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THE CONCEPT OF THE ACOUSMATIC

1. Pythagoras and musique concrète

The concept of acousmatic experience, in which sounds are experienced as divorced from their producers, was brought to the fore in recent times by composers in the tradition of *musique concrète*. For Pierre Schaeffer, a composition is experienced acousmatically when a curtain has been lowered between its constituent sounds and their previous worldly existence. In this situation, which the medium of recording privileges, sounds are treated as objects divorced from their sources or causes. Schaeffer himself took the term from descriptions of Pythagoras' practice of lecturing to students from behind a screen, so that they would attend to the words and not the speaker; the esoteric or religious sect of Pythagoreans were called *akousmatikoi*, "those willing to hear". Thus Schaeffer wrote: "We can, without anachronism, return to an ancient tradition which radio and recording follow in the same way today, restoring to hearing alone the entire responsibility of hearing a perception ordinarily leaning on other sensory evidence".[1] In the history of music, Pythagoras is best known for his discovery of the natural harmonic series, according to which consonant musical sounds are related by simple number ratios. His followers split into Acousmatics and Mathematicians, and it was the scientific *mathematikoi* who endured.[2] Correspondingly, two distinct ways of musical thinking can be derived from Pythagoras' thought. The first is the regimentation of the natural harmonic series, resulting in what Palombini refers to as "The musical note, a notable assortment of pitch, duration, and intensity, [which] has borne sway over European tradition and laid claim to universality" – and hence tonal music in its broadest sense, music based on tones, that is, determinate pitched sounds of a certain stability and duration.[3] The second way of thinking, not influential until many centuries later, is so-called acousmatic music, which explores the inner nature of sound. In contributing to the latter conception through the development of *musique concrète*, Schaeffer sought an alternative to the tonal music which sprang from the Pythagorean proportions of intervals.

During the later 1940s Pierre Schaeffer, in an incredibly labour-intensive process, used the primitive recording technology then available – disc-cutters and, later, tape-recorders – to create compositions based on a montage of everyday and natural sounds recorded on tape, such as doors slamming, trains puffing and people talking, as well as more traditional musical materials such as the piano and other instruments. These sounds were modified in various ways - played backwards, cut short or extended, subjected to echo-chamber

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[1] Schaeffer (1966), p. 91, my translation; some passages appear in translation in Cox and Warner eds (2004), pp. 78-9.
[2] "The *akousmatikoi* disappeared with little trace, and we can only conjecture about the nature of their practices", Lippman reports (Lippman (1964), pp. 48-9).
[3] Palombini (accessed 2004).

effects, filtering out or reinforcing of certain frequencies, or varied in intensity – and in later *musique concrète* these processes had the effect of destroying clues about the source of the sounds.[4] The term *concrète* is meant to convey the idea of working directly or concretely with sound material, in contrast to the composer of traditional music who – according to exponents of *musique concrète* - works indirectly or abstractly through a system of notation which represents the sounds to be made concrete. *Concrète* also conveys the genre's concern with natural, real-world source-sounds, though in theory recorded electronic sounds were not forbidden.

While *musique concrète* typically treats and often transforms "worldly" sounds from everyday life such as footsteps, trains, and doors slamming, pure electronic music from the Stockhausen tradition – initially known by its German designation *elektronische Musik* and sometimes referred to as sound synthesis – is produced at least in part by computer synthesis. However, despite the ideological divide between *musique concrète* and pure electronic music, most practitioners were not purists. In *Hymnen* from 1966-7, Stockhausen used recorded sounds of national anthems, which are recognizable, though they are also transformed; in the early "Gesang der Jünglinge", which uses recordings of a child singing, there is an even closer affinity to *musique_concrète*. Moreover, the historic divide between *musique concrète* and *elektronische Musik* now concerns how the composition is realised in the performance-space as much as the kind of material exploited – hence the contrast between sound *diffusion* of acousmatic music and sound *reproduction* of taped music. Diffusion of a stereo source over a multi-channel loudspeaker system is the norm in *musique concrète,* and implies live control during performance and interaction with the performance space. In the electronic music tradition, in contrast, each channel on the tape is mapped on to a single loudspeaker, implying an attempt to replicate the composer's conceived space within the performance space – intervention in performance is concerned solely with balance, not with exploiting the individuality of the performance space.[5]

Composers in the *musique concrète* tradition took up the term "acousmatic", often describing their work as "acousmatic music".[6] *Musique concrète* composers tend to describe "acousmatic listening" as "listening without seeing". In both cases, he maintains, one should ignore the physical origin of the sounds, and appreciate them for their abstract properties. Schaeffer also termed the process "reduced listening", arguing that recording encourages it both through the possibility of listening without seeing, and of indefinite repetition. Sound reproduction has a double role: "to retransmit in a certain manner what we used to see or

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[4] See for instance Wishart (1986), p. 45.
[5] See Harrison (1999).
[6] According to Dhomont (accessed 2002), the term "acousmatic music" was introduced by *musique concrète* composer François Bayle in 1974.

hear directly and to express in a certain manner what we used not to see or hear".[7] In this way Schaeffer seeks to reconcile technology with nature, treating the medium of analogue recording like the curtain which concealed Pythagoras from the *akousmatikoi* – excluding visual experience while at the same time enhancing experience of the sonorous object in the way to which we have now grown accustomed through the telephone, tape and radio. John Dack reiterates Schaeffer's view, writing that after recording and *musique concrète* or radiophonic transformation, sound "can now attain the status of a sound object [and] acquires an autonomous identity...".[8]

Strictly, reduced listening should not be equated with listening without seeing; rather, it is listening that is enhanced by listening without seeing. The object of acousmatic or reduced listening is what Schaeffer calls a sound-object (*objet sonore*), apparently discounting the commonsense assumption that sounds are temporal processes rather than things. He writes: "In order to avoid confusing it with its physical cause or with a 'stimulus', it seems that we have based sound objects on our subjectivity. But...far from being subjective, in the sense of personal [and] incommunicable...sound objects...lend themselves quite well to being described and analysed...Such is the suggestion of the acousmatic: deny the instrument and cultural conditioning, to put in front of us the sound and its musical possibility ("possible")". Also: "When [sound recognition] is effected without the aid of sight, musical conditioning is shaken up. Often surprised, sometimes uncertain, we discover that much of what we believed was only in fact seen, and explained, by the context".[9] Schaeffer recognised that a Pythagorean curtain will not discourage our curiosity about causes, to which we are instinctively drawn. But he maintained that reduced listening counteracts this tendency: "the repetition of the physical signal, which recording makes possible...by exhausting this curiosity...gradually brings the sonorous object to the fore, [and] progressively reveals to us the richness of this perception".[10] (Compare the spoken repetition of a word - its meaning is forgotten as one concentrates on the sound itself.) At first, where we are ignorant of what is causing the sound, we want to know what it is; with practice, however, the desire dissipates.[11] It should also be noted that one can desire to know the origin of the sound, while at the same time experiencing it acousmatically.

Schaeffer's conception of acousmatic music concerns not just how listeners should perceive sounds, but the attitude which composers should adopt towards their material - one which attempts to ignore the physical origin of the sounds they use, and appreciates them for their abstract properties. Schaeffer distinguished four modes of listening ("les quatres écoutes"):[12]

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[7]Quoted Palombini (accessed 2004).
[8] Dack (1994).
[9] Schaeffer (1966), pp. 93, 97 (translation by Abigail Heathcote).
[10]Cox and Warner eds (2004), p. 78.
[11]Chion (1994), p. 32.
[12]Schaeffer (1967), pp. 103-28

(1) Indexical mode of listening (*écouter*): concerned with identification of events responsible for the emission of sound.

(2) Symbolic mode (*comprendre*): sounds as signs, signifiers or signifieds that are *extra-sonores*. (3) Naïve reception of a sound's occurrence (*ouir*): "I heard something".

(4) Attention to qualities of the sound itself, without reference to its source or significance (<u>entendre</u>).

Both (2) and (4) are acousmatic, but only the latter involves the experiencing of sounds as sounds that is characteristic of musical listening. *La recherche musicale* which Schaeffer proposes is based a return to "the sound itself". The *objet sonore* is an "in-itself" to be explored by "bracketing" both significations and causes. Schaeffer aimed to develop the everyday (*banale*) non-referential listening of entendre into a specialised semiotic system, equivalent to pre-existing musical and linguistic systems in its relational and abstract nature yet completely different in its development of "natural" listening.[13]

After beginning his collaboration with Pierre Henry on "Symphony pour un homme seul" and other pieces, Schaeffer became preoccupied with creating a syntax for non-tonal as well as tonal sounds, a *solfège* or typology for *objets sonores* – sounds considered in separation from their sources and classified in terms of tessitura, timbre, rhythm and density (the degree to which the sound-object fills out the sonic spectrum). He had begun developing this semiotic system of reduced listening in his preliminary studies of 1948, in which he recorded percussion instruments, and discovered that any single musical event is characterised not only by the timbre of the main body of the sound, but also by its attack and decay.[14] Schaeffer distinguished two elements of the sound object, the complex spectrum associated with a sharp attack or abrupt change in content, and the more ordered, slowly changing spectrum usually associated with the body of the sound and its decay; the former element can be so disordered as to be a semi-continuous spectrum of noise. In 1952 Schaeffer produced a definitive syntax in the form of "Esquisse d'un solfège concrèt", the last chapter of *A la recherche d'un musique concrète*. Schaeffer consolidated his formidable apparatus in the *Traité des objects musicaux* (1966). It involved three "plans de référence" – melodic (the evolution of pitch parameters with respect to time), dynamic (evolution of intensity parameters with respect to time) and harmonic (the reciprocal relationship between parameters of pitch and intensity represented as spectrum analysis). Thirty-three criteria for evaluating the three plans in total were suggested, resulting in around 54,000 possible combinations of sonological characteristics.[15] This attempted syntax attempts to characterise non-tonal sounds independently of their sources.

Modernists who criticised *musique concrète* from the standpoint of instrumental puritanism - which dictated that only instrumental sounds, or sung vocal sounds of fairly determinate pitch, could be included within music - argued in effect that the genre failed to afford genuine acousmatic experience, an ironic

[13]Schaeffer (1966), especially pp. 360-85.
[14]Manning (1993), pp. 20ff. The implications of this discovery are discussed further in section 4.
[15]I am indebted to Manning (1993) for this information.

objection given *musique concrète's* pretensions. Stockhausen for instance complained that the genre is replete with "associations [which] divert the listener's comprehension from the self-evidence of the sound-world presented to him because he thinks of bells, organs, birds or faucets". (By "self-evidence" he presumably means hearing sounds as sounds or tones.) Pierre Boulez argued that when electronic composers use noise "without any kind of hierarchic plan, this also leads, even involuntarily, to the 'anecdotal', because of its reference to reality... Any allusive element breaks up the dialectic of form and morphology".[16] These composers were perhaps over-impressed by earlier *musique concrète*, where the causal origins of the sounds were easily recognisable. John Cage, however, took the opposite view, claiming that *musique concrète* was too conventionally musical – though for that iconoclast anything would be too conventionally musical. Perhaps he was right, for certainly on some evidence Schaeffer aspired to create "music". He commented that "From the moment you accumulate sounds and noises, deprived of their dramatic [literal] connotations, you cannot help but make music".[17] Moreover, in invoking the parallel of solfege, he was emphasising the connections with traditional music creation. Thus it seems that Schaeffer did not consider the possibility of creating a category of soundart distinct from music, even though it could be argued that that was what he was doing.[18] However, he increasingly felt that he had failed to deprive sounds of their literal connotations, declaring in despair that "*Musique concrète* in its work of assembling sound, produces sound-works, sound-structures, but not music".[19] He explained that "each time I was to experience the disappointment of not arriving at music…In fact I don't consider myself a real musician…A good researcher is what I am".[20]

2. A broader definition of "acousmatic": the acousmatic thesis

Is the concept of the acousmatic a specialised one restricted to the domain of electro-acoustic composition, or does it have a broader application? The claim of the *acousmatic thesis* is that is does – that all music is essentially acousmatic. On this view, while worldly sounds are characterised in terms of their producers, to hear sound as musical is to separate it from its producers. The thesis is defended by Roger Scruton in *The Aesthetics of Music,* who writes that in musical experience, "we spontaneously detach the sound from the circumstances of its production, and attend to it as it is in itself... The history of music illustrates the attempt to find a way of

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[16]Stockhausen quoted in Kahn, p. 112; Boulez (1971), pp. 22-23.
[17]Quoted in Diliberto (1986), pp. 54-9, 72.
[18] See Hamilton (forthcoming).
[19]Cage quoted in Kahn (1999), p. 114; Schaeffer quoted in ibid., p. 110. Kahn comments that in Cage's own audiotapes works such as the pioneering "Williams Mix" (1952), "associative properties [of] the recorded sounds...are almost entirely obliterated" (ibid., p. 113).
[20] Schaeffer (1987).

describing, notating, and therefore identifying sounds, without specifying a cause of them".[21] Later he writes that "The person who listens to sounds, and hears them as music, is not seeking in them for information about their cause, or for clues as to what is happening. On the contrary, he is hearing the sounds apart from the material world...the notes in music float free from their causes...What we understand, in understanding music, is not the material world, but the intentional object: the organisation that can be heard in the experience".[22] Edward Lippman writes in similar vein: "Hearing is satisfied with its own objects, and has no need to relate them to further objects and events of the outside world. This is especially evident in the case of tone and tonal configurations...[Sonority's] ontological status is clearly that of an object peculiar to hearing; it can not be located at all in environmental space".[23] Although ultimately I reject the acousmatic thesis, as I argue elsewhere I believe that discussion of it yields significant insights into the nature of musical experience. The thesis conforms with an enduring strand of thought about music, which detaches it from the world, making it the most abstract of the arts – a pure "art of tones". [24]

In fact, there are two related contrasts between Scruton's position and that of exponents of *musique concrète* – these concern the definition of the acousmatic, and its application. First, the definition. To reiterate, in describing their work as "acousmatic music", those in the *musique concrète* tradition cite the Pythagorean definition of "acousmatic" as "listening without seeing". Compare this definition with Scruton's broader characterisation of acousmatic listening as listening which excludes both thought and awareness of the source or cause of the sound. On his account, such listening could occur while the cause of the sound is visible; so while both Schaeffer's and Scruton's senses of acousmatic involve detaching the sound from its circumstances of production, they should not be equated. Clearly when someone listens to musical sounds they may gain information about their cause, but Scruton's claim is that we spontaneously detach such information in musical listening. This descriptive claim contrasts with the more prescriptive claim of the Schaefferians; according to Scruton, we do not choose to listen to musical sounds acousmatically, but do so quite naturally. Scruton believes that acousmatic experience of traditional music is wholly natural and spontaneous, while Schaefferians – thinking in terms of "listening without seeing" - believe that the listener has to make an effort to forget the origins of the sounds.

Scruton and Schaeffer also differ fundamentally over the application of the acousmatic. Schaeffer focussed on our experience of non-tonal sounds or noise, which up to his time music had hardly embraced, while Scruton applies his concept to what *musique concrète* composers would regard as traditional music. When Scruton speaks of sounds that are detached from the circumstances of their production, he is referring to the way that tones are intentional objects of musical perception; for him, indeed, typical cases of *musique concrète* would

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[21]Scruton (1997), pp. 2-3.
[22] Scruton (1997), p. 221. Scruton's views are discussed at greater length in Hamilton (1999).
[23]Lippman (1977), pp. 46-7, 50.
[24] As discussed in Hamilton (2006a).

not qualify as music. However, Schaeffer's followers at least on occasion have allowed that acousmatic experience can apply to traditional music. Luke Windsor is most explicit, allowing that there is "both intentionally acousmatic music and music that is more coincidentally acousmatic…" – presumably he means *musique concrète* and traditional music respectively.[25] Moreover, *musique concrète* compositions are indeed compositions – that is, while reduced listening is a concern with sound itself, in which one develops a heightened attention to individual sounds, one returns to the whole, incorporating that new attention into the complex totality. If *musique concrète* is soundart or a precursor of soundart, it shares many of the traditional concerns of music.

To elucidate Scruton's thesis one must define the non-acousmatic. Sound experienced in terms of its cause, as the sound of some event such as a door slamming, a dog barking or a clarinet being played – has been or might be described as: significant, anecdotal, associative or dramatic sound; or, conceived explicitly as a kind of experience, the purely acoustic, the practical, the literal, the documentary. The description "purely acoustic experience" could apply just as well to the acousmatic as to the non-acousmatic case, and so is best avoided. "Literal", "practical" and "documentary" have the right connotations.[26] Say I am walking in the woods and hear a creaking sound above me. An acousmatic response would be "That's a very interesting high-pitched sound, intermittent and rising in intensity" – perhaps it could be located in Schaeffer's taxonomy of sound-objects. A non-acousmatic response, in contrast, might simply be (looking up) "Is that a branch about to topple onto me?" – hearing is subservient to sight in information-gathering.[27] The acousmatic experience of sound excludes its literal qualities – as in the case of music, the listener detaches the sound from its worldly source or cause. In contrast, literal experience of sound involves a practical or technical interest. Rescuers listening for the cries of survivors buried by an earthquake treat those sounds practically and not acousmatically.

3. Assessing the acousmatic thesis

The acousmatic thesis faces some serious obvious objections. Indeed I have argued elsewhere that the thesis is incorrect, and that both the acousmatic and the non-acousmatic are essential aspects of musical experience.[28] The objections may be summarised as follows:

(1) Timbral objection: the experience of timbre is non-acousmatic; if this experience is an essential part of musical experience, then the acousmatic thesis is undermined. When listening to a piano concerto or a jazz

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[25]Windsor (2000), p. 9.

[26]The term "literal" is used by electronic composer Trevor Wishart (1996). Schaeffer writes that "acoustic and acousmatic are not opposed like objective and subjective", suggesting that he does not want to equate the acoustic and the non-acousmatic; but the issue is not clear ((1966), p. 92).

[27]As discussed in Lippman, "Spatial Perception and Physical Location as Factors in Music", in his (1999), pp. 26-39.

[28] Hamilton (2006b forthcoming).

pianist, one cannot help thinking "piano", and so it is essential to the musical experience that one attends to its causal origin.

(2) Spatial objection: Acousmatic experience cannot comprise awareness of the spatial origin or movement of sounds, since spatial origin clearly concerns their cause or source. Therefore acousmatic experience will not suffice for the appreciation of those varieties of music which have as a central purpose achieving spatial effects through placement of groups of performers or sound-producers – where it is important that one attends to the direction of the sounds.

(3) Virtuosity objection: Acousmatic experience cannot comprise awareness of the performer's virtuosity, therefore it will not suffice for the appreciation of those varieties of music where this is a significant element in the listening experience.

Although proponents have responses to each of these objections, the thesis ultimately cannot be sustained. The most that can be claimed is that a more developed musical understanding tends towards the acousmatic. To say that the playing of a novice musician is beginning to make musical sense, is to say it is becoming less mechanical – though the mechanics of sound-production may later be exploited intentionally, as effects. (For instance, Helmut Lachenmann's extended instrumental techniques draw attention to the means of their production - one of his primary reasons for exploiting them).[29]

Even those sympathetic to Schaeffer have recognised that musical experience is two-fold in the sense outlined. In his investigation of *musique concrète*, Luke Windsor holds that "for the listener at least, attempts to break through the acousmatic 'screen' in order to ascribe causation to sounds are an important facet of musical interpretation".[30] In place of the acousmatic thesis, therefore, I propose a two-fold thesis, which claims that listening to music involves both non-acousmatic and acousmatic experience - experience in terms of causes of sounds, and as abstracted from those causes. The analogy with Richard Wollheim's two-fold thesis of "seeing-in" concerning the experience of pictorial representation is deliberate. Wollheim's claim is that one experiences a picture non-representationally and atomistically, as a set of marks on a surface, and also representationally.[31] Now the question is not whether ordinary listening involves attention to both cause or medium and tonal aspects; but rather, whether each is a fully musical aspect of musical experience. My claim is not that Scruton rejects two-foldness, but that he wrongly denies the genuinely musical status of the non-acousmatic aspect. Indeed, Scruton does seem to hold with Wollheim that there is a single act of attention. Thus while Wollheim argues that I must be able to see the cornfield in the picture in the same act of attention that reveals to me that it was

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[29] See Heathcote (2004).
[30] Windsor (2000), p. 9.
[31] Wollheim (1980).

produced by means of pallet knife working on chrome yellow paste, Scruton argues that I must be able to hear the phrase that opens the second movement of Brahms' Symphony No. 4 as a melodic unity, at the same time as hearing that it is sounded on the horns. According to Scruton's concept of "double intentionality", acousmatic experience is available in one and the same act of attention that embraces the real-life causality of the musical medium; "double intentionality" is meant to cover all the ways in which we can focus on something real while attending to something that is imagined in and through it.[32]

Perhaps Scruton is right to suggest that one should not pick out aspects like spatial properties and timbre, and treat them as non-acousmatic, as if they could be the object of a distinct act of attention. The issue is not clear. However, double intentionality does not, as he seems to assume, offer a kind of proof of the acousmatic thesis, for the reason that "real-life causality" is a genuinely musical part of musical experience. For "genuinely musical" here, one could substitute "genuinely aesthetic". The genuinely musical is not entirely imagined, entirely the product of metaphorical perception, or essentially acousmatic. Nonetheless, it is a consequence of the nature of sound that mediation through the concept of causality has a particular significance in musical experience that it does not seem to have in the case of arts such as painting and literature. This fact gives the concept of the acousmatic a special interest.

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[32] Scruton argued this in discussion.

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