

## **Radiophonic Performance and Abstract Machines: Recasting Arnheim's Art of Sound**

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1936. Faber & Faber London publish an essay by Rudolf Arnheim dedicated to the invention of the radio, and probing its artistic potential. Concurrently, in Berlin, Goebbels and Hitler invade the airwaves with their own declaration—they declare that radio's destiny was to become a state propaganda tool of unassailable force. At that moment in time, Rudolf Arnheim is not yet the famous American art historian who will make painting, music, and architecture understandable through experimental psychology. He is merely a young film critic, temporarily exiled to Italy after the Nazis took control of the German Republic. Yet, though expatriated from its place of origin, he asks Gestalt psychology's fundamental questions: why do we see or hear things as we do, how can art change the way we see and hear? These questions suddenly take on a dramatic tone, for, as a world war looms, all at once they seem to be about the future of humanity.

Naturally, in *Radio: An Art of Sound*, Arnheim examined the social and political possibilities of the technology, but much more important, he tried to place it in the realm of perceptual invention. In his own words, Arnheim understands that if an art of sound can have a social and political impact, it is because society and politics are first a partition of the perceptible and a partition of sensibility; politics is a form of aesthetics: a partition between what can and cannot be seen or heard, a partition between what can and cannot be joined together,

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a partition between what can and cannot be intermingled.<sup>1</sup> Consequently, an art of sound can reconfigure a political and social order only if it reshapes the social and political partition of our acoustic sensitivity. Arnheim knows that artists seriously interested in radio performances - F. T. Marinetti and Pino Masnata for instance - aim at the same aesthetic target.<sup>2</sup> But he also knows how quickly a struggle for a redefined sensitivity can become a war on people—how quickly radio’s capacities to synthesise infinite simultaneous actions can become a rapid transmission of war orders.<sup>3</sup> For this one important reason he needs to look more rigorously at the aesthetic potential of radio performances.

As in his seminal essay on cinema, Arnheim begins by laying out in the broadest sense the perceptual characteristics of the medium of radio programming so he may thus, from this base, explore its expressive potential. First, once it is understood that radio uses effects, words and music essentially as sound—not as imprints, symbols and forms—Arnheim endeavours to delineate how the dynamic fusion of these former elements could create a music of global dimensions.<sup>4</sup> Second, he defines the topographic indicators one must recognise for navigation within this sonic universe. Once it is also understood that broadcasting does not provide the definition, the limits and structure of a space, but simply establishes a topological relationship between sounds of varying intensity, Arnheim tries to establish procedures for containment or resonance, juxtaposition or discordant superimposition that will forge the emergence of an ability to grasp, perceptually, an intense, deep space.<sup>5</sup>

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1. See Jacques Rancière, *Le Partage du sensible. Esthétique et politique* (Paris: La Fabrique, 2000).

2. See F. T. Marinetti and Pino Masnata, “La Radia (1933)”, in Douglas Kahn and Gregory Whitehead (eds.) *Wireless Imagination: Sound, Radio, and the Avant-Garde* (Cambridge: MIT Press, 1992), p. 265-268.

3. See Timothy C. Campell, *Wireless Writing in the Age of Marconi* (Minneapolis: University of Minnesota Press, 2006) 94.

4. Rudolf Arnheim, *Radio: An Art of Sound* (Salem: Ayer Company Publishers, 1986) 28-29, 34-35, and 42.

5. Arnheim 52-55, and 95-96.

Furthermore, once it is understood that radio is utterly free to reconfigure the temporal landscape of an event, Arnheim lists the editing procedures—reduction and transposition—that break up one dimensional, linear movement through time, and render apparent the shifting relationships between finite sound segments that may at times reside within a universe created by another sound, yet at other times be a cosmos of their own, within which resident sounds dwell.<sup>6</sup>

But if his analyses go beyond a simple catalogue of radio's attributes, it is because of the second element in this twofold claim: "the radio drama [...] is capable of creating an entire world complete in itself."<sup>7</sup> Thus, we should be able to evaluate the success of a radio program—its capacity to arouse the empathy and participation of our senses aside—by its power to test the boundaries of hearing<sup>8</sup> and by its capacity to invoke other uses of that faculty: a fresh, discordant and unattached employment of the senses, the imagination, the memory and the very thinking process.

To probe Arnheim's claim to its full depth, I read his essay in relation to the logic of sensation of Gilles Deleuze. If there is a violence to this act of comparing the two, it's not a question of turning our guns on Arnheim. We will not re-write him here. We will melt down his cannons to recast them, so to better use them in our own battle. We must not overlook the fact that the public—the listener—is physiologically no different for us then for Arnheim. Thus if social circumstances since Arnheim's time have become exacerbated, his assertions should point to an aggravated crisis. Circumstances have changed dramatically: "It may be that believing in this world, in this life, becomes our most difficult task, or the task of a mode of existence still to be discovered on our plane of immanence today."<sup>9</sup> This way of life does not come as a gift; it can only be constructed: it is the product of an experiment with life's

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6. Arnheim 105-117.

7. Arnheim 137.

8. Arnheim 136.

9. Gilles Deleuze and Félix Guattari, *What Is Philosophy?*, trans. Hugh Tomlinson and Graham Burchell (New York: Columbia University Press, 1994) 75.

driving forces, its materials and structures, time and space, the power of our perception. In certain circumstances, radio (or a sound performance) may well be a possible vehicle for testing the “possibilities of movements and intensities”<sup>10</sup> of this universe, movements and intensities capable of “[giving] birth to new modes of existence”<sup>11</sup> and creating consciousness of a cosmos that is, as yet, in many ways intangible. A world as ethereal as the one Columbus set out from Huelva on the caravel *Santa Maria* to discover, a world more defined by hope and need than by any accurate representation.

Arnheim not only believed in the capacity of radio to hurdle space, abolish frontiers and give universal access to the complete spectrum of human activity<sup>12</sup> but also, as we deduce from his essay, in its capacity to stimulate contentious exchanges within complex organisations and draw the entire planet into the sphere of sonic influence.

In wireless the sounds and voices of reality claimed relationship with the poetic word and the musical note; sounds born of the earth and those born of the spirit found each other; and so music entered the material world, the world enveloped itself in music, and reality, newly created by thought in all its intensity, presented itself much more directly, objectively and concretely than on printed paper: what hitherto had only been thought or described now appeared materialised, as a corporal actuality.<sup>13</sup>

Today, this is the sense in which Arnheim’s assertions can be best appreciated, and this is how I will approach them in this study: The arrangement of radio’s sounds presents a twofold venture, a chance to both attain a new listening dimension and rediscover the world. Only by exploring the singular macrocosm of radio will our world be restored. Not as a static presence, but as a dynamic potential for activity and change. *Radio: An Art of Sound* became a guide for radio artists, but has not yet found its legitimate place in the realm of radio or performance studies—if frequently referred to, it is only as a

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10. Deleuze and Guattari 74.

11. Deleuze and Guattari 74.

12. Arnheim 14 and 226-256.

13. Arnheim 15.

useful part in an argumentation aiming at its already given conclusions. Recasting Arnheim's study can help us understand not only why a voice heard on radio may acquire so much power, but also how a multimedia performance can reshaped our time-space—once understood that this performance replays in its own ways many radio's features: disembodiment of the voice; schizophrenic editing of words; coupling of a recorded past with an over-amplification of the present; a music of noises; etc. We only need to follow the story line of his essay, and refrain ourselves from making quick analogies with the actual performances. We only need to live through him the inventiveness of some radio events that opened up new ways of encountering the world, and see for ourselves if our radically new multimedia stage apparatus are not only repetitions and displacements of an old technology.<sup>14</sup>

### **The empirical circumstances**

To join the game, Arnheim invents. He sets up a little Italian style theatre: he delineates a space, he places the actors, he sets out the stage directions. His first little story puts us in a café in the south of Italy, a fisherman's spot, its view of the sea dominating the street's clamour, where all our attention is on the boats returning to port.<sup>15</sup> A charming country scene, with a few details to orient us; a scene prepared to capture sounds: spitting, crackling, shouting, whistling... a French *chansonnette*. The café's waiter has turned up the radio. But this act will obliterate all sense of space and direction already established, and utterly transform the little place. The radio program does not just become one of the many sounds in the little café. No, it

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14. For detailed considerations about sound and radio artworks that can still have an influence on actual performances, see Christine von Assche, *Sonic Process. Une nouvelle géographie des sons* (Paris: Éditions du Centre Pompidou, 2002); Douglas Kahn, *Noise, Water, Meat: A History of Sound in the Arts* (Cambridge: MIT Press, 1999); Christof Migone, *Writing Aloud: The Sonics of Language* (Los Angeles: Errant Bodies Press, 2001); Allen S. Weiss, *Phantasmic Radio* (Durham: Duke University Press, 1995).

15. Arnheim 13.

establishes, instantly, its own space by the simple force of its sound waves, as it blends into the café's ambience, at once integrated and detached.

The announcer informed us that they were going to broadcast an hour of German folk-songs and he hoped we would enjoy them. And then a typical German male voice choir sang the old songs that every German knows from childhood. In German, from London, in a little Italian place where strangers are almost unknown. And the fishermen, hardly one of whom had been in a big town, let alone abroad, listened motionless. After a while the waiter seemed to think we should have a change, so he got on to an Italian station, and as an hour's gramophone records was on just then, we heard a French chansonnette. French, from Rome, in that village!<sup>16</sup>

This radio program is not simply sound; it is a demonstration of the immense disparity between the various sounds: "French, from Rome, in that village!" Immediately, the disparities between the auditory possibilities fill the air and seek to create their own place in the little café. Immediately the spatial compass needle swings round its pivot, disconnecting the café from its secure sonic mooring. The scene, once composed of totally integrated fragments, is shattered into a mass of disparate elements. What is important is not the material violence of these sounds that promote a little upheaval in this civilised tableau. That's a conclusion too ordinary, too dialectic, too easily sunk by simple common sense. No, what's important rather, is the inequality implied in the carefully structured disturbance of everyday perceptions: "the fishermen [...] listened motionless."<sup>17</sup> The unequal relationship between the heterogeneous fragments puts the listeners into a mute trance and pushes their hearing faculty to the limit without abandoning them, like sailors enshrouded by fog, in a perceptual void. The configuration of the radio program, as it suffuses these alien people, places and things, articulates a new force in the relationships here. Radio: a mighty attack on the time-honoured conventions of the café.

The radio demonstrates that the sound environment is built

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16. Arnheim 13-14.

17. Arnheim 13.

solely by implication, that the relationships between the fragments are based on their differences. Examining this arrangement, we could say (if we wished to look at its negative side) that it is elliptical, full of holes and deficient in many respects, but that would underestimate its supple adaptability, its very affirmative nature. Rudolf Arnheim sums up this process:

It represents a triumph of the mind that it has succeeded in creating new worlds of the senses in which actual space- and time-relations are of no value, but where the associations of thought of the directing mind decide what—not only in thought but also in the senses—belongs together.<sup>18</sup>

“French, from Rome, in that village!” is an arrangement of heterogeneous sound fragments that is complete unto itself. It does not speak of a process of accumulation on a return passage from a lost world, or even show us a future where it will establish a frame of reference, an authentic world. It speaks of a process of implied dimensions, directions, speeds, viscosities, waxing and waning currents, a process that is inventing a world of perceptual possibilities. Like Modern painting did. Like silent movies do. Like audiovisual performances will do.

### **Certain possibilities**

First, we must stress that the trance-like state of those listening to the radio observed by Arnheim is closely related to his claims regarding radio, and describes precisely what is at stake with the creation of any radio program or sound performance: how to invoke listening in another way, how to forge new perceptions. By all evidence, these fishermen don't maintain any intimate and natural relationship with radio, their listening habits do not dispose them to pay much attention to the multiple layers of sound occasioned by the introduction of this foreign language program from Rome. But above all, we can bet that their strange trance is not evidence of a lack of culture, not the result of some inability to understand, and is instead a

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18. Arnheim 120.

mental state of much greater depth: an actual breach in the sensory-motor system, a gap through which we may propel a perceptual assault. The trance has not stilted the fishermen's senses, it has simply defined, straightaway, the conditions of perceptual invention. The trance-like state of the fisherman is not a manifestation of a lack of understanding on their part that could lead them to misinterpret what they hear. To describe the interpretation of this event in terms of understanding or misunderstanding would be to favour a passive idea of listening, thus condemning it to the narrow task of bringing about a correct response, a correct result presupposed by questions of identification, and thus eliminating the elemental force of acknowledging the credibility of the real world, where listening is not a task of applying truth based on recognition. We incorrectly imagine the fishermen struggling to interpret French and differentiate it from German: "The new aural education by wireless, which is so much talked about, does not consist only of training our ear to recognise sounds [...]. But it is more important that we should get a feeling for the musical in natural sounds [...]."<sup>19</sup> Not only does Arnheim rewrite here Luigi Russolo's art of noises manifesto, but he also foresees Pierre Schaeffer's *musique concrète* and what will become known as electronic music.<sup>20</sup>

The sound signals pose a dilemma. Perturbing and captivating, they force one to truly listen, to embark upon an exploratory voyage that is also a sort of initiation. Arnheim's aesthetic proposition needs to be heard only once for us to understand that it maintains no relationship to sound fidelity or integration with the world as we know it. To hear it is to above all be faced with an experiment in audition, one that points towards a plethora of new lifestyles. Arnheim distrusts any use of broadcasting that seeks to disseminate a world made to measure from the materials of the already accepted

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19. Arnheim 35.

20. See Luigi Russolo, *The Art of Noises* (1916), trans. Barclay Brown (New York: Pendragon Press, 1986); Pierre Schaeffer, *Traité des objets musicaux* (Paris: Seuil, 1966); Herbert Brün, "Wayfaring Sounds", in *When Music Resists Meaning: The Major Writings of Herbert Brün* (Middletown: Wesleyan University Press, 2004).



world, that is to say one made from the artefacts of visual culture and bourgeois theatre.<sup>21</sup> The future of radio will be realised in a new perceptual state “training the listener to concentrate on the audible”<sup>22</sup>: which will also encompass a musicalisation of our world—forcing perceptions that transcend common sense and in the case of radio, literal representation. When the forces of global change find their realisation in the medium of radio listening, radio itself ceases to be a system of retransmission dedicated to maintaining sonic harmony as “an assistant to the social order”<sup>23</sup>—its sole attribute its capacity to bolster agreement.

The criteria are thus both violence and originality. This is precisely what strikes our listeners: they are forced, obliged by a formulation of sounds to an exploration of perception, and it is there that they encounter an opportunity to gain credence, in a new way, of this world we live in. For belief in the world is also that which they need the most. These sailors, seemingly out of danger on *terra firma*, have lost their bearings. As a world war looms and Fascist societies expand, they no longer believe in where they are, and the very mechanism that has directed them to this dispossessed state is also that which had helped them set a course out of it: their habits, and those *clichés* that have blunted their sensibilities. Thus, believing in the world may result in an arrangement of sounds that allows escape from this control of representation; an arrangement that, however insignificant, will give birth to a new time-space: “The new and close alliance of natural and artificial sounds will not only create a new branch of art, but will also bring about a refinement of our sensibility,” Arnheim insists.<sup>24</sup>

Henceforth incapable of remaining moored to a recollection of how things were, the listener needs to seek new sonic bearings, that will lead to a change, in a concrete way, in the very manner in which they listen, the very course of their perceptual voyage. The radio itself

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21. Arnheim 15, 31, and 35.

22. Arnheim 15.

23. Arnheim 141.

24. Arnheim 34-35.

demands this new direction. And, suddenly, there exists only one compulsion: to navigate out of the trance, via the same route that got them into it, by taking a bearing on the new potentials in what they hear, an act that can only be accomplished within the context of the broadcast, by a reshaping of the listening process. The arrangement of sounds, by its violence and originality, presents, as we already said, a twofold venture: a chance to both rediscover the world, and attain a new listening dimension. The listener does not want this violence—it happens to be exterior to them—but they assume, consequently, that it goes against their habitual perceptual flow. The tiny universe of radio sound has been confounded with the disruption of their faculties, and this thanks to the very thing which has brought about this mutation. Rudolf Arnheim is exceptionally clear on this point: “The wireless artist must develop a mastery of the limitations of aural. The test of his talent is whether he can produce a perfect effect with aural things, not whether his broadcast is capable of inspiring his listeners to supplement the missing visual image as realistically and vividly as he can.”<sup>25</sup>

The radio Arnheim defends calls for a hearing faculty that no longer needs recognition. To recognise is to grasp the interplay of our faculties with regards to an object that those same faculties have already defined and which they are actually in rapport with. Recognising a thing is not possible under any conditions that do not presuppose agreement between our faculties and ordinary common sense: that which we perceive finds its confirmation in the memory and its extension by inferred comprehension. So the radio Arnheim defends permits us to make experiments with another sensibility: a sensibility discovered in the radio waves that roam so far away, without ever meeting, in diffuse patterns the self becomes lost in. “[The listener] has rather to keep strictly to what the artist offers him [...] and not to supplement it by his own imaginative frills.”<sup>26</sup> Arnheim looks for another type of empathy, an empathy for sounds that have become independent of the objects that are their

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25. Arnheim 136.

26. Arnheim 134.

references. A musicality as prodigious as the desire to listen itself: “The listener [...] restricts himself to the reception of pure sound, which comes to him through the loudspeaker, purged of the materiality of its source.”<sup>27</sup>

A true radio system—apparatus, techniques, personnel and management—broadcasts a group of sound sensations that have a direct effect on the nervous system even if it does not respond with movement or reaction and remains catatonic. “Sensibility and nerves are directly attacked, music becomes an organic part of nature, pulsating, rejoicing sorrowing, boundless, amorphous.”<sup>28</sup> This system does not mix together sounds, languages, cultures, places and listeners without producing a configuration that becomes intolerable to the listener. And it’s precisely because the configuration is cross-fertilised by these disparate, highly evocative potentials that it cannot remain bound by the constraints of the real world. This configuration, inorganic and aformal, is a strange thing to hear, and it forces us into a conflictual use of our faculties. The radio puts together a German song and an Italian speaker. But these uncommon occurrences don’t converge in an object defined by the void: they preserve their differences. That’s because, if these differences are attributed to things, these associations cannot be made without provoking new differences. And it is also because, if this system provokes listening, it does so by obliging a departure from the normal sensory-motor blueprints. It is here that radio represents, in the eyes of Arnheim, an opportunity to invent perceptual vistas. By its concrete application, by an “acoustic bridge,”<sup>29</sup> radio is the occasion of a discrepancy in intensity, of a cognisant differentiation between the fragments—“French, from Rome, in that village!”—that breaches ordinary perception and forces an exploration of perceptual power. In so doing, radio becomes not only a mediation technique but also a popular art, a way to rebuild an image of our world and a way to forge a deeper relationship to it.

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27. Arnheim 142.

28. Arnheim 41.

29. Arnheim 195.

### **An abstract machine**

But why, for Arnheim, do these radio programs represent such a perceptual confrontation. Because their elements are not dealt with as parts of a whole, as mementoes of an everyday event. In other words, certain radio programs evade the logic of representation: “the radio drama [...] is capable of creating an entire world complete in itself.”<sup>30</sup> But why, of course, do these elements only have this independent life that permits them to intermingle in ways so varied as to constitute such problematic symbols? Because the radio system takes these bits of music, their melody and words so very independent of association with any particular place, yet so very moving, so supple, and demonstrates that what they have in common is that they are sounds—“The rediscovery of the musical note in sound and speech, the welding of music and speech into a single material, is one of the greatest artistic tasks of the wireless.”<sup>31</sup>

In doing this, radio uses the sound fragments less for their attribute of being able to establish empathy with an object and more for their property as an infinite series of modes—passive and active forces of affect and of change. Sound is no longer considered as an amorphous material that is waiting to be moulded into shape, but like a dense, dynamic material taut with the tensions of its own fantastic potential. A material and its internal forces: “Common to all such sounds is the chromatic rise in intensity and pitch, the swelling and increase of strength, and just this is the special expression that such sounds transmits to us.”<sup>32</sup> It is the sound itself, when it is chosen and set into any constituent of a radio experiment, that opens up an infinity of possible compositions, and propels radio towards a music of the future: “it should be realised that elementary forces [intensity, pitch, interval, rhythm and tempo] lie in the sound, which affects

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30. Arnheim 137.

31. Arnheim 30-31.

32. Arnheim 30.

everyone more directly than the meaning of the word, and all radio art must make this fact its starting point.”<sup>33</sup>

If, on one of its level, the radio produces certain compositions, and forces associations upon the listener that no longer dovetail with a reconstitution of physical reality, it is because, on a deeper level, the radio uses all sound fragments as parts of a single and intense molecular material. Not like radically separated forms and substances, but like a singular material of variable intensity transected by tensors. Language, musical composition, noise: these are the different intensities in the same selection of congruous sound. “The separation of noise and word occurs only on a higher plane, fundamentally, purely sensuously, both are first and foremost sounds.”<sup>34</sup>

What does it resemble, this deeper level with its ominous implications referred to in the radio experiments that interested Arnheim? 1. At this level, he recapitulates, often tiny segments are appropriated as sound material; 2. This material is an energy set apart to be altered, such as in degree of intensity, of resistance, of penetration, of surroundings, of speed, etc.: “the multiplicity of voices, harmonious and discordant, raucous and smooth, calm and restless, nasal and resonant, repressed and open, piping and booming”<sup>35</sup>; 3. And that which will alter this material will always be its own energy or the tensors. Arnheim did not call these by name, but he did indicate a repertoire of compositional methods (juxtaposition, implication, multiplication, etc.) that sum up this process: to bend or crush; 4. This rapport between the active and passive energies, this rapport of affect, it is that which we will call, as Deleuze did, an abstract machine.

Machine because it is a series of joined forces, abstract because it does not fabricate actual forms and substances but potentials for change.<sup>36</sup> A technological apparatus is not only made of manu-

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33. Arnheim 28-29.

34. Arnheim 28.

35. Arnheim 38.

36. Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (Minneapolis: University of Minnesota Press,

factured pieces, plastic, aluminium, electrical wires, etc., and of organisational structures, programs, prototypes etc., but of materials which have no form, that present only degrees of intensity (resistance, absorption, stretching, speed), and also of a function that is resolved only by the tensors: juxtaposition, envelopment, interweaving, etc.

What are we doing, insisting on the nature of the fragments that we have been occupied with up to now? They must not be considered simply as commodities independent of everything because they are also intensities that express a rapport between forces. A fragment of language expresses a wrinkling of sound at a certain magnitude, a kind of explosion that menaces the formal expectations of a language, and forces unnatural links. “French, from Rome, in that village!” it is a rapport of resistance, penetration, envelopment, speed, etc. that leaves unscathed neither the language nor the place. This is neither correspondence, nor formal opposition between a language, a piece of music and a sound that allow the radio to put these in affiliation, but common force of their sounds influence. And it is because this power is animated by the folding or the crumbling that these fragments retain their immediacy and conserve all their singularity. The abstract machine does not advance or oppose the identity of a language or a place—these are but affects that linger after the strike, the most trivial perhaps. The abstract machine formulates different intensities within the same sound framework: by the telescoping of two intensities, there folding up the sound, the abstract machine steers the sounds identity, formal and substantial, the languages and places, toward other configurations that evade the formality of parallels, analogies, oppositions and identities.

In the eyes of Arnheim, a broadcast system thus exhibits a harmony of precise forces: the bending and crushing of sound at the same time the fragments resulting from this are interwoven with all sounds’ own particular spatial and temporal energy. “The direct expressive power of a hammered-out rhythm and a soft blurred sound, a major and a minor chord, a fast and a slow pace, a sudden

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or a gradual rise and fall in pitch, a loud or a soft tone—these are the most elemental and the most important creative means for every form of acoustic art [...].”<sup>37</sup>

But that alone does not suffice to stimulate the innovative in certain radio experiments. It is in conceiving programs that will bring about musicalisation of radio that Arnheim reveals his great vision. What concept of music does he convoke for liberating the power of radio? That is the question we must ask, because music could easily bulwark an abstract machine with a purely abstract function, one that would then never cease to relocate the diverging sounds on escape routes within resonant structures perpetually being reassembled. An entity that could be either, mathematical, formal, harmonious or conceptual.

When radio makes itself a witness to historical events, when radio lets us hear experimental programming, Arnheim listens for things other than the vast echo chamber that will become the world; it seems to him that above all, these events and experiments demonstrate the never ending metamorphosis that conditions the relationship between sound intensities: inequality. These radiophonic moments and presentations do not presume to embrace all of sound’s influences; they place their circumstance of inequality within the domain of the fundamentals of sound composition. Until the publication of Arnheim’s essay, radio had done nothing but reduce distances, accelerate the speed of interactions, and increase the number of listening points in a space that remained unchanged. According to Arnheim, radio’s greater task lay in changing the world. That is to say radiophonic systems that individualise the world by repeated differentiation: with each repetition the world acquires a new coherence and always a new interactive fabric. This is because radio signals are based, by their very physical nature, upon the underlying inequality of every sound excerpt, on associations that do not repeat without being transformed.

Sounds and speech are not “chemically pure” art-products as tones of music are to a certain extent; they are products of nature and reality. From

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37. Arnheim 30.

this it follows that they are not strictly definable. Of course the artist moulds them [...] by stylising them with the help of those musical means [tempo, intensity, dynamics, harmony and counterpoint], but there always remains, unless it is going to result in nothing but a laboratory product [...]. Rhythm and the vocal line of speech can be modulated, but if one starts scanning too regularly, boredom is the inevitable consequence!<sup>38</sup>

It is, therefore, this continuous transformation that poses the enigma of the radio signal, the inner differentiation that compels the listener. It can be a new way to perceive. But it is not sufficient to just apply the techniques. We will gain nothing without changing radio's nature, physically, mentally, socially and politically. Arnheim's enthusiastic message is that with radio the difference is the medium of communication itself: each sound composition appears to be the result of the transformation of inequalities. Transformation is not a representative device; it is a force that torments our perception. The senses find themselves confronting a tumult of sound intensities that can no longer be accommodated within the common forms bestowed upon an object or a scene by the imagination's schematic. This latter, inspired mainly by the gradual process of individuation, continuously repeated and displaced (relationships between more and more discreet sound intensities, the increasingly subtle implications of their disparate potentials, forced movement from one to the other that open gaps in reality<sup>39</sup>), as the memory migrates within a complex cosmos<sup>40</sup> and thought too, is repositioned within infinite understanding.<sup>41</sup> It is this oscillation, this incessant shift from one listening perspective to another that Arnheim raises to the level of a fundamental method when he describes the following radiophonic event, one that seems at first to be a simple fusion of opposing locales.

One of the most dramatic events in the history of the wireless occurred on New Year's Eve, 1931-1932, when the New Year's speech of President von

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38. Arnheim 33-34.

39. Arnheim 52-55.

40. Arnheim 24.

41. Arnheim 20.



Hindenburg was interrupted by Communists: here, unexpectedly and at a significant moment, two extremes of political thought were manifested directly after one another, and those opposites seemed to come from the same room. [...] It represents a triumph of the mind that it has succeeded in creating new worlds of the senses in which actual space- and time-relations are of no value, but where the associations of thought of the directing mind decide what—not only in thought but also in the senses—belongs together. [...] These same effortless leaps in space governed by the central thought of the broadcasting official can be achieved by the listener himself, he rushes from station to station on his long-distance receiver and abandons himself to the ecstasy of the breadth, the depth and the diversity of earthly life [...].<sup>42</sup>

### **The realities of change**

Arnheim makes a sharp distinction between a placement of locations in a structure well delineated by cultural beacons and the implications of the dissimilarities through which the radio signal induces a change to acoustic space,<sup>43</sup> a movement which telescopes the intensities, creating different universes and disregarding without invalidating the distances that separate them: “In the sensory zone of audibility which the microphone transmits to us there is probably no direction at all but only distance.”<sup>44</sup> On one side, the listener always finds a way to allocate time-space;<sup>45</sup> on the other, the heterogeneous acoustic spaces are immersed one into the other.<sup>46</sup> In the former, the most complex compositions will never go beyond a melange of sounds within Euclidian space and played out in real time (mayhap breaking the mould occasionally by proceeding elliptically or in the opposite direction). “In the second case, it is accompanied by a new, peculiar, invisible space [...]”:<sup>47</sup> conflicting dimensions that intermingle without ever unifying within a larger whole, necessitating constant

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42. Arnheim 119-121.

43. Arnheim 146-147.

44. Arnheim 55.

45. Arnheim 99.

46. Arnheim 20.

47. Arnheim 99.

permutations and migrations, producing an ambivalence appropriate for the future, and there, wherein are unresolvable probabilities and inexplicable differences. “[You] make countries tumble over each other by a twist of your hand, and listen to events that sound as earthly as if you had them in your own room, and yet as impossible and far-away as if they had never been.”<sup>48</sup>

Now there’s a definition of a radio signal! The expression of an abstract machine, driven by metamorphosis, product of the invisible, of the “impossible,” indifferent to that which has already been its time, absorbed as it is within a reality continually in the process of being concocted and obliterated. A machine that also sculpts a portrait of real, “earthly” forms, occupying itself with varying patterns composed of only sound in such a way as to render their manifestation an expression of the magnitude, the implied differences (hither and yon, here in the kitchen, and way out there, nowhere) of forces incorporeal yet nevertheless tangible, active, “unseen, yet entirely earthly,”<sup>49</sup> of the actual occurrences that make up this world right here. “Thus, through spatial conditions, the original acoustic equality of all human beings (as represented by their voices) gives place to a hierarchy determined by spiritual values.”<sup>50</sup>

There is another logic that falls into place: for “otherwise... otherwise...” it substitutes “and... and...” We do not actually dwell in London, or in German folklore, or in our childhood. We are in an implied reality of combined London and Berlin and childhood, that is to say truly in the process by which these singularities are connected yet do not in any way reconstitute a presupposed whole (the world, the continent, my life) but connect locally—never globally or generally—at the moment they are disbursed, to produce an unimpeded and mutating mass. We are otherwise not at all actually in London, or in Berlin or in our childhood. We are for all intents and purposes in London, and in Berlin, and in our childhood, that is to say actually in a process of transformation, and of movement

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48. Arnheim 20.

49. Arnheim 76.

50. Arnheim 101.

between singularities that affirms as it disconnects, and in that way entails a mutual conservation of all the distances, physical and chronological, while never forming a whole imaginary structure, but instead assembling the disparate elements, through this process arriving at a weightless relation that levitates, and in so doing glides over the sequence of singularities: “even the mere simultaneity brings about a close contact in the acoustic sphere, because there the individual things do not lie beside and separate from each other as in visual space but overlay each other completely, even when, objectively, the sounds come from different spatial directions.”<sup>51</sup> A macrocosm, most assuredly constructed through this incessant passage from one singularity to another within a tacit coexistence, “so as to follow on without a break, at the same time keeping the divisions between them clear.”<sup>52</sup>

One can well understand how fundamental and important is the contradiction between this sound-space with all its possibilities and the actual space that always remains equally empty or full, where there is more or less constant movement or lack of it, organisation or lack of it, which is equally harmonious or non-harmonious, and which is, above all, static, constant and without any time element.<sup>53</sup>

An experiment with the singular reality of these sound tracks is essential if one is to fashion a macrocosm such as that. To perform local connections, inclusive divisions and itinerant combinations, is to invent incorporeal effects that reassign sound phenomena to another dimension: “a super-realistic level” where a “wireless” link “can directly juxtapose what is farthest removed in space, time and thought with amazing vividness.”<sup>54</sup> A sound dimension independent of the requirement of naturalism: “the wireless is not, like the sound film, tied to naturalistic pictures; it can embed a politically ‘heightened’ speech in a sound world that will not contradict it.”<sup>55</sup> Change

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51. Arnheim 121.

52. Arnheim 114.

53. Arnheim 148.

54. Arnheim 119.

55. Arnheim 42.

persists: a virtual dimension where differences are without contradiction or opposition. The radio system achieves a threshold of transformation that doesn't let anything replace this transformation, neither an imaginary identity nor the structural integrity of the sound composition. Moreover, it is the transformation itself that has the most direct affinity with these occurrences that quicken or prolong themselves. The sound fragments do not need a larger structure of the consciousness or a representation of the real world to assume the appropriate density. The mass that they sculpt has the active consistency of a process, of migratory mooring points and meandering courses. "And yet nothing is lacking! For the essence of broadcasting consists just in the fact that it alone offers unity by aural means. Not in the external sense of naturalistic completeness, but in affording the essence of an event, a process of thought, a representation."<sup>56</sup>

### **The musicality of radio**

It's fine to declare that radio, when so compelled, can reproduce the naturalist sound of the theatre, the effects and the voices that it transmits are no more obliged to be attached to the physical world than to our visual or theatrical culture and the perceptual and cognitive presuppositions that thus ensue. In the eyes (and ears?) of Arnheim, radio represents a victory of a new understanding that has disengaged itself from chronological time and Euclidian space. "Extension in time is a characteristic of the audible; therefore all aural art [...] have a time character. Nevertheless, we must observe that within this period of time there are not only successive, but also parallel representations; our ear is capable of distinguishing several simultaneous sounds."<sup>57</sup>

But the coming of radio's future-music does not coincide with abdicating the real world; it is the world that will surrender its bucolic scenes, its fraudulent ties to Chronos and Euclid. This musicalisation

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56. Arnheim 135.

57. Arnheim 24.

does not coincide with the establishment of a formal structure that will be essentially radiophonic and that could play with sound for itself and by itself within a structure of internal feedback. On the contrary, it is a departure from structure. As to the musicalisation of the world, Arnheim declares: “and so music entered the material world, the world enveloped itself in music, and reality, newly created by thought in all its intensity, presented itself much more directly, objectively and concretely than on printed paper.”<sup>58</sup> Radio does not transcribe the structure of the world onto a musical score. Rather, seeking continuous transformation, it will beleaguer and subvert the scheme of locks and dams that constrain the world.

And if Arnheim invokes the material aspects of sound, it is by the measure to which it is in its entirety multifaceted and abundant, because this is what he understands as materiality, the affective capacity of sound: sound as movement, as metamorphosis, as a material repetition of ephemeral differences that generates intricate lapses—convoluted lapses with many velocities, all viscous, elastic, capable of sequences, but certainly also capable of simultaneity, of retention, of anticipation, of slowing down and speeding up, of multiple intervals, a thousand times folded and refolded—that, finally, breach all confines and burst forth into boundless musicality.

We submit that this musicality is not a plain and comfortable metaphor: it proclaims a liberation provoked by manifold affinities, through forces that appropriate perception. It is a musicality composed of unequal intensities that transports the world towards an event where, journey bound, the perceptions are conveyed into the realm of the passionate: “Time passes most perceptibly; nothing of what has just been is left the next moment; only the course of the single line of melody exists; all the action is pure movement. [...] If the piece is *adagio*, then the whole world is *adagio*.”<sup>59</sup> This musicality is not cloistered and uncompromising—“This radical restriction to the essential [...] does not result from a stylistic simplification, nor is it

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58. Arnheim 15.

59. Arnheim 145.

a departure from reality”<sup>60</sup>—because musicalising our world demands a writing of the real itself: “In this pure aural world, sounds from quite separate spheres of the material world are united.”<sup>61</sup>

## **Conclusion**

Radio transmits an incalculable number of symbols that never elicit understanding. But, with Arnheim, we must remember that it can invent problematic symbols, either chronicles in which the narrative is rendered gobbledygook, or singular experiments that invent whole ways of living. These chronicles and these experiments permit us to determine the interplay of differences that are resolved in a sound symbol. It permits us to discern that this interplay of differences is the manifestation of another way of perceiving, that gains its driving force from change. And in that sense, we’re forced to admit that this wasn’t a “new” radio technique that Arnheim discovered after all, but simply the inborn tumultuous character of the various kinds of programming that it is possible to produce, “[f]or even if, as is highly probable, television destroys the new wireless form of expression [...] the value of this aesthetic experience remains unimpaired.”<sup>62</sup> The new reality of radiophonic symbols is still new, “with its power of beginning and beginning again, just as the established was always established from the outset, even if a certain amount of empirical time was necessary for this to be recognised”:<sup>63</sup> “wireless, when it wished to, could beat the theatre at sound realism.”<sup>64</sup> The perceptual changes invoked by the new radiophony are of an order outside of recognition.

Although wireless, when it wished to, could beat the theatre at sound-realism, yet those sounds and voices were not bound to that physical world

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60. Arnheim 159.

61. Arnheim 193.

62. Arnheim 16.

63. Gilles Deleuze, *Difference and Repetition*, trans. Paul Patton (New York: Columbia University Press, 1994) 136.

64. Arnheim 15.

whose presence we first experienced through our eye, and which, once perceived, compels us to observe its laws, thus laying fetters on the spirit that would soar beyond time and space and unite actual happenings with thoughts and forms independent of anything corporal.<sup>65</sup>

In committing himself to the enigma of radiophony, Arnheim avoided limiting his analysis to just radio and the rudimentary technical considerations of broadcasting. Mere multiplication of points of contact does not lead to the most global depiction of the world because it is that very way of seeing it that we find dislodged by the self-same symbols that result from such multiplication. For Arnheim radio is not simply a more efficient communications device, capable of extending farther the perimeters of a consolidated way of representing the world, of multiplying settings and the listening points in a homogeneous and static universe because from radiophonic events and experiments emerges the condition—inequality—that puts these very phenomena outside homogeneity and stasis: in “the ecstasy of the breadth, the depth and the diversity of earthly life.”

*Translated from the French by Clayton Bailey*

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65. Arnheim 15.