A propulsion model of creative leadership[☆]

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Abstract

This article presents a propulsion model of creative leadership. First, it introduces some general issues in the nature of creative leadership. Then, it presents the propulsion model. Creative leadership can be of three general kinds—leadership that accepts existing ways of doing things, leadership that challenges existing ways of doing things, and leadership that synthesizes different existing ways of doing things. Within these three general kinds of leadership are eight specific types. Finally, the article draws some conclusions and notes other ways of dividing up types of creative leadership.
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1. Introduction

What exactly does it mean for leadership to be creative? A number of models of creative leadership have been proposed under different names. These models include transformational (as opposed to transactional) leadership (Bass, 1998; Bass & Avolio, 1994; Bass, Avolio, & Atwater, 1996), emotionally intelligent leadership (Goleman, 1998b), visionary leadership

(Sashkin, 1988), and charismatic leadership (Conger & Kanugo, 1998; Weber, 1968). An especially interesting model is that of Strange and Mumford (2002), who distinguish between ideological and charismatic leaders. The former stresses personal values and standards, while the latter stresses social needs and requirements for change. Thus, ideological leaders are more likely to look inside themselves to seek direction for their leadership, while charismatic leaders are more likely to look outside.

In our early work, we suggested that all exemplars of creative leadership had a certain core similarity. We proposed what we called an investment theory of creativity (Sternberg & Lubart, 1995a, 1995b), which asserts that creative thinkers are like good investors: They buy low and sell high. Whereas investors do so in the world of finance, creative people do so in the world of ideas. Creative leaders generate ideas that are like undervalued stocks (stocks with a low price-to-earnings ratio). Both the stocks and the ideas initially are often rejected by the public. When creative ideas are proposed, they often initially are viewed as bizarre, useless, and even foolish and are summarily rejected. The person proposing them often is regarded with suspicion and perhaps even with disdain and derision.

Creative ideas are both novel and valuable. However, they are often rejected because the creative innovator stands up to vested interests and defies the crowd. The crowd does not maliciously or willfully reject creative notions. Rather, it does not realize and often does not want to realize that the proposed idea represents a valid and advanced way of thinking. Society generally perceives opposition to the status quo as annoying, offensive, and reason enough to ignore innovative ideas.

Evidence abounds that creative ideas are often rejected (Sternberg & Lubart, 1995a). Initial reviews of major works of literature and art are often negative. Toni Morrison's *Tar Baby* received negative reviews when it was first published, as did Sylvia Plath's *The Bell Jar.* The first exhibition in Munich of the work of Norwegian painter Edvard Munch opened and closed the same day because of the strong negative response from the critics. As other examples, Proust had to self-publish *Remembrance of Things Past* after many publishers rejected it. *Animal Farm* was rejected by most English and American publishers ("There is not much demand for animal stories in the USA"). No one thought making the movie of *Gone with the Wind* was a good idea, and most producers and actors passed on it (and ridiculed it). Finally, Decca Records (one of the biggest recording companies) managed to insult and not to contract both Buddy Holly and the Beatles within a period of a few years (Cerf & Navasky, 1998).

Some of the greatest scientific papers have been rejected not just by one but by several journals before being published. For example, John Garcia, a distinguished biopsychologist, was immediately denounced when he first proposed that a form of learning called classical conditioning could be produced in a single trial of learning (Garcia & Koelling, 1966). The successful Apple Macintosh line draws, to some extent, on ideas that met a cool reception when first proposed in the form of the Xerox Star System.

From the investment view, then, the creative leader buys low by presenting a unique idea and then attempting to convince other people of its value. After convincing others that the idea is valuable, which increases the perceived value of the investment, the creative leader sells high by leaving the idea to others and moving on to another idea. People typically want

others to love their ideas, but immediate universal applause for an idea usually indicates that it is not particularly creative.

This investment view seemed to capture many important aspects of creative leadership but to miss others. In particular, not all creative leaders seem radically to defy the crowd. Indeed, most of them probably would not view themselves this way. They may not view themselves as buying low and selling high at all. Thus, a different conception is needed that better captures the full variety of ways in which to exert creative leadership. The conception below considers various strategies leaders may use to be creative.

Sternberg and his colleagues (Sternberg, 1999; Sternberg, Kaufman, & Pretz, 2001, 2002) have proposed that there are eight different ways in which to exert creative leadership. If one looks at leaders who are creative, they lead creatively in one of eight different ways. These types of leadership represent different ways of metaphorically propelling those they lead from wherever they are to wherever the leader wishes them to go. The types of leadership can be divided broadly into three general kinds.

Some types of creative leadership accept current paradigms. In brief, replicators do what others have done in the past. Redefiners do what others have done but find a new rationale for it. Forward incrementers move one step or a small number of steps beyond where other leaders have gone. Advance forward incrementers move a large number of steps beyond where others have gone, sometimes at their own peril.

Other types of creative leadership reject current paradigms. Redirectors steer an organization in a new direction. Reconstructive redirectors move in a new direction but use the past rather than the present as a starting point. Reinitiators virtually start over from scratch.

Finally, one type of creative leadership synthesizes various current paradigms. Synthesizers take what they believe are the best ideas from different paradigms and put them together.

We will consider each in turn. In discussing leadership, we will be discussing both personal leadership and product-based leadership.

2. Types of creative leadership that accept current paradigms and attempt to extend them

These types of creative leadership accept current assumptions and apply them in new ways. Thus, they do *not* defy the crowd but rather "move" it to a new location. They are most likely to be found in organizations that have strong cultures that they do not wish to change or that view themselves as succeeding the way they are and hence are reluctant to tamper with what they view as a winning strategy.

2.1. Replication

This type of leadership is an attempt to show that a field or organization is in the right place at the right time. The leader therefore attempts to maintain it in that place. The propulsion keeps the organization where it is rather than moving it. The view of the leader is that the organization is where it needs to be. The leader's role is to keep it there. This type of creativity

is represented by stationary motion, as of a wheel that is moving but staying in place. The replicative leader metaphorically pedals in place, as with a stationary bicycle.

Replicative leadership can be seen in various types of innovations. Examples of innovations that represent replications are the Mercury version of a Ford car, Rocky III (and similar sequels), Harlequin romances (all of which are small variations on each other), and IBM clones.

Replicative leaders tend to be chosen when an organization is succeeding and the goal of those seeking the new leader is to maintain the perceived status, and perhaps preeminence, of the organization. The greatest threat to the organization is likely to be perceived to be loss of current status, not failure to gain new status. The organization is seen as one that does not need to change or appear to change (cf. Sternberg, 2002). Organizations with highly successful product or service lines may seek replicative leaders who will maintain the standing of these lines. Organizations that have had a highly successful and possibly charismatic leader for some time may be happy to seek a leader who can, to the extent possible, replicate the success of the previous leader.

For example, when Roberto Goizueta retired from Coca-Cola, many people probably felt that a successor could do no better than to replicate Goizueta's success. Douglas N. Daft is trying to do just that, although it is proving to be a challenging task. Coke was at the "top of its game," and the goal for some was to keep doing whatever Goizueta had done to keep it there.

Replicative leadership is likely to be most successful during periods of relative stability both in terms of consumer demands and in terms of competitive threats. In times of flux, the kind of leader that worked before may not work again, and the organization may lose preeminence by selecting a leader like the last one.

Replication can occur in politics as well. A good example of this phenomenon was when George Wallace could not run for governor of Alabama in 1967 because there was a limit to the number of times a politician could seek reelection. Wallace's wife, Lurleen, ran for governor with a very similar platform to her husband's, and she won the election. George was named a "special assistant" to the governor and was symbolically paid a dollar a year to serve in this capacity. As a "special assistant," he consulted and helped Lurleen make many important decisions (Eskin, 1998). Lurleen's term as governor of Alabama was designed to be a replication of her husband's policies and strategies.

An even odder and more recent case was that of Mel Carnahan, who was elected Senator of Missouri posthumously. Clearly, his constituents did not expect him to represent them adequately from the grave. Rather, his election was a way to place his widow, Jean, into his position. Jean was chosen as the person most likely to pursue—essentially to replicate—the policies of her deceased husband.

A risk of selecting a replicative leader is that so often the decision-makers do not get what they bargained for. One of the most notorious examples used to be the "dedazo" system of selecting a new Mexican president. The president of Mexico would select his successor (point the finger—dedazo—at the successor) to continue what he had started and to ensure the succession of his ideas, not to mention the maintenance of his own safety. Because, for many years, the presidents were all of the same party, it seemed to about to be ex-presidents like it should be a safe system. It was not. New presidents regularly turned on their predecessors

despite the apparently unflinching loyalty that gained them their jobs. One president, Carlos Salinas Gortari, was driven into exile, so little was the support he received from his successor, Ernest Zedillo, and the party (PRI: Institutional Revolutionary Party). One could argue that his lack of support was because of the corruption of Salinas and especially of his brother Raul, but in this regard, Salinas was little or no different from many of his predecessors.

2.2. Redefinition

This type of leadership is an attempt to show that a field or organization is in the right place but not for the reason(s) that others, including previous leaders, think it is. The current status of the organization thus is seen from a different point of view. The propulsion leads to circular motion, such that the creative leadership directs back to where the organization is but as viewed in a different way. Metaphorically, this type of leadership is like riding a bicycle in a circle, so that one returns to where one is but sees it from a different vantage point.

Redefinitions may take the form of attempts to take credit for good times or to assign blame for bad times. When George W. Bush took over the reins of the presidency from Bill Clinton, the economy had been riding high for many years but was just beginning to show signs of weakness. Under Bush, the economy tanked by almost any standard. At first glance, then, it would appear that people would be uniformly angry with Bush and regretting the departure of Clinton, at least from the standpoint of the economy.

Not necessarily so. The predictable interpretation of the Bush administration was that the policies of the Clinton administration set the stage for the current debacle. What was thus perceived as a grand success at one period of time is being redefined as a pitiful failure at another. Of course, Zedillo made exactly the same claim for the administration of Salinas, when, on Zedillo's arrival in office, the Mexican economy immediately tanked. (In the case of Zedillo, there is no doubt that he was correct, as the Salinas government had been maintaining only the illusion of solvency, not actual solvency.) In the United States, there is little doubt that if the next administration is Democratic, it will assign responsibility for the failure of the economy to the Republican administration's tax cuts and record deficit spending (the latter typically associated with Democrats!).

Redefinitions can also occur in the case of successes. For example, when a new political party comes into power, its leaders generally take credit for whatever is successful in the country, which, of course, they view as due to their courageous opposition to the disastrous policies of the administration that preceded them. Just as Bush gave Clinton no credit for anything successful in the country, Clinton gave no credit to Bush or Ronald Reagan for any of their successes, such as Reagan's simplifying a highly complex tax code, which was again complicated under the Clinton administration.

Redefining a field can help win elections. In 1874, Grover Cleveland had an illegitimate son with a young widow. The boy was subsequently put up for adoption. When Cleveland ran for president 10 years later, it provided fodder for his Republican opponent, James Blaine. Blaine made Cleveland's illegitimate child a large issue in the campaign, and Blaine's follower's chanted, "Ma, Ma, where is my Pa?" (Eskin, 1998). They also spread rumors that if Cleveland was elected, he would bring many young women with him to Washington.

Before public sentiment could turn against Cleveland, he and his advisors decided to redefine the field of campaigning. In addition to being completely honest about it (a bit of a novelty right there), they also reshaped the question. Cleveland admitted to fathering the child, but then Cleveland (or his advisors) put a brilliant spin on the issue. Blaine had several ethical questions raised about whether he had received illicit money from a railroad company. Cleveland may have behaved questionably in his private life, while Blaine had not; on the other hand, Blaine may have behaved questionably as a public official, while Cleveland's reputation was more secure. The proper response, Cleveland's followers suggested, would be for Cleveland to be sent to the White House to be a public servant, while Blaine should be restored to his rightful role as a private citizen. Cleveland's rare honesty—and redefinition of the situation—helped secure his victory as president (Boller, 1984). Indeed, Cleveland's win gave the Democrats a punch line to the Republican slogan: "Ma, Ma, where is my Pa? Gone to the White House, ha-ha-ha!"

There are many examples of leading products that have represented redefinitions in their marketplaces. That is, they lead the market by functionally redefining what is already there. One example is the four-wheel drive "off-road" utility vehicle. Very few people who drive such vehicles actually go off-road, ever. Rather, they buy the vehicles for their cachet, snow-handling ability, roominess, or any other reason but the purpose for which they were originally intended, namely, is to go off-road. A second and just as profitable redefinition is the use of aspirin to prevent heart attacks. Aspirin probably now is more widely used for this purpose than for its original purpose of pain relief. It has become *the* leading product for the purpose, simply by redefining itself. Many drugs, of course, are redefined in similar ways, such as Ritalin, a stimulant that is used to calm down hyperactive children! Wellbutrin, originally marketed as an antianxiety pill, is now also used for weight loss purposes. A third example is the current use of computers, which originally were used almost exclusively as number crunchers, word processors, chess experts, medical diagnosers, and so forth. A final example is the use of academic tests to measure the quality of schools, not just of the individuals taking the tests. Historically, achievement tests were designed to measure student progress. They now are being used as much to measure school progress as they are being used to measure the progress of individual students.

Sometimes, redefining a field means seeing a deficit as a potential benefit. Perhaps this strategy—and its serendipitous results—can be best seen in the story of Art Fry, a scientist with the 3M Company. The 3M Company allowed all of its scientists to have 15% of their time spent on personal projects of particular interest to them. Within this encouraging environment, Fry was able to make a most memorable discovery.

Fry sang in his church choir and noticed that whenever he would mark his hymnbook with small pieces of papers, these makeshift bookmarks would invariably fall out shortly after they were used. Fry remembered an adhesive that was being developed at 3M Company that was being criticized because it did not work well as glue—its strength was very poor. Perhaps, Fry thought, this supposedly useless adhesive could be used in a new way. He applied the adhesive to a small piece of paper and used it as a bookmark in his hymnbook. It stayed in place and then was easily removed without damaging the book. Other uses for the new product quickly

became evident, and post-it notes were soon one of 3M Company's most profitable products (Amusing Anecdotes, http://members.home.net/rajiv/amusing_anecdotes.htm)!

2.3. Forward incrementation

This type of leadership is an attempt to lead a field or an organization forward in the direction it already is going. The propulsion leads to forward motion.

Most leadership is probably forward incrementation. In such leadership, one takes on the helm with the idea of advancing the leadership program of whomever one has succeeded. The promise is of progress through continuity. Creativity through forward incrementation is probably the kind that is most easily recognized and appreciated as creativity. Because it extends existing notions, it is seen as creative. Because it does not threaten the assumptions of such notions, it is not rejected as useless or even harmful.

Presidents of the United States, when they follow on presidents of their own party, typically promise what amounts to forward incrementations or they are perceived as offering forward incrementations. This perception both helped and hurt Al Gore in the 2000 presidential election. On the one hand, the Clinton administration represented a time of unprecedented prosperity. On the other hand, many people perceived it to represent a time of unacceptable moral compromise. Gore had to decide, in his campaigning, whether or not to assume the mantle of Clinton. He decided that the costs were greater than the benefits and largely dissociated himself from Clinton. He thus rejected the forward incrementation strategy. Whether the strategy succeeded is a matter of dispute, but he is not currently president.

The current Chairman of IBM, Sam Palmisano, follows a highly successful former Chairman, Louis Gerstner. Gerstner took over the company when it was struggling and essentially reinvented it as a technology service company. Predictably, perhaps, Palmisano has sold himself as carrying forward in the highly successful tradition of Gerstner. Of course, both see themselves as carrying on in the interrupted tradition of their highly successful predecessor, Thomas Watson. When the Chairman who preceded Gerstner, John Akers, left office, the company seemed to be at risk of heading into a downward spiral.

Several of the top Web sites on the Internet are the result of forward incrementations. From the 1990s to the present day, an entrepreneur could find a business that worked in the "real world" and then decide to apply it to an on-line site. In the early days of the Web, it could be as simple as deciding that an Internet bookstore could offer a nearly infinite selection of books, because there was no need actually to have the books physically present in one location—sites such as Amazon.com (http://www.amazon.com) attest to the wisdom of such a decision. Other sites applied a similar rubric to auction houses (eBay, http://www.ebay.com), music stores (CDNow, http://www.cdnow.com, among many others), and outlet stores (OutletBound, http://www.outletbound.com). By now, most of the obvious venues have already been used on the Internet, so it would likely take even more than a solid forward incrementation to develop a successful and innovative Web site.

Most products on the market represent forward incrementations. New improved versions of detergents, new models of cars, new breakfast cereals—almost all are small incremental variants and sometimes improvements on what came before. For example, two recently

introduced breakfast cereals (in 2003) are Cheerios with mixed berries and Cheerios with strawberries. They are fairly typical new forward incremental products. They take an existing product, Cheerios, and add some ingredients to them, hoping to capitalize on the success of other cereals (such as Special K) that have introduced versions with berries. Another example is found in ketchup. Heinz ketchup, to better appeal to children, has introduced green and purple ketchup. There is absolutely no difference in the taste of ingredients of these ketchups except for food coloring—yet children enjoy eating the oddly colored ketchups more than the "regular" ketchup.

Forward incrementations tend to be successful when times are changing in relatively predictable and incremental ways. The times thus match the leadership strategy, whether in terms of leadership of people or leadership of products. When times change unpredictably, leaders may find that their strategy no longer works. For example, many Internet start-ups in the late 1990s were simple forward incrementations of other such businesses. Small variants in products or even image seemed to be enough to generate investment capital, if not to start a successful business. However, when the dot.com market crashed, many of the start-ups went with it. There was no longer any investment capital to be had for just another variant of what already existed, and there was insufficient customer base to support the businesses. A recent documentary, Startup.com, follows one such failed Web site (http://govWorks.com), which offered people the chance to pay their parking tickets on-line. While such an idea represents forward incrementation, the idea was not creative enough to withstand the market bottoming out. The Web site, once worth millions of dollars, went bankrupt.

2.4. Advance forward incrementation

This type of leadership is an attempt to move an organization forward in the direction it is already going but by moving beyond where others are ready for it to go. The propulsion leads to forward motion that is accelerated beyond the expected rate of forward progression.

Advance forward incrementations usually are not successful at the time they are attempted, because followers in fields and organizations are not ready to go where the leader wants to lead or significant portions of them may not wish to go to that point, in which case they form an organized and sometimes successful source of resistance.

The most well-known examples of advance forward incrementations are probably with regard to leadership in the arts. 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. Perhaps the most memorable premiere in music history is that of Igor Stravinsky's ballet *The Rite of Spring* in 1913. This performance 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 of Spring* 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 deemphasis 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 nonart music sources in their compositions. Although *The Rite of Spring* was so poorly received at its premiere, its contribution to the field of music can be considered simply ahead of its time (Machlis, 1979).

Products that are advance forward incrementations generally do not succeed at the time they are first introduced. Some are introduced only in concept. For example, many of Leonardo da Vinci's inventions, such as the flying machine, were so far ahead of their time that they could not be engineered at the time of their conception. However, the same concept applies today. When fax machines were first introduced, they were slow to catch on. Today, they are a routine part of most offices and even many hotel rooms. Sometimes, the product for which a market is not ready is conceptual. Countries that are suddenly introduced to democratic institutions often have trouble maintaining them, as we have seen in a number of the Asian "republics" that were formerly part of the Soviet Union as well as in a number of African and Latin American countries. The countries are, for whatever reason, not ready for democracy and fail to establish the institutions (some kind of free market system, a free press, respect for individual rights) that are important to maintaining democracy.

3. Types of creativity that reject current paradigms and attempt to replace them

These types of creativity reject current ways of doing things and propose new assumptions or paradigms. They are transformational in character (Bass, 1998), and the leaders that implement them are likely to be charismatic (Strange & Mumford, 2002). Thus, they are the crowd-defying types of creativity (Sternberg & Lubart, 1995a). They are most likely to occur in organizations that believe, for one reason or another, that they must change to survive. Examples are organizations in bankruptcy, organizations that have experienced a major scandal, and organizations that pride themselves on staying one or more steps ahead of the competition.

3.1. Redirection

This type of leadership is an attempt to redirect an organization, field, or product line from where it is headed toward a different direction. The propulsion thus leads to motion in a direction that diverges from the way the organization is currently moving.

Redirecting the concept of advertising children's toys saved Mattel from going out of business in the 1930s. The toy company—which was years away from making Barbie Dolls—was close to bankruptcy but made the wise decision to invest nearly all of its assets in the sponsorship of television's *The Mickey Mouse Club* (Panati, 1991). What Mattel decided was to take existing advertising strategies and redirect them. In the past, toy companies had tried hardest to sell their products to wholesalers and store buyers; if the toy store buyers did not

choose to stock a particular toy in the store, then it was not sold. If the toy companies were going to target any public audience, it would be parents (Stern & Schoenhaus, 1990). However, by sponsoring *The Mickey Mouse Club*, Mattel would reach children directly. Mattel advertised its new Burp Gun on the show. The reaction was instantaneous. Children all over America demanded (and got) the toy. Within a few weeks, Mattel could barely keep up. In a few months, Mattel had sold more than a million Burp Guns (Panati, 1991). Mattel successfully redirected the field of children's advertising, moving the emphasis from reaching store buyers and parents to reaching the children directly. This decision was so profitable that other toy companies quickly followed suit.

Sometimes it can be a series of consumers who redirect a field based on a product rather than the product itself and for reasons other than manufacturers expect. When the chain of K-Mart decided to produce its own bottle of wine ("Kmarto," priced at US$1.97), it provided a ripe opportunity for K-Mart customers to redirect a purchase of wine into a gag gift. The Kmarto wine was a flop as an actual alcoholic beverage. However, several newspapers reported its continued popularity as a joke—one family, for example, was reported to include Kmarto in all of their group photographs (Kirchner, 1996).

Mass production redirected U.S. manufacturing. Eli Whitney in the United States as well as others in Europe had introduced mass production techniques to the arms industry. However, a strong promoter of this industrial movement was the assembly line. The first notable assembly line in use during the 19th century was actually a *disassembly* line. Employees at a Midwest meat packing company harvested cuts of meat from carcasses hanging from a trolley overhead. When the work at one station was done, the pieces were easily transported to the next point on the line (History of the Organization of Work, 2000).

It was in this context that Henry Ford first launched his constant motion assembly line for the manufacture of the Model T Ford in 1913. Whereas large machines had previously been mass produced from a single location to which large stocks of components were hauled, Ford's innovation was to install a moving assembly line in which identical parts could be added to the car as it passed down the line (Cardwell, 1994). On the assembly line, one of Ford's Model T's could be produced in 93 minutes. This reduction in time led to a commensurate reduction in cost to the consumer. In particular, this unprecedented cost effectiveness forced Ford's competitors to join him and play the new production game (History, 2000).

While his application of this technique to the automobile industry is no great feat of creative thinking, its impact on the field was strongly redirective. Ford's promotion of the assembly line and of mass production techniques was an impetus with wide-reaching impact. Whereas others had begun using these methods, Ford's introduction of the assembly line and mass production to the production of cars initiated a change in manufacturing whose impact reached beyond the automobile industry to include a broad range of industrial domains.

An invention that had redirective effects on the field of communication as well as on the wider social and intellectual world is the printing press with movable type. The first printed book dates to 9th century China, although the printing press did not appear in Europe until the mid-15th century. Whether these developments were independent or related is of less concern than is the impact of the printed word on Western society at the time of its introduction.

Prior to the invention of movable type and the printing press, books were laboriously copied by hand. This process resulted in books' being rare and precious. When Johannes Gutenberg (1394/1999–1467) introduced the concept of movable type in 1448 in Mainz, Germany, a revolution followed. Especially in Europe, the 26-letter alphabet was particularly well suited to the use of movable type. Any book could be reproduced by mixing and matching many multiples of these 26 basic prototypes. It has been estimated that there were more books published in Europe between 1450 and 1500 than had been published in the previous 1000 years (Yarwood, 1983).

The immediate and lasting effect of Gutenberg's contribution can be summarized as the grand facilitation of the dissemination of ideas. Gutenberg's process affected many aspects of culture, including the dissemination of information about religion. Perhaps the best-known printed volume associated with Gutenberg's name is his version of the Latin Bible. As a case in point, greater public access directly to scripture had revolutionary (or at least reformatory) effects on the culture at the time. As Bibles became more available, lay people who were not proficient in Latin wished to read the text in their native language. As Bibles became available in the vernacular, the theology of the Church was also in a parallel transition. Martin Luther (1483–1546) advocated direct access to the scripture by lay people, preaching a new Reformation theology that argued for a direct and personal relationship with God (Rubenstein, 2000).

Redirective leaders need to match to environmental circumstances to succeed (Sternberg & Vroom, 2002). If they do not have the luck to have matching environmental circumstances, their best intentions may go awry. Mikhail Gorbachev proposed glasnost (speaking one's mind) and *perestroika* (opening to new ways) as redirections of the old Communist ways, which discouraged both. However, his goal was to redirect Communism, not to initiate a new form of government (see reinitiation, below). Political and economic factors quickly spun out of control, and his redirection failed to bring the particular redirection he hoped for. His attempt at redirection shows the extent to which leaders cannot always control the change processes they initiate.

Examples of products that represent redirections are binary computers in comparison with calculators, electric cars, and electric razors. All do what was done before, but in a new way. The basic starting point is not different. For example, electric cars often cannot be distinguished from gasoline-powered cars by appearance. Electric razors can be distinguished in appearance from manual razors, but the basic cutting mechanism, the blade, is the same. Nevertheless, the basic product is taken in a different direction to form a new product.

3.2. Reconstruction/redirection

This type of creative leadership is an attempt to move a field or an organization or a product line back to where it once was (a reconstruction of the past) so that it may move onward from that point, but in a direction different from the one it took from that point onward. The propulsion thus leads to motion that is backward and then redirective from an earlier point in time.

Many very conservative politicians, who hark back to a better and simpler age, exemplify the reconstruction/redirection type of propulsion. These politicians believe that the field of

politics—indeed, perhaps, the field of the world as a whole—would be better served by undoing the last several decades of domestic and foreign policy and starting from scratch. One politician who has exemplified this viewpoint—and who has also written and spoken extensively on how he would have handled crises and situations of the past—is Pat Buchanan. In an age when people often watch what they say and are careful not to offend potential voters, for better or for worse, Buchanan has spoken his mind.

Buchanan has criticized immigration, believing that America's demographic population should stay constant. He strongly believes in American isolationism and has gone so far as to criticize America's entrance into World War II. If he had been president, Buchanan states, he would have left Hitler alone; Nazi Germany's objectives did not directly affect the United States (Cohen, 1999).

Buchanan, while often being extreme to the point of seriously offending people, has still been a politician in search of a perhaps reactionary constituency. Other groups of people who have also reconstructed and redirected a field have had much more sinister motivations. Holocaust deniers or ''revisionists'' have claimed either that the Holocaust (in which the Nazis killed over 10 million people who were deemed undesirable) never occurred or that the extent of the Holocaust has been greatly exaggerated.

Much of the political philosophy of Thomas Jefferson is rooted in reconstruction/redirection. Jefferson was very interested in the life and writings of Solon, an Athenian statesman and politician who lived from 638 to 559 B.C. Solon was an early founder of the concept of city-and-state republican democracy. Solon was a moderate reformer who did a great deal of experimenting in early forms of developing a republican government. Many of his ideas about the nature of citizenship, with a person's privileges commensurate with their responsibilities, were a basis for Jefferson's political ideas and beliefs.

However, rather than merely harking back to an ancient Greek model, Jefferson also incorporated more modern ideas about government (such as those of Thomas Hobbes and Adam Smith), and his eventual philosophy—much of which was the basis for the U.S. Declaration of Independence—was, perhaps, what Solon's philosophies would have been if the Greek politician had enjoyed the benefit of another 2000 years of discoveries and ideas (Ellis, 1998). Jefferson's political philosophy was certainly put to great use in his lifetime as a politician and writer. In addition to writing the Declaration of Independence, Jefferson served as Minister to France, Secretary of State, Vice President, and President, and he helped found the Democratic–Republican Party, which succeeded the Federalist Party to become the predominant political party in America for many years (Ferris, 1973).

Another largely positive example of reconstruction/redirection is the regime of Alexander Putin in Russia. When Putin took over, it was clear that the policies of Yeltsin were driving the country toward ruin. Massive corruption, uncontrolled oligarchies, and soaring crime made the direction of the regime untenable. Putin came in and started moving the country in a new direction, but one that had features in common with the Communist governments of the past, such as very strong centralization of government and attempts to restrict freedom of the press. Even the old Communist national anthem has been brought back. Probably no one would say that Putin is simply readopting the worse of the old forms of Communism, as is happening in some of the Central Asian republics, such as Turkmenistan. However, Putin clearly has

returned to his (KGB) roots in setting up a governmental structure that has many elements of reconstruction/redirection.

Examples of products and services that represent reconstruction/redirection are not hard to find. Indeed, one can find whole stores that sell modern versions of old nostalgia products, such as advertisements for long-gone products such as Bromo-Seltzer or Brill Cream. Watches with mechanical movements are made by many of the most prestigious manufacturers, such as Rolex, and also represent a modern twist on an old and, in many respects, dated idea (in that battery-powered watches save one the bother of having to reset the watch). American Airlines' adding legroom in coach seating areas is actually another example of a return and, in this case, a welcome one.

3.3. Reinitiation

This type of leadership is an attempt to move a field, organization, or product line to a different as yet unreached starting point and then to move from that point. The propulsion is thus from a new starting point in a direction that is different from that the field, organization, or product line previously has pursued.

Eleanor Roosevelt's term as First Lady represented a reinitiation from what it previously had meant to serve in this capacity. Prior First Ladies had remained in the background and had, for the most part, let their husbands and their husband's advisors determine their actions. Eleanor was very much her own person, and she approached her role as the First Lady in an entirely different manner than anyone before her. Her new style became evident only a few days after her husband Franklin was elected president. The outgoing First Lady, Lou Hoover, invited her over to the Executive Mansion. When Hoover asked when the White House limousine should arrive at Roosevelt's hotel, Eleanor said that she would walk. Overcoming the chief of protocol's objections over this simple act, she walked from her hotel to the White House (and walked back, too). This incident was a small indicator of things to come (Boller, 1988).

From the small details to the larger issue of her role in society, Eleanor took charge of her life and behavior in a way that no First Lady had ever done. She ran the White House elevator herself. She helped her servants arrange the furniture when she moved in. She held her own press conferences (something that was unheard of at the time). One reason for Roosevelt's independence, incidentally, was accidental. In 1918, she discovered that her husband was having an affair. While Eleanor and Franklin reached a reconciliation, their marriage was never quite as close. As a result, Eleanor was determined even more to be her own person (Boller, 1988).

Eleanor not only changed the conception of what a First Lady could be but also took steps to demonstrate the many positive things that a First Lady could accomplish. She personally inspected the slums of Washington, coalmines, and mental hospitals (among many others) and then kept the press informed of what she found. She made tremendous strides for civil rights and women's rights. When she found out that the Daughters of the American Revolution had refused to give permission to African American singer Marian Anderson to sing in Constitution Hall, Roosevelt resigned from the group and then sponsored an outdoor concert

for Anderson at the Lincoln Memorial. She wrote monthly columns for magazines, daily columns for newspapers, and an autobiography and then donated her earnings from her writing to charity (Boller, 1988). While other First Ladies had certainly helped charity or supported causes passively, Eleanor was the first one to aggressively and actively pursue activities that were important to her. First Ladies such as Jackie Kennedy, Betty Ford, and Hillary Clinton were able to establish their own identities in ways that never would have been imagined before Eleanor pioneered the course.

Around the same time that Eleanor was serving as a reinitiator, another pioneer was serving to reinitiate the role of women in society—only this pioneer was a partly fictional composite, Rosie the Riveter. Before World War II, the idea of women entering the workforce en masse may have seemed farfetched. However, with many of the able-bodied men off fighting in Europe, factories lost workers at precisely that time when factory products (such as weapons and airplanes) were most needed. Factories and officials (at such plants at Douglas Aircraft in Long Beach, CA) ended up changing the public's perception of working women, shifting the image from an undesirable one to a highly desirable one (Frank, Ziebarth, & Field, 1982).

Among the most successful reinitiators in the history of government were those leaders who crafted the government of the United States of America as embodied in the U.S. Declaration of Independence and the U.S. Constitution. Although the United States was far from a perfect democratic republic, it has set a model for many countries that have followed it in seeking democratic institutions. In addition, it represented a radical departure from the traditional imperialistic British monarchy of which it had been a part.

A number of different types of products can be viewed as forms of reinitiations. Examples are electric and gas washers in comparison with hand washboards, the first airplanes in comparison with ground transportation, the first spaceships in comparison with airplanes, and the first use of fire for cooking. What these reinitiations have in common is that they do not just build on mechanisms of their predecessors but rather use wholly different mechanisms. They conceive of a way of providing something people need through a means that is essentially totally different from what came before.

4. A type of creativity that integrates existing paradigms to create a new one

Some organizations want to take the best of all worlds. They look at their competitors or the history of their own organization and try to select the best elements. They seek synthesizers.

4.1. Synthesis

In this type of creative leadership, the creator integrates two 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. Integration is a key means by which progress is attained in the sciences. It represents neither an acceptance nor a rejection of existing paradigms but rather a merger of them.

Synthesis also occurs in political leadership. Goldwater (1960) was able to integrate two very different facets of conservatism in his groundbreaking political tract *The Conscience of a Conservative*. Goldwater (who was greatly helped with the book by Brent Bozell) bridged the gap between traditional conservatives and libertarian conservatives by appealing to aspects of both philosophies. He argued, for example, that the New Deal was a move toward totalitarianism and that the government should not be active in most aspects of life—yet he also argued in favor of the government's need to sustain order and reinforce morality. He brought together the two different conservative factions by uniting them on the goal of fighting Communism. Goldwater's ability to bring two very different types of conservative ideologies together helped establish conservatism as a strong force from the 1960s to the present day (Dalek, 1995). In his later life, Goldwater came out in favor of advanced rights for homosexuals, something that few conservatives had done before him.

As another example, when Maggie Kuhn was forced to retire from her position with the Presbyterian Church when she reached the mandatory retirement age of 65 in 1971, she decided to fight back against the system that was making her lose her job. While there were already some groups that existed to defend the rights of elderly people, none of them had a great deal of impact on policy-making. What Kuhn did was to integrate the techniques of forceful civil rights groups such as the Black Panthers with the goals of these early ageism-fighting groups. In honor of the Black Panthers, Kuhn and the early leaders dubbed their group the Gray Panthers.

The Gray Panthers began to spread the idea that the elderly had to get actively involved in their own lives. If older people did not want to be condescended or disregarded, they had to work for more respect and rights—just as the Black Panthers and other 1960s civil rights groups did. Because of the efforts of the Gray Panthers, mandatory retirement laws were mostly ended, nursing homes were reformed on a national level, and widespread fraud and scams aimed at the elderly were fought. Kuhn herself stayed active with the group until her death at 89; the Gray Panthers' ranks have swelled to as many as 60,000, and their impact is strongly felt to the present day (Kuhn, Long, & Quinn, 1991).

Examples of products that are syntheses are seaplanes (which combine features of planes and boats), office suite software (which combines multiple largely independent products into one integrated package), E-books (which display what formerly were printed books through software), and handheld scheduling devices (which combine aspects of computers with aspects of traditional calendars).

5. Discussion

The eight types of creative leadership described above are viewed as qualitatively distinct. However, within each type, there can be quantitative differences. For example, a forward incrementation can represent a fairly small step forward or a substantial leap. A reinitiation can restart a small subfield or an entire field, as did the work of Einstein on relativity theory. Thus, the theory distinguishes types of leadership both qualitatively and quantitatively.

Of course, the taxonomy we provide is not the only one that has been proposed. Most existing taxonomies do not apply to creative leadership in particular, but some do.

Tests of creativity (e.g., Torrance, 1974) typically provide scores that assess both quantitative and qualitative aspects of performance (Plucker & Renzulli, 1999). For example, the Torrance tests can be scored for originality of responses (how unusual each response is), flexibility (how varied the responses are), elaboration of responses (how detailed each response is), and fluency of responses (how many unusual responses there are). These types of scores also serve as a basis for a taxonomy of aspects of creativity (Guilford, 1975; Michael & Wright, 1989). However, these test scores are largely atheoretical. The extension to leadership would be concerning the number of creative ideas the leader has versus the originality of these ideas.

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 on or otherwise elaborates on an already existing paradigm of scientific research, whereas revolutionary science proposes a new paradigm. Revolutionary leaders in science have included Newton and Einstein in the field of physics, Darwin and Wallace in the field of biology, and Freud and Wundt in the field of psychology. Darwin's contribution is particularly well analyzed by Gruber (1981).

Gardner (1993, 1994) 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. Each of these types of contribution tends to be characteristic of a particular field or set of fields. For example, the performance of a ritualized work describes a creative contribution in the arts, such as an artist's interpretation of a musical composition. Similarly, "high stakes" performances may refer to actions taken by social and political leaders, for example, while engaging the public in protests. This "high stakes" performance is qualitatively different from that of a ritualized work in that it is more spontaneous and involves solving new and challenging problems on the spot. In contrast, the performance of a ritualized work does not require as much novel contribution on the part of the performer. Although qualitative distinctions exist among these categories of creative contributions, each type is best described as suited to a particular domain rather than being generalizable to creative contributions of all possible domains. Gardner has suggested that these contributions occur in eight domains (corresponding to multiple "intelligences"): linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, naturalistic, interpersonal, and intrapersonal.

A view that is more likely to distinguish among types of creative leaders has been proposed by Gough and Woodworth (1960), who discussed stylistic variations among professional research scientists. The styles include zealots, initiators, diagnosticians, scholars, artificers, estheticians, and methodologists. For example, a zealot proposes a cause and then becomes extremely strongly identified with that cause, sometimes with only minimal empirical support for the arguments behind the cause. A methodologist concentrates on and takes great care with the methodology of his or her contributions and perhaps with the innovation inhering in the

methodology, possibly at the expense of paying attention to the substantive contribution. These types distinguish differences among individual creators' preferred working styles, but no predictions are made regarding the nature of the creative contributions such individuals would produce.

In sum, leadership is not creative or not creative. Rather, it can be more or less creative in different ways. What type of creativity will emerge in an organization depends in part on the leaders but also in part on the organizational environment. Some organizations are more susceptible and favorable to change than others (Sternberg, 2002). An organization that resists change is more likely to have kinds of creative leadership that accept existing paradigms (replication, redefinition, and forward incrementation). Other kinds of leaders are likely to be fired or to resign. An organization that welcomes change, however, may also welcome creative leadership that rejects existing paradigms (redirection, reconstruction/redirection, and reinitiation) or synthesizes them (synthesis). Companies that are failing or in bankruptcy may have no choice but to choose the paradigm-rejecting kinds of creative contributions: Their existing structures have failed. Companies that are succeeding may choose less radical types of creativity, but if the market changes, they may have to change as well, regardless of past successes.

Different theories have been proposed to characterize different types of creative leadership, primarily in the scientific domain. In this article, we have proposed a propulsion model of types of creative leadership that characterizes some of the ways in which leaders can manifest their creativity. Although single leaders may use a mixture of styles, they seem largely to fall into one of these groupings of another. At the very least, they tend to be remembered in a particular way.

Acknowledgements

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