggests numerous future research directions. Here only a few themes are detailed: defining creative products, elaborating the nature of creators’ mental structures (schemata, problem representations, etc.), and understanding the role of evaluation and (possibly) learning in creativity. Naturally, discussing these points involves some speculation; however, the main intention is to show how Gombrich’s ideas might stimulate further research, rather than how they have already been supported.

Defining Creative Products

How should creativity be defined? Gombrich had the highest critical standards and generally thought that “we tend to use the word creativity too lightly” (Gombrich, 1991, p. 69). For archival studies dealing with elite samples (Galenson, 2001, 2004, 2005; Martindale, 1990; Murray, 2003; Simonton, 1991a, 1991b, 1994, 1998), this is largely a nonissue, because elite samples, by definition, meet high critical standards and because posthumous measures of eminence or success show considerable stability and reliability. Such results strongly support Gombrich’s position of the reality of aesthetic values and argue against relativists who object, even in principle, to the scientific study of creative achievements. Moreover, Gombrich’s view that even nonrevolutionary works can represent peak aesthetic achievements suggests that creativity researchers need not focus exclusively on radical, paradigm-shifting works. Rather, they could profitably undertake a broader understanding of different types of creative contributions, such as Sternberg’s (1999b) propulsion model, which specifies seven such categories. For instance, Gombrich raved about the unassuming still-lifes of 18th-century artist Chardin, remarking that “the subtleties of tone and texture... turn these paintings of simple kitchen utensils into the visual equivalent of great poetry” (Gombrich, 1984, p. 186). Few contemporary psychological accounts encompass such nuanced aspects of creativity or aesthetic quality. Finally, Gombrich’s multidimensional understanding of creative outcomes and de-emphasis of raw originality as the sine qua non of creativity should encourage researchers to consider rich ways of unpacking this construct (e.g., Amabile, 1983; Christiaans, 2002; Hekkert & van Wieringen, 1996; Kozbelt, 2004), rather than relying on undifferentiated creativity judgments.

Creators’ Cognitive Structures

Gombrich’s (1960) focus on schemata reflects his concern with psychological concepts and processes. Like many accounts of schemata (e.g., Rumelhart, 1980), Gombrich’s may be criticized as vague, conceptually slippery, or overly flexible. For instance, artists’ schemata might include such varied components as a declaratively encoded expert knowledge base; procedurally represented motor skills; default problem solving goal-plans; and evaluation criteria with cognitive, perceptual, or emotional bases, plus other factors. Any of these could distinguish artists from nonartists or more creative artists from less creative artists. Psychological research reveals that artists show cognitive, perceptual, and visual memory advantages over nonartists (Kozbelt, 2001; Winner & Casey, 1992). However, how these processes unfold in realistic (or creative) drawing has been the subject of relatively few investigations (Cohen & Bennett, 1997; Kozbelt, 2001, 2006b, in press; van Leeuwen, Verstijnen, & Hekkert, 1999). Surely skilled drawing is a staggering complex phenomenon: As Gombrich (1960) remarked about the changing identities of simple line drawings as new features are added, “Far as we are from completely understanding this process, how can we hope to approach Velazquez?” (p. 7). Distinguishing the relative contributions of and interactions between hypothesized components might allow schemata to be profitably unpacked (Cohen & Bennett, 1997; Seeley & Kozbelt, 2004). Gombrichian art historical studies and computational approaches (e.g., Willats & Durand, 2005) can complement psychological studies to remedy the scant progress that has been made in understanding artists’ schemata. Note also that although this discussion has focused on image-making, similar strategies could be applied to schemata in other domains.

Gombrich (1960) emphasized that schemata arise from arduous learning processes. This heralded a cognitive psychological tradition of creativity research stressing the importance of domain-specific expertise (e.g., Ericsson, 1999; Simon, 1988; Weisberg, 1986, 1993, 1999). In this view, even prodigiously talented persons tend not to create original works of lasting value until they have spent at least a decade acquiring relevant expertise (Hayes, 1989; Simonton, 1991a). Among other things, this knowledge enables experts to devise more effective problem representations (Chi, Feltovich, & Glaser, 1981). Problem representations define a creator’s goals and means of achieving those goals.
(Hayes, 1989) and conceptually overlap with Gombrich’s notion of schemata.

Other constructs besides schemata and problem representations may also help explain psychological aspects of creativity. For instance, in the last 15 or so years, provocative investigations in the creative cognition approach (Finke, Ward, & Smith, 1992; Smith, Ward, & Finke, 1995; Ward, Smith, & Vaid, 1997) have delved deeply into characterizing the mental structures and processes involved in creative and noncreative thought. These include conceptual combination, conceptual expansion, metaphor, analogy, and the use of preinventive forms as a way of generating and exploring ideas. The rationalist perspective of the creative cognition approach, which holds that creativity is ultimately based on nonexotic cognitive processes (cf. Perkins, 1981), is very much in the Gombrichian spirit. As he himself stated, “...believe that the contrast between rationality and creativity is ultimately unsound” (Gombrich, 1979b, p. 7).

However, major challenges remain, namely, documenting and understanding how these structures and processes operate in experts and how well they may account for the superior creative achievement that concerned Gombrich. For instance, how much do the problem representations (or other cognitive structures) of creative experts vary? What aspects of problem representations evolve (vs. remain invariant) during the process of creation? In ill-defined domains like painting or scientific discovery, how are creators’ problem representations related to their problem solving strategies? Some useful guidance may be had from Gombrich’s emphases: maintaining high critical standards to unify expertise and creative cognition approaches, focusing on individual differences in creators’ mental structures and processes, and stressing continuity with tradition to understand the origin of creators’ schemata and expert knowledge bases.

Evaluation and Learning Processes

Gombrich’s values-driven mode of reasoning made evaluation a self-evident aspect of the creative process, and his perspective suggests several potentially fruitful research directions. One is the role of feedback and dynamic self-criticism, which are necessary to guide the implementation of schemata, problem representations, preinventive forms, and other cognitive structures. Gombrich’s negative appraisal of artist Oscar Kokoschka as sometimes insufficiently self-critical illustrates his belief that more active evaluation and self-monitoring might engender more creative outcomes. Although research on other aspects of creativity has corroborated or elaborated Gombrich’s ideas, the nature of evaluative processes remains an understudied topic (Runco, 2003; Runco & Chand, 1994). Some earlier psychological discussions of evaluation in creativity include that of Perkins (1981), who devoted a largely theoretical chapter to the topic, and Simonton’s (1988, 1997, 1999, 2003a, 2003b) Darwinian theory, which has mostly pessimistic implications for the reliability of self-criticism. More recently, investigators have begun to elaborate the nature and role of critical and evaluative processes in creativity (see, e.g., Jaarsveld & van Leeuwen, 2005; Kozbelt, 2006a, 2007; and, especially, chapters in Runco, 2003). Gombrich’s perspective has starkly and presciently highlighted the relative neglect of this important topic.

Evaluation may also have longer-term ramifications. Gombrich’s (1991) example of the sculptor Donatello seeking criticism in order to improve his work suggests that individuals might be able to use critical feedback to develop their creativity (cf. Perkins, 1981). Via learning, evaluation processes may have the potential to bridge process and lifespan levels of analysis in creativity research, which are typically examined separately (Policastro & Gardner, 1999; Simonton, 2003b). In nomothetic lifespan analyses, creative productivity results from sufficiently complex component processes that it can be modeled as a random variable. However, this does not greatly inform the constituent psychological processes or how these might vary among individuals.

A promising perspective to unite process and lifespan analyses is Galenson’s (2001, 2004, 2005) seeker–finder typology. Specifically, the continual improvement and late career peak of seekers suggests that they have acquired or developed abilities that finders have not. In part, finders’ rejection of the importance of traditional skills and knowledge in radically changing the rules of a domain enables them partly to circumvent the long period of expertise acquisition and to create notable contributions early in their careers. In contrast, seekers value, utilize, and develop expert knowledge and skills that require substantial practice. Perhaps seekers also acquire superior critical and evaluative abilities, a kind of wisdom that enables them to learn from experience and continue to make important creative contributions even very late in their careers. Links between evaluation, learning, and creativity emerge naturally from Gombrich’s foci, but scant empirical research has examined these issues.

The potential role of learning in creativity is particularly interesting, because it is commonly held that creativity, by definition, is inherently unpredictable (Campbell, 1960; Simonton, 1988, 1997, 1999, 2003a, 2003b). In this view, creators should not be able to learn to become more creative. For instance, critical feedback is rarely reliable; even if it were, which aspects of a work contributed to success would be unclear; even if this were true, persons who repeated the same idea would
no longer be considered creative (Simonton, 1999). However, the assumptions about this dynamic may better apply to the approach of finders than to seekers. Arch-finders may strive to invent an original system or style with each new major work (cf. Gombrich, 1979a). When there is little basis for comparison of ideas or works, outcomes would likely be hit-or-miss, evaluation might be comparatively unimportant (or unreliable), and learning or transfer would be difficult. In contrast, seekers may exploit their greater continuity with tradition and their own earlier works as a basis for learning and improvement in critical or creative ability. Gombrich’s rationalist, seeker-biased perspective suggests that some creators may exercise considerable control over the creative process, a provocative possibility with substantial theoretical and practical implications (cf. Sternberg, 1998). Indeed, some perfectivist suggests that some creators may exercise considerable control over the creative process, a provocative possibility with substantial theoretical and practical implications (cf. Sternberg, 1998). Indeed, some perfectivist creators show a higher than normal ratio of hits to total output, and such individuals may need to be considered in more detail (Simonton, 1997).

If learning could have an impact on creativity, one might also speculate about the underlying mechanisms. One possibility involves the extent to which finders’ versus seekers’ knowledge bases involve explicit versus implicit processes or knowledge representations. Galenson (2001) observed that finders are better able than seekers to articulate their creative goals, consistent with the notion that seekers rely more on tacit or implicit representations or processes. An implicit knowledge base might allow more robust, nuanced forms of learning that take advantage of environmental statistical regularities that are difficult to encode consciously. Interestingly, Gombrich seems to have intuited some of the essential characteristics, importance, and evolutionary origins of such processes:

If the mind is not a patchwork of individual sensations, neither is nature a chaos of random events. It offers us the experience of a multitude of interacting but ordered regularities…Without such an order man could not form expectations, could not plan, could not develop science and, maybe, not art either…Like a patient language teacher, nature familiarized the mind of man with recurrent processes in ever-changing modifications, establishing a communicable pattern of events which determined survival but always needed fresh attention (Gombrich, 1984, pp. 76–77)

In conclusion, although one may disagree with Gombrich on particular issues, his stance provokes a number of interesting and empirically testable questions that may stimulate further research on the nature of creativity. Such research would likely involve the application of basic cognitive psychological principles to understand creativity in complex situations, as well as multidisciplinary work uniting different perspectives and levels of analysis. Gombrich himself was stimulated by many domains and exercised considerable reciprocal impact. Perhaps it is time he influenced the direction of creativity research as well.

REFERENCES


