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Acousmatics

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The founder of *musique concrète* (see the introduction to Section I), Pierre Schaeffer (1910–1995) is equally important as a theorist of musical listening. Trained as a radio engineer and announcer, Schaeffer was fascinated by the fact that radio and recording made possible a new experience of sound—what he called "reduced listening" or "acousmatic listening"—that disclosed a new domain of sounds—"*objets sonores*" or sonorous objects, the objects of "acousmatic listening."

Like many post-War French intellectuals, Schaeffer was attracted to the philosophy of Edmund Husserl, founder of "phenomenology." Phenomenology disregards the traditional philosophical distinctions between "subject" and "object," "appearance" and "reality" and instead attempts simply to describe the contents of experience without reference to its source or subjective mode (e.g., dreaming, waking, etc.). In the case of sound, for example, instead of distinguishing sounds with reference to their sources (the sound *of* a guitar, the sound *of* a violin), phenomenology attempts to "reduce" (separate or distill) signal from source, and to restrict itself to describing the differences among sounds themselves. For Schaeffer, technologies such as radio and the phonograph made palpable this phenomenological experience, which was already envisioned by the Pythagoreans, among the first European musical theorists. These technologies effectively subvert the hierarchical relationship of source to signal, allowing sounds themselves (the sonorous objects) to have their own existence distinct from their sources. In this chapter from his *magnum opus*, *Treatise on Musical Objects*, Schaeffer introduces the concepts of "acousmatic listening" and the "sonorous object."

The Relevance of an Ancient Experience

Acousmatic, the *Larousse* dictionary tells us, is the: "*Name given to the disciples of Pythagoras who, for five years, listened to his teachings while he was hidden behind a curtain, without seeing him, while observing a strict silence.*" Hidden from their eyes, only the voice of their master reached the disciples.

It is to this initiatory experience that we are linking the notion of acousmatics, given the use we would like to make of it here. The *Larousse* dictionary continues: "*Acousmatic, adjective: is said of a noise that one hears without seeing what causes it.*" This term [. . .] marks the perceptive reality of sound as such, as distinguished from the modes of its production and transmission. The new phenomenon of telecommunications and the massive diffusion of messages exists only *in relation to* and *as a function of* a fact that has been rooted in human experience from the beginning: natural, sonorous communication. This is why we can, without anachronism, return to an ancient tradition which, no less nor otherwise than contemporary radio and recordings, gives back to the ear alone the entire responsibility of a perception that ordinarily rests on other sensible witnesses. In ancient times, the apparatus was a curtain; today, it is the radio and the methods of reproduction, along with the whole set of electro-acoustic transformations, that place us, modern listeners to an invisible voice, under similar conditions.

Acoustic and Acousmatic

We would utilize this experience erroneously if we subjected it to a Cartesian decomposition by distinguishing the "objective"—what is behind the curtain—from the "subjective"—the reaction of the auditor to these stimuli. In such a perspective, it is the so-called "objective" elements that contain the references of the elucidation to be undertaken: frequencies, durations, amplitudes . . .; the curiosity put into play is that of acoustics. In relation to this approach, acousmatics corresponds to a reversal of the usual procedure. Its interrogation is symmetrical: it is no longer a question of knowing how a subjective listening interprets or deforms "reality," of studying reactions to stimuli. It is the listening itself that becomes the origin of the phenomenon to be studied. The concealment of the causes does not result from a technical imperfection, nor is it an occasional process of variation: it becomes a precondition, a deliberate placing-in-condition of the subject. It is *toward it*, then, that the question turns around: "What am I hearing? . . . What exactly are you hearing"—in the sense that one asks the subject to describe not the external references of the sound it perceives but the perception itself.

Nonetheless, acoustics and acousmatics are not opposed to each other like the objective and the subjective. If the first approach, starting with physics, must go as far as the "reactions of the subject" and thereby integrate, in the end, the psychological elements, the second approach must in effect be unaware of the measures and experiences that are applicable only to the physical object, the "signal" of acousticians. But for all that, its investigations, turned toward the subject, cannot abandon its claim to *an objectivity that is proper to it*: if what it studies were reduced to the changing impressions of each listener, all communication would become impossible; Pythagoras' disciples would have to give up naming, describing, and understanding what they were hearing *in common*; a particular listener would even have to give up understanding himself from one moment to the next. The question, in this case, would be how to rediscover, through confronting subjectivities, something several experimenters might agree on.

The Acousmatic Field

In the sense of acoustics, we started with the physical signal and studied its transformations via electro-acoustic processes, in tacit reference to the norms of a supposedly known listening—a listening that grasps frequencies, durations, etc. By contrast, the acousmatic situation, in a general fashion, symbolically precludes any relation with what is visible, touchable, measurable. Moreover, between the experience of Pythagoras and our experiences of radio and recordings, the differences separating direct listening (through a curtain) and indirect listening (through a speaker) in the end become negligible. Under these conditions, what are the characteristics of the current acousmatic situation?

a) *Pure Listening*

For the traditional musician and for the acoustician, an important aspect of the recognition of sounds is the identification of the sonorous sources. When the latter are effectuated without the support of vision, musical conditioning is unsettled. Often a surprise, sometimes uncertain, we will discover that much of what we thought was heard was in reality only seen, and explicated, through the context. This is why certain sounds produced by instruments as different as string instruments and wind instruments can be confused.

b) *Listening to Effects*

In listening to sonorous objects [*objets sonores*] whose instrumental causes are hidden, we are led to forget the latter and to take an interest in these objects for themselves. The dissociation of seeing and hearing here encourages another way of listening: we listen to the sonorous forms, without any aim other than that of hearing them better, in order to be able to describe them through an analysis of the content of our perceptions.

In fact, Pythagoras' curtain is not enough to discourage our curiosity about causes, to which we are instinctively, almost irresistibly drawn. But the repetition of the physical signal, which recording makes possible, assists us here in two ways: by exhausting this curiosity, it gradually brings the sonorous object to the fore as a perception worthy of being observed for itself; on the other hand, as a result of ever more attentive and more refined listenings, it progressively reveals to us the richness of this perception.

c) *Variations in Listening*

Furthermore, since these repetitions are brought about in physically identical conditions, we become aware of the variations in our listening and better understand what is in general termed its "subjectivity." This does not refer, as one might perhaps tend to think, to an imperfection or a kind of "fuzziness" [*flou*] that would scramble the clarity of the physical signal; but rather to particular clarifications or precise directions that reveal, in each case, a new aspect of the object, toward which our attention is deliberately or unconsciously focused.

d) *Variations in the Signal*

Finally, we should mention the special possibilities we have for intervening in the sound, the implementation of which accentuates the previously described features of the acousmatic situation. We have focused on the physical signal fixed on a disk or magnetic tape; we can act on it, dissect it. We can also make different recordings of a single sonorous event, approaching the sound at the moment of its taping [*prise de son*] from various angles, just as one can film a scene using different shots [*prise de vues*]. Assuming that we limit ourselves to a single recording, we can still read the latter more or less quickly, more or less loudly, or even cut it into pieces, thereby presenting the listener with several versions of what was originally a unique event. What does this deployment of diverging sonorous effects from a single material cause represent, from the point of view of the acousmatic experience? What correlation can we expect between the modifications that are imposed on what is recorded on the tape and the variations in what we are hearing?

On the Sonorous Object: What It Is Not

We have spoken at several points of the sonorous object, utilizing a notion that has already been introduced, but not clarified. It is clear, in light of the present chapter, that we were able to propose this notion in advance only because we were implicitly referring to the acousmatic situation that has just been described. If there is a sonorous object, it is only insofar as there is a blind listening [*écoute*] to sonorous effects and contents: the sonorous object is never revealed clearly except in the acousmatic experience.

Given this specification, it is easy for us to avoid erroneous responses to the question raised at the end of the preceding paragraph.

a) *The sonorous object is not the instrument that was played.*

It is obvious that when we say "That's a violin" or "That's a creaking door," we are alluding to the *sound* emitted by the violin, to the *creaking* of the door. But the distinction we would like to establish between the instrument and the sonorous object is even more radical: if someone plays us a tape which records a sound whose origin we are unable to identify, what are we hearing? Precisely what we are calling a sonorous object, independent of any causal reference, which is designated by the terms *sonorous body, sonorous source* or *instrument.*

b) *The sonorous object is not the magnetic tape.*

Although it is materialized by the magnetic tape, the object, as we are defining it, is not on the tape either. What is on the tape is only the magnetic trace of a signal: a *sonorous support* or an *acoustic signal.* When listened to by a dog, a child, a Martian, or the citizen of another musical civilization, this signal takes on another meaning or sense. The object is not an object *except* to our listening, it is relative to it. We can act on the tape physically, cutting it, modifying its replay speed. Only the act of listening by a listener [*seule l'écoute d'un auditeur*] can provide us with an account of the perceptible result of these manipulations. Coming from a world in which we are able to intervene, the sonorous object is nonetheless *contained entirely in our perceptive consciousness.*

c) *A few centimeters of magnetic tape can contain a number of different sonorous objects.*

This remark follows from the preceding one. The manipulations just mentioned do not modify *a* sonorous object having an intrinsic existence. They have *created other objects* from it. There is, of course, a *correlation* between the manipulations to which one subjects a tape or its diverse conditions of reading, the conditions of our listening and the perceived object.

A simple correlation? Not at all, it must be expected. Suppose, for example, that we listened to a sound recorded at normal speed, then slowed down, then again at normal speed. The slowed-down portion, acting like a magnifying glass in relation to the temporal structure of the sound, will have allowed us to discern certain details—of grain, for example—which our listening, thus alerted and informed, will rediscover in the second passage at normal speed. We must let ourselves be guided here by the evidence, and the very way we have had to formulate our supposition dictates the response: it is indeed the *same* sonorous object, subjected to different means of observation, that we are comparing to itself, original and transposed. But what makes it one and the same object is precisely our will to comparison (and also the fact that the operation to which we have subjected it, in this very intention to compare it to itself, has modified it, without rendering it unrecognizable).

Suppose now that we play this slowed-down sound to an unwarned listener. Two cases can arise. Either the listener will still recognize the instrumental origin and, at the same time, the manipulation; for him there will be *an original sonorous source* that in fact *he does not hear*, but to which, however, his listening refers him: what he hears is effectively a *transposed version*. Or else he will not identify the real origin, will not suspect the transposition, and he will then hear *an original sonorous object*, which will be so *automatically*. (It cannot be a question of an illusion or a lack of information, since in the acousmatic attitude our perceptions cannot rest on anything external.) Inversely, for those of us who have just subjected the sonorous object to one or more transpositions, it is likely that there will be a unique object and its different transposed versions. However, it may also happen that, abandoning any intention to comparison, we attach ourselves exclusively to one or the other of these versions, in order to make use of them, for example, in a composition; they will then become for us so many original sonorous objects, completely independent of their common origin.

We could devote ourselves to similar analyses of other types of manipulations (or variations of the act of recording [*prise de son*]) which, as a function of our intention, our knowledge, and our prior training, will have as their result either variations of a single sonorous object, or the creation of diverse sonorous objects. With the slowing-down, we have voluntarily chosen a modification that lends itself to equivocation. Other manipulations can transform an object in such a way that it becomes impossible to grasp any perceptible relations between the two versions. In this case, we will not speak of the permanence of a single sonorous object, if the identification no longer rests on anything but the recollection of the diverse operations to which "something that was on the magnetic tape" was subjected. If it is impossible for a listener to recognize a kinship between the diverse sonorous results—even guided by recollections and a will to comparison—we will say that

the manipulations of a single signal have given way to diverse sonorous objects, whatever our intention may have been.

d) *But the sonorous object is not a state of the mind* [*âme*].

To avoid confusing it with its physical cause or a "stimulus," we seemed to have grounded the sonorous object on our subjectivity. But—our last remarks already indicate this—the sonorous object is not modified for all that, neither with the variations in listening from one individual to another, nor with the incessant variations in our attention and our sensibility. Far from being subjective (in the sense of individuals), incommunicable, and practically ungraspable, sonorous objects, as we shall see, can be clearly described and analyzed. We can gain knowledge of them. We can, we hope, transmit this knowledge.

Our rapid examination of the characteristics of the sonorous object reveals this ambiguity: as an objectivity linked to a subjectivity, it will surprise us only if we obstinately insist on opposing "psychologies" and "external realities" as antinomic. Theories of knowledge did not have to wait for the sonorous object to perceive the contradiction that we are indicating here, and which is not revealed in the acousmatic situation as such [. . . .]

The Originality of the Acousmatic Procedure

Our approach is thus distinguished from the spontaneous instrumental practice in which [. . .] everything is given at once: the instrument, as the element and means of a musical civilization, and the corresponding virtuosity, and thus a certain structuration of the music extracted from it. Nor do we any longer lay claim to "the most general instrument that exists"; what we are aiming at, in fact, and which follows from the preceding remarks, is the most general musical situation that exists. We can now describe it explicitly. We have at our disposal the generality of sounds—at least in principle—without having to produce them; all we have to do is push the button on a tape recorder. Deliberately forgetting every reference to instrumental causes or preexisting musical significations, we then seek to devote ourselves entirely and exclusively to *listening*, to discover the instinctive paths that lead from the purely "sonorous" to the purely "musical." Such is the suggestion of acousmatics: to deny the instrument and cultural conditioning, *to put in front of us the sonorous and its musical "possibility."*

One more remark before finishing [. . . .] In the course of this chapter, we have already begun to *hear* with another ear [. . . .] The interest of this remark is not a matter of pure form: it consists in noting that the operative technique has itself created the conditions of a new listening. Let us give audio-visual techniques what is owed to them: we expect from them unheard-of sounds, new timbres, deafening plays—in a word, instrumental progress. Indeed, they provide all that, but very quickly we no longer know what to do with it all; these new instruments are not added easily to the old ones, and the questions they pose singularly disrupt received notions. The tape recorder has the virtue of Pythagoras' curtain: if it creates new phenomena to observe, it creates above all new conditions of observation [. . . .]