

# Schaeffer's Sonic Object: Prolegomena

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## Abstract

While the terms 'musical object' and 'sonic object' (sometimes 'music object' and 'sound object') propounded by Schaeffer between 1952 and 1966 are now an integral part of musicological parlance, little attention has been paid to the construct where these notions belong. Moreover, the diachrony of Schaeffer's system has been customarily disregarded. Focusing on *Traité des objets musicaux*, the author introduces the notion of sonic object as inferable from Schaeffer's 1966 *Solfège*, with reference to earlier texts. This survey comprises: three new musical facts, the three musicological deadlocks that follow thence, a preliminary definition of sonic object, the relationship between object and structure, the relationship between sonority and musicality, the idea of *recherche musicale* and the pre- history of the music instrument.

## 1 INTRODUCTION

Pierre Schaeffer's 1966 *Solfège of the Sonic Object* rehearses itself as an operational lexicon in 'Esquisse d'un solfège concret' (Schaeffer 1952<sup>A</sup>), presents itself as a precept of the Method of Research after *Musique Concrète* in 'Lettre à Albert Richard' (Schaeffer 1957) and formulates itself as a Method of Discovery of a Universal Polymorphous Musicalness, by deconditioning and reconditioning of listening, in *Traité des objets musicaux* (Schaeffer 1966). Research in course turns to the notion of *sonic object*, the focal point of Schaeffer's construct, to present it within the *sofège* method where it belongs. Then, extricating Schaeffer's concept from that method, I shall be arguing for an independent and self-supporting *sonic thing*.

## 2 RATIONALE

Although the notions of ‘musical object’ and ‘sonic object’ (sometimes ‘music object’ and ‘sound object’) propounded by Schaeffer between 1952 and 1966 have been appropriated by various idiolects since 1953 (Boulez’s for instance), little attention has been paid to the theoretical construct where these notions belong. The consequences of this are illustrated by the following definition of Cadoz’s: ‘We use the term *sound object* in a larger sense than that used by Pierre Schaeffer (1966). In Schaeffer’s book, the notion of an object is associated with elementary sounds. In our use of this term, a complex sound structure can be an object’ (Cadoz, Luciani and Florence 1984 cited from Roads ed. 1989: 495). Yet the level of complexity of a sonic object as defined in *Traité des objets musicaux* is a function of an intention of listening, from micro-objects such as the fragment ( $\Phi$ ) to macro-objects such as accumulations (A) and *échantillons* (E).

## 3 TRAITÉ DES OBJETS MUSICAUX: ESSAI INTERDISCIPLINES

Published in 1966, the writing of *Traité des objets musicaux* occupied Schaeffer for fifteen years. The first draft, stolen in Turin with his luggage from a car, was rewritten four times. Initially expository, the text became a veritable ‘thinking machine’ (Pierret 1969: 97). *Traité* comprises seven Books: (I) ‘To Make Music’, (II) ‘*Entendre*’, (III) ‘Co-relations Between Physical Signal and Musical Object’, (IV) ‘Objects and Structures’, (V) ‘Morphology and Typology of Sonic Objects’, (VI) ‘Solfège of the Musical Object’ and (VII) ‘Music as a Discipline’. One level below, *Traité* is divided into a Foreword, an Introduction — ‘Historical Situation of Music’ — and thirty-six Chapters. With the exclusion of the Foreword, *Traité* is further divided into numbered and unnumbered Paragraphs, the former making up the thirty-six Chapters, the latter the Introduction and a Penultimate Chapter, which was added to the 1977 reprint. The terms ‘object’, ‘sonic object’ and ‘musical object’ make repeated appearances in the Foreword, Introduction and Book I before the sonic object is negatively defined in Chapter IV, Paragraph 5, on conclusion to Book I.

### 3.1 Three New Facts

*Traité* ‘proposes to go through the daily expanding domain of sonic objects’ and readers are advised not to seek in it ‘a “music theory”’,

for they will find nothing but 'a practice of the musical object' (Schaeffer 1966: 11). The Introduction evokes the musical object among the 'Three Deadlocks of Musicology' (third Paragraph) that follow from 'Three New Facts' (second Paragraph), which are listed in the order of importance that is generally ascribed to them, even if for Schaeffer this order should be reversed.

The first fact is of an aesthetic nature. The earlier half of the twentieth century associates an increasing compositional freedom with an ever sterner quest for rigorous compositional rules. This process has been extensively analysed, albeit in an operative rather than explicative fashion. It is not simply that rules of harmony and counterpoint have gradually been broken with, it is musical structures themselves that have been called into question. To speak of dissonance and polytonality with reference to the Occidental scale is one thing. To call that structure into question with an hexatonic or a dodecaphonic scale is another. In addition, the notion of *Klangfarbenmelodie* points to an interest turned towards structures other than pitch structures.

The second fact concerns the appearance of new techniques, for musical ideas are dependent on music machines, in the same way as scientific ideas are dependent on experimental apparatus. Around 1950 two new modes of sound production appeared. *Musique concrète* purported to create works with sounds from any source whatsoever, carefully chosen and then assembled according to the electroacoustic techniques of montage and mixing. On the contrary, *elektronische Musik* bypassed the acoustic phase and, abetted by electronics, purported to synthesize all sounds by combination of frequencies, each regulated in intensity and evolving as a function of time. In either case, the works created resulted so peculiar as not to be considered music. Besides, *Musique concrète* was not written and *elektronische Musik* was coded. Whether by lack or by excess, they did worse than defy traditional notation: they did away with it.

#### *traditional music*

Sounds of acoustic origin, whether primitive or refined, furnish the materials for a language that the instruments allow one to articulate, by succession or superimposition, in the course of a musical execution that results either from a set-up pre-established by the author of a score or from an improvisation, which also responds to the rules of Art. (Schaeffer 1959: 10)

### *elektronische Musik*

Carefully predetermined sounds of electronic origin furnish the materials for rigorous combinations that the electroacoustic means of transformation allow one to modulate, juxtapose and superimpose, according to a scheme preconceived by the composer. (Schaeffer 1959: 12)

### *musique concrète*

Sounds of any origin whatsoever, but preferably acoustic sounds, furnish the materials for a montage that no instrument allows one to articulate, unless by transformation, transmutation, *découpage*, juxtaposition and superimposition, with a view to a 'musical experience' that results, through successive improvisations, from a composer's elaboration, according to the possibilities afforded by the material and to the perception registers of a public. (Schaeffer 1959: 13)

The third fact concerns an ancient and endangered reality, namely vestiges of musical civilizations and musical geographies other than Western European. Despite the traditional musician's curiosity for the historical sources of music and a musical ethnology that would not be devoid of analogies with that of languages, ethnology arrived quite late at this domain, attaching itself to its own object, rather than to the musical object which its discoveries were likely to illuminate. Moreover, musicologists, with exceptions, were not prepared to decode those languages, which would hold the key to a true musical universalism. How could they? Music, for the Western European, remains attached to a 'music theory' that would rely, if the manuals are correct, upon a solid scientific basis. The teaching of the Faculties corroborates the teaching of the Conservatoires, which starts from a few definitions — musical note, scale, chord — taken as principles given once for all under the discreet guarantee of the specialists, musicians and physicists, who trust each other or else declare themselves incompetent in a domain that is not theirs.

A native African plays a tune on his bamboo flute. The European musician will have great difficulty in reproducing the exotic melody faithfully. When he finally succeeds in identifying pitches, he becomes convinced of having accurately accounted for the African piece of music. The native protests though, for the European has not paid enough attention to the timbres. The native then repeats the same tune on another flute. The European believes it is another melody, for pitches have completely changed in compliance with the dissimilar construction of the new instrument.

However, the native swears it is the same piece. The difference is that for the African the most important thing is the identity of timbre while for the European it is pitch. What matters in music is not the natural given, not sounds as executed but as meant. The native and the European hear the same sound, whereby they mean quite different things, for this sound is comprehended with reference to two different musical systems. Sound in music functions as a 'system-sound'. Executions may diverge, as the acoustician can accurately determine but, for music, the essential is that the piece must be recognized as identical. There exists between a musical value and its execution exactly the same relation as in language between a phoneme and the sounds that represent the intended phoneme in speech. (Jakobson 1932 cited from Palombini 1993: 185)

### **3.2 Three Musicological Deadlocks**

The first deadlock concerns musical notions and follows from the third fact. It is not simply tonality and the scale that have come to be dismissed by the most primitive and the most modern musics alike, but the very notion of musical note, the archetype of musical object, whereon melodic and rhythmic structures rest. No solfège or harmony, albeit atonal, can account for the generality of musical objects, particularly those employed by African and Asian musics.

The second deadlock concerns instrumental sources and follows from the second fact. Despite their tendency to refer archaic and 'exotic' instruments to Western European norms, musicologists were left speechless by concrete and electronic sources, which — surprise, surprise — blended well with African or Asian instruments. The notion of instrument was held in check. Nests of instruments, synthetic instruments; such would be the fittings of our concert halls, unless a total bareness sanctioned the absence of any instrument. Would the orchestra and the conductor, already threatened by the disappearance of the score, give way to a magnetic tape read by loudspeakers?

The third deadlock concerns the aesthetic commentary and follows from the first fact. Overall, the abundant literature devoted to sonatas, quartets and symphonies sounds hollow. We only fail to notice this poverty and meaninglessness because we have grown accustomed to it. Once those complacent considerations, moving to and fro the piece, on the composer's and the exegete's moods are discarded, we are left with an extremely arid list of manufacturing

procedures in technical jargon or at best with a study of syntax. But a true explication of the text is nowhere to be seen.

### 3.3 Preliminary Definition

The sonic object is succinctly defined in a footnote to 'Historical Situation of Music': 'By sonic object I mean here sound itself considered in its *sonic* nature, rather than the material object (instrument or any device whatsoever) from which it comes' (Schaeffer 1966: 23, note 3).

### 3.4 Object/structure

'In order to retrieve a certain fervour of listening and fever of discovery, it is necessary to have been through those instants, whose personal experience can be made by any interested person, when sound imprisoned on tape repeats itself endlessly identical to itself' (Schaeffer 1966: 33). Such a fervour and fever are not unlike those that befall image people when, through the camera, slow motion and the big close-up, they discover visages, objects and movements seldom and poorly seen by the eye.

On the one hand, once a disk is put on the turntable, a magical force enthralls me and forces me to listen to it, however monotone. Is it that one surrenders for being under the impact? I am aware of how tiresome and unsuitable to broadcast these raw disks are. But I know they are extraordinary to listen to in a *special frame of mind*, and I know I much prefer them raw than in the state of vague composition (decomposition) where I have painstakingly finished by isolating eight pseudo-bars of a pseudo-rhythm.

I lower the pick-up at the beginning of a rhythmic group. I lift it exactly at the end, link this group with another and so on. Imagination has so much power when we mentally single out a sonic element and strive to carry out this sampling of matter with the pick-up that, for the moment, we let ourselves go. In reality, re-listening coolly to the compound obtained after long hours of patience, we get nothing but a coarse fragmentation of rhythmic groups rebellious to any compass. You believe to remember that the train takes a  $3/4$ , a  $6/8$ . The train follows its own time signature, perfectly defined but perfectly irrational. The most monotone train varies constantly, never plays in time. It turns into a series of singularly twin isotopes. It is here that would reside musical pleasure for a trained ear.

This pleasure would not consist in making the train play in time, the times of our elementary solfèges, for the sake of a satisfaction after all quite vulgar, but in learning to listen to and love this Czerny of a new genre, enjoying, in a most mechanical monotony, the play of some atoms in freedom, the imperceptible improvisations of chance, with no help from melody or harmony. *Diabolus in mecanica*. (Schaeffer 1950: 38)

A musical investigation thus limited, however, would fail to take into account that ‘the objects are made to serve’ and that once grouped into *structures* they go unnoticed as *objects*, simply to contribute, each, a value to the ensemble. We do not perceive the objects really but the structures that allow their identification. From objects to structures and from structures to language there is a continuous chain, all the more indiscernible since it is absolutely familiar and spontaneous and we have been totally conditioned by it. ‘Thus we come across the second aspect of the tape machine, which we had initially taken for a machine to make sounds, to assemble them, to create new objects and new musics even. The tape machine is also — and, for research, it is mostly — a machine to observe sounds, to “decontextualize” them, to rediscover traditional objects, to re-listen to traditional music with another ear, an ear that, if not new, is at least as deconditioned as possible’ (Schaeffer 1966: 33).

At this point, it is indeed necessary to comprehend the dissymmetry of uses. In the sense of the *making* or even of sound analysis, the tape machine belongs in the laboratory or in the instrumentarium. It works at the elementary level, say the level of the objects. In the sense of the listening [*entendre*], the tape machine becomes a tool to prepare the ear, to unfold a screen, to create shocks, to drop masks for it. The tape machine, as any acoustic machine for that matter, cannot dispense with the work of thinking upon the listening; however, it paves the way for that work with new contexts. Thanks to it, we can ask why, how and by means of what references (ancestral, traditional, conventional, natural, etc.) we listen [*entendons*]. (Schaeffer 1966: 34)

### 3.5 Sonority/musicality

The tape machine allows attention to be directed to sound itself, its matter and shape, by means of cuttings and comparisons that resemble, technique apart, works on the materials of language. Taking language into context, it becomes difficult if not impossible

to acquire such a knowledge. The flow of sense and the functions of the elements are much too determining to let the infrastructure be uncovered. Patient re-constitutions of the objects of phonation have been required for this amazing discovery to take place: certain sounds, phonetically different, are heard [*entendus*] as similar in certain languages but as distinct — significant as one says — in others. It has been possible to say even that, at the limit, phonology would dispense with phonetics. ‘Musical perception has little in common with audition’, that is, the physicist’s (Francès 1958). Schaeffer cannot rest content with this dichotomy, even if justifying by it the distinction between sonority and musicality, after the distinction between phonetics and phonology.

Between phonetic material and the functional units of phonology there exist co-relations that explain one another. Of course one may cast doubt on so close a parallel: the link between signifier and signified is arbitrary in language, which makes the word into a symbol (in Saussure’s and Peirce’s acceptance), while the musical note has customarily been conceived as detached from all arbitrariness, like a given of the physical world to which we would be sensitive. This runs counter to Francès proposition. Musicality is deductible from sonority. Indeed, musical objects do present an objective foundation in connection with the physical world, but Schaeffer will choose their sense with unusually ample latitude, so that the symbols of the solfège, rather than simply represent physical sounds, are relatively arbitrary signs, ‘musical ideas’ if you like.

### **3.6 Recherche musicale**

Musicality can be approached from two ends, the material and the oeuvre. *Traité* tackles the material only. Still, such neat distinction overlooks the fundamental implication that articulates structures, from simple to complex, and which does not necessarily show the simplest first. We enter these relations at various levels, gaining then access to lower and upper strata. Schaeffer puts it this way: I keep in mind (and in the ear) the role played in the work by the *objects* (constituent sonic elements) that I isolate and compare, independently of their original contexts. *Traité* therefore evokes traditional, primitive, ‘exotic’ and contemporary musics without reference to the language level, which is beyond its scope. There are three reasons.



(I) In linguistics, where the objects are even more inextricably implicated in the superior levels, it seems possible to grade disciplines by relative 'degree of freedom'.

The combination of linguistic units thus shows an ascending scale of freedom. In the combination of distinctive features into phonemes the freedom of the individual speaker is none. The code has already defined all possibilities of use for the language in question. The freedom of combining phonemes is restricted, being limited to the marginal situation of creating words. In the formation of sentences with words, restrictions upon the speaker are fewer. Finally, in the combination of sentences into elocutions, the restrictive rules of syntax drop and the freedom of any individual speaker is substantially increased, though one should not underestimate the number of stereotyped elocutions. (Jakobson 1963 cited by Schaeffer 1966: 36)

The composer who uses an instrumental 'language' enjoys the same degree of freedom as the speaker who combines phonemes: the sounds of the orchestra are a given, as are those of the vocal apparatus. Orchestral 'words' are notes and new ones are possible only in the zone of 'neologisms': gongs, cowbells and ondes martenot. Musical 'sentences' rely on scales, modes and rules of harmony, enjoying the half-freedom of linguistic sentences vis-à-vis syntax. Finally, there are stereotyped musical elocutions too: cadences, answers, accompaniment and resolutions, and the new stereotypes of contemporary musics.

(II) Music teaching traditionally separates music theory from music composition. Keeping clear of compositional rules, Schaeffer is taking up a tried and tested usage. Besides, his 'music theory' is even less theoretical than that of solfège lessons, which quickly move on to uses of the scale, intervals and tonality. Schaeffer's preoccupations are akin to the performer's: he never dissociates the *listening* [*entendre*] from the *making*.

(III) Inasmuch as musicality appears so linked to the physical sound, it matters to examine the latter first. One would be suspicious of a linguist who lacked interest for the phonatory apparatus and the 'phonic objects' it is capable of delivering, as one would be suspicious of a fundamental musical investigation that dispensed with re-examining sound as manufacturable nowadays. Now, while the phonatory apparatus has not changed since Neanderthal, the

means for creating musical sounds have kept varying from age to age and from civilization to civilization.

### 3.7 The Music Instrument

If the sole aim of *Traité*, as stated in Chapter I, Book I, is to incite readers to listen to sounds (the traditional role of solfège classes as opposed to instrument classes), why start from the instrument? Because the reader is a musician, being therefore conditioned by the notions acquired and an experience that precedes and even shapes his musical consciousness. Invited to listen, he will refer to this background, all the more inevitably since implicitly.

Not laying claim to historical truth, Schaeffer reverts to the genesis of the instrumental experience, where the homo faber takes precedence over the homo sapiens. Neanderthal man is unlikely to have encountered his muse on listening to the hart belling or to the bison bellowing. One rather imagines him on the qui vive, assessing the distance, the direction and the likelihood of a fruitful hunt. Not for one instant does he linger on or get interested in sound itself, which is instantly obliterated in the interest of the event it signals and the projects it incites to. However, side by side with survival activities, he practises disinterested activities, as young animals themselves do: races, stretches, fake fights, rehearsals, free muscular exercises. Such games are useful, for they contribute towards the fulfilment of nature's goals, but they also display a certain degree of gratuitousness. The Neanderthal man is conversant with two uses of his voice: emission of calling, threatening or choleric shouts and experimentation with what we pompously term his 'phonatory apparatus'. He knows the pleasures of shouting at the top of his voice and hitting objects, without necessarily dissociating the gesture from its effects, the satisfaction of exercising the muscles from the satisfaction of 'making noise'. Should we seek in such games, later improved and developed, the common origins of dance, singing and music?

Utensils and musical instruments were originally linked and probably indistinguishable in real life. The calabash that served music also served the soup. One calabash might not have sufficed but two or three calabashes could have made the signal pleonastic, efface it by repetition and halt references to the utensil. Thus, the sonic object emerged, disinterestedly perceived, 'striking the ear' as

something completely useless and transforming the cook into an experimental musician.

Let me explain. The instrumental activity, visible and primary cause of every musical phenomenon, presents the particularity of tending above all to efface itself as a material cause, in two ways:

*Repetition* of the same causal phenomenon, by signal saturation, annuls the practical signification of that signal (for instance, such an object hits such another in such a way), proposing a disinterested activity. It is the passage from utensil to instrument.

*Variation*, in the bosom of causal repetition, of *something perceptible*, stresses the disinterested character of that activity in relation to the instrument itself and provides the activity with a new interest, thus creating an event of another kind, which we are indeed obliged to call musical. Of music, this is the simplest, the most general and the least preconceived definition. Even if the calabash player does not yet know how to play, expresses nothing or does not make himself understood, he is 'making music'. What else would he be doing? (Schaeffer 1966: 43)

Such an instrumental pre-history pays tribute to the early history of musique concrète, and to the genesis of *Étude aux chemins de fer* in particular.

On the other hand, I have managed a musical sequence where the same isolated rhythm alternates with itself in another *colour*. Dark, clear, dark, clear. The rhythm may well remain unaltered for long. It furnishes a kind of identity and repetition makes one forget the train.

I had set off on a bad track. Instead of musical effects I was getting dramatic effects. However, if I extract a sonic element and repeat it without worrying about its *contexture*, making its *matter* vary, I am taking it away from the universe of signification into the universe of form.

I realize that, writing a railway score, I was turning my back on my goal.

One does not impose a form on sonic materials, one uses theirs. So far as there is a series of natural sonic materials there is literature and not music.

Music starts with two procedures at work:

*To distinguish* an element (to hear [*entendre*] it in itself, for its texture, its matter, its colour).

*To repeat it.* Repeat the same thing twice, there is music. (Schaeffer 1950: 39)

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