sound mentioned above, this could be the same sound Peter Sellers might make as he gargles in a Blake Edwards comedy.

Here, the effect of the sound is so strong because it represents human speech felled at its physical core: what has been destroyed are a larynx and a tongue, which have just spoken.

TWO

THE THREE LISTENING MODES

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CAUSAL LISTENING

When we ask someone to speak about what they have heard, their answers are striking for the heterogeneity of levels of hearing to which they refer. This is because there are at least three modes of listening, each of which addresses different objects.[1] We shall call them *causal listening*, *semantic listening*, and *reduced listening.*

Causal listening, the most common, consists of listening to a sound in order to gather information about its cause (or source). When the cause is visible, sound can provide supplementary information about it; for example, the sound produced by an

enclosed container when you tap it indicates how full it is. When we cannot see the sound's cause, sound can constitute our principal source of information about it. An unseen cause might be identified by some knowledge or logical prognostication; causal listening (which rarely departs from zero) can elaborate on this knowledge.

We must take care not to overestimate the accuracy and potential of causal listening, its capacity to furnish sure, precise data solely on the basis of analyzing sound. In reality, causal listening is not only the most common but also the most easily influenced and deceptive mode of listening.

Identifying Causes: From the Unique to the General

Causal listening can take place on various levels. In some cases we can recognize the precise cause: a specific person's voice, the sound produced by a particular unique object. But we rarely recognize a unique source exclusively on the basis of sound we hear out of context. The human individual is probably the only cause that can produce a sound, the speaking voice, that characterizes that individual alone. Different dogs of the same species have the same bark. Or at least (and for most people it adds up to the same thing) we are not capable of distinguishing the barking of one bulldog from that of another bulldog or even a dog of a related breed. Even though dogs seem to be able to identify their master's voice from among hundreds of voices, it is quite doubtful that the master, with eyes closed and lacking further information, could similarly discern the voice of her or his own dog. What obscures this weakness in our causal listening is that when we're at home and hear barking in the back room, we can easily deduce that Fido or Rover is the responsible party.

At the same time, a source we might be closely acquainted with

can go unidentified and unnamed indefinitely. We can listen to a radio announcer every day without having any idea of her name or her physical attributes. Which by no means prevents us from opening a file on this announcer in our memory, where vocal and personal details are noted, and where her name and other traits (hair color, facial features—to which her voice gives us no clue) remain blank for the time being. For there is a considerable difference between taking note of the individual's vocal timbre—and *identifying* her, having a visual image of her and committing it to memory and assigning her a name.

In another kind of causal listening we do not recognize an individual, or a unique and particular item, but rather a category of human, mechanical, or animal cause: an adult man's voice, a motorbike engine, the song of a meadowlark. Moreover, in still more ambiguous cases far more numerous than one might think, what we recognize is only the *general nature* of the sound's cause. We may say, "That must be something mechanical" (identified by a certain rhythm, a regularity aptly called "mechanical"); or, "That must be some animal" or "a human sound." For lack of anything more specific, we identify *indices*, particularly temporal ones, that we try to draw upon to discern the nature of the cause.

Even without identifying the source in the sense of the nature of the causal object, we can still follow with precision the *causal history* of the sound itself. For example, we can trace the evolution of a scraping noise (accelerating, rapid, slowing down, etc.) and sense changes in pressure, speed, and amplitude without having any idea of *what* is scraping against *what.*

The Source as a Rocket in Stages

Remember that a sound often has not just one source but at least two, three, even more. Take the sound of the felt-tip pen with

which I am writing this draft. The sound's two main sources are the pen and the paper. But there are also the hand gestures involved in writing and, further, I who am writing. If this sound is recorded and listened to on a tape recorder, sound sources will also include the loudspeaker, the audio tape onto which the sound was recorded, and so forth.

Let us note that in the cinema, causal listening is constantly manipulated by the audiovisual contract itself, especially through the phenomenon of synchresis. Most of the time we are dealing not with the real initial causes of the sounds, but causes that the film makes us believe in.

SEMANTIC LISTENING

I call semantic listening that which refers to a code or a language to interpret a message: spoken language, of course, as well as Morse and other such codes. This mode of listening, which functions in an extremely complex way, has been the object of linguistic research and has been the most widely studied. One crucial finding is that it is purely differential. A phoneme is listened to not strictly for its acoustical properties but as part of an entire system of oppositions and differences. Thus semantic listening often ignores considerable differences in pronunciation (hence in sound) if they are not *pertinent* differences in the language in question. Linguistic listening in both French and English, for example, is not sensitive to some widely varying pronunciations of the phoneme *a*.

Obviously one can listen to a single sound sequence employing both the causal and semantic modes at once. We hear at once what someone says and how they say it. In a sense, causal listening to a voice is to listening to it semantically as perception of the handwriting of a written text is to reading it.[2]

REDUCED LISTENING

Pierre Schaeffer gave the name *reduced listening* to the listening mode that focuses on the traits of the sound itself, independent of its cause and of its meaning.[3] Reduced listening takes the sound—verbal, played on an instrument, noises, or whatever—as itself the object to be observed instead of as a vehicle for something else.

A session of reduced listening is quite an instructive experience. Participants quickly realize that in speaking about sounds they shuttle constantly between a sound's actual content, its source, and its meaning. They find out that it is no mean task to speak about sounds in themselves, if the listener is forced to describe them independently of any cause, meaning, or effect. And language we employ as a matter of habit suddenly reveals all its ambiguity: "This is a squeaky sound," you say, but in what sense? Is "squeaking" an image only, or is it rather a word that refers to a *source* that squeaks, or to an unpleasant *effect?*

So when faced with this difficulty of paying attention to sounds in themselves, people have certain reactions—"laughing off" the project, or identifying trivial or harebrained causes—which are in fact so many defenses. Others might avoid description by claiming to objectify sound via the aids of spectral analy-. sis or stopwatches, but of course these machines only apprehend physical data, they do not designate what we hear. A third form of retreat involves entrenchment in out-and-out subjective relativism. According to this school of thought, every individual hears something different, and the sound perceived remains forever unknowable. But perception is not a purely individual phenomenon, since it partakes in a particular kind of objectivity, that of shared perceptions. And it is in this objectivity-born-of-intersubjectivity that reduced listening, as Schaeffer defined it, should be situated.

In reduced listening the descriptive inventory of a sound cannot be compiled in a single hearing. One has to listen many times over, and because of this the sound must be fixed, recorded. For a singer or a musician playing an instrument before you is unable to produce exactly the same sound each time. She or he can only reproduce its general pitch and outline, not the fine details that particularize a sound event and render it unique. Thus reduced listening requires the fixing of sounds, which thereby acquire the status of veritable objects.

Requirements of Reduced Listening

Reduced listening is an enterprise that is new, fruitful, and hardly natural. It disrupts established lazy habits and opens up a world of previously unimagined questions for those who try it. Everybody practices at least rudimentary forms of reduced listening. When we identify the pitch of a tone or figure out an interval between two notes, we are doing reduced listening; for pitch is an inherent characteristic of sound, independent of the sound's cause or the comprehension of its meaning.

What complicates matters is that a sound is not defined solely by its pitch; it has many other perceptual characteristics. Many common sounds do not even have a precise or determinate pitch; if they did, reduced listening would consist of nothing but good old traditional solfeggio practice. Can a descriptive system for sounds be formulated, independent of any consideration of their cause? Schaeffer showed this to be possible, but he only managed to stake out the territory, proposing, in his *Traite des objets musicaux,* a system of classification. This system is certainly neither complete nor immune to criticism, but it has the great merit of existing.

Indeed, it is impossible to develop such a system any further unless we create new concepts and criteria. Present everyday language as well as specialized musical terminology are totally inadequate to describe the sonic traits that are revealed when we practice reduced listening on recorded sounds.

In this book I am not about to go into great detail on reduced listening and sound description. The reader is encouraged to consult other books on this subject, particularly my own digest of Pierre Schaeffer's work published under the title of *Guide des objets sonores.*

What Is Reduced Listening Good For?

"What ultimately is the usefulness of reduced listening?" wondered the film and video students whom we obliged to immerse themselves in it for four days straight. Indeed, it would seem that film and television use sounds solely for their figurative, semantic, or evocatory value, in reference to real or suggested causes, or to texts—but only rarely as formal raw materials in themselves.

However, reduced listening has the enormous advantage of opening up our ears and sharpening our power of listening. Film and video makers, scholars, and technicians can get to know their medium better as a result of this experience and gain mastery over it. The emotional, physical, and aesthetic value of a sound is linked not only to the causal explanation we attribute to it but also to its own qualities of timbre and texture, to its own personal vibration. So just as directors and cinematographers—even those who will never make abstract films—have everything to gain by refining their knowledge of visual materials and textures, we can similarly benefit from disciplined attention to the inherent qualities of sounds.

The Acousmatic Dimension and Reduced Listening

Reduced listening and the acousmatic situation share something in common, but in a more ambiguous way than Pierre Schaeffer (who first developed both notions) gave us to understand. Schaeffer emphasized how acousmatic listening, which we shall define further on as a situation wherein one hears the sound without seeing its cause, can modify our listening. Acousmatic sound draws our attention to sound traits normally hidden from us by the simultaneous sight of the causes—hidden because this sight reinforces the perception of certain elements of the sound and obscures others. The acousmatic truly allows sound to reveal itself in all its dimensions.

At the same time, Schaeffer thought the acousmatic situation could encourage reduced listening, in that it provokes one to separate oneself from causes or effects in favor of consciously attending to sonic textures, masses, and velocities. But, on the contrary, the opposite often occurs, at least at first, since the acousmatic situation intensifies causal listening in taking away the aid of sight. Confronted with a sound from a loudspeaker that is presenting itself without a visual calling card, the listener is led all the more intently to ask, "What's that?" (i.e., "What is causing this sound?") and to be attuned to the minutest clues (often interpreted wrong anyway) that might help to identify the cause.

When we listen acousmatically to recorded sounds it takes repeated hearings of a single sound to allow us gradually to stop attending to its cause and to more accurately perceive its own inherent traits.

A seasoned auditor can exercise causal listening and reduced listening in tandem, especially when the two are correlated. Indeed, what leads us to deduce a sound's cause if not the characteristic form it takes? Knowing that this is "the sound of x"

allows us to proceed without further interference to explore what the sound is like in and of itself.

ACTIVE AND PASSIVE PERCEPTION

It seemed important, in the context of this book on audio-vision, . to draw clear distinctions among the three modes of listening. But i we must also remember that these three listening modes overlap [1] and combine in the complex and varied context of the film sound- ^ track.

The question of listening with the ear is inseparable from that of listening with the mind, just as looking is with seeing. In other words, in order to describe perceptual phenomena, we must take into account that conscious and active perception is only one part of a wider perceptual field in operation. In the cinema to look is to explore, at once spatially and temporally, in a "given-to-see" (field of vision) that has limits contained by the screen. But listening, for its part, explores in a field of audition that is given or even imposed on the ear; this aural field is much less limited or confined, its contours uncertain and changing.

Due to natural factors of which we are all aware—the absence of anything like eyelids for the ears, the omnidirectionality of hearing, and the physical nature of sound—but also owing to a lack of any real aural training in our culture, this "imposed-to-hear" makes it exceedingly difficult for us to select or cut things out. There is always something about sound that overwhelms and surprises us no matter what—especially when we refuse to lend it our conscious attention; and thus sound interferes with our perception, affects it. Surely, our conscious perception can valiantly work at submitting everything to its control, but, in the present cultural state of things, sound more than image has the ability to saturate and short-circuit our perception.

The consequence for film is that sound, much more than the image, can become an insidious means of affective and semantic manipulation. On one hand, sound works on us directly, physiologically (breathing noises in a film can directly affect our own respiration). On the other, sound has an influence on perception: through the phenomenon of added value, it interprets the meaning of the image, and makes us see in the image what we would not otherwise see, or would see differently. And so we see that sound is not at all invested and localized in the same way as the image.

THREE

LINES AND POINTS: HORIZONTAL AND VERTICAL PERSPECTIVES ON AUDIOVISUAL RELATIONS

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Harmony or Counterpoint?

The arrival of sound in the late twenties coincided with an extraordinary surge of aestheticism in silent film, and people took passionate interest in comparing cinema with music. This is why they came up with the term *counterpoint* to designate their notion of the sound film's ideal state as a cinema free of