The Propulsion Model of Creative Contributions Applied to the Arts and Letters

ABSTRACT

This article applies a propulsion model of creative contributions to the arts and letters. The basic notion is that creative contributions differ not only in the amounts of creativity they display but also in the types of creative contributions they make. The article opens with a general discussion of creative contributions and next considers some existing models of creative contributions. It then describes the propulsion model for understanding creative contributions and suggests eight types of contributions that follow from the propulsion model. Next the article describes some contributions in the arts and letters and shows how the propulsion model can be applied to understanding them. Finally the article discusses why such a model can be useful in evaluating the status of creative work, of individuals, and of a domain.

INTRODUCTION

What makes some artistic and literary contributions stand out from others? Which contributions are enduring and which are flashes in the pan? These are two of the kinds of questions that are addressed by a propulsion model of creative contributions (Sternberg, 1999b). We argue in this article that the type of creative contribution exhibited in a creator’s works can have at least as much of an effect on judgments about that person and his or her work as does the amount of creativity exhibited. In many instances, it may have more of an effect on these judgments.

Creativity may be viewed as taking place in the interaction between a person and the person’s environment (Amabile, 1996; Csikszentmihalyi, 1996, 1999; Feldman, 1999; Feldman, Csikszentmihalyi, & Gardner, 1994; Sternberg & Lubart, 1995).
According to this view, the essence of creativity cannot be captured just as an intrapersonal variable. Thus, we can characterize a person’s cognitive processes as more or less creative (Finke, Ward, & Smith, 1992; Rubensen & Runco, 1992; Weisberg, 1986) or the person as having a more or less creative personality (Barron, 1988; Feist, 1999). We further can describe the person as having a motivational pattern that is more or less typical of creative individuals (Hennessey & Amabile, 1988), or even as having background variables that more or less dispose that person to think creatively (Simonton, 1984, 1994). But we cannot fully judge that person’s creativity independent of the context in which the person works.

For example, a contemporary artist might have thought processes, personality, motivation, and even background variables similar to those of Monet, but that artist, painting today in the style of Monet, probably would not be judged to be creative in the way Monet was. He or she was born too late. Artists, including Monet, have experimented with impressionism, and unless the contemporary artist introduced some new twist, he or she might be viewed as imitative rather than creative.

The importance of context is illustrated by the difference, in general, between creative discovery and rediscovery. Consider an extreme example. If a forger constructs a virtually perfect imitation of a great work of art, the work of art may be artistically indistinguishable, for all intents and purposes, from the original. Yet, if exposed as a copy, the more recent work will be worth many times less than the original, no matter how close it is to that original work of art.

A consensual definition of a creative contribution is of something that is (a) relatively original and (b) high in quality vis a vis some purpose (see Sternberg & Davidson, 1995; Sternberg & Lubart, 1995, 1996). We then immediately can think of contributions that vary in terms of these two dimensions or perhaps some summation of them. There are a number of ways of distinguishing among types of creative contributions. These are reviewed elsewhere, and so are only summarized here (see Sternberg, 1999b).

The most obvious way to distinguish among creative contributions might be in terms of the domains in which they are made, such as art, literature, music, and so forth. Csikszentmihalyi (1996; Csikszentmihalyi & Rathunde, 1990) has made a further distinction between the domain and the field. A domain is a formal body of knowledge such as in art
or music, whereas a field is the social organization of the domain. The field is typically the source of judgments as to whether contributions in a domain are creative. The basis of creativity in the interaction between individual and context is shown by the fact that what a field judges to be creative at one time might differ from what it judges to be creative at another. The work of some composers, such as Bach, or some artists, such as Van Gogh, now appears to be viewed as more creative by the members of these fields than the work was at the time it was done. At a given time, the field can never be sure of whose work will withstand the judgments of the field over time (such as that of Mozart) and whose work will not (such as that of Salieri) (Therivel, 1999).

Theorists of creativity and related topics have recognized that there are different types of creative contributions (see reviews in Ochse, 1990; Sternberg, 1988; Weisberg, 1993). For example, Kuhn (1970) distinguished between normal and revolutionary science. Normal science expands upon or otherwise elaborates upon an already existing paradigm of scientific research, whereas revolutionary science proposes a new paradigm. The same kind of distinction can be applied to the arts and letters.

Gardner (1993, 1994) has also described different types of creative contributions individuals can make. They include (a) the solution of a well-defined problem, (b) the devising of an encompassing theory, (c) the creation of a “frozen work,” (d) the performance of a ritualized work, and (e) a “high-stakes” performance.

Other bases for distinguishing among types of creative contributions also exist. For example, psychoeconomic models such as those of Rubensen and Runco (1992) and Sternberg and Lubart (1991, 1995, 1996) can distinguish different types of contributions in terms of the parameters of the models. In the Sternberg-Lubart model, contributions might differ in the extent to which they “defy the crowd” or in the extent to which they redefine how a field perceives a set of problems.

Simonton’s (1997) model of creativity also proposes parameters of creativity, and contributions might be seen as differing in terms of the extent to which they vary from other contributions and the extent to which they are selected for recognition by a field of endeavor (see also Campbell, 1960; Perkins, 1995; Simonton, 1997). But in no case were these models intended explicitly to distinguish among types of creative contributions.
Maslow (1967) distinguished more generally between two types of creativity, which he referred to as primary and secondary. Primary creativity is the kind of creativity a person uses to become self-actualized — to find fulfillment in him or herself and his or her life. Secondary creativity is the kind of creativity with which scholars in the field are more familiar — the kind that leads to creative achievements of the kind typically recognized by a field.

Ward, Smith, and Finke (1999) note that there is evidence to favor the roles of both focusing (Bowers et al., 1990; Kaplan & Simon, 1990) and of exploratory thinking (Bransford & Stein, 1984; Getzels & Csikszentmihalyi, 1976) on creative thinking. In focusing, one concentrates on pursuing a single problem-solving approach, whereas in exploratory thinking one considers many such approaches. A second distinction made by Ward and his colleagues is between domain-specific (Clement, 1989; Langley, Simon, Bradshaw, & Zytikow, 1987; Perkins, 1981; Weisberg, 1986) and universal (Finke, 1990, 1995; Guilford, 1968; Koestler, 1964) creativity skills. Finally, Ward and his colleagues distinguish between unstructured (Bateson, 1979; Findlay & Lumsden, 1988; Johnson-Laird, 1988) and structured or systematic (Perkins, 1981; Ward, 1994; Weisberg, 1986) creativity.

In this article, we apply a propulsion model of kinds of creative contributions (Sternberg, 1999b) to the arts and letters, rather than emphasizing science, as did the previous analysis. The model differs from many previous models in explicitly being intended to distinguish types of creative contributions and in a unified way.

A creative contribution represents an attempt to propel a field from wherever the field is to wherever the creator believes the field should go. Thus, creativity can be seen as being propulsive in nature. The creator may or may not intend his or her creative work to be propulsive, but creativity of a work is a function of the way the work is judged in the context of a field rather than of what the creator intends to happen to the work. Some people attempt unsuccessfully to be creative; others create with no particular intention to do so.

The propulsion model is a descriptive taxonomy that originally suggested seven types of contributions that can be made to a field of endeavor at a given time (Sternberg, 1999b), but here is expanded to eight types. Although the eight types of contributions may differ in the extent of creative contribution
they make, there is no a priori way of evaluating amount of creativity on the basis of the type of creative contribution. Certain types of creative contributions probably tend, on average, to be greater in amounts of novelty than are others. For example, replications tend, on average, not to be highly novel. But creativity also involves quality of work, and the type of creative contribution a work makes does not make necessarily predict the quality of that work.

The panels of Figure 1 summarize the eight types of contributions and are referred to in the following discussion. Although we view these types in terms of “propulsion,” they may be viewed as separate types of creative contributions, whether or not one wishes to use the propulsion metaphor. To foreshadow the following discussion, the eight types of creative contributions are

1. Replication. The creative contribution represents an effort to show that a given field is where it should be. The propulsion is intended to keep the field where it is rather than moving it.

2. Redefinition. The creative contribution represents an effort to redefine where the field currently is. The current status of the field thus is seen from a new point of view.

3. Forward Incrementation. The creative contribution represents an attempt to move the field forward in the direction in which it already is moving, and the contribution takes the field to a point to which others are ready to go.

4. Advance Forward Incrementation. The creative contribution represents an attempt to move the field forward in the direction it is already going, but the contribution moves beyond where others are ready for the field to go.

5. Redirection. The creative contribution represents an attempt to move the field from where it is toward a new and different direction.

6. Reconstruction/Redirection. The creative contribution represents an attempt to move the field back to where it once was (a reconstruction of the past) so that the field may move onward from that point, but in a direction different from the one it took from that point onward.

7. Reinitiation. The creative contribution represents an attempt to move the field to a different and as yet not reached starting point and then to move the field in a different direction from that point.
8. *Integration*. The creative contribution represents an attempt to move the field by putting together aspects of two or more past kinds of contributions that formerly were viewed as distinct or even opposed. The result of the integration is to place the field at some new place — intermediate between former places the field was — that would not have been predictable in advance. This type of contribution shows particularly well the potentially dialectical nature of creative contributions, in that it merges into a new Hegelian type of synthesis two ideas that formerly may have been seen as opposed (Sternberg, 1999a).

The eight types of creative contributions described above are viewed as qualitatively distinct. However, within each type, there can be quantitative differences. For example, a forward incrementation may represent a fairly small step forward for a given field, or it may represent a substantial leap. A reinitiation may restart an entire field or just a small area of that field.

In the discussion below, the various types of contributions are exemplified by particular exemplars from the arts and letters.

**Type 1: Replication.** Replication is illustrated in Panel 1 of Figure 1. Replications help solidify and give credibility to the current state of a field. The goal is not to move a field forward so much as to establish that the field really is where it is supposed to be. In art or literature, replications essentially show that a style of work can be applied not just to a single artwork or literary work, but to other works as well.

Replications are limiting cases in that they seem, on their face, to offer the least that is new in terms of the types of creative contributions that are considered in this taxonomy of types of creative contributions. Yet replications are important in any field because they can help either to establish the validity or invalidity of contributions, or the utility or lack of utility of approaches, that have been offered. If something cannot be replicated, then its contribution to a field is questionable.

In the arts and letters, replications help ensure that an approach is robust and can generate a number and variety of works. For example, many artists imitated Monet’s impressionistic techniques, and although they added nothing new to his techniques, they showed the robustness of the techniques for producing varied artworks. Perhaps the limiting case in the art world is the work of forgers, who attempt to reproduce exactly the work of a (usually well-known) creator. However, replications are not limited to forgers. Many visitors to museums have
FIGURE 1. Types of creativity

1. Replication (Stationary Motion)
2. Redefinition (Circular Motion)
3. Incrementation (Forward Motion)
4. Advance Forward Incrementation (Accelerated Forward Motion)
5. Redirection (Divergent Motion)
6. Reconstruction/Redirection (Backward/Divergent Motion)
7. Reinitiation (Reinitiated Motion)
8. Integration (Converging Motion)
(1) Replication helps solidify the current state of a field.
(2) Redefinition involves a change in perception as to where the field is.
(3) Incrementation occurs when a piece of work takes the field where it is and moves it forward from that point in the space of contributions in the direction work is already going.
(4) Advance incrementation occurs when an idea is “ahead of its time.”
(5) Redirection involves taking the field where it is at a given time but attempting to move it in a new direction.
(6) Reconstruction/redirection involves moving the field backward to a point it previously was at but then moving in a direction different from that it has moved in.
(7) Reinitiation occurs when a contributor suggests that a field or subfield has reached an undesirable point or has exhausted itself moving in the direction that it is moving. The contributor suggests moving in a different direction from a different point in the multidimensional space of contributions.
(8) Integration occurs when a contributor suggests putting together kinds of ideas that formerly were seen as distinct and unrelated or even as opposed.
encountered individuals studiously copying great works of art and proudly displaying their work for what it is.

Perhaps the crucial insight for the contributor is to know when there is a need for replication in the first place. In the arts and letters, this need is associated with techniques that may seem to be limited only to a single artwork or artist, or literary work or writer, but that could be used more widely.

Die Kunst der Fuge (the Art of the Fugue), by Johann Sebastian Bach, is an excellent example of conceptually replicatory work that did not revolutionize the field of musical composition but nonetheless is regarded as the ultimate masterpiece in fugal writing due to its high quality. Fugue was a common technique used in musical composition at the end of the Baroque era. Bach’s two-volume work, Das Wohltemperirte Clavier (The Well-Tempered Clavier), included 48 preludes and fugues in all major and minor keys. In fact, Bach’s extensive use of this procedure essentially established the form as a standard one in music.

Whereas some composers used the form of the fugue more strictly than did others, distinctive features which characterized the fugal style developed by J. S. Bach later came to define this technique in academic music. As Bullivant (1980) explained, “Johann Sebastian Bach is traditionally regarded as representing a culmination of all that had been done in fugal writing.” (p. 15)

Die Kunst der Fuge was left incomplete at Bach’s death, but the existing manuscript provides enough evidence to demonstrate the magnitude of this undertaking. This piece extends the familiar fugal form to its limit, introducing the basic theme to listeners in each of 24 unique variations. In addition to this first theme, a second was also incorporated into the work and the manuscript reveals that Bach intended a third. Because of the grand scale and great precision of this work produced by the master of the fugue himself, Die Kunst became a standard for Bach’s musical followers, engaging the minds of musicians such as Mozart, Schumann, Wagner, Webern, and Berio (Schleuning, 1993). Though he did not innovate this technique or even synthesize it with others, there is no question but that Bach’s treatment and frequent use of the fugal form established it as a versatile and challenging framework for musical composition.

Genre novels and imitative works are also good demonstrations of the replication category. The School of Rembrandt, comprising many different artists who studied with Rembrandt
and who tried to create paintings in his style, is an apt example. Another is the novels that were written under the name “V. C. Andrews” after the novelist died — these were books whose sole purpose was to replicate the feel and style of earlier (and more successful) Andrews books. These works did not advance their respective fields in any substantial way except for reinforcing the initial contributions of Rembrandt and Andrews, respectively.

Type 2: Redefinition. Redefinition is illustrated in Panel 2 of Figure 1. Redefinition, like replication, involves little or even no change of where a field is at a given point in time. Rather, redefinition involves a change in perception as to where the field is at that point in time. It is analogous to the realization of a navigator that a vehicle the navigator had thought to be in one place is really in another place. The placement of the vehicle does not change, but the construal of where that place is does change. Similarly, a redefinition in the propulsion model is a work that leads people to realize that the field is not where they had thought. Work of this type is judged to be creative to the extent that the redefinition of the field is novel with respect to an earlier definition and to the extent that the redefinition is judged to be of high quality.

An interesting example of redefinition in the arts is the work of the late Roy Lichtenstein. Lichtenstein took a form of art — the comic — that was viewed as a debased form of art, and turned it into a serious art form. Lichtenstein’s work originally met with tremendous opposition, and this opposition never really ended, at least from some quarters. Yet in his later career, his comic works of art brought extremely large sums of money as well as the kind of serious study that showed what had been perceived as a base art form had come to be taken seriously, at least by many. Andy Warhol is a second example of an artist in this tradition, turning, for example, studies of soda bottles into pieces of art valued by many collectors.

Stage directors who specialize in revivals often excel at the redefinition. For example, in the recent Tony-award winning revival of *Cabaret*, director Sam Mendes reconceptualized the traditionally asexual Emcee as a very sexual — and bisexual — character. Mendes also dramatized the Nazi Germany setting by indicating at the end that the Emcee would be sent to a concentration camp, a decision not in the original script. Although consistent with the character and thematic content of the play, this choice is also a departure from earlier productions that viewed the Emcee as less human.
Another example of redefinition can be found in the recent London revival of *Oklahoma*. The Royal National Theater’s Trevor Nunn emphasized the dark side of the traditionally light-hearted musical. Jud, usually portrayed as a pathetic figure, became fearsome and menacing. The ballet sequence in which Laurie chooses between Jud and Curly is foreboding and sexual. Another director who envisioned a usually happy musical as a more serious, intense work is Christopher Renshaw, whose recent Broadway direction of *The King and I* featured not only a near-dour Anna but also, in contrast to other revivals, an authentic, all-Asian cast. Although these re-conceptualizations of these shows certainly enrich the theater, they do not necessarily advance the field at all. But even though the field has not changed (as it would need to for a forward incrementation), the way that people view the field has changed a bit: These stage directors now have redefined musical theater as being among the more serious and intense art forms.

In the world of art, Paul Cezanne “reformulated” the styles of the Impressionists, using the same type of stroke to paint many different types of objects. He used the style of earlier impressionists for the purpose of redefining what a painting should be. Cezanne believed in the concept that a painting was not a window into the world but an object in and of itself. This theory can be seen in his painting *Still Life with Apples and Oranges* (1895-1900); the fruit do not look terribly life-like, nor are they necessarily supposed to. The table is tilted at an angle that in real life would probably spill the fruit on the floor. But this fact is irrelevant — he was trying to capture the forms and colors of the objects, rather than worrying about his depiction of reality (Hartt, 1993).

**Type 3: Forward incrementation.** This type of creative contribution is illustrated in Panel 3 of Figure 1. Forward incrementation probably represents the most common type of creative contribution. It occurs when a piece of work moves a field forward in the direction the field already is going to a point to which people are ready to go. Work of this type is judged to be creative to the extent that it seems to move the field forward from where it is and to the extent that the movement appears to be correct or desirable.

Forward incrementation occurs in all fields. Elaborations on Impressionism by the minor Impressionists introduced new techniques but basically drew on the techniques introduced by Monet, Renoir, and others.
Forward incrementations can also be found in genre fiction that pushes the envelope. The hard-boiled detective story pioneered by Dashiell Hammett and Raymond Chandler has been elaborated upon by countless writers, some of them moving the genre forward in major ways, such as Ross MacDonald, who introduced identity confusions as a major theme in his work. But MacDonald’s work and that of others has its roots in the paradigm introduced by Hammett and Chandler.

Jonathan Kellerman’s psychological thrillers take the genre a step further by having the hero, Alex Delaware, actually be a clinical psychologist. Patricia Cornwell’s suspense novels have Kay Scarpetta, a medical examiner, as the protagonist. Using these non-standard professions instead of the usual cops and detectives adds an extra layer of authenticity to the stories, and allows for much more technical detail to be realistically added to the plots. Kellerman’s plots, for example, often hinge on Delaware identifying various psychological syndromes (for example, Munchausen Syndrome by Proxy), while Cornwell has Scarpetta discover essential clues in her autopsies. The forward incrementations can also be found in the plots of genre fiction — Agatha Christie’s classic *The Murder of Roger Ackroyd* (1926) is a fairly standard murder mystery . . . until the then-startling ending of the narrator winding up being the killer. These advances certainly move the field forward, but in an expected, non-startling way. Kellerman and Cornwell still work within the pre-established conventions of the field, and Christie’s famed novel still obeyed most of the “rules” of a murder mystery.

Similarly, quality genre television shows often use forward incrementations to stand apart from their predecessors. Shows like *Hill Street Blues* and *L. A. Law* advanced the concept of the “law” or “cop” shows from the tradition of *Dragnet* and *The Defenders* to incorporate aspects of characters’ personal lives. In addition to chasing criminals or defending clients, these lawyers and policemen fell in love, endured the loss of a parent or friend, and sometimes had important “outside” interests — all of which were as central to the plots as the actual cases. Other shows such as *E. R.* and *NYPD Blue* push the envelope further, using violence and gore to further illustrate their characters’ professional lives, and sex and nudity in their characters’ private lives. Part of this forward incrementation is a result of reduced censorship, but part is also due to the creative powers of such series creators and writers as Stephen Bocho and David E. Kelley (Brooks & Marsh, 1995).
Vaudeville and live performance frequently feature forward incrementation in the succession of new and varied acts. When entertainer Herbert Brooks developed a routine of being able to produce from his coat pockets — without looking — any playing card an audience requested, Arthur Lloyd did him one better and extended the trick to any card whatsoever — a club membership card, a business card, a sporting event ticket, a marriage license, etc. Lloyd’s coat filled with cards had more than forty pockets, weighed up to 100 pounds, and contained approximately 15,000 items (Jay, 1986). Similarly, London entertainer Ethardo had a specialty of balancing himself on a ball and then managing to roll up a spiral track. But, again, LaRoche took the trick one step further and fit himself inside the metal ball. The sight of the metal sphere seemingly moving by itself up a long spiral incline was even more astounding to spectators than the earlier acts (Jay, 1986).

Forward incrementations can occur in the classical arts as well, of course. The Futurist painters were drawn to a movement that rose up in opposition to romanticism. Futurism, unlike many other artistic movements, was drawn to speed and noise, and embraced technology; it was also drawn to fascism. (Futurism: Manifestos and other resources; URL: http://www.unknown.nu/futurism). The Futurist painters, such as Carlo Carra and Umberto Boccioni, infused these political ideas into their Cubist-schooled art. Their art reflected the power of an industrial state, and the presence of the fascist ideas conveyed extra meaning to the pre-existing style of Cubism (Hartt, 1993). In photography, Diane Arbus moved away from more commercial work (mostly taking pictures of celebrities and other members of the elite) and began to explore in the 1960s a wide variety of subjects. These people were outgroups of society who were rarely photographed, such as the mentally handicapped, the physically disabled, nudists, and transvestites. And yet Arbus’s photographs, rather than mocking or singling out these people, were compassionate and non-judgmental. Her ability to capture these people on film and allow them humanity paved the way for many other photographers who would specialize in undervalued or odd individuals (Bosworth, 1995; Hartt, 1993).

**Type 4: Advance forward incrementation.** This type of creative contribution is illustrated in Panel 4 of Figure 1. Advance incrementation occurs when an idea is “ahead of its time” and others are not ready to go to where the creator wishes to move the field. Often the value of the work is not recognized
at the time because the field has not yet reached the point where the contribution of the work can be adequately understood. The creator essentially attempts to move the field beyond where others in his or her field are ready to go — often “skipping” a step that others will need to take. The value of the creator’s work may be recognized later than otherwise would be the case, or some other creator, who has essentially the same idea at a more opportune time, may end up getting credit for the idea.

An advance forward incrementation is a work whose potential typically is not realized at its premiere, yet is later recognized as a step along the historical path of a genre, and often considered a work ahead of its time. Perhaps the most memorable premiere in music history is that of Igor Stravinsky’s ballet *The Rite of Spring* in 1913. This performance so shocked its Parisian audience that the instrumentalists could not hear themselves play over the riotous crowd. At the time, French ballet music was very backward-looking and accompanied a very stylized choreography. Of course, the usual ballet patrons were bound to be overwhelmed by the enactment of barbaric rituals accented by pulsating rhythms and dissonant harmonies featured in Stravinsky’s new work.

Although the premiere of *The Rite* was vehemently rejected, Stravinsky’s innovation was rooted in the past and proved to be an important step on the future course of music history. The pressing and irregular rhythms of ritual in this work continued the rhythmic experimentation begun by Stravinsky’s teacher, Nikolai Rimsky-Korsakov. This de-emphasis of melody and harmony is also characteristic of works later in the century. Just as Stravinsky borrowed elements from folk music for this piece, many 20th century composers also made extensive use of non-art music sources in their compositions. Although *The Rite* was so poorly received at its premiere, its contribution to the field of music can be considered simply ahead of its time (Machlis, 1979).

The painter Kasimir Malevich, by contrast, received more appreciation when his works premiered. In 1912, he painted *Knife Grinder*, an abstract series of multi-colored geometric shapes that came together to form the image of a knife grinder. His 1918 *Suprematist Composition: White on White*, a diagonal white square on a white background, moves beyond Post-Impressionism and is “very nearly the ultimate in abstraction” (Hartt, 1993, p. 988). His new and innovative style, which he dubbed Suprematism, was noted for its geometric abstraction and became quite influential later in the 1920s.
A literary technique that became especially popular in the 1980s was the advance forward incrementation of “writing back” against the classics. While similar at first glance to the “sequels” to literary classics (see Reconstruction/Redirection), these works took themes, characters or plots from classic works of literature or history, and then examined them from a radically different point of view. Jean Rhys’ *Wide Sargasso Sea* (1966) is an entire novel about the first Mrs. Rochester. In its source material, Charlotte Bronte’s *Jane Eyre*, Rochester sweeps Jane off her feet, and his first wife surfaces only as a lunatic who is mostly used as a plot point. Rhys, however, centers her entire book around the first Mrs. Rochester, probing at the reasons behind her madness. Roberto Fernandez Retamar’s *Caliban* (1989) is an essay that takes the point of view of Prospero’s unhappy creation. While Shakespeare’s play *The Tempest* views Caliban as a deformed savage, Fernandez Retamar grants him humanity. Michael Dorris and Louise Erdrich’s *Crown of Columbus* (1989) tells the story of a Native American woman and her husband following Columbus’s diary in search of supposed treasure. As in the works by Rhys and Fernandez Retamar, the works of Dorris and Erdrich focus on an oppressed person who has previously only been seen as a footnote to history. All of these works are an attempt to use modern values and ideas to “write back” against past values, many of which were racist and sexist. By presenting a minor, undervalued character as the protagonist of a new work, it offers the chance to both accept the character as important in his or her own right, as well as an opportunity to re-evaluate the original work.

These works anticipated the wave of political consciousness (or, as it sometimes is called, “correctness”) that has pervaded much of the arts in recent years. Rhys’s novel, for example, did not sell very well when it first was published, yet it was re-released some years later to much more acclaim. Fernandez Retamar, as well as Dorris and Erdrich, received a respectful but underwhelming critical reception when their works were published but perhaps their work, too, will be re-evaluated in the years to come as the field continues to change.

**Type 5: Redirection.** Redirection is illustrated in Panel 5 of Figure 1. Redirection involves taking the field where it is at a given time but attempting to move it in a new and sometimes radically different direction. Work of this type is creative to the extent that it moves a field in a novel direction and to the extent that this direction is seen as desirable for the field.
Beethoven’s work can also be viewed as a redirection from the classical style of music that had been employed so successfully by Haydn, Mozart, and others. Beethoven used many of the same classical forms as had his predecessors. But he also showed that a greater level of emotionality could be introduced into the music without sacrificing the classical forms.

Kurt Vonnegut’s classic *Slaughterhouse Five* (1969) and Tim O’Brien’s (1990) *The Things They Carried* tried to redirect the field of war novels, not just by adding new dimensions to the form but by questioning the goals and the reality of the form. Vonnegut’s prologue to his story of the hapless soldier Billy Pilgrim includes a conversation in which someone accuses him of glorifying war by writing a war novel. Any war novel, the character says, even the ones that say “war is hell,” end up glorifying war. Vonnegut promises not to do this and, indeed, does not. Pilgrim is not a noble or heroic character — he is pathetic and passive. And Pilgrim’s mental undoing is not described or hinted at — it is graphically and physically portrayed in his capture by an alien race, the Tralfalmadorians, who have a philosophy that smacks dangerously of repression and other defense mechanisms.

O’Brien questions the truth of war and all war stories. His central character is a writer named Tim O’Brien who fought in the Vietnam War, and his book is written in the first person. In real life, O’Brien did fight in the Vietnam War. Is it a true story? How much is fact and how much is fiction? O’Brien does not tell. Let me tell you a true war story, he writes, and then he describes how he killed a man during the war. But no, he says, that is not true; here is the truth. And then O’Brien tells an entirely different story of how he killed someone during the war. You know what?, he then writes, that was not true, either. His point is that the “details” of war do not matter — what is important is the central themes and emotions. The reader can, presumably, infer that at some point, in some manner, O’Brien killed a man, but who knows?

Vonnegut questioned the very fabric of what constitutes a war novel, and in doing so pointed a path for the field to take. Recreations and straight-forward stories of the horrors of war (such as Stephen Crane’s *The Red Badge of Courage* or MacKinlay Kantor’s *Andersonville*) are powerful, Vonnegut might argue, but to truly convey the nature of war an author must go beyond this. O’Brien picks up on Vonnegut’s path and takes it in yet another direction: An author cannot convey the nature of war to someone who has not experienced it. All
he or she can do is convey the feelings and thoughts one might have in these types of situations. O'Brien and Vonnegut are not re-initiators, as they are accepting the same starting point for war novels that other novelists have used. Their work is also not merely a type of forward incrementation, however, because they have taken a radically different view of the way in which a war novel should be written.

A composer who is well-known for his stated attempt to redirect the field of music in the early 20th century is Arnold Schoenberg. Schoenberg may be best known for his rejection of tonality, though he wrote extensively on the continuity of his musical ideas with the past. Schoenberg viewed tonality as a means of organizing musical materials; his position was that there are other means for providing organization to sound, and his twelve-tone method was an example of that means. In taking this position, the composer was attempting to direct the rest of the musical community toward a higher art with less emphasis on comprehensibility for the masses and more emphasis on progress among experts (Stein, 1975).

Schoenberg’s aim was not to write radical and atonal music, but to make use of a challenging new structural format in his compositions. His first piece that employed the twelve-tone method entirely was his Suite for Piano, Op. 25 (1924). A true witness to his claim that this new musical language could express any musical style, Schoenberg wrote a suite similar to those typical of the early 18th century (consisting of six movements in song and dance forms). Despite the lack of traditional tonal harmonies, Schoenberg’s work uses traditional forms and rhythms. The piece includes a Prelude with Bach-like counterpoint, an intermezzo reminiscent of Brahms, as well as a classical Minuet in the Sonata form made standard by Mozart and Haydn.

The romantic pieces of late 19th century challenged the rules of harmony by changing tonality often. Schoenberg took things one step beyond this weakened tonality and declared all tones of the scale of equal importance. In doing so, Schoenberg believed he was founding a new Viennese school of composition which would ensure the dominance of German music into the 20th century. Despite the loyalty and musical refinements of his disciples, Alban Berg and Anton Webern, Schoenberg’s twelve-tone method became the regular compositional model for few notable 20th century composers (Machlis, 1979).

**Type 6: Reconstruction/Redirection.** This type of creative contribution is illustrated in Panel 6 of Figure 1. In using
reconstruction, an individual suggests that the field should move backwards to a point it previously was at but then should move in a direction divergent from that in which it has moved. In other words, the individual suggests that, at some time in the past, the field went off track. The individual suggests the point at which this error occurred and how the field should have moved forward from that point. The work is judged as creative to the extent that the individual is judged as correctly recognizing that the field has gone off track and to the extent that the new direction suggested from the past is viewed as a novel and useful direction for the field to pursue.

The musical “Take It Easy” (1996) is an exemplar of reconstruction/redirection. Author Raymond G. Fox’s musical takes place in the 1940’s, and the music is a reconstruction of the “swing” sound. The characters are intentionally stereotypes, such as The Bookworm and The All-American Hero. The ultimate goal of the show is to re-create the feel of a ’40s college musical, with young, good-looking, and patriotic characters.

Several other recent Broadway shows, such as “Triumph of Love” (Book by James Magruder, Music by Jeffrey Stock, and Lyrics by Susan Birkenhead) and “Big” (Book by John Weidman, Music by David Shire, and Lyrics by Richard Maltby, Jr.) have been “throwback” musicals that reflect the more simplistic plot, characters, and musical tone of musicals of the 1950s. Unlike more modern shows, which tend to be entirely sung and have either an operatic or rock musical style, these shows take the structure and values of more classic musicals (such as “Oklahoma!” or “My Fair Lady”) and update the topics and sensibilities to the 1990s (e.g., in “Big,” characters refer to rap music).

In the world of painting, Joan Mitchell can be seen as an example of an artistic reconstructor/redirector. Her work (especially those painted in the 1980s) reflects the colors and themes of Monet’s landscape paintings. She uses Monet as a base from which to expand, rather than incorporating more recent styles (Hartt, 1993). Indeed, she spent much of her later life in France, where the impressionist style of Monet and other artists was created.

Recent “sequels” to classic works of literature are further examples of reconstruction/redirection. Not merely trying to recreate past works, these “sequels” attempt to both advance the plot and apply modern sensibilities to the novels. In Alexandra Ripley’s Scarlett, the titular heroine of Gone with the Wind becomes less needy and less man-dependent,
reflecting a society’s changing values. Laura Kalpakian’s *Cosette* follows the surviving characters from *Les Miserables* and allows readers to see how Marius and Cosette would have handled the upcoming French Revolution.

This is not to say that reconstructors and redirectors cannot create their own unique ideas. A neoclassicist of the early 20th century, German composer Paul Hindemith, believed in the importance of order, stability, and continuity with tradition. Whereas composers of the romantic era challenged the bounds of tonality with their roaming harmonies and Schoenberg went so far as to propose a new musical language in which all twelve tones were equal, Hindemith explained how those twelve tones were necessarily located around a tonal center. Hindemith sought to revive the use of absolute forms characteristic of the Classical era. This effort addressed his concern for the audience’s ability to understand music. Hindemith warned that straying too far from prototypical structure, melody, and harmony would render much of the art inaccessible to its lay listeners.

An example of the artist’s attitude toward musical composition is his symphony *Mathis der Maler* (1934). This work recreates classical Sonata form with a 20th-century tonal twist. Rather than moving from tonic to dominant throughout a movement, Hindemith’s tonic tends to pull toward the tritone. Though this progression is far from the traditional, the recurring tritone actually unifies the work, leading Kemp (1980) to call it a “coherently argued whole” (p. 582). Kemp also praises the composer for his synthesis of old and new: “Hindemith developed a language that restores the validity of tonality as a structural and expressive tool, while at the same time remaining unmistakably original in its absorption of both traditional and 20th-century harmonic resources” (p. 582). Hindemith hinted at the past not only in his use of tonality and traditional form, but the programmatic elements found in *Mathis* harken back to the romantic contributions of the 19th century. Not only Hindemith, but also such neoclassicists as Stravinsky, Milhaud, and Poulenc affirmed the relevance of absolute forms, counterpoint, and tonality in their musical compositions of the early 20th century (Machlis, 1979).

**Type 7: Reinitiation.** This type of creative contribution is illustrated in Panel 7 of Figure 1. In reinitiation, a contributor suggests that a field has reached an undesirable point or has exhausted itself moving in the direction that it is moving. But rather than suggesting that the field move in a different
direction from where it is (as in redirection), the contributor suggests essentially starting over from a new point that most likely makes different assumptions. This form of creative contribution represents a paradigm shift.

Reinitiative contributions are often bold and daring gestures. One prime example can be found in sculpture, with Marcel Duchamp’s 1917 *Fountain*. Duchamp’s Dada piece is simply a urinal turned on its back. The very act of entering such a piece in an art show is a statement about art — Duchamp’s sculpture made art-making focus on the definition of exactly what art is and what art can be. Duchamp’s urinal became a piece of art, and he and his fellow Dada creators set the stage for other modern art that exists, in part, to challenge our ideas of what “art” encompasses (Hartt, 1993).

Another radical reinitiator is one of Duchamp’s friends, the composer John Cage. He often employed unconventional sound materials and spent a period in which his compositional process (and often performance) was determined entirely by chance. The philosophy that led Cage to compose in this unorthodox manner can be considered essentially a rejection of some basic tenets of the Western musical tradition, including the definition of music itself. Cage declared music to be all sound, including the whispers and heartbeats we perceive while silent. Cage’s affinity for Eastern philosophy caused him to focus on the importance of awareness in the human experience, and he used his music to foster awareness in his listeners.

An illustration of this point is his piece 4’ 33". The performance of this piece consists of four minutes and 33 seconds of “silence,” or rather, in Cage’s terminology, “unintentional sound.” In performance, the instrumentalist approaches her instrument, prepares to play, and proceeds to sit, motionless and without sound, for four minutes and 33 seconds. The only pauses are those indicated by Cage which signal the change of movement. The music, therefore, is that sound which exists in the environment during that period of time. Cage’s statement is that there is music being played around us all the time; we must reject the notion of music as organized melody, harmony, and rhythm to include all intentional sound, even the rush of traffic beyond the door and the buzzing of the fluorescent lights above our heads (Cage, 1961; Hamm, 1980).

Dancer and choreographer Paul Taylor is a similar reinitiator. He did a solo piece reminiscent of Cage’s work in which he merely stood still for four minutes while on stage. What is
notable about this performance is that the journalist who was assigned to review the dance for *Dance Observer* wrote an equally radical review: four inches of blank white space! (Fadiman, 1985).

Reinitiators in literature are plentiful. Some famous examples are James Joyce’s *Finnegan’s Wake* (written in stream of consciousness) and many of Franz Kafka’s stories (such as “Metamorphosis,” the story of a man who wakes up and discovers he has turned into a cockroach). William Burroughs, best known for *Naked Lunch* (1959), broke new ground with his use of vulgarity, graphic scatology, and obscene language. Paranoid and sadistic, his best work brilliantly explores issues of control and freedom, often using the metaphor of drug use. Much of his work also often explores (in very different ways) his accidental murder of his wife (Parker & Kermode, 1996). Ian Finlay’s poetry transcends nearly any type of poetry done before, with its use of such visual props as wild flowers, stone, sundials, and glass combining with the words of the poetry to result in the overall creation of a certain emotion or feeling (Parker & Kermode, 1996).

**Type 8. Integration.** This type of creative contribution is illustrated in Panel 8 of Figure 1. In this type of creative contribution, the creator puts together two types of ideas that previously were seen as unrelated or even as opposed. What formerly were viewed as distinct ideas now are viewed as related and capable of being unified.

One example of an integration is *Fatherland* (Harris, 1992), Robert Harris’s best-selling novel of historical speculation. The genre of historical speculation is one in which the author imagines a world different from the one we live in because of a fundamental change in history. One possibility is a world in which a famous event in the past did not occur (e.g., if John F. Kennedy had not been assassinated). Another possibility is a world in which an event that did not occur had, in fact, happened (e.g., if Adolf Hitler had been assassinated). In *Fatherland*, Harris conceptualizes a world in which Germany defeated the Allies in World War Two. But rather than spending the majority of the book setting up the world and describing the “new” history, Harris plunges right in and begins a suspense thriller. Harris took the two genres — historical speculation and suspense thrillers — and fused them together into a well-received novel.

Another example of integration is in the innovative artwork of Rob Silvers. Silvers (1997) takes Georges Seurat’s pointillist
technique of using many small dots to form a larger work and combines it with the field of photography. Silvers uses thousands of tiny photographs and puts them together to form a larger image. His type of work, called photo mosaics, has become well known; Silvers designed the movie poster for The Truman Show and has done portraits of such disparate individuals as Princess Diana, Abraham Lincoln, and Darth Vader.

For another example of integration we can consider the classical music scene in the Jazz Age. At this time, many classical composers were sampling elements of the jazz idiom in their works, but the most successful integrator of jazz with the tradition of Western art music was a jazzman himself, George Gershwin. Gershwin’s Concerto in F (1925), the follow-up to his increasingly popular Rhapsody in Blue of the previous year, successfully synthesized the world of popular jazz with the classical idiom. In this piece, Gershwin drew not only on syncopation and blues harmonies as he did in the Rhapsody, but successfully synthesized these elements with classical Concerto form. The first movement follows traditional Sonata form in its statement and development of a few key themes.

Gershwin’s contribution casts a new light on the field of music. Gershwin, a jazz pianist whose formal classical training began at age 14, succeeded in integrating into the tradition of art music the inclusion of popular elements (Schwartz, 1973). Until that point, classical and popular idioms had been separated despite attempts of other composers to integrate the two. Schwartz (1980) has explained that “despite the many composers who have sought to emulate [Gershwin’s] success by popularizing their operas and concert works, Gershwin has had little direct influence on other composers’ (p. 303). This comment confirms that the Concerto in F was not an increment in art music — it was not a step leading down a long and prolific path in musical history. However, this piece was not a replication of any other jazz piece, or classical one, for that matter. The freshness of Gershwin’s music caught the interest of many music lovers in the jazz age.

Robert Wright and George Forrest reached acclaim in musical theater for their synthesis of two different musical art forms. Wright and Forrest used a common technique in classical music, the variation, in which a composer takes another composer’s music and writes his or her own variations on this theme. What Wright and Forrest did, however, was to transform the work of the composer Alexander Borodin not into a symphony or concerto but into a work of musical theater.
Using Borodin’s basic melodies, Wright and Forrest adapted a theatrical style and added lyrics, creating *Kismet*. This 1953 musical ran over 500 performances and was a financial success, spawning the hit song “Stranger in Paradise.” *Kismet* was merely the most well-known example of Wright and Forrest’s technique; their other “variation” musicals included *Song of Norway* (Grieg’s music, 1944), *Gypsy Lady* (Herbert’s music, 1946), *Magdalena* (Villa-Lobos’ music, 1948), and *Anya* (Rachmaninoff’s music, 1965) (Suskin, 1993, 1997).

What types of purposes might be served by this or really any taxonomy of types of creative contributions? We believe there are several purposes, which are achieved to the extent that the model is strong in accomplishing its goals. First, taxonomies of this kind acknowledge the fact that creative contributions differ not only in degree of contribution but also in type of contribution. Second, a taxonomy such as this one may be useful in properly judging the types of contributions as well as the levels of creativity that particular contributors in a field show. Third, the model may be useful even in describing and perhaps evaluating the progress of a field, such as of a certain type of music or form of artwork. Fourth and finally, the model may help the members of a field recognize creative contributions that they otherwise might overlook. It can also serve as a heuristic for generating a variety of creative ideas.

These strengths of the model are complemented by weaknesses. First, the model is relatively new and has not yet been quantitatively tested. Second, contributions cannot always be unequivocally and unambiguously classified into the different types. Third, the model is almost certainly not exhaustive with respect to the types of creative contributions that can be made.

The propulsion model suggests that the kinds of reactions generated by a given creative contribution are likely to vary with the type of creativity that is evinced in a given creative contribution. For example, the kind of crowd-defying creativity dealt with by the investment theory of creativity (Sternberg & Lubart, 1995) is probably largely of the last four types: redirection (type 5), reconstruction/redirection (type 6), reinitiation (type 7), and integration (type 8). Forward incrementations are creative but occur within existing paradigms and hence are more likely to engender favorable reactions from critics of music, literature, and the arts. In the short run, creative contributors who provide forward incrementations may have the
The easiest time getting their work well reviewed; in the long run, however, their contributions will not necessarily be the longest lasting or the most important to where the field goes.

The propulsion model also may help psychologists better understand the nature of the relation between creativity, on the one hand, and leadership, on the other (see also Gardner, 1993, 1995). Leadership, like creativity, is propulsive, attempting to move people in a certain direction. Hence, creative work potentially serves in a leadership role, although this role may not be intended by the creator(s).

Ultimately, there probably is no unique “correct” model of types of creative contributions. Rather, models such as this one can help people expand their thinking about the types of creative contributions that can be made in a field. To the extent this model accomplishes that goal, it has succeeded.

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