The History of Futurism

The Precursors, Protagonists, and Legacies

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Contents

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A Vitalist Art

Filippo Tommaso Marinetti's sintesi radiofoniche

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Filippo Tommaso Marinetti's 1933 *sintesi radiofoniche* (radio syntheses)[1] are five short experimental radio compositions that date back to Marinetti's late futurist period and coincide with his *Manifesto futurista della radio*, also known as *La radia*.[2] Compared to other radio performances by Marinetti, including his radio drama *Violetta e gli aeroplani* (1932),[3] the *sintesi radiofoniche* present the significant advantage of being abstract and programmatic, thus revealing Marinetti's unconventional approach to technology.[4] According to Arndt Niebisch, what is at stake with the futurist use of the "radia" is not an aesthetic innovation but a new relation with the "nervous system of the listeners:" "the radio *sintesi* do not unfold a complicated narrative, but adopt an absolutely minimalistic aesthetic based on alternating sounds, noises, and silence . . . what Marinetti tries to affect with his radio *sintesi* is not the critical mind of the audience but the nervous system of the listeners."[5] Taking up an idea by Wolf Kittler, Niebisch relates the symbolic function of traditional art to communication noise, which presupposes a hermeneutical decoding by the receivers, and Marinetti's medial practices to a signal technology channeled directly, as in Artaud's theatre of cruelty, to the sensorial apparatus: "'Signal' in opposition to 'symbol' is a semiotic category that requires no interpretation, but provokes reflexes."[6]

As declared in *La radia*, Marinetti's engagement with radio transmission aims explicitly at creating unprecedented medial topologies and modalities of reception: "A new Art that begins where theatre cinema and narration leave

off. . . . Immense enlargement of space. . . . A pure organism of radiophonic sensations. . . . An art without time or space without yesterday or tomorrow. . . . The elimination of the concept or the esteem of the audience which has always had a deforming and worsening influence even on the book."[7] The replacement of the standard substantive "radio" with the playful neologism "radia" suggests a disjunction between the ordinary social use of technology and artistic sabotage. While the radio is a normalized communication device, "la radia" requires a distortion of aesthetic categories and experiential habits:

> La radia abolishes 1. space or any required scenery in the theater including the
> Futurist synthetic theater (action unfolding against a fixed or constant scene)
> and film (actions unfolding against extremely rapid and highly variable simul-
> taneous and always realistic scenes) 2. time 3. unity of action 4. The dramatic
> character 5. the audience understood as a mass self-appointed judge systemati-
> cally hostile and servile always misoneist always retrograde.[8]

Following Friedrich Kittler's ground-breaking inquiries into the history of media connectivity,[9] Timothy Campbell has rescued the notion of the "wireless" from the "gray zone between telegraphy and humble genealogies of early radio,"[10] outlining the impact on literary structures of Marinetti's appropriation of the logic of communication media. Although Campbell's analyses concentrate exclusively on Marinetti's literary manifestos and *pa-role in libertà*, his description of the emerging practices of "wireless writing" grasps indirectly the medial context of Marinetti's radio experimentations. Beginning in the late 1920s, a fundamental mutation in medial interconnec-tivity reframes, together with the nature of radio broadcasting, the relation of speaker and listener, the exchange of inscription technologies and sound, the hierarchy of archival traces and spoken language: "Once the frequencies in voice transmissions and technological storage converged, sounds could be cut and mixed in montage, resulting in important temporal effects, especially in the field of time manipulation."[11] From this moment "wireless writing" becomes a matter of frequency modulation, of machinic couplings and spac-ing, of bodily interfacing.[12]

The *sintesi radiofoniche* and the manifesto *La radia* followed in the foot-steps of a heated debate, taking place in the late 1920s and early 1930s, on the impact of radio broadcasting and new communication technologies on traditional aesthetic practices such as theatre and literary recitations.[13] In his commentaries on Bertolt Brecht, Walter Benjamin has highlighted the technological implications of Brecht's epic theatre—"The forms of epic the-atre correspond to the new technical forms—cinema and radio. Epic theatre corresponds to the modern level of technology"—and underlined the funda-

mental changes in the nature of aesthetic perception introduced by Brecht's method of interruption, capturing the "moment when the mass begins to differentiate itself in discussion and responsible decisions . . . the moment the false and deceptive totality called 'audience' begins to disintegrate."[14]

Like Marinetti's "radia," epic theatre is "a new art" that implies unusual space-time relations and a transformed attitude by the audience. Yet, unlike Marinetti's vitalist language of "radio sensations," Brecht's interruptions and *Verfremdungseffekt* are predicated in the context of a pedagogical and human-ist Marxist *episteme*, which explains Benjamin's well known condemnation of Marinetti's futurist sensibility.[15]

As in Brecht's epic theatre, the central feature of the *sintesi* is the interplay of acoustical fragments and interruptions, intervals and boundaries. This is the logic of Marinetti's "radia," which corresponds to the non-representational fu-turist use of the media: the language of the *sintesi* does not presuppose symbols and rhetorical articulations of meaning but a defamiliarizing practice of con-nectivity, deferred movements and setting-in-relation of multiple elements; a landscape of signals and *stimulai*, processes of fusion and spacing of expressive materials. Most importantly, the *sintesi*'s alternation of intervals and interrup-tions points to a continuous field of intensity, a vitalist logic of condensation and expansion. Between the acoustical intervals and the interruptions that both separate and connect the multiple segments of the *sintesi* there is not a difference of nature but a difference in degree, which can be intensified or weakened, accelerated to the point of absolute variation or suspended in the stillness of repetition. Beyond the appearance of an unsurpassable heteroge-neity of elemental acoustic substances and irrational interruptions, we can observe the emergence of a subtle aesthetics of the interstitial, a technological production of new perceptual intervals.

Stati intermomentali

In order to understand the centrality assigned to intervals and interruptions by Marinetti, we need to go back to the debate surrounding the temporal experience of presence that was unfolding at the beginning of the twentieth century. According to Henri Bergson, a key influence on Marinetti and the avant-gardes at large, behind the illusory instantaneousness of the present lays the reality of "duration," of "elastic" blocks of temporal segments. These unities comprise a temporal span; they last, because they are tensed up be-tween the immanent polarities of the virtual and the actual, the powerless past and the active present. These blocks of duration are thin yet dense, since they continuously frustrate the presence-to-itself of the instantaneous

and non-dimensional present. Whereas the Euclidean spatial habits of human reason and perception have privileged "representation"—that is a mimetic reproduction of presence, based on the illusion of an a-temporal relationship with the thing represented—Bergson concentrates on the infra-representational intervals, questioning the spaceless non-dimensionality of interruptions: "In the living mobility of things, the understanding is bent on marking real and virtual stations. It notes departures and arrivals. It is more than human to grasp what is happening in the interval."[16]

Following this Bergsonian notion of interval, Anton Giulio Bragaglia bases his *Fotodinamismo*, a pioneering technique of avant-garde photography, on the concept of *stati intermomentali* [inter-momental states]. According to Bragaglia, the aim of photography is to reveal the non-representational nature of the intervals that constitute everyday gestures, dispelling the illusion of the instantaneity of snap-shot photography.[17] Marcel Duchamp's notion of *infra-mince* [infra-thin] is another modulation of the Bergsonian aesthetics of intervals. In his posthumous notes to the *Large Glass*, Duchamp attacks in a Bergsonian language the instantaneity of present: " = in each fraction of duration (?) all / future and antecedent fractions are reproduced—All these past and future fractions / thus coexist in a present which is / really no longer what one usually calls / the instant present, but a sort of / present of multiple extensions—."[18] While the visuality of traditional art is inextricably linked to the myth of an "instant present"—the present of production and reception of images, of interpretation and communication of meanings, of the marketing and taste of artworks—Duchamp's absorption of the Bergsonian logics of infra-representational intervals transforms artworks into non-artistic works of "multiple extensions;" "infra-thin" objects, works that do not belong to representation and that occupy the paradoxical spatiality of duration. This is the nature of the "ready-mades:" they are aporetic "things," which dwell in the perceptual and conceptual "thinness" of non-representational intervals.

For contextualizing Marinetti's construction of sound intervals it is useful to take into account also the developments taking place in the field of experimental physiology. By relying on technical devices such as the "chronoscope" illustrated in Wilhelm Wundt's *Principles of Physiological Psychology* (1874), psychophysiological experiments aimed at measuring "physiological time," the physiological interval between stimulus and reaction that questioned the instantaneity of perception and thought. Symbolist writers, painters, and composers such as Debussy and Janáček were fascinated by the experiential territory revealed by the discovery of the non-instantaneousness of perceptual mechanisms. What was happening during these short, and yet dense, intervals?

Janáček emphasized that when one tone or chord passes to another, the first does not instantaneously cease to be, but lingers both in memory and physiologically as the fibers in the cochlea continue to vibrate for the briefest moment after the second tone has begun to sound. Janáček believed this moment lasted about 1/10 of a second. Hence, it became important to attend to the particular quality of that moment *between* two sounds in order to grasp the quality of the connection. For the idea of the actual psychophysiological coexistence of tones, Janáček cited Hermann von Helmholtz's classic text *On the Sensations of Tone*. At other times, he referred to Wundt's and others' findings that a rather long delay subsisted between the disposition of attending to one object and the disposition of attending to another. . . . The general point to be drawn from all of this is that Janáček's fascination for the *in-betweenness* of certain events amounted to a fairly coherent and all-encompassing aesthetics of the interstitial, which took stock of available musical materials and found that the perhaps most interesting and vital were specifically those which were most easily and often overlooked: the moment, virtual or actual, *between* two apparently contiguous tones; the delicate relation of one millisecond to another in a barely apperceived phonemic succession. . . . As a composer, Janáček did not miss opportunities to exploit a sense of being in-between, of opening up gaps in a temporal fabric, so that one never quite settles comfortably into a forward flow while listening to his music.[19]

In his captivating reconstruction of musical modernism, Benjamin Steege mentions also Russolo's *intonarumori* as an example of interstitial art, in which "the apparent stability and unity of everyday aural experience would be productively fractured by a kind of listening available to what he calls 'futurist ears.'" Marinetti's *sintesi radiofoniche* are yet another example of this subtle art on the in-between.

Interruptions

Marinetti's first *sintesi radiofonica*, *An Acoustical Landscape*, is made of three blocks of sounds: a fire's crackling, a water's lapping, and the whistle of a blackbird:

An Acoustical Landscape
The whistle of a blackbird envious of the fire's crackle ended up putting out
    the water's
whispery gossip
10 seconds of lapping.

1 second of crackling.
8 seconds of lapping.
1 second of crackling.
5 seconds of lapping.
1 second of crackling.
19 seconds of lapping.
1 second of crackling.
25 seconds of lapping.
1 second of crackling.
35 seconds of lapping.
6 seconds of blackbird whistling.[20]

The crackling lasts constantly for 1 second while the lapping follows a dramatic *crescendo* and *decrescendo* (10, 8, 5, 19, 25, 35 seconds), ended up by the abrupt whistle of the blackbird. This *sintesi* presents the basic elements of Marinetti's radio language: although the three sounds can be erroneously interpreted as heterogeneous materials, separated by differences of kind, they function as differences in degree of emotional intensity. In order to achieve this effect, Marinetti transforms the lapping into a repetitive interruption, the five 1 second segments. These interruptions are at the same time connectors and modulators of the degree of intensity of the lapping. Instead of a flow of punctiform heterogeneous materials, we are now experiencing an assemblage of acoustical repetitions and variations.

In the second *sintesi*, *Drama of distances*, the alternating occurrences of soundscapes from distant geographical regions and environments—the military, entertainment, everyday urban or rural life, religion—are assembled without distinct interrupting intervals, following a strict rule of repetitive unities of eleven seconds:

Drama of distances
11 seconds a military march in Rome.
11 seconds a tango being danced in Santos.
11 seconds of Japanese religious music being played in Tokyo.
11 seconds of a lively rustic dance in the Varese countryside.
11 seconds of a boxing match in New York.
11 seconds of street noise in Milan.
11 seconds of a Neapolitan love song sung in the Copacabana Hotel in Rio de Janeiro.[21]

In this circumstance, the communal element is the medium of radio itself, the flowing continuum of radio waves. Radio broadcasting "immensifies space," but it does so artificially, by coupling and modulating differences.

What is at stake is the logic of intermediality, the power of connectivity of radio transmission.

In the third *sintesi*, *Silences speak among themselves*, the medial constructivism of Marinetti becomes overtly complex and the distinction between intervals and interruptions is blurred: is silence interrupting sounds of vice versa?

Silences speak among themselves
15 seconds of pure silence.
A flute's do re mi.
8 seconds of pure silence.
A flute's do re mi.
29 seconds of pure silence.
A piano's sol.
A trumpet's do.
40 seconds of pure silence.
A trumpet's do.
An infant's wah wah.
11 seconds of pure silence.
An eleven year old girl's stupefied ooooh.[22]

Since the blocks of silence and the musical and human sounds vary according to a *crescendo* and *decrescendo* of time patterns—15, 8, 29, 40, 11 seconds of "pure silences"—it becomes increasingly difficult to distinguish between repetitions and variations, modulations and qualitatively different segments of musical instruments. Given the abstraction of silences and the singular concreteness of human voices, it is also impossible to establish differences of kind between forms and contents, structural and thematic elements. What is clear is that we need to grasp the differences in degree of the emotional lifespace constructed by the "radia." A paradoxical reversal takes place: silence is not the empty background filled in by the fullness of media communication. Quite the opposite is true: the apparently triumphal efficacy of interconnected global networks rests on the fragile foundation of virtual silences, of silences that "speak among themselves," penetrating and overcoming the barriers of human and technological communication.[23]

The *Battle of Rhythms* intensifies the exchanges between interruptions and intervals, silences and sounds:

Battle of Rhythms
A prudent and patient slowness expressed by means of the tap tap tap of water
    drops
first cut off then killed off by
A flying elasticity composed of arpeggios of piano notes first cut off then killed
    off
by

A loud ringing of an electric doorbell first cut off and then killed off by
A three minute long silence first cut off and then killed off by
A toiling key in lock tat rum ta trac followed by
A one minute long silence.[24]

Here, each acoustical segment is first "cut off" and then "killed off" by the following segment. What this means is that each block functions initially as an interruption, and then as a dense interval. Furthermore, an acoustical segment can be "slow" or "elastic," "loud," or "silent"— the tap tap of water, the arpeggios of piano, the three minutes of silence[25]—thus showing a variety of intertwined spatial and temporal characteristics. Not only is there no difference of kind between interruptions and intervals, silences and sounds. Also quality and quantity, time and space are technologically coupled, assembled by the machinic performance of the "radia" and addressed to the listeners as a mysterious field of pulsations.

The fifth *sintesi*, *Building a Silence*, reveals the foundations of Marinetti's topological constructivism:

Building a Silence
1) Build a wall on the left with a drum roll (one half minute)
2) Build a wall on the right with trumpeting—shouting—auto tram a squealing of capital (one half minute)
3) Build a floor with the gurgling of water in pipes (one half minute)
4) Build a ceiling terrace with the chip chip chip of sparrows and swallows (20 seconds).[26]

Here Marinetti avoids any distinction between intervals and interruptions. Since their difference is in degree, intervals and interruptions are hinges, devices for folding and shaping space-time phenomena. Consequently, each acoustical material—drum rolls, auto tram squealing, gurgling water, bird's chip chips—is used as a joint, a turning point for building the ideal "infra-thin" artificial environment: silence.[27]

Entre-deux

The *sintesi* are sound collages, constructivist montages, assemblages of silences and acoustical *objects trouvés* infused with a modernist sensibility for unmediated conceptual structures and *readymade* materials. As such, they follow a minimalist cubist aesthetics and pave the way for John Cage's radio music and *musique informelle*.[28] Yet, because of their primary concern with the articulation of interstices and cuts, they also belong to a more specific lin-

eage of avant-garde experimentalism that, from Bertolt Brecht to Jean-Luc Godard, has emphasized the use of gaps and interruptions: "the interrupting of action is one of the principal concerns of epic theatre. . . . often its main function is not to illustrate or advance the action but, on the contrary, to interrupt it: not only the action of others, but also the action of one's own. It is the retarding quality of these interruptions and the episodic quality of this framing of action which allows gestural theatre to become epic theatre."[29]

In Gilles Deleuze's ontology of "irrational cuts"—which is based on Godard's cinema theory, in its turn directly influenced by Brecht's *Verfremdungseffekt*—Benjamin's uncovering of Brecht's interruptions is radicalized, becoming the central device for reconstructing the logic of modern cinema. Like Marinetti, Deleuze is immune to Brecht's marxist humanism and pedagogical tenets and develops his conception of the "in-between," the *entre-deux*, on a purely vitalist terrain. In his two-volume study on cinema, Deleuze's arguments culminate in the theorization of a "method of irrational cuts," that generates an "interstice between images." In the cinema of Rohmer, Dryer, Bresson, and Godard,

the question is no longer that of the association or attraction of images. What counts is on the contrary the interstice between images, between two images. . . . Given one image, another image has to be chosen which will induce an interstice between the two. This is not an operation of association, but of differentiation. . . . As physicists say: given one potential, another one has to be chosen, not any whatever, but in such a way that the difference of potential is established between the two, which will be productive of a third or of something new.[30]

This example of interstitial differentiation, the difference of potential between two images, which produces an interstice between the two, can guide us toward the key intuition of Deleuze. What matters for Deleuze is a peculiar movement: not a locomotion but a process of becoming, a power of transformation whose driving force is localized in the "transcendental field." "What is a transcendental field? It is distinct from experience in that it neither refers to an object nor belongs to a subject (empirical representation). It therefore appears as a pure a-subjective current of consciousness, an impersonal pre-reflexive consciousness, a qualitative duration of consciousness without self. . . . The transcendental field is defined by a plane of immanence, and the plane of immanence by a life."[31] In the transcendental field, life is "a life," events take place at "absolute speed" in an "empty time," in the non-representational duration of a non-human interval: "This indefinite life does not itself have moments, however close together they might be, but only meantime (*des entre-temps*), between-moments."[32]

At least apparently, Deleuze follows Marinetti in developing a refined logic of the in-between, conceived as an organum for vitalist art practices. And yet, Deleuze separates sharply interruptions from intervals, attributing to cuts and ruptures the task of relating the finite and the transcendental fields, the actual and the virtual. Because of this architectural function, interruptions for Deleuze are not intervals, and they are not mutually exchangeable. They join and disconnect segments by cutting and penetrating the empirical plane. However, their power originates from an intensive field that we must not confuse with everyday perceptual experience. Interruptions for Deleuze are in-betweens understood as a pure power of differentiation of the transcendental field.

As a result, Deleuze's descriptions of the in-between presuppose a topology of interruptions, incompatible with Marinetti's exchanges of cuts and intervals. Deleuze's logics of "irrational cuts" is a method for intersecting immanence and transcendence, absolute life and relative movements: the pure, void intensive Outside and the impure territory of worldly phenomena. A line of escape, not an interval:

> The in-between is not an average, a centrism, a moderation. It is an absolute velocity. . . . We call absolute the speed of a movement between two points, in between them, which traces a line of escape. . . . Such a movement does not take place from one location to another. It happens between two degrees, as in a potential difference. It is a difference in intensity which produces a phenomenon, letting him escape, expelling it, into space. . . . Speed means belonging to a becoming, something different from a development or an evolution.[33]

The Deleuzian in-between is an autonomous and incommensurable cut, not coordinated with the beginnings and ends of other blocs of life; not exchangeable with intervals. This is, according to Deleuze, the logic of avant-garde art and cinema: "The modern image initiates the reign of 'incommensurables' or irrational cuts: this is to say that the cut no longer forms part of one or the other image, of one or the other sequence that it separates and divides. . . . The interval is set free, the interstice becomes irreducible and stands on its own."[34] The transcendental non-dimensionality of the Deleuzian in-between requires a theology of the Outside, an ontological Void that sustains all the operations of irrational cutting:

> Because of the method of the BETWEEN: "between two actions, between two affections, between two perceptions, between two visual images, between two sound images, between the sound and the visual" . . . the whole undergoes a mutation . . . The whole thus merges with what Blanchot calls the "force of

dispersal of the Outside," or "the vertigo of spacing": that void which is no longer a motor-part of the image, and which the image would cross in order to continue, but is the radical calling into question of the image.[35]

We may try to imagine how Deleuze would have approached Marinetti's *sintesi radiofoniche*: their "primitive" interruptions, their use of raw sounds and unpredictable cuts, would have been understood as the evidence of an irrational interstitial power, the trace of an absolute freedom of becoming, the signal of a line of flight leading to the superior life of the machinic intervals, the life of a "spiritual automaton."

And yet, the density of Marinetti's silences—which are never a void and never do produce a "vertigo of spacing"—and the thick dimensionality of the *sintesi*'s cuts—with their constant exchange of intervals and interruptions—suggest that, contrary to the Deleuzian in-betweens, Marinetti's intervals *do* "form part of one, or the other, sequence that they separate and divide." For this reason, in order to approach the *sintesi*'s nature, we must reach a vitalist and yet post-Deleuzian conception of the in-between, envisioning a topology of intervals syntonized with Marinetti's non-transcendental geometry of interruptions. That is, we need to elaborate a truly vitalist critique, able to decipher the language spoken by the "radia."[36] Unfortunately, we are still quite far from this objective. What we have instead are a few hermetic objects, such as Marinetti's *sintesi*, which encourage a yet to be articulated theory of their puzzling artistic life.

Notes

1. The scores for the *sintesi radiofoniche* have been originally published in the journal *Autori e scrittori* (August 1941), then in Filippo Tommaso Marinetti, *Teatro*, ed. Jeffrey T. Schnapp, vol. 2 (Milan: Mondadori, 2004): 629–37, and recently translated into English by Jeffrey T. Schnapp, "Radio Syntheses. Introduction and Translation by Jeffrey T. Schnapp," *Modernism / modernity* 16, 2 (2009): 415–20. The *sintesi radiofoniche* have never been broadcast by Marinetti; a 1978 recording by composer Daniele Lombardi is included in the cd *Musica Futurista: The Art of Noises 1909–1935*, LTM Recordings (2006). The audio files of this recording are also available on line: www.futurismo.altervista.org/audio.htm. For information on other performances of the *sintesi radiofoniche* see Margaret Fisher, "Futurism and Radio," in Günter Berghaus, ed., *Futurism and Technological Imagination* (Amsterdam; New York: Rodopi , 2009), 245.

2. The *Manifesto futurista della radio*, co-authored with Pino Masnata, has been published on September 22, 1933, in the Italian newspaper *Gazzetta del popolo*. The manifesto appeared as *Manifesto della radio* in *Futurismo* (1 October 1933) and as

La radia, Manifesto futurista dell'ottobre 1933 in *Autori e scrittori* (August 1941). It is now available in Marinetti, *Teatro*, vol. 2, 769–74; English trans. *The Radia. Futurist Manifesto*, in Lawrence Rainey, Christine Poggi, Laura Wittman, eds., *Futurism. An Anthology* (New Haven: Yale University Press, 2009), 292–95, subsequently cited as Rainey, *Anthology*. The manifesto was followed in 1935 by a forty-four-page unpublished exegesis by Pino Masnata. Translated excerpts from this exegesis will appear in *Modernism / modernity* 19, 1. On this gloss see Margaret Fisher, "New Information Regarding the Futurist Radio Manifesto," published in March 2011 in *Italogramma*, the on-line journal of Italian studies of the Italian Institute, Faculty of Letters, Università Eötvös Loránd in Budapest.

3. See Marinetti, *Teatro*, vol. 2, 638–56. For a history of Italian radio aesthetics, see Angela Ida De Benedictis, *Radiodramma e arte radiofonica. Storia e funzioni della musica per radio in Italia* (Turin: EDT, 2005).

4. "Marinetti's experiments with recorded sound begin in 1914 with a series of recordings of poetic recitations carried out in a London recording studio. His interest in the medium of radio dates back to Futurism's beginnings but starts carrying over into the realm of practice in the mid to late 1920s. During his 1926 tour of South America, Marinetti makes repeated appearances on Brazilian and Argentine radio stations. These are followed by sixteen years of active collaboration with the Italian national radio (the EIAR), founded in 1928, which involve everything from declaiming aeropoems, to serving as a live action commentator of major events like the August 1932 return from the United States of Italo Balbo's flying squadron, to hosting a regularly broadcast radio bulletin on the activities of the futurist movement," Schnapp, "Radio Syntheses," 415. On Marinetti's and the futurists' engagement with radio, see Fisher, "Futurism and Radio," 229–62.

5. Arndt Niebisch, "Cruel Media. On F.T. Marinetti's Media Aesthetics," *Annali d'Italianistica* 27 (2009), *A Century of Futurism: 1909–2009*, ed. Federico Luisetti and Luca Somigli, 343–44.

6. Niebisch, "Cruel Media," 344.

7. Rainey, *Anthology*, 294–95.

8. Rainey, *Anthology*, 293–94.

9. See Friedrich A. Kittler, *Discourse Networks, 1800/1900*, trans. Michael Metteer (Stanford: Stanford University Press, 1990) and *Gramophone, Film, Typewriter*, trans. Geoffrey Winthrop-Young and Michael Wutz (Stanford: Stanford University Press, 1999).

10. Timothy C. Campbell, *Wireless Writing in the Age of Marconi* (Minneapolis: University of Minnesota Press, 2005), x.

11. Campbell, *Wireless Writing*, xii.

12. Timothy Campbell calls the attention on Marinetti's literary "simulation of wireless functions" and the deficiencies of his "translation of sense data into their written analogue," Campbell, *Wireless Writing*, 91. In my essay I approach directly Marinetti's medial logic, abandoning the privileges of the literary field.

13. See for instance Bertolt Brecht, "The Radio as an Apparatus of Communication" (1932), in John Willett, ed., *Brecht on Theatre. The Development of an Aesthetic* (New York: Hill and Wang, 1964), 51–53.

14. Walter Benjamin, *What is Epic Theatre [First version]*, in *Understanding Brecht*, trans. Anna Bostock (London: Verso, 1983), 6, 10. On Brecht's epic theatre see Fredric Jameson, *Brecht and Method* (London; New York: Verso, 1998).

15. See Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction," in *Illuminations*, trans. Harry Zohn (New York: Schocken Books, 1969), 241–42.

16. Henri Bergson, *Introduction to Metaphysics*, trans. Thomas Ernest Hulme (New York: Putnam, 1912), 77.

17. Anton Giulio Bragaglia, *Fotodinamismo futurista* (Turin: Einaudi, 1970). On Bergsonian intervals in Bragaglia's *Fotodinamismo* see Federico Luisetti, *Una vita. Pensiero selvaggio e filosofia dell'intensità* (Milan: Mimesis, 2011), 119–38. In *Fotodinamismo futurista* (34) Bragaglia quotes the previous passage on intervals from Bergson's *Introduction to Metaphysics*.

18. Marcel Duchamp, *Notes*, ed. and trans. Paul Matisse (Boston: G.K. Hall, 1983), 135 n.

19. Benjamin Steege, "Musical Modernism and the Culture of Experiment," unpublished essay; read at *100 Years of Futurism: Sounds, Science, and Literature: An Interdisciplinary Colloquium*, University of North Carolina at Greensboro, February 20–21, 2009. Courtesy of the author.

20. Schnapp, "Radio Syntheses," 416.

21. Schnapp, "Radio Syntheses," 417.

22. Schnapp, "Radio Syntheses," 418.

23. The role played by silences in Marinetti's radio *sintesi* trails from Enzo Ferrieri's 1931 manifesto, *Radio as a Creative Force*. Ferrieri, artistic director for Italian radio from 1929, "introduced the seminal idea that the source of radio's true, paradoxical power derives from silences;"see Margaret Fisher, "New Information."

24. Schnapp, "Radio Syntheses," 419.

25. On this three minute silence, see De Benedictis, *Radiodramma e arte radiofonica*, 66.

26. Schnapp, "Radio Syntheses," 420.

27. For the role of silence as the minimal, "keyed-in unit of spacing," "necessary for one sound to be joined to another," see Campbell's pages on Sergi's measuring of the gap between unities of excitation, *Wireless Writing in the Age of Marconi*, 70–72.

28. See Schnapp, "Introduzione" to Marinetti, *Teatro*, vol. 1, XLII.

29. Benjamin, *What is Epic Theatre*, 3–4. On the structural affinities between Brecht's epic theatre and Marinetti's theatrical techniques see Elena Coda, "Teatro di straniamento in Marinetti e Brecht," *Carte Italiane: A Journal of Italian Studies* 13 (1993–1994): 1–15.

30. Gilles Deleuze, *Cinema 2. The Time-Image*, trans. Hugh Tomlinson and Robert Galeta (Minneapolis: University of Minnesota Press, 1989), 179–80.

31. Gilles Deleuze, *Immanence: A Life . . .*, trans. Nick Millett, *Theory Culture Society* 14, 3 (1997): 4.

32. Deleuze, *Immanence: A Life . . .*, 5.

33. Gilles Deleuze and Claire Parnet, *Dialogues* (New York: Columbia University Press, 1989), 37, 39.

34. Deleuze, *Cinema 2*, 277.

35. Deleuze, *Cinema 2*, 180.

36. Given the hegemony of transcendental paradigms in Western thought and aesthetics, a vitalist critique may benefit more by looking Eastward, for instance at Chinese thought and art, where the "subtle," the suspended complexity of virtual and yet real experiences, of immanent gaps between the present and the absent, has been for centuries at the center of philosophical and artistic practices: "There are various angles from which the subtle becomes accessible to experience. In aesthetics, for example, there is the exquisite flavor of the barely perceptible, whether in sound or image, in the transitional stage between silence and sonority in music or between emptiness and fullness in painting, when the sonic or pictorial realization is barely evident or on the verge of vanishing. . . . All Chinese practices derive from this." François Jullien, *Vital Nourishment. Departing from Happiness* (New York: Zone Books, 2007), 25.