Steve Reich's "Musical Process":
A Linkage with Postminimal Art

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Steve Reich (1936-), a representative composer of musical minimalism, wrote an essay in 1968 titled "Music as a Gradual Process,"[1] which is known as the quintessence of his artistic view at that time. In the essay, he claimed that "a compositional process and a sounding music [...] are one and the same thing,"[2] in other words, that a process of music should be audible through the sound generated. This aesthetic creed of "perceptible processes"[3] has been recognized as the basic idea of minimal music. K. Robert Schwarz, for example, introduced "Music as a Gradual Process" as Reich's "minimalist manifesto"[4] and described some aspects of "Reich's early minimalist period," referring to this essay.[5]

"Music as a Gradual Process" first appeared in the catalogue for *Anti-Illusion: Procedures/Materials*, an exhibition in which Reich himself participated, held at the Whitney Museum of American Art in 1969.[6] Although minimal music has been considered a counterpart of minimal art, the *Anti-Illusion* show is, in fact, a threshold of postminimalism in the plastic arts: this exhibition presented a metamorphosis of minimal art, and it was a significant occasion in the dispersal of a new art movement called "process art."[7] Robert Pincus-Witten, the art critic who used the term "Post-Minimalism" for the first time,[8] identified process art as "[t]he first phase of Postminimalism."[9] It is interesting that the minimalist ideas Reich included in "Music as a Gradual Process" were publicized through the exhibition that may have begun *post*minimal art.

The term "minimal music" has been interpreted in parallel with minimal art; therefore, preceding studies have considered both as a unit, and explored analogies in view of their exclusively reductive modules, repetitive features, and so forth.[10] But the fact that the first appearance of Reich's "Music as a Gradual Process" was in the catalogue of the *Anti-Illusion* show implies that the relationship between minimal music and contemporary plastic arts was not simply parallel.[11] The term "postminimalism" in music is generally applied to works from the mid 1970s onward by the early "minimalists" such as Reich and Philip Glass, and also by the younger generation of composers influenced by minimal music: this term is used for development and inheritance of minimalism with respect to pursuit of harmonically richer sound within repetitive arrangements.[12] On the other hand, "postminimalism" in the plastic arts indicates comprehensively a series of art movements, especially from the late 1960s to the early 1970s (process art, earth works, conceptual art, and so on), which advanced minimalism's investigation of temporality of the artwork and its defiance of illusionism: this term emphasizes attempts to surpass minimalism.[13] Presumably because of such differences in the scope of the term "postminimalism," preceding studies of minimal music have focused on the comparison with minimal art, but they have not considered the relationship to postminimal art.

In this paper, I would like to clarify the relationship between Reich's music and postminimal art through comparison of Reich's ideas in "Music as a Gradual Process" with practices and discourses of contemporary art, regarding the *Anti-Illusion* show as an intersection of music and the plastic arts.

1. Anti-Illusionism in Modern and Postmodern Art

The exhibition *Anti-Illusion: Procedures/Materials* took place from May 19 to July 6, 1969. It was co-organized by Marcia Tucker and James Monte, associate curators of the Whitney Museum at that time. This exhibition featured not only paintings and sculptures but also works in various other genres. The participant artists included the plastic artists Robert Morris, Richard Serra, Bruce Nauman, filmmaker Michael Snow, and composers Steve Reich and Philip Glass. In addition to exhibits, there were film shows and lectures held as evening events; concerts by Reich and Glass were presented also as a part of the events.[14] In the concert "An Evening of Music by Steve Reich" on May 27, Reich performed the pieces *Violin Phase* (1967), *Pendulum Music* (1968), *Four Log Drums* (1969), and *Pulse Music* (1969).

Marcia Tucker, one of the organizers, accounts for the theme of the *Anti-Illusion* show as follows:

> There is, in the exhibition, no illusionism that is relevant to the past tradition of art. We are presented with a non-symbolic, non-ordered approach, one which does not depend upon a conceptual framework to be understood. The work is realistic in the fullest sense, because it does not rely on descriptive, poetic or psychological referents.[15]

The "realistic" work, as she described, is the work presented as a thing, as it is actually *here now*, by "a non-symbolic, non-ordered approach"; that is, by elimination of meaning and symbolism, and also by elimination of any order and form typified by linear perspective, the artwork is presented as an object existing *here now*.

Previously, the formalist critic Clement Greenberg's modernist theory had clearly insisted upon a discourse opposed to traditional illusionism. According to him, the development of modernist art is a course of purification by which works are limited to what is unique to the nature of each medium: for painting, he identifies "the ineluctable flatness of the support" as the most fundamental factor; representation of three-dimensional space, he claims, is excluded from painting because it is "the province of sculpture."[16] Additionally, he speculates that "optical illusion" is indispensable for preventing art from becoming "an arbitrary object" as a result of this purification.

> The flatness towards which Modernist painting orients itself can never be an utter flatness. The heightened sensibility of the picture plane may no longer permit sculptural illusion, or *trompe-l'oeil*, but it does and must permit optical illusion. [...] Where the Old Masters created an illusion of space into which one could imagine oneself walking, the illusion created by a Modernist is one into which one can only look, can travel through only with

the eye.[17]

The emergence of minimal art in the 1960s was the high-water mark of Greenberg's modernist purification. At the same time, however, by extreme reduction of composition elements, minimal art also exposed the "objecthood" of works and indicated a denial of optical illusion.[18] Then, at the beginning of postminimalism, in the *Anti-Illusion* show, artists attempted to deny both sculptural illusion and optical illusion through other methods of minimalism: that was signified by revealing the "procedures" and "materials" in/as the subtitle of the exhibition. By emphasizing the process by which art is realized in the exhibition space, and the materiality that art consists in, the work is connected with the real time and space that it makes and presents: thereby any illusion is eliminated from the work.

2. "Music as a Gradual Process"

In music, this "realistic" presence can be regarded as a foregrounding of the physical time of the work's actual performance. Tucker introduced the music of Reich and Glass in the exhibition catalogue as follows:

> It has been thought that music creates its own suspended temporality, dependent upon the elements of rhythm and silence. Musical time has thus been considered different from "real" time. For Philip Glass and Steve Reich, actual time is a crucial factor in their music; it offers no illusion of temporality other than that which exists in the performance of their pieces. They have [...] only the sense of an isolated present. This constant present exists because of a deliberate and unrelenting use of repetition which destroys the illusion of musical time and focuses attention instead on the material of the sounds and on their performance.[19]

Tucker adapts the "procedures" and "materials" in the subtitle of the show to "their performance" and "the material of the sounds," respectively. When concentrating on the procedure of generating sound (performance) and its material (the sound itself), the audience notices "real" time instead of the musical time of traditional music. This procedure of generating sound corresponds to the "process" which Reich claimed in his essay to be the core concept of his music.

In the exhibition catalogue of *Anti-Illusion*, "Music as a Gradual Process" appeared beside Reich's biography; this essay was published as his introduction. Since 1965, when he composed the tape piece *It's Gonna Rain*, Reich had made music using "phase-shifting / phasing," a musical technique to generate a variety of sounds by gradually moving the cycles of two or more repetitive patterns in and out of phase. "Music as a Gradual Process" identified this technique with the concept of "process" and summarized his aesthetic creed. The text leads off,

> [By "music as a gradual process"] I do not mean the process of composition but rather pieces of music that are, literally, processes. / The distinctive thing about musical

processes is that they determine all the note-to-note (sound-to-sound) details and the overall form simultaneously. [...] / I am interested in perceptible processes. I want to be able to hear the process happening throughout the sounding music. / To facilitate closely detailed listening a musical process should happen extremely gradually.[20]

What Reich calls "pieces of music that are, literally, processes" means the sounding result generated from execution of a certain musical procedure. Reich attempts to present the sound as a work without imposing his own subjectivity upon the results. He writes,

Musical processes can give one a direct contact with the impersonal and also a kind of complete control [...]. By "a kind" of complete control, I mean that by running this material through this process I completely control all that results, but also that I accept all that results without changes.[21]

Composition based on musical process, however, is not what is original here. The important point of "Music as a Gradual Process" is that Reich insists on the *perceptibility* of musical process. In music, the process can be divided into two categories: the process of composition (sound arrangement) and the process of performance (sound generation). Reich's "perceptible process" can be said to be the homology of these two processes, as he claimed that "a compositional process and a sounding music [...] are one and the same thing."

Reich distinguishes his music from music of chance operation, indeterminacy, and serialism in terms of the perceptibility of its processes,

John Cage has used processes and has certainly accepted their results, but the processes he used were compositional ones that could not be heard when the piece was performed. The process of using the *I Ching* or imperfections in a sheet of paper to determine musical parameters can't be heard when listening to music composed that way. The compositional processes and the sounding music have no audible connection. Similarly, in serial music, the series itself is seldom audible.[22]

Cage introduced chance and indeterminacy to his music in order to abandon subjective control of music. His "process of using the *I Ching*" is a compositional method of choosing tones by checking the results of coin tossing using the *I Ching*'s hexagram; "imperfections in a sheet of paper to determine musical parameters" is a method of deciding tones on the basis of the positions and shapes of stains and scratches on a piece of paper viewed as if it were a musical score.[23] On the other hand, Pierre Boulez and a number of other composers use the serial technique to create strict organization for a piece. Although the two approaches employ different principles and attempt to compose different types of music, they are coincident with respect to the intention to arrange tones objectively. It is often pointed out that the sounding result of Cage's *Music of Changes*, composed through a chance operation, resembles Boulez's total serial work *Structures Ia*; nevertheless, they were composed in wholly different ways.[24] The focus of Reich's criticism is that, as far as listening simply to this music, one cannot

recognize what type of compositional method produces the sounding result; namely, there is no correspondence between the processes of composition and performance. If the composer's principle of music is not clarified, the audience may misunderstand that the composer's intention has shaped the sounding results, even though subjectivity does not mediate the results. As a consequence, a kind of illusion may be generated: the attention of listeners focuses not on the music itself sounding in actuality but on fictitious "hidden messages" of the composer. Reich claims in "Music as a Gradual Process" that, by making the process of generating sound audible, he clarifies the mechanisms of music and guides the audience's attention to the sounding of music itself *here now*. This point is regarded as the basic idea of minimal music.

3. *Pendulum Music*

Reich explains musical processes as follows:

Performing and listening to a gradual musical process resembles:
pulling back a swing, releasing it, and observing it gradually come to rest;
turning over an hour glass and watching the sand slowly run through to the bottom;
placing your feet in the sand by the ocean's edge and watching, feeling, and listening to the waves gradually bury them.[25]

It is significant that Reich, in this quotation, compares the acoustic experience of a musical process with the visual experience of observing a swing or an hour glass, and the tangible experience of feeling waves. This is not merely a metaphor; in fact, he made this sounding process explicitly visible in *Pendulum Music*, which was performed in the *Anti-Illusion* show. The text score (performance instructions) of the piece is as follows:

2, 3, 4 or more microphones are suspended from the ceiling by their cables so that they all hang the same distance from the floor and are all free to swing with a pendular motion. Each microphone's cable is plugged into an amplifier which is connected to a speaker. Each microphone hangs a few inches directly above or next to its speaker.
The performance begins with performers taking each mike, pulling it back like a swing, and then in unison releasing all of them together. Performers then carefully turn up each amplifier just to the point where feedback occurs when a mike swings directly over or next to its speakers. Thus, a series of feedback pulses are heard which will either be all in unison or not, depending on the gradually changing phase relations of the different mike pendulums.
Performers then sit down to watch and listen to the process along with the audience.
The piece is ended some time after all mikes have come to rest and are feeding back a continuous tone by performers pulling out the power cords of the amplifiers.[26]

Pendulum Music was composed in cooperation with sculptor/video artist Bruce Nauman,

and premiered in the happening *Over Evident Falls*, planned by painter William T. Wiley at the University of Colorado at Boulder in August 1968.[27] In the *Anti-Illusion* show, this piece was performed by Reich (amplifiers) with the microphones released by Richard Serra, Bruce Nauman, Michael Snow, and James Tenny.

For Reich's works, *Pendulum Music* is exceptional in that it is not written in staff notation and in that it does not use traditional instruments. But this piece demonstrates Reich's thesis in "Music as a Gradual Process," and he has mentioned *Pendulum Music* as "the ultimate process piece."[28] It is obvious that the microphone's pendulum motion adheres to Reich's explanation of the musical process, "pulling back a swing, releasing it, and observing it gradually come to rest." In fact, in the first performance, in *Over Evident Falls*, this piece was performed by two microphones attached to the sides of a swing.[29] When the performers release the microphones all together, the pendulums are set into motion and produce the feedback pulses, illustrating the phrase in "Music as a Gradual Process," "once the process is set up and loaded it runs by itself."[30]

Interviewed by Michael Nyman, Reich said,

A pendulum is not a musician. So of all my pieces that was *the* most impersonal, and was the most emblematic and the most didactic in terms of the process idea, and also most sculptural. In many ways you could describe *Pendulum Music* as audible sculpture, with the objects being the swinging microphones and the loudspeakers. I always set them up quite clearly as sculpture. It was very important that the speakers be laid flat on the floor, which is obviously not usual in concerts.[31]

Pendulum Music is, as it were, a sound-generating device consisting of microphones and loudspeakers that visualize the musical process as a pendular motion of microphones: this is why Reich describes this piece as "audible sculpture." Forming a musical proceeding around the microphones' physical movement, Reich reveals the process of generating sound in the actual space and foregrounds the "real" time in which the pendulums move. Comparing Reich's ideas in *Pendulum Music* with the theme of the *Anti-Illusion* show, the microphones' pendulum motion and the feedback pulses correspond to "procedure" and "material" in the subtitle of the exhibition.

4. Recovery of Process in Postminimal Art

Now, how do the ideas propounded in "Music as a Gradual Process" and demonstrated in *Pendulum Music* relate to the process art emerging in the *Anti-Illusion* show?

In this exhibition, the exemplary works presenting the "real" process were Rafael Ferrer's installation *Ice* (1969), which was located on the entrance ramp of the museum, and Richard Serra's *Casting* (1969), which was made on the exhibition floor. Ferrer's *Ice*, consisting of fifteen blocks of ice, melted away in twenty hours after the show started. The ice piece having vanished, the receipt for the work was displayed on the exhibition floor, as a sort of drawing, under the title of *Plan for Whitney Ice Piece* (1969).[32] In other words, Ferrer exhibited the

fact – along with the disappearance – of the work itself, in the form of a document of the action of installing the work. Serra's *Casting* was created from molten lead thrown at the intersection of the wall and the exhibition floor. In this work, by lining up the clots torn from the wall, Serra emphasized the temporality of making art.

As these works demonstrate, the participant artists of the Anti-Illusion show attempted to deny illusion and expose the "realistic" presence of the artwork by foregrounding materiality and process as well as the temporality of making and installing art. The exhibition catalogue presents plenty of photographs of the processes of making the presented works, which are created from various materials not used in traditional art. In addition to the aforementioned ice and lead, Keith Sonnier's *Flocked Wall* (1969) uses latex; Eva Hesse's *Expanded Expansion* (1969) uses cheesecloth and fiberglass; and so forth.

As for the result of using these materials, sculptor Robert Morris wrote in his essay "Anti Form":

> Recently, materials other than rigid industrial ones have begun to show up. […] In these cases considerations of gravity become as important as those of space. The focus on matter and gravity as means results in forms which were not projected in advance. Considerations of ordering are necessarily casual and imprecise and unemphasized. Random piling, loose stacking, hanging, give passing form to the material.[33]

In contrast with the "rigid industrial" materials, such as steel, Plexiglas, and so on, often used in minimal art, the soft and ephemeral materials typifying process art directly reflect processes of time. Process artists focused on the duration of real, or "passing," time. A number of critics had already made an issue of temporality in the plastic arts before process art emerged. For example, formalist critic Michael Fried, discussing works of minimalism ("literalism" in his wording), indicated that "the experience in question *persists in time*,"[34] writing "the presentment of endlessness that […] is central to literalist art and theory is essentially a presentment of endless or indefinite *duration*."[35] Fried condemned "the presentment of endlessness" as "theatrical," that is, neither painterly nor sculptural. His discussion, however, concerns the temporality of the viewer's experience, which is not equivalent to the process of time exposed by the transformation of the work itself.[36]

Robert Pincus-Witten described the emergence of these works, typified by soft and ephemeral materials and the emphasis on process, as "a reaction to the taciturn inexpressivity and absence of chromatic appeal typical of Minimalism," and also indicated a linkage with reevaluation of Jackson Pollock, a representative painter of abstract expressionism, by these artists, in view of the process-oriented nature of his work.[37] The exemplary statement of this reevaluation was in Morris's "Anti Form":

> Of the Abstract Expressionists only Pollock was able to recover process and hold on to it as part of the end form of the work. Pollock's recovery of process involved a profound re-thinking of the role[s] of both material and tools in making.[38]

Focusing on the dripping technique in Pollock's painting, Morris identified "Pollock's recovery of process" in the role that the fluidity of the flung paint plays in determining the finished work. "Material and tools" in Morris's words correspond with "Materials" and "Procedures" in the subtitle of the *Anti-Illusion* show. In fact, Tucker and Monte "were going to call the exhibition *Anti-Form*" after Morris's essay at first; however, accepting the other artists' complaints about the exhibition title, the curators changed it to *Anti-Illusion*.[39]

In contrast, the formalist criticisms of Greenberg and Fried, which had been potent before Morris's interpretation of Pollock, made the point that optical illusion was created by eliminating the materiality of the work. For example, Fried wrote, in his review of Pollock in 1965, "Pollock's field is optical because it addresses itself to eyesight alone."[40] In these words, Fried indicates a purely optical space containing neither materiality of the work nor physicality of the painter.

Rosalind Krauss discusses this difference of interpretation of Pollock between Morris and formalist critics in her book *The Optical Unconscious*,[41] referring to Hans Namuth's photographs of Pollock painting (1950).[42] Namuth shoots Pollock's violent gesture and the overlap of the dripped paint, in which the beholder can read many things: physicality of the painter, temporality of making, and gravity's effect on the paint among them. Krauss writes,

> Clem [Greenberg]'s mission was to lift him above those [Namuth's] pictures, just as it was to lift the paintings Pollock made from off the ground where he'd made them, and onto the wall. Because it was only on the wall that they joined themselves to tradition, to culture, to convention. It was in that location and at that angle to gravity that they became "painting."[43]

When the horizontal canvas, which bears the trace of the painter's gesture, is lifted onto the vertical against gravity (Krauss calls this "sublimation," referring to Freud),[44] the canvas gives stable sight to the beholder standing upright, and the whole image can be grasped in an instant. By concentrating on the vertical position of Pollock's finished work, formalist critics concealed the process of making lurking in the picture, and found optical illusion generated from the picture plane. On the other hand, Morris directs attention to the fact that Pollock paints on a horizontal canvas. "Gravity was what had combined with liquidity of the paint to read through the finished work as a sign of *process*," wrote Krauss, describing Morris's commentary on Pollock's works.[45] Process artists pursued effects of gravity in real space by using the soft and ephemeral materials, as observed in the *Anti-Illusion* show, attempting to reconcile the processes of making with the results, just as Reich sought to establish an identification between processes making music and the made music itself.[46]

5. Actualization of Process

Given the circumstances under which process art appeared, and under which artists reevaluated Pollock's dripping technique as the "recovery of process," it is understandable that Reich's claims in "Music as a Gradual Process" were closely tied to the postminimal movement

in the plastic arts in the late 1960s.

Reich composed *Pendulum Music* in cooperation with plastic artists, describing it as "audible sculpture"; Richard Serra, who took part in the performance in the *Anti-Illusion* show, called the piece "a paradigm for process art."[47] Reich explained, in an interview in *Artforum*, that his music and Serra's sculpture were analogous in that "his [Serra's] works and mine [Reich's] are both more about materials and process than they are about psychology."[48] "Materials" and "process" are central ideas of "Music as a Gradual Process," and are essential ideas of the *Anti-Illusion* show, as indicated in the subtitle.

According to Tucker,[49] "procedures" and "materials" in the subtitle of the exhibition were equivalent, in music, to performance and its sound material, that is, the process of generating music in real space and the sound derived from the process. Reconciling the performance process with the compositional one, Reich claimed "a compositional process and a sounding music [...] are one and the same thing." This incorporates compositional process, which is usually executed beforehand, into real-time performance, the actualization of process. By making compositional process perceptible, Reich attempted to reveal the real time within his music as different from the musical time of traditional music.

For the plastic artists participating in the Anti-Illusion show, "procedures" were a series of actions of making and displaying art, and "materials" were the substance of the artworks. From this point of view, Pollock's paintings were not picture planes generating optical illusion, as indicated by Greenberg and Fried. By focusing on the "material" and "tools," paint's fluidity and the stick Pollock used for flinging the paint in his work, process artists attempted to reveal the real presence of artwork under the influence of gravity.

The paint and stick, "material" and "tool," in Pollock's painting are parallel to the feedback pulse and swinging microphones in Reich's *Pendulum Music*. Reich also indicates that music is generated in real space, by making the musical process visible as a pendular motion of microphones.

In painting, the vertical canvas gives the beholder stable sight, because the beholder's line of sight intersects with the wall at a right angle. On this occasion, even Pollock's intricate drips of paint are grasped as an image, and generate optical illusion. What Reich found in serial music and Cage's music of chance operation and indeterminacy, and what he criticized in "Music as a Gradual Process," was illusion generated in a way similar to "sublimation" in painting.

Under the theme of Anti-Illusion, Reich demonstrated his aesthetic creed through essay and music. At the same time, the plastic artists built the threshold of postminimalism, by revealing processes and the materiality of artworks. "Music as a Gradual Process," known as the basic idea of minimal music, has been considered independently of the contemporary art movement, taken out of the context of the *Anti-Illusion* show, for which the essay was written. But Reich's claim was propounded in conjunction with postminimal art as an attempt to eliminate illusion through unification of artworks with real time and space, that is, through "perceptible processes."

Notes

[1]   Steve Reich, "Music as a Gradual Process," in *Writings on Music 1965-2000* (=WoM), ed. Paul Hillier (New York: Oxford University Press, 2002), pp. 34-36; originally published in *Anti-Illusion: Procedures/Materials* (=AI) [exhibition catalogue] (New York: Whitney Museum of American Art, 1969), pp. 56-57. In addition to these two versions, Reich's essay "Music as a Gradual Process" has been reprinted in some books, liner notes, and so on. There are some slight differences of wording, orthography and punctuation in the various versions. The text of the essay quoted in this paper is taken from WoM.

[2]   Reich, "Music as a Gradual Process," in WoM, p. 35; AI, p. 57.

[3]   Ibid., in WoM, 34; AI, p. 56.

[4]   K. Robert Schwarz, *Minimalists* (London: Phaidon Press, 1996), p. 69.

[5]   Schwarz, "Steve Reich: Music as a Gradual Process," Part 1, *Perspectives of New Music*, vol. 19 (1980-1981), pp. 376-377.

[6]   For detailed information on the *Anti-Illusion* show, see AI. See also *The New Sculpture 1965-75: Between Geometry and Gesture* [exhibition catalogue] (New York: Whitney Museum of American Art, 1990), pp. 16, 135-194, and Marcia Tucker, *A Short Life of Trouble: Forty Years in the New York Art World*, ed. Liza Lou (Berkeley: University of California Press, 2008), pp. 81-85.

[7]   See Shinichiro Ozaki, "Tenrankai no Seijigaku: Minimal Art wo meguru Mittsu no Tenrankai (The Politics of Exhibition: Three Exhibitions of Minimal Art)," *Seiyo Bijutu Kenkyu* (*Studies in Western Art*), no. 10 (2004), pp. 104-106, and Irving Sandler, "Postminimalism," in *Art of the Postmodern Era: From the Late 1960s to the Early 1990s* (New York: Icon Editions, 1996), pp. 23-24.

[8]   The first appearance of the term "Post-Minimalism" was in a Pincus-Witten treatment of Eva Hesse, one of the participant artists of the *Anti-Illusion* show: Pincus-Witten, "Eva Hesse: Post-Minimalism into Sublime," *Artforum* (November 1971), pp. 32-44.

[9]   Robert Pincus-Witten, "Introduction to Postminimalism," in *Postminimalism to Maximalism: American Art 1966-1986* (Ann Arbor, Michigan: UMI Research Press, 1987), p. 10.

[10] Comparative studies of minimalism in music and the plastic arts include: Jonathan W. Bernard, "The Minimalist Aesthetic in the Plastic Arts and in Music," *Perspectives of New Music*, vol. 31, no. 1 (Winter 1993), pp. 86-132; H. Wiley Hitchcock, "Minimalism in Art and Music: Origins and Aesthetics," in Richard Kostelanetz and Joseph Darby, ed., *Classic Essays on Twentieth-Century Music: A Continuing Symposium* (New York: Schirmer Books, 1996), pp. 308-319; and Edward Strickland, *Minimalism: Origins* (Bloomington: Indiana University Press, 1993). Bernard and Hitchcock pay less attention to postminimal art. Strickland's book, though lacking sufficient discussion about the relationship between Reich's music and postminimal art, clarifies the time-lag between the peaks of minimalism in music and in the plastic arts with considerable supporting evidence. The book treats the *Anti-Illusion* show on pp. 200-202, 215-216, and 242.

[11] See Strickland, op. cit., p. 242.

[12] See Kyle Gann, "Minimal Music, Maximal Impact: Minimalism's Immediate Legacy: Post-minimalism," *New Music Box: The Web Magazine from the American Music Center* (November 1, 2001), <http://www.newmusicbox.org/articles/minimal-music-maximal-impact/6/> (accessed April 25, 2012), and Keith Potter, *Four Musical Minimalists: La Monte Young, Terry Riley, Steve Reich, Philip Glass* (Cambridge; New York: Cambridge University Press, 2000), pp. 15-18.

[13] See Sandler, op. cit., pp. 21-85, and Akinobu Tatsumi, "Postminimalism to Ba (Postminimalism and Sites)," *Bigaku* (*Aesthetics*), no. 205 (2001), p. 56.

[14] Glass's concert in the *Anti-Illusion* show, "An Evening of Music by Philip Glass," was held on May 20, where his *Two Pages* and *How Now* (both 1968) were performed, and three films by Richard Serra were projected.

[15]   Tucker, “Anti-Illusion: Procedures/Materials,” in AI, p. 33.

[16]   See Clement Greenberg, “Modernist Painting,” in Richard Kostelanetz, ed., *Esthetics Contemporary*, revised ed. (Buffalo, New York: Prometheus Books, 1989), pp. 196-197.

[17]   Ibid., p. 199.

[18]   See Michael Fried, “Art and Objecthood,” *Artforum*, Special Issue (Summer 1967), pp. 12-15; reprint, in *Art and Objecthood: Essay and Reviews* (Chicago: University of Chicago Press, 1998), pp. 151-153.

[19]   Tucker, op. cit., pp. 35-36.

[20]   Reich, “Music as a Gradual Process,” in WoM, p. 34; AI, p. 56.

[21]   Ibid., in WoM, p. 35; AI, p. 56.

[22]   Ibid., in WoM, p. 35; AI, pp. 56-57.

[23]   See John Cage, “Composition as Process,” in *Silence* (Middletown, Connecticut: Wesleyan University Press, 1961), pp. 18-56. He also describes these compositional processes in some other books and articles.

[24]   See, for example, Susumu Shono, *Choshu no Shigaku: J. Cage kara soshite J. Cage he* (*A Poetics of Listening: from J. Cage, and to J. Cage*) (Tokyo: Keiso Shobo, 1991), p. 180, and Ryosuke Shiina, “John Cage no Ongaku: Kigouronteki Bunseki no (Goku Sasayakana) Kokoromi [Music of John Cage: A (Very Brief) Attempt at Semantic Analysis],” *Suisei Tsushin* (March 2007), p. 67.

[25]   Reich, op. cit., in WoM, p. 34; AI, p. 56.

[26]   Reich, “Pendulum Music,” in AI, p. 28; WoM, p. 32. The text score of *Pendulum Music* quoted here is the 1968 version. When this piece was revised in 1973, Reich added “Directions for Performance” and partly rewrote the text score: see the current printed score (UE16155, Universal Edition, 1980). The main changes are as follows: (1) a performer who adjusts the amplifiers is specified in order to facilitate the performance; (2) the number of microphones is changed from two to at least three; (3) the microphones are suspended not from the ceiling but from microphone boom stands or other supports (the length of the microphone’s cables therefore can vary); the phase relations of the microphone pendulums are potentially more diverse due to changes (2) and (3).

[27]   For detailed information on the compositional context and the first performance of *Pendulum Music*, see Reich, “Steve Reich Interview: Pendulum Music,” in *OHM-: The Early Gurus of Electronic Music*, <http://www.furious.com/perfect/ohm/reich.html> (accessed April 25, 2012); Potter, op. cit., pp. 174-175.

[28]   Reich, “Pendulum Music,” in *OHM+: The Early Music Gurus of Electronic Music: 1948-1980* (CD, DVD, Ellipsis Arts, 2005), p. 50. Reich, “Steve Reich Interview: Pendulum Music,” in *OHM-: The Early Gurus of Electronic Music*.

[29]   See Potter, op. cit.

[30]   Reich, “Music as a Gradual Process,” in WoM, p. 34; AI, p. 56.

[31]   Reich, “Steve Reich: Interview,” in *Studio International* (November/December 1976), p. 305; reprint, as “Second Interview with Michael Nyman,” in WoM, p. 95. Italics in original.

[32]   Tatsuo Kondo, “*Anti-Illusion: Tetsuzuki to sozai* (*Anti-Illusion: Procedures/Materials*, Whitney Museum of American Art, New York),” *Bijutsu Techo* (October 1969), p. 83.

[33]   Robert Morris, “Anti Form,” *Artforum* (April 1968), p. 35; reprint, in *Continuous Project Altered Daily: The Writings of Robert Morris* (Cambridge, Massachusetts: MIT Press, 1993), p. 46.

[34]   Fried, op. cit., p. 22; reprint, pp. 166. Italics in original.

[35]   Ibid., p. 22; reprint, pp. 166-167. Italics in original.

[36]   Regarding the temporalities in minimal and postminimal art, I should add that there are some aspects that we hardly differentiate from one another, such as temporality of the viewer’s experience and that of the work’s transformation. For example, art critic Scott Burton, in his review of the *Anti-Illusion* show, described minimal art, such as Tony Smith’s *Black Box* (1962), as

prototypically exposing the process of time by transformation of the work. The surface of *Black Box*, located outdoors, is in the process of oxidation. Burton found the difference of temporality between minimal and postminimal art in the speed of transformation of the object. From his viewpoint, Minimal art forms may integrate temporality by requiring the perception that the work transforms; postminimal art tends to have a further requirement, that the transformation is perceptible as the viewer watches. (See Burton, "Time on Their Hands," *ARTnews* (Summer 1969), p. 40).

[37]   Pincus-Witten, "Introduction to Postminimalism," pp. 10-11.

[38]   Morris, op. cit., p. 34; reprint, p. 43.

[39]   Tucker, *A Short Life of Trouble: Forty Years in the New York Art World*, pp. 81-82.

[40]   Fried, "Jackson Pollock," *Artforum* (September 1965), p. 15.

[41]   Rosalind Krauss, *The Optical Unconscious* (Cambridge, Massachusetts: MIT Press, 1993), pp. 242-329.

[42]   Hans Namuth, *L'atelier de Jackson Pollock* (Paris: Macula, 1978).

[43]   Krauss, op. cit., p. 244.

[44]   Ibid., p. 247.

[45]   Ibid., p. 293. Italics in original.

[46]   See Ibid., pp. 293-294; Yve-Alain Bois and Rosalind Krauss, *Formless: A User's Guide* (New York: Zone Books, 1999), pp. 97-98; Ozaki, "Juryoku: Sengo Bijutsu no Zahyojiku (Gravity: Axis of Contemporary Art)," in *Juryoku: Sengo Bijutsu no Zahyojiku* (*Gravity: Axis of Contemporary Art*) [exhibition catalogue] (Osaka: National Museum of Art, 1997), pp. 186-193; and Ozaki, "Modernism to Futatsu no Suichoku (Modernist Art and Two Verticality)," in *Kaigaron wo Koete* (*Painting Theory and After*) (Tokyo: Toshindo, 1999), pp. 219-230.

[47]   Richard Serra, [No title], written for MacDowell Medal Award Ceremony for Steve Reich, 2005, <http://www.stevereich.com/articles/Richard_Serra.html> (accessed April 25, 2012).

[48]   Emily Wasserman, "An Interview with Composer Steve Reich," *Artforum* (May 1972), p. 48; reprint, as "Excerpts from an Interview in Art Forum," in WoM, p. 33.

[49]   See Tucker, "Anti-Illusion: Procedures/Materials," in AI, pp. 35-36.