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ANALYZING ARTISTIC INNOVATION: THE GREATEST
BREAKTHROUGHS OF THE TWENTIETH CENTURY

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Analyzing Artistic Innovation: The Greatest Breakthroughs of the Twentieth Century
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ABSTRACT

This paper considers not only when in their careers the greatest artists of the twentieth century made their greatest discoveries, but also how quickly they made them. The results underscore the dominant position of Picasso and Cubism in twentieth-century art: Picasso alone accounts for the two best three-year periods produced by any artist, and he and Braque account for three of the best five-year periods, all for the work the two young artists did in developing Cubism. Warhol's innovations in Pop art and Matisse's development of Fauvism also rank among the century's most important breakthroughs. In general, identifying the most important short periods of artistic creativity emphasizes the differing methods of conceptual and experimental artists: great conceptual innovators, like Picasso, Matisse, and Warhol, made their greatest discoveries abruptly, whereas great experimental innovators, like Mondrian, Kandinsky, and Pollock, made their discoveries more gradually. The finding that artists who innovate early in their lives do so suddenly, while those who innovate late do so more gradually, adds an important dimension to our understanding of human creativity.

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Breakthroughs

[The artist] has to make an enormous effort to lift himself above his contemporaries. This results in what we often call the “breakthrough,” that every artist on the path to success has to make.

Alan Bowness¹

The true subject of art history is the narrative and analysis of the succession of innovations that have changed the practices of artists over the course of time. This is a source of considerable confusion not only among the public at large, but even among many art scholars, for there is a persistent belief that art history is the story of the lives of great artists. However widespread, this belief is mistaken. Artists’ contributions to their discipline do not consist of their entire body of work, but rather only that part of it that embodies inventions that are subsequently deemed valuable by other artists. The chief curator of painting and sculpture at New York’s Museum of Modern Art, perhaps the world’s preeminent museum of twentieth-century art, recently expressed this succinctly in explaining the mission of his institution: “MOMA is a museum interested in telling the story of successive innovations rather than a museum interested in the longevity of individual careers.”² Scholarly surveys follow this same model, as for example in the statement that opens the preface to their recent textbook, *Art Since 1900*, Hal Foster, Rosalind Krauss, Yve-Alain Bois, and Benjamin Buchloh declare not that their work is arranged around the careers of artists, but rather that “This book is organized as a succession of important *events*, each keyed to an appropriate date, and can thus be read as a chronological account of twentieth-century art.”³

Although a vast body of scholarship has concentrated on the specific discoveries made by great artists, art historians consistently treat each of these discoveries in isolation, and there has

been remarkably little systematic comparative treatment of these events. This paper will begin to remedy this neglect, by using the scholarly narratives of scores of art historians as the basis for empirical analysis of the most important breakthroughs made by the greatest artists of the past century in the course of following their paths to success. Performing this analysis can increase our understanding of artistic creativity, at the same time that it deepens our insight into the nature of the greatest artistic innovations of the twentieth century.

Data

There is, it seems, a graph of creativity which can be plotted through an artist's career.

Alan Bowness⁴

The data used in this study were drawn from all available textbooks of art history, published in English since 1990, that survey the art of the twentieth century.⁵ From these 33 books, listings were made of all the illustrations of works by 19 artists: 15 of these artists were identified by an earlier study as the most important artists of the twentieth century, while the remaining four were identified by a second study as having executed individual works that ranked among the most important of the twentieth century.⁶ The full sample of these 19 artists is shown in Table 1.

The data set constructed in this way can be used to create a profile for each artist, showing how many illustrations of his work the textbooks contain from each year of his career. Since the illustrations were chosen by the books' authors to show readers the most important developments in advanced art, the individual years, or periods of years, from which the most illustrations of an artist's work are reproduced can be presumed to identify the most important portions of the artist's career.⁷

These profiles furthermore reveal not only at what stage of his career an artist made his greatest contribution, but also how suddenly and how quickly he made them. And comparisons across artists of the numbers of illustrations of their work from specified periods of time can allow us to judge which artists' breakthroughs were most important, in the judgment of art historians. With this recognition, we can examine the evidence.

Durations

Many artists do their best work in a relatively short period.
Alan Bowness⁸

Table 2 ranks the best individual years of all the artists in the sample for this study. This ranking is not restricted to each artist's best year, so some artists appear more than once, while some artists do not appear at all.

Perhaps the most striking feature of Table 2 is the dominant position of Picasso. Not only does he rank in first place for his work of 1907, with nearly a third more illustrations than the second-place entry, but in all he has no less than four individual years that rank among the greatest 15 of the century. Even more remarkably, three of these years rank among the top five overall.

It is no surprise that Picasso's work of 1907 ranks as the greatest one-year achievement of the twentieth century, for that was the year he painted *Les Femmes d'Alger (O.J.)*, which ranks as the century's most important individual work of art.⁹ The privileged place of that painting, and of Picasso's work of that year, are a consequence of the fact that this announced the beginning of the Cubist revolution, which would become by far the most influential development of the century in the visual arts. Experimental artists develop their contributions gradually, and later

works in their mature signature styles are often the most important examples of experimental artists' innovations, but conceptual artists often arrive at their contributions precipitously, and therefore it is usually the earliest works in a new style that are the most important. Cubism was a quintessentially conceptual innovation, which Picasso created in order to represent his knowledge of objects rather than to describe their appearance. Although Picasso, later joined by his friend Braque, would go on to develop Cubism in a number of important respects, the movement's greatest innovation occurred at its outset. Picasso clearly understood this, for he spent months making an unprecedented number of preparatory sketches and studies, then executed the *Demoiselles* on a canvas far larger than any he had previously attempted. Thus although Picasso did not make mature Cubist paintings in 1907, his work of that year unambiguously declares the radical new approaches to the representation of space and to the construction of form that would stand as Cubism's most important legacy to modern art. There is consequently no surprise that his work of 1907 leads Table 2, for it was in that year that the century's greatest artist announced the century's greatest artistic innovation.

The importance of Cubism is underscored by the third-place ranking of Picasso in Table 2 for 1912. This was a key year in the development of Cubism, for it was during 1912 that the progressive flattening by both Picasso and Braque of the faceted objects in their paintings marked the passage from early, or analytical, Cubism to late, synthetic Cubism. In part this progression was a consequence of a radical innovation by Picasso, announced in his famous *Still Life with Chair Caning* of 1912, in which he pasted a small piece of oilcloth to the canvas. This small painting thus became the first collage. This marked a radical departure from artistic tradition, for by attaching a real object to his canvas Picasso violated the two-dimensional surface of the

picture plane that Western painters had respected for five centuries. This apparently innocuous act was the seminal event for the unprecedented proliferation of artistic genres that would occur over the course of the twentieth century.

Picasso's third entry in Table 2, which ranks fifth overall, is for 1937. Although this came more than two decades after the initial period during which Picasso and Braque had developed Cubism, Picasso's innovation of 1937 was nonetheless a significant development of the language of Cubism. During a ten-week period in the spring and early summer of 1937 Picasso painted *Guernica*, a mural that was nearly five times as large as the *Demaiselles d'Avignon*. Picasso made the enormous painting to express his outrage at the destruction of the Basque town of Guernica, and the slaughter of its entire population, by German bombers acting for General Franco. The painting was an artistic landmark because of its subject matter, for it demonstrated that Cubism, which had previously been restricted to private subjects, could be used to make a powerful public statement. For this *Guernica* became an inspiration to many advanced artists who wanted to use their art for political and social ends.

A striking feature of Table 2 is the position of Warhol, who ranks second for his work of 1962. This was the year in which Warhol made his most celebrated works, which became the most famous images of the Pop movement. Early in the year he painted 32 portraits of Campbell's soup cans - one for each flavor the company made - which were exhibited in July in Los Angeles, in Warhol's first one-man show. He made these paintings with stencils. In August Warhol began to make paintings by silkscreening, a technique he would use for the rest of his life, and he quickly made a series of portraits of actors and singers based on magazine photographs.¹⁰ Marilyn Monroe committed suicide in August, and Warhol decided to paint a

series of portraits of her. In November, Warhol had his first New York show. It included the *Marilyn Diptych* and *Green Coca-Cola Bottles* that became his most important individual paintings.¹¹

Warhol's position in Table 2 is a consequence of the enormous influence of his work on generations of conceptual artists from the 1960s on, and of his precipitous arrival at his key innovations. Early in 1962 Warhol was still engaged primarily in his successful career as a commercial artist (when the paintings of Campbell's soup can were first exhibited in Los Angeles, they were priced at \$100 each, which was one tenth as much as Warhol was then getting for a commercial drawing). The immediate impact of the Campbell's soup can paintings on the art world, which was triggered by an article in *Time* magazine even before his Los Angeles show opened, within months made Warhol into the leader of the dominant new art movement of its time.¹² Critics immediately recognized the conceptual nature of his art, as for example in an assessment of Pop art the editor of *Artnews* observed that "Today, the sole requirement of a work of art is intent; what the artist says, goes."¹³ And it was the conceptual nature of the art that allowed Warhol's sudden transformation from a commercial artist to an advanced artist, for as his biographer noted, "From the first Campbell's soup can onwards Warhol was at his purest as a conceptual artist."¹⁴ During the single year of 1962, Warhol arrived at his two key formal innovations, the production of serial images and the use of a mechanical technique to make them.¹⁵ And because what mattered was not the appearance of the works but the idea that motivated them, there was no need for Warhol or his assistant Gerard Malanga to spend years, or even months, perfecting their use of silkscreens (indeed, Malanga later recalled that he and Warhol often made mistakes, but Warhol never rejected anything, saying "It's part of the art"),

and it was the very earliest paintings that embodied these innovations that became Warhol's canonical works.¹⁶

Matisse ranks fourth in Table 2, for his work of 1905. Although Matisse made a number of contributions in the course of a long career, the most important was his first innovation, the development of Fauvism. The movement was a conceptual one, in which Matisse and several younger painters, inspired by the strong colors and flattened forms of van Gogh and Gauguin, went even further than those earlier symbolists in the expressive use of pure, bright colors and simplified shapes. Matisse was recognized as the leader of the Fauve movement, which began abruptly in 1905, and ended abruptly in 1907. Fauvism became important for its influence on a series of expressionist painters, beginning with the German Blue Rider movement in 1910. Although Matisse made Fauve paintings for three years, the conceptual nature of the contribution meant that the most important were those that announced the innovation, and these were the paintings of 1905 that were exhibited at the Salon d'Automne of that year.

Although there are six experimental artists in the sample for this study, only one appears in Table 2. This imbalance is a consequence of the absence of sudden breakthroughs by experimental artists, whose work typically evolves gradually. Yet Jackson Pollock nonetheless ranks sixth for his work of 1950. Pollock's most celebrated innovation was the drip method he developed, in which he poured and spattered paint onto the canvas, breaking the connection between the touch of the artist's brush and his paintings. Pollock used the drip method in novel ways, to make "all-over" compositions that lacked any central focal point of interest. He achieved this by creating lines that for the first time in Western art did not indicate the edges of planes, and consequently did not bound shapes or figures, but rather served as an autonomous

visual element.¹⁷ These innovations are generally considered to have been used most effectively in the large paintings Pollock made during the four-year period 1947-50.¹⁸ It is not the paintings from the earliest of these four years that most often appear in textbooks, however, but those from the last year of the period, in 1950. Because Pollock's contribution was not an idea, it is not its first appearance that is most important. Instead, because the contribution was aesthetic, it is the latest and most sophisticated embodiments of the new techniques that are most important. A common misconception about Pollock's drip style is that it represented a lack of control. Pollock vehemently denied this, famously responding to a *Time* magazine article that described his style as chaos with a telegram that declared "NO CHAOS DAMN IT."¹⁹ As William Rubin later pointed out, Pollock's method involved a number of choices that had to be made jointly, and that doing this successfully required considerable skill, that developed over time: "It may very well be that the physical mastery needed to control a larger 'figure' in this technique partly explains why the more bodily inflected patterns of the wall-size pictures came only after three years of working with it."²⁰

Malevich ranks seventh in Table 2. He was one of the three great pioneers of abstraction, as he, Kandinsky, and Mondrian all developed their own distinctive forms of non-representational art during the mid-1910s. Yet the arrival of the conceptual Malevich was more sudden than those of the experimental Kandinsky and Mondrian, as John Golding recognized: "It might be fair to say that Malevich's abstraction sprang, Athena-like, ready formed from the brow of its creator; this distinguishes Malevich's approach very sharply from that of Mondrian and Kandinsky, who had sensed and inched their way into abstraction over a period of many years. It is this that makes Malevich's art so exhilarating."²¹ The gradual progress of Kandinsky and

Mondrian, rather than any lack of importance of their achievements, accounts for their absence from Table 2, for Mondrian's work overall received substantially more total illustrations in the textbooks than Malevich's, and Kandinsky's only slightly fewer than that of Malevich.²² In contrast, the suddenness of Malevich's arrival at abstraction accounts for his high position in Table 2, for his entry is for 1915, the year he executed his first abstract paintings, and presented them, with attendant fanfare that included publication of the *Suprematist Manifesto*, at a Moscow exhibition titled "The Last Exhibition of Futurist Painting." The conceptual nature of Malevich's work is reflected in his meticulous use of geometric calculation in the preparation for these paintings, and in their arrangement at the exhibition, as well as in the assertion in his written text that the abstract forms in those paintings symbolized the triumph of modern technology over space and time.²³

Duchamp is the only artist other than Picasso who has more than one entry in Table 2. Duchamp was a radical and protean conceptual innovator, who made a series of largely unrelated innovations that all served to challenge basic conventions of advanced art. Duchamp's highly conceptual approach allowed his innovations to be embodied in individual landmark works, and his two entries in Table 2 represent the years in which he made his two most celebrated works, which both rank among the most frequently reproduced works of the century: thus in 1912 he painted the *Nude Descending a Staircase, No. 2*, and in 1917 he signed a porcelain urinal to create the readymade *Fountain*.²⁴ Both of these works created immediate controversy, not only among the general public but also among advanced artists - the *Nude Descending* for what was taken to be its attack on Cubism, and *Fountain* for its implicit assertion that art could be made merely by a decision of the artist. Although for several decades *Nude Descending* was considered

the more important of these works, their relative positions in Table 2 may reflect the fact that the influence of *Fountain* has grown over time, so that many in today's art world consider it to have been the most influential individual work for the advanced art of the second half of the twentieth century.²⁵

To consider the possibility that breakthroughs can occur within short periods longer than one year, Table 3 ranks the best three-year periods, again by total illustrations, for the same artists listed in Table 1. The results are broadly similar to those of Table 2, but some significant changes appear. Three artists who were ranked in Table 2 disappear from Table 3. Each of the three - Tatlin, Smithson, and Hamilton - made a single important conceptual innovation, which in each case was embodied in a single important work, but none of the three made any developments beyond this contribution.²⁶

Picasso holds the top two positions in Table 3, as well as three others in the ranking; remarkably, he accounts for five of the century's 15 most important three-year periods in the careers of individual artists. What is interesting, however, in comparing his performance in Tables 2 and 3 is that the period in Picasso's 50s when he produced *Guernica* becomes less important when the longer span of three years is considered, whereas all three of Picasso's highest ranked entries in Table 3 are from the years from 1905-14, when the young artist was first developing Cubism. This underscores the density of innovation during this first decade of Cubism, whereas in contrast *Guernica* appears as an isolated achievement of Picasso's later years, which he did not subsequently develop in any significant way. Exceptionally, Picasso was able to make a major innovation at the age of 56 - fully 19 years beyond the age of any other conceptual artist listed in Table 2 - but even he could not recapture the remarkable ability to

make one discovery after another that he had enjoyed during his late 20s and early 30s.

Kandinsky joins Pollock as a second experimental entrant in Table 3. The years represented, 1911-13, are the ones in which Kandinsky's cautious and gradual approach finally produced abstract forms. In an essay of 1913 he looked back on the evolution of his work, and stressed not only the difficulty of his progress, but also his expectation that it had not yet reached an end:

Only after many years of patient toil and strenuous thought, numerous painstaking attempts, and my constantly developing ability to conceive of pictorial forms in purely abstract terms, engrossing myself more and more in these measureless depths, did I arrive at the pictorial forms I use today, on which I am working today and which, as I hope and desire, will themselves develop much further.

Although he expressed frustration with the slow pace of his development - "I sometimes look back at the past and despair at how long this solution took me" - he understood that it was not his nature to solve problems conceptually: "My only consolation is that I have never been able to persuade myself to use a form that arose within me by way of logic... I could not devise such forms, and it disgusts me when I see them."²⁷

Finally, to consider even more gradual breakthroughs, Table 4 ranks the same artists' best five-year periods. The rankings do not change dramatically, but several interesting differences appear. Braque, who had ranked 13th and 11th, respectively, in Tables 2 and 3, moves up to fifth place in Table 4, for the years 1908-12. These were the years when Braque and Picasso worked together "like two mountaineers roped together," in Braque's famous description, to develop Cubism. Picasso was the more gifted of the two, and he was bolder and more daring in his art. In spite of Braque's more cautious approach, however, in 1908 and 1911 he produced individual

paintings that appear in more textbooks than any single work of Picasso's from the period apart from the *Demoiselles d'Avignon*. Reviewing an exhibition of the art of Picasso and Braque from these years, John Golding reflected that "it told the story of how one of the most protean of all artists was prepared temporarily to accept the support and the stimulus offered to him by a fellow artist so much less talented than himself, and of how that artist accepted the challenge involved and in the process transformed himself into a major painter."²⁸ Virtually all successful modern artists have initially developed their art in the company of other talented young artists; David Sylvester compared these collaborations to jazz musicians' jam sessions, "the paradigm of a situation in which artists are simultaneously supporting and competing with each other."²⁹ The early collaboration of Picasso and Braque was the most important of these episodes for the art of the twentieth century, just as that of Monet with Bazille, Renoir, and the other Impressionists had been for the modern art of the nineteenth century. That three of the top five entries in Table 5 represent a single ten-year period in the development of Cubism further emphasizes the preeminent place of that movement in twentieth-century art.

Another interesting feature of Table 4 involves two great experimental artists, as Kandinsky moves up into the ninth rank, and Mondrian makes an appearance for the first time in this study's tables, ranked in the lowest position. Both artists benefit from consideration of a longer period, as both are ranked in Table 4 for the period in the early 1910s when they and Malevich pioneered abstraction. That Mondrian worked even more cautiously, and progressed even more slowly than Kandinsky, is witnessed by the fact that Mondrian ranks well below Kandinsky in Table 4 in spite of the fact that he has substantially more total illustrations than the Russian artist in the textbooks overall, for that larger number is spread more evenly over a period

of five decades.³⁰

Table 4 provides clear evidence of the difference in the creative life cycles of conceptual and experimental innovators. Twelve of the entries in the table are for conceptual artists, while three are for experimental innovators. The median age of the conceptual artists when they began the periods listed in the table was 30, whereas the corresponding median age of the experimental artists was 39. Great conceptual innovators, like Picasso, Warhol, and Duchamp, mature rapidly and peak early in their lives, whereas great experimental artists, like Mondrian, Kandinsky, and Pollock, develop slowly and make their greatest contributions at older ages.

Conclusion

Of all the revisions of pictorial language proposed in the 20th century, cubism has been the most radical.

Alan Bowness³¹

Artistic innovation in the twentieth century was dominated to a remarkable degree by one man. By the measure of textbook illustrations, Picasso by himself accounts for three of the five most creative individual years of the century, five of the 15 most creative three-year periods, and two of the three most creative five-year periods. Today, after the close of the twentieth century, we can see not only how Picasso's specific artistic innovations dominated the agenda of advanced artists throughout the first half of the century, but also how the manifestation of his versatile conceptual creativity became the prototype for some of the most important conceptual innovators throughout the entire century.³² David Sylvester recognized the historical departure represented by Picasso, when he reflected that "Picasso is a kind of artist who couldn't have existed before this century, since his art is a celebration of this century's introduction of a totally promiscuous eclecticism into the practice of art."³³

Cubism was equally clearly the preeminent artistic movement of the twentieth century. Working together during the period from 1908 until Braque left to serve in the French army in 1914, Picasso and Braque created a revolution that not only transformed painting, but also had a profound impact on sculpture, architecture, cinema, and virtually every other form of visual art, and beyond this to poetry and literature, as faceting and fragmentation were applied to words as well as to images. The work of Picasso and Braque in these years accounts for three of the five most important five-year periods of individual artistic creativity of the century. These two young conceptual innovators created a new synthesis of earlier artistic elements that overturned the synthesis of an equally young conceptual innovator, Masaccio, who had worked in Florence nearly five centuries before, as Cubist space and form abruptly replaced Renaissance perspective as the dominant paradigm in advanced art. Sylvester again recognized both the significance of this episode and its nature, as he observed that

The story of the rise of Cubism is one of the most wonderful chapters in the history of art. There is something deeply moving about the way this pair of artists in their late twenties found themselves subverting six centuries of European painting while seeing themselves - quite rightly - as the successors to a line that stretched from Poussin to Chardin to Corot to Cézanne.³⁴

The empirical analysis of this paper highlights the difference in the creative processes of conceptual and experimental innovators, for it points up the fact that conceptual artists not only innovate earlier in their careers than their experimental counterparts, but also that they innovate more rapidly. An earlier study based on counts of illustrations in textbooks showed that three of the 10 greatest artistic innovators of the twentieth century were experimental artists, as were five of the greatest 15.³⁵ When we examine short periods of innovative breakthroughs, however, using

the same data set as the earlier study, the experimental artists are much less prominent. Thus experimental artists account for only one of the 15 most important individual years of creativity of the century, for only two of the 15 most important three-year periods, and for only three of the 15 most important five-year periods. The difference in the results of the two studies is a consequence of the fact that many conceptual artists arrive at their greatest contributions suddenly, while many experimental artists arrive at their greatest achievements much more gradually: the shorter the periods within artists' careers we study, the greater the advantage of conceptual over experimental innovators.

One further difference between the two types of innovator also appears in the data analyzed here. Because experimental innovators are rarely satisfied that they have achieved their goals, they are often tied to a single problem for an entire career. In contrast, conceptual innovators often believe that they have conclusively achieved specific goals, and can consequently move onto other problems, and to make different contributions. This diversity of conceptual innovators is reflected in the fact that the three artists who make more than a single appearance in any of the tables in this paper were all conceptual artists. All three - Picasso, Matisse, and Duchamp - are among the protean conceptual innovators who made multiple contributions to modern art.

Footnotes

I thank Robert Jensen for discussions.

1. Alan Bowness, *The Conditions of Success: How the Modern Artist Rises to Fame* (New York: Thames and Hudson, 1989), p. 50.
2. Deborah Solomon, "Frank Stella's Expressionist Phase," *New York Times Magazine*, (May 4, 2003), p. 47.
3. Hal Foster, Rosalind Krauss, Yve-Alain Bois, and Benjamin Buchloh, *Art Since 1900* (New York: Thames and Hudson, 2004), p. 12. The italics are mine.
4. Bowness, *The Conditions of Success*, p. 51.
5. These books are listed in the appendix to David Galenson, "The Greatest Artists of the Twentieth Century," NBER Working Paper 11899 (2005).
6. Galenson, "The Greatest Artists of the Twentieth Century;" Galenson, "The Most Important Works of Art of the Twentieth Century," NBER Working Paper 12058 (2006) .
7. For discussion and examples, see David Galenson, *Artistic Capital* (New York: Routledge, 2006), Chaps. 1-2.
8. Bowness, *The Conditions of Success*, p. 51.
9. Galenson, "The Most Important Works of Art of the Twentieth Century," Table 2.
10. Gary Garrels, ed., *The Work of Andy Warhol* (Seattle: Bay Press, 1989), p. 87.
11. Galenson, *Artistic Capital*, p. 50.
12. Victor Bockris, *Warhol* (New York: Da Capo Press, 1997), pp. 145-48.
13. Steven Madoff, ed., *Pop Art* (Berkeley: University of California Press, 1997), p. 101.
14. Bockris, *Warhol*, p. 145.
15. Madoff, *Pop Art*, p. 296.
16. Bockris, *Warhol*, p. 170.
17. Pepe Karmel, ed., *Jackson Pollock* (New York: Museum of Modern Art, 1999), pp. 97-103, 118-75.

18. E.g. see Karmel, *Jackson Pollock*, pp. 126, 266; Kirk Varnedoe, *Jackson Pollock* (New York: Museum of Modern Art, 1998), pp. 48-62.
19. B. H. Friedman, *Jackson Pollock* (New York: Da Capo Press, 1995), p. 160.
20. Karmel, *Jackson Pollock*, p. 170.
21. John Golding, *Paths to the Absolute* (Princeton: Princeton University Press, 2000), p. 67.
22. Galenson, "The Greatest Artists of the Twentieth Century," Table 2.
23. Golding, *Paths to the Absolute*, p. 62-67.
24. Galenson, "The Most Important Works of Art of the Twentieth Century," Table 2.
25. Charlotte Higgins, "Work of art that inspired a movement... a urinal," *Guardian*, Dec. 2, 2004.
26. For discussions see Galenson, "The Most Important Works of Art of the Twentieth Century."
27. Wassily Kandinsky, *Complete Writings on Art* (New York: Da Capo Press, 1994), p. 370.
28. John Golding, *Visions of the Modern* (Berkeley: University of California Press, 1994), p. 67.
29. David Galenson, *Old Masters and Young Geniuses* (Princeton: Princeton University Press, 2006), pp. 18-19; David Sylvester, *About Modern Art* (New York: Henry Holt, 1997), p. 445; Bowness, *The Conditions of Success*, pp. 51-54.
30. See Galenson, "The Greatest Artists of the Twentieth Century," Table 2.
31. Bowness, *Modern European Art*, p. 105.
32. David Galenson, "And Now for Something Completely Different: The Versatility of Conceptual Innovators," NBER Working Paper 12034 (2006).
33. Sylvester, *About Modern Art*, p. 30.
34. Sylvester, *About Modern Art*, p. 447.
35. Galenson, "The Greatest Artists of the Twentieth Century,"

Table 1: Artists Included in this Study

Artist	Date of birth	Date of death	Country of birth
Boccioni, Umberto	1882	1916	Italy
Brancusi, Constantin	1876	1957	Romania
Braque, Georges	1882	1963	France
Duchamp, Marcel	1887	1968	France
Hamilton, Richard	1922	--	England
Johns, Jasper	1930	--	US
Kandinsky, Wassily	1866	1944	Russia
de Kooning, Willem	1904	1997	Netherlands
Malevich, Kasimir	1878	1935	Russia
Matisse, Henri	1869	1954	France
Mondrian, Piet	1872	1944	Netherlands
Oldenburg, Claes	1929	--	Sweden
Picasso, Pablo	1881	1973	Spain
Pollock, Jackson	1912	1956	US
Rauschenberg, Robert	1925	--	US
Rothko, Mark	1903	1970	Russia
Smithson, Robert	1938	1973	US
Tatlin, Vladimir	1885	1953	Russia
Warhol, Andy	1928	1987	US

Source: see text.

Table 2: Best Years in Careers of Greatest Twentieth-Century Artists

Artist	Age	No. of illustrations	Year
1 Picasso	26	61	1907
2 Warhol	34	46	1962
3 Picasso	31	42	1912
4 Matisse	36	37	1905
5 Picasso	56	36	1937
6 Pollock	38	34	1950
7 Malevich	37	31	1915
8 Boccioni	31	28	1913
9t Duchamp	30	25	1917
9t Tatlin	34	25	1919
11t Duchamp	25	24	1912
11t Smithson	32	24	1970
13 Braque	29	23	1911
14t Hamilton	34	22	1956
14t Picasso	29	22	1910

Source: see text.

Table 3: Best Three-Year Periods in Careers of Greatest Twentieth-Century Artists

Artist	Ages	N	Years
1 Picasso	24-6	80	1905-07
2 Picasso	31-3	74	1912-14
3t Matisse	36-8	67	1905-07
3t Warhol	34-6	67	1962-64
5t Malevich	35-7	49	1913-15
5t Pollock	36-8	49	1948-50
7 Boccioni	29-31	44	1911-13
8t Duchamp	25-7	43	1912-14
8t Picasso	27-9	43	1908-10
10 Duchamp	30-2	40	1917-19
11t Braque	27-9	38	1909-11
11t Picasso	54-6	38	1935-37
13 Picasso	40-2	37	1921-23
14 Kandinsky	45-7	36	1911-13
15 Matisse	40-2	31	1909-11

Source: see text.

Table 4: Best Five-Year Periods in Careers of Greatest Twentieth-Century Artists

Artist	Ages	N	Years
1 Picasso	25-9	116	1906-10
2 Matisse	36-40	86	1905-09
3 Picasso	30-4	84	1911-15
4 Warhol	34-8	69	1962-66
5 Braque	26-30	63	1908-12
6 Malevich	34-8	61	1912-16
7 Pollock	35-9	58	1947-51
8 Boccioni	27-31	52	1909-13
9 Kandinsky	44-8	51	1910-14
10 Duchamp	24-8	46	1911-15
11t Duchamp	30-4	45	1917-21
11t Johns	25-9	45	1955-59
13 Picasso	39-43	44	1920-24
14 Picasso	52-6	43	1933-37
15 Mondrian	39-43	38	1911-15

Source: see text.