

The Touch through Time: Raoul Hausmann, Nam June Paik and the Transmission Technologies of the Avant-Garde

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In the late 1960s, Dadaist Raoul Hausmann, formerly of Berlin, took to the TV screen. This was not in a literal way, however: exiled after the Second World War in the French city of Limoges, he did not have access to television technology and he was not one of those artists who were invited to go on talk shows. Instead he wrote a fictitious transcript of a TV talk show, in order to highlight certain issues of tele-technology. What concerned him was the theoretical question of the *presence* of the material body in the new television reality that had, at that point, invaded even the field of art. But this was not a new concern for him. In the years between 1921 and 1934, this question had led him to generate a series of theoretical texts and one major technological invention. This latter was the so-called Optophon: an apparatus designed to transform sound signals into light signals and vice versa—a technological elaboration on the sound-image oscillation that Hausmann had already explored in his “optophonetic” letter poems (Figs 1–2). Now, repeating and explaining his earlier ideas, Hausmann once more wrote extensively on such technological issues, including historical overviews of the development of the electronic arts, computer science and cybernetics [1]. If these issues had now taken on a new urgency, it may have been due to the uncanny experience of seeing his own work repeated in that of the 1960s neo-avant-garde. In his 1921 text “Presentismus,” in which he had first sketched the rudimentary outline for the Optophon, Hausmann had called out for a new “electric scientific painting!!!” [2]. It does not take a great imaginative leap to identify an answer to this call in Nam June Paik’s experiments in the early 1960s with video and television images, at the time described as a new, electronic mode of musical composition and painting rolled into one. Hausmann, however, considered the problematic question of the repetition of the original avant-garde moment through his own idiosyncratic approach to the televisual. The question of historical “transmissions” from one epoch to another could, in other words, be considered in the terms of a transmission technology that was understood to be at one with Hausmann’s own work. At the core of these technological fantasies was the notion of a properly televisual *touch* through time and space. It is the historical implications of this particular notion of the *touch* that I try to unravel in what follows.

JEAN ARP ON TV

As Hausmann took to the TV screen, he created a scenario with strongly historiographic overtones. In between his theoretical writings, he produced a fictional transcript of an imaginary television talk show, in which his (at the time) far more famous Dada colleague Jean Arp is interviewed by a perennially jovial French talk-show host [3]. The transcript, which bears the title “À la recherche de Jean Arp à la téléconcretisation,” proceeds as follows: On the screen (one imagines the flickering and grainy black-and-white image of early television), Arp explains his point of view on the nature of art, which turns out to be one on the nature of nature, since as an artist Arp was famous for his refusal to recognize any distinction between natural and artificial objects. He saw such distinctions as simply the residue of a philosophical tradition that separates the material body from the “sparks of the spirit,” so that the material body is understood to be essentially passive, a “*soma in coma*,” without “*étincelles*,” or flickering. In the electronic realm of *étincelles*, however, the material body cannot be separated from the flickering sparks of electricity and ultimately of light itself. Arp’s body and Arp’s work are at one with an electronic nature.

The strategic intent of this manuscript is not hard to elucidate. Hausmann imagined a natural place for Arp’s work in the flickering light of 1960s TV-culture. If Arp’s famous *concretions* (his work with the concrete materiality of natural forms) are a genre of natural creation, they must be identified with the mutating or self-differentiating processes of an electronic nature, for it was precisely such processes of growth or mutation that both *return to* and *differentiate themselves from* the particularity of

ABSTRACT

This essay outlines the historiographic implications of the strange convergence between Berlin Dadaist Raoul Hausmann’s Optophon (1920–1936)—a “syn-aesthetic” instrument designed to transform sound signals into light signals and vice versa—and Nam June Paik’s pioneering 1960s television work. Hausmann articulated a new, “televisual” form of presence, which also implied a new form of tele-tactility. As his notion of tactility returns in Paik’s work, the Optophon might be construed as the historical origin of the genre called “video art.” Yet, it could be argued that Hausmann’s technological reasoning produced an interruption at the very site where such art-historical legacies are constituted.

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This text is part of the *Leonardo* special project on Synesthesia and Intersenses, guest edited by Jack Ox and Jacques Mandelbrojt. Synesthesia is the phenomenon in which the stimulation of one sense modality gives rise to a sensation in another sense modality; for example, some synesthetes see colors when they hear music. This special project is devoted to the exploration of the nature and history of this phenomenon, as well as the discussion of intersense relationships, artworks and experiences.



Fig. 1. Raoul Hausmann, graphic construction from the *Dadaco*, 1919.

one material being that Arp referred to when he named his non-representational works concretions (rather than abstractions). In Hausmann's view, Arp's concretions might then just as well have been called *téléconcretisations*—a French neologism introduced in Hausmann's fictional transcript. By this strange concept, Hausmann indicated the spatio-temporal dimension of such a process of self-differentiation, in which the presence of a singular being is multiplied: If presence is multiplied, it evokes times and spaces beyond the most immediate *reach* and *touch* of the concrete body. By insisting on this point, Hausmann inscribed Arp's concretions in the relatively new history of television art. They were now seen to reside at the core of the televisual principle of electronic image transmission, since this principle was already at the core of Arp's work itself.

What is also significant, however, is that through this work of fiction Hausmann displaced Arp from the historical

perspective in which he is simply *placed* in *one* historical context, that is, positioned as a *precursor* to the recent history of electronic arts. In the terms of the principle of *téléconcretisation*, his historical singularity has so to speak been multiplied or transmitted. It has, in other words, taken on a new and different presence at the core of current artistic research in the field of electronics and telecommunications. This point becomes all the more pertinent in light of the biographical circumstances of Hausmann's text. The title "*À la recherche de Jean Arp . . .*" inevitably resonates with Marcel Proust's *À la recherche du temps perdu*: it hints at the capacity of the work of art to reinvent the lost time of the past. In fact, Jean Arp's time *was* irrevocably lost: he died in 1966, just before Hausmann's text was most likely written. By multiplying the present—creating or inventing time, that is—telecommunications seem to have the capacity to give "lost time" back to the dead: time being

of course one thing that the dead do not have. It would seem that Hausmann had in fact written this TV transcript as one among a series of obituaries for an artist with whom he had always identified, but an obituary construed to evoke the paradoxical presence of the dead man of the historical past.

Now, the strategic scope of the text becomes wider and more dramatic. Hausmann placed the deceased Arp on live TV in order to illustrate an important point concerning the uncanny tendency of Dada to present itself *once more* in the face of its own death: the new realm of electronic arts of the 1960s above all testified to this continual and paradoxical *presentation* of Dada itself, its "live" events and its technological inventions. The imagined distance between two separate historical moments had collapsed: Dada and Neo-Dada were now radically and irrevocably *in touch*. It is a touch that cuts through time, a particular and complicated case of what we might today call tele-touch.

PRESENTISM AND THE TELEVISUAL

As it happens, the strange condition of such a *touch* can be sought out in the ideas and images surrounding two inventions that seem most uncannily connected: Hausmann's *Optophon* and Nam June Paik's early 1960s invention of television art.

At this point, the particular features of electronic *image* transmission—in its *difference* from other tele-communicational media—becomes crucial. The profusion of quasi-scientific, fantastic and furiously optimistic statements on the significance of new technology that appeared within the contexts of Futurism, Dadaism and Constructivism paid testimony to what was, in this context, possibly the most important aspect of tele-technology: its appeal. The appeal of this technology seems to be that it facilitates appeals—or calls—in general, i.e. the power to invoke the Other by creating an on-line connection. A 1923 manuscript by Hausmann addressed this most pervasive ideological fantasy of the power of technology [4]. There he quoted a 1906 statement by William Edward Ayrton, who predicted that one day all of the then-current technological equipment would be in museums: instead people would call out to each other with electrical voices, and be heard by electrical ears, wherever they were. The bodily internalization of the

departure for a new understanding of the relationship between the optical and the haptic: the traditional division between them would disappear with the introduction of a wholly new understanding of tactility. Here, he criticized Marcus for still attaching too much importance to the old division between sight and touch: his notion of the haptic seemed stuck in the idea of the traditional physical limits of the body, whereas the notion of ex-centric sensitivity should really be understood as a properly “*somatic extension all the way to the stars.*” It would, in other words, imply a radical redefinition of the spatio-temporal presence of the physical body itself.

This idea depended on a new understanding of the nature of light. Hausmann criticized Marcus for lack of consequence when he claimed that the optical image was nothing but *schein* (light), since this would imply a difference between real and imaginary objects that contradicted the crucially important idea that in an electronic universe there is no fundamental distinction between actual bodies and the effects of light [13]. Bodies are “penetrated” by light, and this accounts for the unlimited expansion of their touch [14] (Fig. 3). But just as important was Hausmann’s emphasis on how the “distance all the way to the stars” folds back into the vision of the eye itself: if light is an electric wave-emanation it must also be understood as a “lightless” electromagnetic energy, which becomes “light” only through the functioning of our eyes [15]. The experience of insurmountable distances *and* the simultaneous transposing of these distances into the perceptual apparatus of the individual subject points to the properly televisual dimension of Hausmann’s new concept of touch. What is distant is brought right into our perceptual presence, yet *at the same time* it remains strangely removed.

The televisual implications of Hausmann’s notion of tactility can then be understood in the following terms: In the (electronic) play of light, the moment of perception itself is experienced as self-differentiation. Here Hausmann’s *Presentismus* has important points in common with what Samuel Weber has called the *differential specificity* of the medium of television—a medium that, rather than simply overcoming distance, seems to somehow short-circuit the notion of distance itself. Television renders distance—as represented for instance by the timing of calls and responses on the telephone—invisible by *transposing dis-*

tance directly into the vision it transmits [16]. This short-circuiting implies a radical separation that splits the unity of the body’s time and place—a well-known feature of both film and photography as well. But in television this separation is combined with a *presentness* associated with sense perception that involves the actuality of the body in a very different way. Television sets up a surrogate for the body in that it allows sense perception to take place, but in a way unlike normal bodily perception, since television’s perception takes place in more than one place at a time. In contrast to film and photography, television (with its live events and real-time emanations) does not transmit images or representations, but offers only the *semblance of presentation as such.*

For Hausmann, the new televisual sense of touch was, in other words, the moment at which the perceiving subject becomes *detached* from itself. Translated to the historiographic concerns of his fictional TV program, Hausmann presented the historical events of Dada in terms of this televisual principle. Dada’s paradoxical “presence” in the “now” of the 1960s was then not simply an example of how some historical content or other has been transmitted across epochs: it was, rather, an example of how the televisual semblance of presentation prevents us from identifying Dada’s historical presence (or its “live” events art) with any *one* time and place. As Hausmann put it in a different context: Dada cuts through time itself [17].

Fig. 3. Raoul Hausmann, *Light Basket*, photograph, 1931. *Light Basket* belongs to a series of photographs in which Hausmann explores the nature of light.



THE POINT OF TOUCH: TV-ART AND THE OPTOPHON

Interestingly, the metaphors of tactility, touch and detachment in Hausmann's technological fantasies returned in Nam June Paik's early TV experiments. With their pioneering quests into the new field of electronic imagery, both Paik and Hausmann figure as artist-inventors or artist-engineers. Yet, at the point where their respective inventions seemed to converge or touch, the question of the *time* of invention itself becomes critical. More precisely, the question of the time of the invention becomes critical at that point where Hausmann and Paik both formulated their inventions *in terms of* the event of a touch in which closeness and distance collapse against one another.

Obviously, the work of both Paik and Hausmann connected itself to a line of electric and electronic inventions in the service of an expanded concept of art. Paik and Shuya Abe's 1970 invention of the video synthesizer, an apparatus that allowed a controlled manipulation of the previously rather uncontrollable electronic image, was at the time the latest entry in a list of inventions including Taddeus Cahill's Telharmonium (1904), Thomas Wilfred's Clavilux color-piano (1905), Leon Theremin's theremin (early 1920s), Ben Laposky's Oscillograph (1950s), RCA's Marc II synthesizer (1955)—and Raoul Hausmann's Optophon. Yet both Paik's and Hausmann's inventions were also reinventions in the sense that both interrupted the representational structure of an established medium and its culturally sanctioned forms of communication. While Paik altered the standard use and meaning of the public mass medium of television, Hausmann's Optophon was an alteration of Thomas Wilfred's Clavilux—an attempt to exploit the possibilities of electronic *transformation* from sound to image ignored by Wilfred, who saw his color piano as “art for art's sake, the art of pure color” and who understood the sound element in purely illustrative terms [18]. In contrast to this, the Optophon's mutation of signals would create a dramatic interruption in the “normal” experience of unified sense-presence promoted by this appeal to traditional forms of art [19].

Here, Paik's work also became a reinvention in the sense that it gave a paradoxical *semblance of an image* to the esoteric theories that Raoul Hausmann had tried but ultimately failed to realize with

Fig. 4. Nam June Paik and Jud Yalkut, video stills from *Video Commune*, 1970. The image of the hand touching the TV screen is followed by images of hands multiplied “inside” the image on the screen. (Courtesy of Electronic Arts Intermix, New York)



his patented invention of the Optophon [20]. Like Hausmann, Paik tried to explore the ultimate consequences that might be drawn from the fact that sound and light share the same electronic wave structure: the difference between aural and visual emanations is only a matter of a difference in frequency. As a result, the different invention-times of Paik and Hausmann intersected in the medium of television—the only medium in which bodies are literally “penetrated by light.”

This cut through the invention-time of technology was underscored as Paik continually interlaced his newest technological researches with references to a technological “childhood” when systems for producing new image- and sound-emanations all departed from the primitive touch-principle of the ordinary piano keyboard. Significantly, his very first TV experiments were directly associated with a pre-electric modification of the traditional piano keyboard function. His groundbreaking TV-art exhibition—the 1963 *Exposition of Music—Electronic Television*—contained 13 television sets whose internal circuits had all been modified, as

well as a series of violently “modified” pianos, covered with a vast range of optical, acoustical and other objects and with devices attached to their keys so that the keys were cut off from the controlled rendering of the analog tonal gradations of the musical harmonies. Raw and untidy like Dada collages, the pianos were emphatically placed within the same realm of invention as that of the television sets, as their keyboards had been modified to exemplify the “electronic” principle of random access at the touch of the hand.

Here Paik referenced a commonly known fact about the “detachment” or “independence” of the hand involved in skilled activities such as piano-playing or typing. This time-warp was later completed with the so-called *Urklavier*—a row of raw wooden branches laid across a simple support of two longer branches, reminiscent of the radically nature-oriented concretism of Jean Arp. As the branches evoked the presence of an unmodified nature, this radically concretist emblem of the “electronic” touch inverted the naturalization of technology as historical/cultural development.

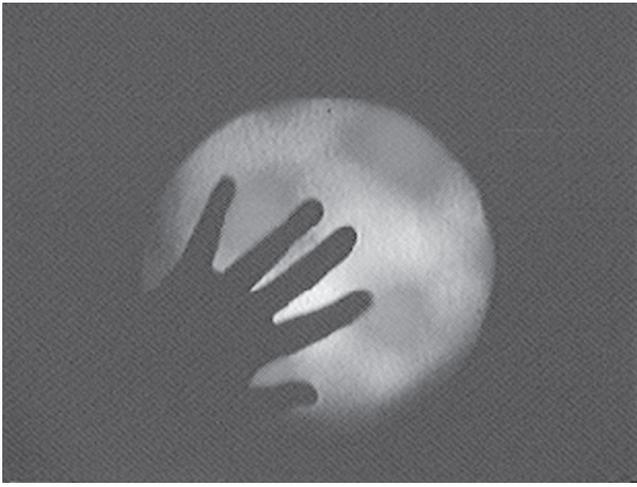
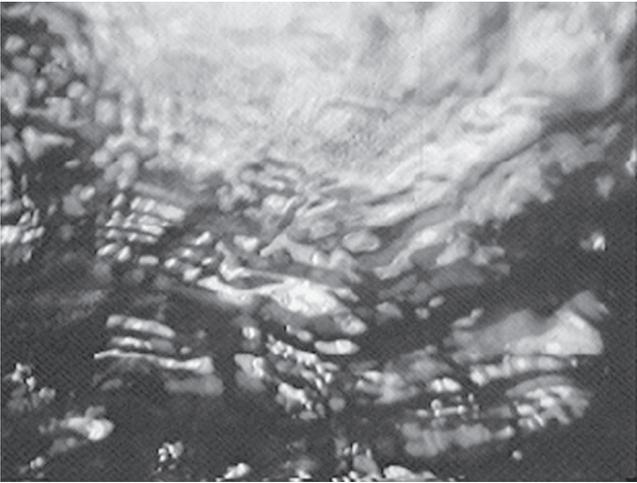


Fig. 5. Nam June Paik and Jud Yalkut, video stills from *Electronic Moon # 2*, 1968. The color pixels of the TV screen turn into a pixel-image of the moon that is touched by Paik's hand. The image of the moon dissolves into a shimmering electronic flow, which at one point turns into a realistic representation of flowing water. (Courtesy of Electronic Arts Inter-mix, New York)



The critical question of the time of invention might, in particular, be traced in the significant fact that the question of the *when* or the timing of Paik's work was taken up by Paik himself in the early 1960s. In fact, the preoccupation with this *when* was the reason Paik had moved from electronic musical composition to television work—a point elaborated in his 1963 text "New Ontology of Music" [21]. Electronic recording lets us experience that the question of the musical "what" is already radically temporalized, yet, as Paik saw it, this temporalization was also potentially suppressed in the medium of tape recording favored by electronic composers: the closed-off and linear duration of the tape simply mimed the structure of a linear historical time in which the ever-new forms of music are always accorded a proper date and place. Only through television's semblance of presentation could the radical implications of Paik's new musical *when* be made to be felt. Significantly, or symptomatically, a recurrent motif in Paik's early television work—particularly in the film/video pieces made in col-

laboration with Jud Yalkut between 1965 and 1969—was the image of Paik's own hand, which enacted its own version of the electronic reach and touch (Figs 4a,b). Because of the particular combination of film and video in these works (Yalkut filming Paik's screen-work), it was possible to create an image-space that passed both inside and outside the space of the television image itself. Paik's hand passed through these different spaces, folding them into one another. It alternatively touched the screen and reached far inside it: subjected to electronic manipulation, it returned in all manner of shadow-like or luminous transformations. Paik's own hand, Paik's own touch, had truly become a light-body.

THE TOUCH "ALL THE WAY TO THE STARS"

As Paik's hand moved inside the television screen in these works, it ultimately gave the semblance of Hausmann's notion of a somatic extension "all the way to the stars." Here, Paik's visual experi-

ments touched one of the central themes of Hausmann's fictional TV transcript: the conflation of moonlight and TV light. Like Paik and Yalkut's video-work, Hausmann's text was written around the time of the event that is generally known as the paradigm case of live TV coverage—the TV transmission of the Apollo moon landing. Since Hausmann's TV fantasies were based on his understanding of the all-encompassing nature of light, it seems hardly surprising that the effusive TV presenter in Hausmann's talk-show transcript compared Arp's "bright declarations" (*déclarations claires*) on *téléconcretisation* with the clarity of moonlight (the *clair de lune*). In the context of the truly "presentist" experience of the televised moon of the Apollo transmission, it became possible to ask questions concerning both the origin and the destination of this light in its relation to the perceptual present.

These questions were taken up in a more direct manner by Paik: In his early television work Paik often conflated the vaguely circular form of the light-screen with the light-globe of the moon itself. This conflation was made quite explicit in a 1965 installation of 12 prepared television sets called *The Moon Is the Oldest TV*. Here, the internal mechanism of the 12 monitors had been altered so that each showed different circular shapes: from a full moon disc to a crescent, the 12 TV screens recreated all the phases of the moon. Paik presented the more specific *image* of an electronic touch reaching all the way to the moon in the video/film *Electronic Moon No. 2*, which started out showing a moonlike disc on a TV screen, against which a finger is pressed. Then the moon-image dissolves into a shimmering flow, appearing partly as a realistic black-and-white representation of flowing water and partly as the pure black-and-white flickering of low-fidelity (low-fi) electronic images (Figs 5a,b).

This emphasis on the low-fi image served as a particularly acute reference to what was perhaps the most important aspect of the live transmission from the moon. In order to be able to realize the transmission, the broadcasting organizations had to accept an image-standard far below the legal Federal Communications Commission (FCC) standard. This lowering of standards was, as Paik pointed out, in many ways as important as the moon landing itself [22]. It essentially meant that the analog or photographic truth-standard of television images would have to be relinquished. Television *coverage*

could no longer hide or *cover up* the essentially unstable and indeterminate character of electronic images. The moon transmission was in other words paradigmatic in that its extremely low-fi image transmission made visible the slippage in official TV's representational strategies [23]. At this level of flickering dissolution, the moon could be interpreted as artificially created rather than simply communicated. In Paik's world, moonlight and TV-light were then essentially the same phenomenon: both were understood to place a radical experience of distance into the perceptual present of vision itself.

Touching the moon then seemed to have become a synecdoche for touch across historical time as well. At some brief points the flickering color dots that made up the spherical image of Paik's TV moon were transformed into pieces of cut-up texts and photographs, very much like the Dadaist photomontages pioneered by Raoul Hausmann, among others. The low-fi structure of the electronic image was here indistinguishable from, or *in touch with*, the technique and imagery of Dadaist montage. Likewise, Hausmann's quasi-scientific TV-dreams touched reality precisely in the flickering and virtual "when" of Paik's video image. They had become technologically feasible, visible and indeed also *present* only in this televisual semblance of presentation. It was a presentation through which the imagined "distances" and "connections" between two moments of avant-garde history collapse. If Dada and Neo-Dada's appearance of being indistinguishable or "in touch" on the one hand repeated the imagined continuity of tradition or history, this continuity had now, on the other hand, been transmitted into a paradoxical perceptual present that disturbed the "before" and "after" of historical succession itself. Presented at a time when the pain-

ful questions concerning the repetition of the original avant-garde events had become most pertinent, Hausmann's fictional TV transcript and Paik's early TV work both underscored the fact that this is the historical condition of works of art in the age of television.

References and Notes

1. A number of Hausmann's 1960s texts on the subject are assembled in Adelheid Koch, ed., *Die Exzentrische Empfindung* (Vienna: Literaturverlag Droschl, 1994). Other typescripts not included in this book are "Ausblick auf Elektronen-Kunst" and "Cybernetic Art Today and in the Future." In addition there is the essay "Elektronische Eidophonie," in the eponymous collection of Hausmann texts edited by Karl Riha (Siegen, Germany: Verlag Autoren der Moderne, 1991) pp. 12–17.
2. Raoul Hausmann, "Présentismus," reprinted in Michael Erlhoff, ed., *Raoul Hausmann. Texte bis 1933*, Vol. 2 (Munich: Edition Text+Kritik, 1982) pp. 24–30.
3. Raoul Hausmann, "À la recherche de Jean Arp à la téléconcretisation" (typescript, n.d. late 1960s).
4. Raoul Hausmann, "Universale Organfunktionalität" (unpublished manuscript, 1923).
5. Quoted in Eva Züchner, *Scharfrichter der Bürgerlichen Seele. Raoul Hausmann in Berlin 1900–1933* (Berlin: Berlinische Galerie, 1998) pp. 175–176.
6. Avital Ronell, *The Telephone Book* (Lincoln, NB: Univ. of Nebraska Press, 1989) pp. 1–5.
7. Brion Gysin, quoted in Marc Dachy, "Dada. La Langue comme Utopie," in Bernard Blistène, ed., *Poésure et Peinture* (Marseille, France: Musées de Marseille, 1993) p. 116.
8. Hausmann wrote extensively about the unacknowledged debts of Neo-Dada, most notably in "Aussichten oder Ende des Neodadaismus," an 89-page typescript, reprinted in facsimile in Adelheid Koch, *Ich bin immerhin der grösste Experimentator Österreichs* (Innsbruck, Austria: Haymon, 1994). Hausmann more specifically attacked the Fluxus group, of which Nam June Paik was a part.
9. Hausmann, "Optophonetik," in Erlhoff [2] (Vol. 2) pp. 50–57.
10. Hausmann, "Présentismus," in Erlhoff [2].
11. Hausmann, "Présentismus," in Erlhoff [2].
12. Hausmann was influenced by Ernst Marcus's book *Das Problem der Exzentrischen Empfindung und seine Lösung* (Berlin: Verlag der Sturm, 1918).

13. Raoul Hausmann, "Das Universale Funktionalitätsprinzip in der Optik" (typescript, 1922), available in Berlinische Galerie, Berlin.
14. Hausmann, "Présentismus," in Erlhoff [2].
15. Raoul Hausmann, letter to Hedwig Mankiewicz, 1922. In Züchner [5] pp. 169–170.
16. Samuel Weber, *Mass Mediauras. Form, Technics and Media* (Palo Alto, CA: Stanford Univ. Press, 1996) p. 122.
17. Raoul Hausmann, "Schnitt Durch Die Zeit," (1919) in Erlhoff [2], Vol. 1, pp. 71–81.
18. Thomas Wilfred, quoted in Hausmann, "Elektronische Eidophonie," in Riha [1] p. 14.
19. The principles of Hausmann's invention are presented in "Optophonetik" (1922) and "Über Farbenklaviere" (1932), in Erlhoff [2] Vol. 2, pp. 50–57, 178–180; and in "Theorie und Instrumentarium des Optophons (1923–1931)" (undated typescript).
20. The Berlin *Patentamt* refused to patent Hausmann's Optophon because they saw no use for it. With the help of Daniel Broido, Hausmann created a new version based on a photoelectrically operating calculating machine—in Hausmann's words, "the first cybernetic robot." In 1936 the device was patented in England. See article by Jacques Donguy in this issue of *Leonardo*, which includes the first page of the drawn patent specifications for the device.
21. Presented in Nam June Paik, *Postmusic, The Monthly Review of the University for Avantgarde Hinduism* (New York: Fluxus Edition, 1963).
22. This fact is mentioned by Nam June Paik in his 1972 letter to "friends at Radical Software," in *Video and Videology 1959–1973* (Syracuse, NY: Everson Museum of Art, 1973).
23. Weber [16] p. 120 makes this connection between television "coverage" and television's "cover-up" in order to show how TV functions both as the consummation of a very old representational tradition and as its simultaneous undoing.

Manuscript received 21 December 1999.

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