

Debating the Measure: Steve Reich's Sociological Imagination.

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Abstract:

This article intends to identify the contributions of Steve Reich's music to sociology. His music presents three main characteristics: it is made out of empirical material collected on the field; it is a theory of processes; it is a political and cultural act. Steve Reich's music affects sociology on these three points: it reminds the social scientist of the nature of his craft and his commitment to the social world, questions his methods and practices; it even sheds light on some of his familiar concepts (in particular that of 'process'). The author proposes to extract from Steve Reich's compositional work some elements that could prove useful for sociology as a profession.

Key Words: contemporary music; Steve Reich; sociology of processes; political commitment; grounded theory; music sociology.

'If you knew Time as well as I do,' said the Hatter, 'you wouldn't talk about wasting IT. It's HIM.'

'I don't know what you mean,' said Alice.

'Of course you don't!' the Hatter said, tossing his head contemptuously. 'I dare say you never even spoke to Time!'

'Perhaps not,' Alice cautiously replied: 'but I know I have to beat time when I learn music.'

'Ah! That accounts for it,' said the Hatter. 'He won't stand beating'

Lewis Carroll, Alice in Wonderland – Chapter 7: A Mad Tea Party.

Introduction¹

Sociology of Music is captivating for it continuously and insistently raises a key question for sociology: its relationship to the object of study. In fact, music is a puzzling object that can hardly be seized by conceptual and observational tools. The music sociologist spontaneously focuses his research on the actors (musicians, producers, audiences, etc.), the institutions and conventions, as well as on markets or instruments (Becker, 1982; Elias, 1993; François, 2004; 2005; Hennion, 1983; 2001; Menger, 2002). As for the music itself, he can only listen to it as an amateur because as a social scientist its object remains an enigma for him (Adorno, 2006); it is unreachable (Ravet, 2010: 271), probably because music is opposed to symbolic language, as noted by Piaser (1994: 22-3).

Indeed, music is not about representation. In fact, it represents nothing: neither a psychic conflict, nor a social configuration, not even a natural phenomenon. Music is a *'bloc of sensations, that is to say, a compound of percepts and affects'* (Deleuze and Guattari, 1994: 164), but also *'an aural form of knowledge, a way of perceiving the world, a tool of understanding'* (Attali, 1985: 4). In other words, music affects us and enhances our perceptive abilities (our 'categories of understanding'). As an example of that idea of non-figuration, let us consider a piece by the American composer Steve Reich, *The Desert Music* (1984). This composition is by no means a representation of the desert: there are no picturesque evocations of sand dunes or any other backdrop. The desert here is musically expressed through a long movement of desertion; a process in which the human voice progressively abandons language (through William Carlos' poems set to music by the composer)². Music affects. It does not symbolize the desert: it *is* the desert. Therefore, since musical language does not seek representation, hermeneutics can provide no guidance to the social scientist for its study.

Developments in the field of music sociology bear testimony of that struggle to seize and define the object of study. Antoine Hennion (1993) describes the history of the 'great partition' between musicology and sociology: the music itself – the inner analysis of the works – became the exclusive territory of musicians, musicologists and music pedagogues, while the 'rest' – the external analysis of these artworks, focused on the social conditions of their production (actors, institutions, markets, etc.) – was left to social sciences. The mission – or the niche – of the sociologist then consists in explaining artistic production through social factors, thus offering a social reading of Art: the height of *'sociologism'* according to Hennion.

How then can the sociologist avoid disavowing the works, the music, what is being played (see Menger, 2010; Becker, 2003: 25-38; Dechaux and Ducret, 1988)? The historical answer to this question is sketched in Max Weber's famous essay *The Rational and Social Foundations of Music* (Weber, 1958). According to him, music is a form of knowledge, almost a science, whose rationalization process in Western societies he broadly describes (development of musical notation and counterpoint, evolution of temperaments, etc.). Theodore Adorno would also set himself in that perspective: to avoid disclaiming the analysis of musical works, this Frankfurt School social scientist considered and studied music as a practical critical theory of society (Adorno, 2006; 1981). Antoine Hennion follows the Weberian line in his own particular way when considering music as a 'theory of mediations', as exposed in his ethnographical study of music theory classes (Hennion, 1988). With the help of ethnomethodology, Hennion achieves a complete reversal of perspective for music sociology: if *'music is a sociology'* (Hennion, 1999), the key question is not what sociology can bring to art (through the analysis of social conditions in the production and the reception of the works), but rather: what can art teach or *'do'* to sociology? (Heinich, 1998: 8)

In this article I would like to show what Steve Reich's music 'does' – hence brings – to social science. Three major qualities can be observed throughout his musical output: it is composed from empirical material previously collected on the field; it is a theory of processes; it is a political and cultural act. Steve Reich's music can affect sociology on these three levels. It inquires into the sociologist's commitment towards the social world, into his habits on the field and his analysis methods. It can even shed light on some very familiar sociological concepts ('process', 'configuration', 'assemblage', 'sample', 'repetition', 'differentiation', etc.). Reich's music is full of teachings and inquiries for the social scientist!

I will start by putting Steve Reich's music in relation to the sociological approach on two particular points: fieldwork and theorization exercise. In a second step, I will specifically

focus on the contributions of Steve Reich's music to sociology. I will try to extract a few elements from his compositional work that could prove useful to the sociological craft, a few 'tricks of the trade' (Becker, 1998): for the sociologist's commitment (the political trick), for the teaching of the discipline, as well as students' and researchers' training in the observation of social processes (the educational trick), and for an 'epistemology of the ear' in social sciences (Serres, 2011), an abstraction created from aural knowledge: the sociological ear, necessary counterpart to Everett Huges' 'sociological eye' (1971) (the methodological trick).

Steve Reich is an American composer born in New York on the 3rd of October 1936 into a family of musicians. He soon learnt the piano and showed interest for percussion, playing jazz drums from the age of fourteen, then studying classical percussion with Roland Kohloff. He also studied philosophy at Cornell University and graduated in 1957.

Enthusiastic about Jazz, he attended composition classes with Hall Overton (1957-8, later entering the Juilliard School of Music (1958-1961), where he met Philip Glass and was initiated into contemporary music (Arnold Schoenberg, Erik Satie, John Cage, etc.). Eventually, he completed his education as a composer in 1963 at Mills College, California, under Darius Milhaud and Luciano Berio, amongst others.

In the mid-sixties, he was part of the Tape Music Centre of San Francisco, of which he became one of the most active members³, and was involved in numerous live performances⁴. In 1966 he founded the *Steve Reich and Musicians*, a flexible ensemble of performers through which he would perform and develop his own music⁵. Despite a somewhat restrained repertoire (a catalogue of about fifty works), Steve Reich is today considered as a key figure of contemporary music, relatively well known from mass audiences as a pioneer of minimalistic music (alongside Terry Riley, Phillip Glass, or Lamonte Young), in the footsteps of John Cage (Bosseur, 1993).

1) Fieldwork as a requirement

The main characteristic of Steve Reich's music is its rooting in fieldwork: it is based on empirical material. When composing pieces such as *It's Gonna Rain* (1965), *Come Out* (1966), *Different Trains* (1988), *The Cave* (1992), *City Life* (1995), *Three Tales* (2002) or *WTC 9/11* (2010), he processes empirical data that he has himself collected on the field. Working like a symbolic interactionist from the Chicago School, this composer from New York holds interviews and carries out direct observations: he records, samples, assembles, and interprets the research data.

From his very first piece, *It's Gonna Rain* (1965), Reich was on the field, in this case recording 'Brother Walter' in San Francisco. He then selected some vocal samples from this recording and pasted them together on magnetic tapes. As noted by Félix Guattari (1995: 131), 'the artist – and more generally aesthetic perception – detach and deterritorialise a segment of the real in such a way as to make it play the role of a partial enunciator'. For Steve Reich, the sample 'It's gonna rain!' is that partial enunciator that constitutes the raw material for the work. The 'phasing' process described in the following point is what assembles the sample(s) together and transforms this raw material into music.

Twenty years later, for the creation of *Different Trains* (1988), Steve Reich carried out a series of interviews (with his own housekeeper, a baggage handler on the New York-Los Angeles Railway line, and with holocaust survivors), and recorded train sounds⁶. From this collected material, he then selected the most interesting vocal and sound samples and transcribed them as accurately as possible into musical notation. These samples constitute, once again, the prime material for the composition, in which violins literally imitate the intonation of the voices or the sounds of the train brakes⁷.

For the composition of *The Cave* (1992) Steve Reich conducted interviews once again, this time with Israelis, Palestinians and Americans. On that recorded empirical material he built a multimedia opera in three acts in collaboration with Beryl Korot.

*The true underpinnings were our interest in making a new kind of musical theatre based on videotaped documentary sources. The idea was that you would be able to see and hear people as they spoke on the videotape and simultaneously you would see and hear on-stage musicians doubling them – actually playing their speech melodies as they spoke.*⁸

The vocal material corresponding to these interviews is presented under the form of recitatives where the intrinsic melodic lines of the spoken words are doubled and developed by the instruments. The melody of each individual's speech is a musical portrait of the interviewee. As in *Different trains*, Steve Reich started with the transcription of the vocal melodies, identifying the pitches, rhythms and tempi of the phrases exactly as they were pronounced. Then came the orchestration, inspired and guided by the sound qualities of these recorded vocal samples.

This interview-based practice together with this musical composition process stemming from samples recorded on the field can be observed through the entirety of Reich's output. *City Life* (1995) is also a piece constructed on sound and voice samples, this time with 'urban colors', a great number of which were directly collected on the streets of New York⁹. For the writing of *Three Tales* (2002), Steve Reich held a dialogue with the originators of Dolly the Sheep's cloning, as well as renowned intellectuals, journalists and theologians. For the creation of *WTC 9/11* (2010) he interviewed his own neighbors from Lower Manhattan, near Ground Zero; he also used conversations recorded at the time of the 9/11 attacks between air traffic controllers and the New York Fire Department.

Yet Steve Reich does not limit himself to interviews for his collection of empirical, raw material: he also clearly practices sociological observation. These are always overt, at times participant, observations (Becker, 1960). With his growing interest in traditional music from Africa, Bali, Japan, Hebraic chant, etc.¹⁰, he would set off to the wide fields of non-Western Music. Firstly in Ghana, under the guidance of a native percussion master:

During the summer of 1971 I went to Ghana to study percussion. Thanks to a scholarship from the special project department of the institute for international education, I travelled to Accra, capital of Ghana, where I studied with a master drummer from the Ewe tribe who was at the Institute for African studies of the Ghana University. I took everyday lessons with Gedeon Alorworye and I recorded each of these lessons. Then, I returned back to my hotel room and listening over and over to the tapes, sometimes at half- or quarter speed, I managed to transcribe the bell, drums or motives that I had just learnt. (Reich, 1981: 74¹¹)

He then studied Balinese music (Gamelan) during the summer of 1973 with Nyoman Sumanthi, a teacher from Bali, this time at the American Society for Eastern Arts in Seattle and Berkeley. In 1976-77, he studied Hebraic chant in its traditional forms in New York and Jerusalem. All this preliminary ethnomusicological research proved to be crucial to the composer's path. African music strengthened his belief in music as a rhythmic process (pulse and phasing; difference and repetition). Music from Balinese theatre brought about his great interest for the study of configurations: experimenting on the multiple configurations of an ensemble of performers with no external conductor (see *Music for 18 Musicians*, 1976¹²), exploring and bringing into practice combinations of instrumental families (see *Music for Mallet Instruments, Voices, and Organ*, 1973). As for Hebraic chant (see *Tehillim*, 1981), it opened for Reich new perspectives onto lyricism and a certain form of research on the human voice, that would lead him one step beyond the vocal samples collected on the field of social existence (*The Desert Music*, *The Cave*, *Three Tales*, *Proverb*).

Steve Reich falls within a creative approach that social scientists would brand as qualitative and inductive. On the one hand, he never seeks comprehensiveness of viewpoints or statistical representation of a social reality; he is more interested in the significance of his vocal or sound samples. He even puts an end to data collecting when this fails to bring new qualitative elements for his research, following the well-known principle of data saturation. His two first pieces (*Come Out*; *It's Gonna Rain*) are built on one-sided samples of social unity; he would later prefer the technique of building multi-sided samples of social micro-unities, following a principle of diversification in order to 'pave the way for (external) comparisons or for some sort of 'heterogeneous totality' (Poupart et al., 1997: 157). On the other hand Steve Reich never knows beforehand where his fieldwork will lead him as a composer. When he goes out on the field (in an African country or in his own city), he only has a vague idea of the subject of his research (a study of polyrhythms or a research on New York). He is not composing yet: he is exploring, observing, participating, and recording. There is no melody in his head, no structure or pre-established scheme, no precise idea of what is to be created. He is searching for ideas and clues (sounds, atmospheres, timbres, melodic lines, textures, rhythms, etc.), and for preliminary hypotheses and assumptions for his study. Once back home he transcribes, cuts, reproduces, compiles and analyzes all this heterogeneous data that will form the basis for his composition and for his music as a theory of processes. According to the principles of the *Grounded Theory*, Steve Reich pays close attention to comparisons and to the 'coding of incidents' (Glaser and Strauss, 1967: 101-115). In *City Life* (1995), for instance, Reich codes his empirical material by pairs, associating a specific instrument to each vocal or sound sample: traffic horns/woodwinds, banging doors/bass drum, brakes/cymbals, boat horns/clarinets, vocal samples/doubling instruments, etc.

The need for fieldwork is a landmark of his work and a preliminary condition for his compositional craft, resulting in a music that is also a music theory, a theory of musical processes rooted in individual life experiences and politically committed. Is there any such model in sociology?

What is Steve Reich's theory? Does he have a key research question? In what sense does collecting field data bring him specifically closer to the social scientist? Does the journalist not do so? The difference between the composer's work and the journalist's – which allows us to connect Steve Reich's method to the sociological approach – is the transition from the fieldwork to an abstract theorization exercise. In addition, that 'critical theory in action' of (musical) processes is very close to that of Elias or Mead, the two prominent theorists of (social) processes.

2) A theory of processes

Steve Reich's music is a statement of the processes inherent in life, not least of social life, social configurations (such as a quartet or a larger ensemble, a railway network or New York City) and historical events (such as Holocaust, Dolly the sheep's cloning, 9/11). His whole work is a theory¹³ of processes, whose starting point is the discovery of phasing.

It's Gonna Rain embodies that discovery: it is a vocal work for magnetic tapes composed in January 1965. The voice used is that of a young Afro-American Pentecostal pastor, Brother Walter. As I indicated earlier, Reich met him in San Francisco and recorded his voice with urban traffic and pigeons in the background on downtown Union Square on a Sunday afternoon. Once back home, he started playing with the recorded vocal loops and discovered 'by accident' the process of gradual phasing consisting in letting two identical loops run at slightly different tempi. In the first part of the piece, they are playing in unison. Then they gradually move apart from each other and eventually align together in unison again. In the second part, two much longer loops gradually phase away from each other: these two intertwining voices are then doubled to four, and subsequently to eight voices. *Come out* (1966) is Reich's second piece based on this phasing process between two or more looped vocal samples. This discovery would lay the ground for his theory of processes.

Reich's creative approach is pragmatic, as he explicitly expressed in a sort of manifesto originally published in 1968, *Music as a gradual Process*:

I do not mean the process of composition, but rather pieces of music that are, literally, processes. The distinctive thing about musical processes is that they determine all the note-to-note (sound-to-sound) details and the over all form simultaneously. (Think of a round or infinite canon.) I am interested in perceptible processes. I want to be able to hear the process happening throughout the sounding music. To facilitate closely detailed listening a musical process should happen extremely gradually. (Reich, 1974: 9)

This publication shows a clear will to 'make theory', to write a music that could also be considered as a music theory. It also defines the object of that theory: for Steve Reich, a musical process must be directly audible (as in J.S. Bach's *Art of the Fugue*, *Well-Tempered Clavier* or the *Musical Offering*). This principle draws a clear distinction between musical processes and serial music, which he feels too abstract since the listener is not able without preliminary knowledge to identify the tone rows and understand the guiding principles according to which subsequent variations are constructed¹⁴.

John Cage has used processes and has certainly accepted their results, but the processes he used were compositional ones that could not be heard when the piece was performed. The process of using the I Ching or imperfections in a sheet of paper to determine musical parameters can't be heard when listening to music composed that way. The compositional processes and the sounding music have no audible connection. Similarly in serial music, the series itself is seldom audible. What I'm interested in is a compositional process and a sounding music that are one and the same thing. (Reich, 1974: 10)

For Steve Reich, process is opposed to improvisation: 'One can't improvise in a musical process – the concepts are mutually exclusive'. (Reich, 1974: 11)

Following the discovery of ‘music as a gradual process’, Reich wrote a few pieces in order to experiment with this phasing process while exploring three solo instruments and their properties: piano, violin, and electric organ. In the works *Piano phase* and *Violin phase* (1967) the performer plays ‘against’ previously recorded fragments of himself. Vocal samples are replaced here by short rhythmic or melodic instrumental patterns, each of them representing an expression unit, a ‘*partial enunciator*’ (Guattari, 1995). How are these enunciators assembled? How do they enunciate? Phasing (repetition and de-synchronization) is the process that assembles these patterns together. First, the performers (or the pre-recorded tracks) are in unison. Then they progressively phase away from each other until they eventually return to unison, where the repeated melodic line undergoes transformations that will open a new phasing process. In order to obtain the necessary phase difference, the performer playing against himself will gradually increase his own tempo. The result of both *Piano Phase* and *Violin phase* is similar to that of *Come out* or *It’s Gonna Rain*: unexpected (unwritten and unplayed) melodic motifs emerge from that interweaving process, from that pattern-repeating and flow-desynchronizing machine.

The phasing process takes a slightly different form in *Four Organs*, performed by four live musicians: it is produced by a gradual augmentation or stretching of particular notes inside repeated chords. The result is a strong impression of a slowing down movement, further stressed by the metronomic use of the maracas beating the common pulse from which each organist gradually moves away. Musical time is relative here: it is a relationship between a regular beat (common to all the musicians and acting as a reference mark) and a phasing, desynchronizing rhythm (specific to each musician). The common tempo is that of the unison (the vital pulse) from which the motifs are repeated and displaced.

In Reich’s first pieces, the process uncompromisingly defines the rules of the game through endless repetition and phasing. The process does not leave anything up to chance or improvisation. The process determines each and every detail, every element, note by note, and the totality of the form: it is the whole and the parts and cannot be dissociated (Elias, 1991: 87).

Let us imagine as a symbol of society a group of dancers performing court dances, such as the française or quadrille, or a country round dance. The steps and bows, gestures and movements made by the individual dancer are all entirely meshed and synchronized with those of other dancers. The dancing individuals were contemplated in isolation, the function of his or her movements could not be understood. The way the individual behaves in this situation is determined by the relations of the dancers to each other. (Elias, 1991: 19)

According to Norbert Elias, it is ‘*this order of interweaving human impulses and strivings, this social order, which determines the course of social change; it underlines the (...) process.*’ (Elias, 1982: 230)

Their function for each other is in the last resort based on the compulsion they exert over each other by reason of their interdependence. (...) The stranger, conversely, becomes the dependence of each of the two players’ overall plans and of each of their moves on the changing figuration of the game – on the game process. The more

the game comes to resemble a social process, the less it comes to resemble the implementation of an individual plan. (Elias, 1978a: 77-82)

That concept of the social act as a complex organic process can also be found in the work of G.H. Mead: *'[The social act] must be taken as a dynamic whole – as something going on – no part of which can be considered or understood by itself'* (Mead, 1972: 7). In Steve Reich's music, the process (repetition and desynchronization) is the force that assembles, configures and interweaves the elements together (samples, motifs, instruments, etc.). For Steve Reich, composing is the act of assembling heterogeneous elements – *'composting'* in Latour's meaning (Latour, 2010: 474).

Another very important point of his musical theory is that the process generates unpredictability and therefore tensions (such as rhythmic conflicts, for instance). A process always *'runs its course by and large blindly'* (Elias, 1982: 234); it fully determines but does not intend anything and cannot foresee:

*'From plans arising, yet unplanned
By purpose arising, yet purposeless.'* (Elias, 1991: 64)

In *Come Out* or *It's Gonna Rain*, the assemblage of two, then four, and eventually eight identical gradually desynchronizing loops produces unexpected results: the emergence of rhythms, sounds (hissing interferences, etc.) and unintended harmonies that result directly from the process itself.

Musical processes can give one a direct contact with the impersonal, and also a kind of complete control, and one doesn't always think of the impersonal as going together. By 'a kind' of complete control I mean that by running this material through this process I completely control all that results, but also that I accept all that results without changes. (Reich, 1974: 10)

These 'results' or *'psycho-acoustic by-products of the intended process'* (Reich, 1974: 10) fascinated Steve Reich and would have a long-lasting impact on his subsequent work.

Allow me to clarify that I am not trying here to compare Steve Reich's music with social processes but rather with the sociological approach to these processes: just as the social scientist does, the composer studies them in an attempt to formulate a general theory.

Drumming is the first sketch for a general theory of musical processes that opens new paths for investigation. Both a synthesis and a transition work, it was composed between the autumn of 1970 and the autumn of 1971 after a trip to Africa. The piece is divided into four sections performed without interruption. *Drumming* appears as a perfect synthesis of the phasing technique: two or three identical instruments repeatedly play the same melodic motif until they gradually desynchronize from each other. But in this work Reich will make use for the last time of the process of (extremely) gradual phasing, and for the first time of several new techniques: 1) progressively replacing rests with beats (and vice versa) within a repeated rhythmic loop; 2) Progressive timbre changes while pitch and rhythm are kept constant; 3) use of the human voice for an accurate imitation of the 'acoustic by-products'. The piece is built on one sole rhythmic motif repeated by the performers – as a whole or in parts – and

undergoing changes in timbre, pitch, or phase. Every repetition is here conceived as a transformation. The rhythmic pattern is both the whole and the parts. Put in parallel with some of the texts from the composer, this percussion piece proposes a brand new approach, a new conception of musical time: it is not defined by time signature (2/4, 3/4, etc.), but instead by a relationship (in this case, a ‘phasing’ relationship between performers or samples)¹⁵. In order to play (or listen to) *Drumming*, we have to ‘*de-beat*’ the measure, as very accurately stated by Orsoni (2011: 37), i.e. to deconstruct the classical conception of musical time consisting in ‘*beating the measure*’, in order to experience a relative, mutually dependent time frame. As we will see below, Steve Reich’s music is also ‘*debating*’ the measure: therein lies its political dimension.

3) Everything is political and cultural!

For Steve Reich, relying on such an assiduous fieldwork as a starting point for musical creation is closely related to a specific form of political and cultural commitment as a composer. Everything in his music is political: the voices of the Civil Rights Movement (*Come Out; It’s Gonna Rain*), those of the Jewish cause and of the three main monotheistic religions sharing common roots (*The Cave*), as well as the damages of science (*Three Tales*), or the 9/11 attacks (*WTC 11/9*). All this is made possible through fieldwork: de-centered perspectives and diversified viewpoints allow the composer to look beyond the frame of ‘small individual concerns’ (such as one’s childhood memories, parents’ divorce, or Jewishness) in order to create a music where everything is collective, social, historical, political and cultural. He certainly questions individuals about their memories of train travels or their knowledge of the sacred texts, but always in order to deconstruct their subjective speech by sampling small sentences until he reaches a ‘*collective assemblage of enunciation*’, a subjective polyphony. As highlighted by Gilles Deleuze and Félix Guattari, Art is not a ‘*small individual concern*’ (family, couple, etc.) but the concern of the people, of entire nations, of civilizations! ‘*There isn’t a subject. There are only collective assemblages of enunciation*’ (Deleuze and Guattari, 1986: 18). This essential dimension of Reich’s work consisting in bringing together individual experiences – ‘*personal troubles of milieu*’ – in order to reach ‘public issues of social structure’ is exactly what C. Wright Mills calls the ‘*sociological imagination*’:

Accordingly, to understand the changes of many personal milieux we are required to look beyond them. (...) To be aware of the idea of social structure and to use it with sensibility is to be capable of tracing such linkages among a great variety of milieux. To be able to do that is to possess the sociological imagination.’ (Mills, 2000: 10-11).

This conception of the artistic work as a political act emerges from his very first pieces. *Come Out* (1966), for instance, was originally part of a show performed at New York City’s Town Hall in support of the retrial of six young men arrested during the 1964 Harlem riots and charged with murder. The voice used is that of Daniel Hamm, aged 19 at the time, who describes a brawl in Harlem’s 28th Street shopping center. The police had decided to evacuate the most seriously injured people only. Hamm suffered no open wound, so that he deliberately injured his leg in order to be taken to the hospital. ‘*I had to like open the bruise up and let some of the bruise blood come out to show them*’: this sentence constitutes the raw material of the piece. The historical, social, and geographical context of these few words turns the piece into a political and cultural act through which the composer takes a committed

position in a public debate. While doing so on his own behalf, he actually also involves another social collective (an ethnic minority in this case).

Reich's ethnomusicological research – studying, observing and practicing Balinese, Japanese, contemporary music, African polyrhythms or Hebraic chant – is part of the same approach, of the same political commitment. His interest in non-Western music does not arise from a taste for exoticism, but rather from a search for some sort of comprehensive synthesis, with the declared aim to '*create a music built under the guidance of our knowledge of non-western structures*' (Reich, 1981: 87¹⁶): a theoretical, political, and cultural synthesis that can be compared to what J.S. Bach achieved at a European scale (merging Italian concerto and German, French and English dances). Steve Reich '*absorbs non-Western musics*' (Bodon-Clair, 2008: 42), but does not copy them. He challenges himself not to use the native instruments that he discovered on the field (such as *Tam-Tam* or *Atoké*). '*It became utterly clear to me after my Ghana experience: I was going to use my own instruments, not theirs; the same applies to Balinese music.*' (Reich, 1981: 87¹⁷). He works for cultural integration, for a systematized musical knowledge at the scale of Human Kind, for the discovery of a universal musical language (some sort of theory of rhythmic and harmonic processes). In this sense, Steve Reich's music is also a theory of cultural mediations.

The explicit theme of his first opera (*The Cave*, 1992) is the gathering of different cultures in a cave that leads to the Garden of Eden. Reich bases this multimedia opera co-written with Beryl Korot on two sacred texts (the Bible and the Quran) and on a set of interviews with Israelis, Palestinians and Americans. '*In your opinion, who are Abraham? Sarah? Agar? Ismael and Isaac?*' The opera libretto is structured according to the answers to these five questions with clear ambitions: '*to bring conflict studies to the mythical stage, to reformulate the terms of the Israel-Palestine conflicts through biblical tradition, and to condemn how much our military habits are nourished by very approximate theological references, relentlessly putting art at the service of this moral imperative*' (Laborde, 2005: 98). The work is presented as a tale told three consecutive times, from three different cultural, religious, and political viewpoints. The biblical characters such as Abraham or Sarah are not interpreted by a singer but rather by an assemblage of multiple, diversified speeches: a 'collective memory'. The work is also an invective against the Nazi regime (like *Different Trains*, 1988): The Cave is Dachau.

His second opera, *Three Tales* (2002), is also a '*committed work*' (Laborde, 2009), '*a tool through which Steve Reich aims at taking a stand on the stage of public debates*' (Laborde, 2008: 121). In the first act, he stages the 1937 Hindenburg Zeppelin disaster, placed in relation to Hitler's rise to power in 1933; the second act gives an account of the American atomic experiments on the Bikini atoll and their hidden consequences for the local population; and the final tale is dedicated to the cloning process of the famous Scottish sheep Dolly and all the ethical debates that it raises.

In order to achieve this theoretical, political and cultural synthesis, Steve Reich follows an ethical principle, a course of action, a particular form of moral commitment consisting in 'debating the measure', as I suggested earlier. In a strictly musical sense, '*de-beating*' the measure would mean practicing gradual phasing, thinking beyond time signature and bars, overcoming the Newtonian concept of time as an objective data that can be measured (see Elias, 1992) in order to experience the relativity of musical time, the interdependence between two vocal samples or between several motifs, or the inner relationships of an instrumental ensemble without external conductor, a configuration Reich is particularly fond of. At a political level, '*debating the measure*' means that the measure of

all things – any measurement – is a public affair, a matter for struggle and power, and hence an object for debate, deliberation, and positioning: the trial of young black Americans, the Holocaust, atomic tests, Dolly's cloning, the 9/11 attacks, the sharp inequalities that can be heard in the sounds of New York City. The measure is not imposed: it is constructed in an interactive process through gestures, signs and symbols¹⁸ (Mead, 1972).

Reich's political commitment is an interesting hint for the social scientist often drifting on troubled waters between '*involvement*' and '*detachment*' (Elias, 1987). As highlighted by Mills, sociological work is a '*political and intellectual task – for here the two coincide*' (Mills, 2000: 13). But what form can the social scientist's political commitment take? Is being critical sufficient? The sociological imagination of Steve Reich leads him to 'debate the measure' as a mode of political commitment: (1) to debate the measure of time through the study of African polyrhythms and phasing experiments; (2) to debate the questions of harmony and order through the study of Balinese Music, the search for a new tonality, and experiments on self-regulated configurations; (3) to debate great social issues such as religion, scientific and technical developments, terrorism, social inequalities, racism, divorce, etc. Such a model could become a commitment model for the social scientist: not only in order to report about deliberative processes and public debates (informing about their main factors, their multiplicity of viewpoints, etc.) but most importantly to set, guarantee and stimulate the debate over measure in the multiple fields of social life, committing oneself as well as other collectives in these deliberative processes¹⁹.

4) Conclusion: listening to social processes

Steve Reich's music could also prove to be an important resource for sociological training, an innovative pedagogical tool to teach and study *Process Sociology* in its German (Elias) or American form (Mead and the Chicago school). Listening to a short and accessible piece such as *Clapping Music* (1972) might be more effective to understand the notion of *Process* than reading 600 pages of Norbert Elias' *Civilizing Process!* It is, however, interesting to note that Elias displays in this book a somewhat repetitive and gradual writing style and a recurrent use of musical metaphors to illustrate his speech, such as the fugue (Elias, 1978b: 94) or dance (Elias, 1991: 19).

Reich's first studies on gradual phasing go way beyond Elias' rich metaphors: they are the true embodiment of the sociological 'law' that paves the way for process theories: the '*order of interweaving*' (Elias, 1982: 230) which determines the rules of the game and produces unpredictability and rhythmic, melodic and timbral chaos. This determination is clearly apparent in each of these short pieces, as the process is directly audible. Yet its unity (its global form or structure) quickly disappears behind the chaos that it engenders. In *Come Out*, the listener ceases hearing a human voice after a few minutes; the process that he was supposedly following disappears behind a tumult of self-generated sounds flowing like the blood of Daniel Hamm, the young African-American whose voice is used in this piece. When listening to *Violin Phase* or *Piano Phase*, your attention is quickly diverted away from the motif; you even forget after a while which instrument is playing! Any notion of time – even beyond the 'beat' or the 'measure' – is lost. All references fade away. The piece *has* no structure: it *is* a structure. In *Four Organs*, instruments and numbers sink in between successive, uninterrupted waves, all similar yet all different: soon, nothing but waves remain on the horizon, as far as the ear can hear!

Steve Reich's music offers valuable methodological tools to listen to social processes. The composer himself insists on this point in several publications.

Focusing in on the musical process makes possible that shift of attention away from he and she and you and me outwards towards it. [...] Listening to an extremely gradual musical process opens my ears to it, but it always extends farther than I can hear, and that makes it interesting to listen to that musical process again. That area of every gradual (completely controlled) musical process, where one hears the details of the sound moving out away from intentions, occurring for their own acoustic reason, is it (Reich, 1974: 11).

Reich's music delivers a peculiar experience of 'determined chaos' that stimulates the listener's attention to details in search for regularities, for an order. This phenomenological and existential experience appears to us as a beneficial and powerful tool for sociologists' fieldwork training, one that could help them: to observe a complex, chaotic reality always concealing away from the observer; to take into account its multiple layers and describe diversities of habits, viewpoints, voices, rhythms, objects, etc.; to understand series of regularities, the 'order', the process that produces and determines this chaos. As noted by C.W. Mills:

What social science is properly about is the human variety. [...] The social scientist seeks to understand the human variety in an orderly way, but considering the range and depth of this variety, he might well be asked: Is this really possible? Is not the confusion of the social sciences an inevitable reflection of what their practitioners are trying to study? My answer is that perhaps the variety is not as 'disorderly' as the mere listing of a small part of it makes it seem; perhaps not even as disorderly as it is often made to seem by the courses of study offered in colleges and universities. Order as well as disorder is relative to viewpoint. (Mills, 2000: 132-133)

Steve Reich's music develops our ability to *listen* to the social world, to social processes and their configurations ... and social scientists remarkably lack that aural training!

If sociology is an *eye* on the social world – Everett Hughes has written brilliant pages from that perspective in *The Sociological Eye* (Hughes, 1971) – the social scientist is in fact almost deaf; not from birth but because of his education. It is true that the social scientist practices the fine art of interview – his '*great flirt with life*' in Hughes' words – where he gives a relative importance to the actor's words and to his speech about the world. However, he is not methodologically equipped to *listen* to him. He can at best make him speak, observe him, then read interview transcripts and observation notes. As noted by Michel Serres, '*sociologists' education should start with singing and composition, with guitar strumming or piano playing*' (Serres, 2011: 73). This 'acoustic or musical path to knowledge' has been persistently ignored: how can the ear gain access to knowledge? Social research method handbooks have dedicated very poor attention to how to listen to a voice, how to analyze its timbre or rhythm variations, its tonal or modal changes, etc.²⁰ The social scientist's 'interpretative scheme' (*Verstehen*) leads him very naturally to the study of meanings somehow 'intellectualized' by the actors (symbols, images, models, schemes, representations) that can be written or transcribed, and read over and over again. But he has not been provided with any tool for the study of affects or emotions, the 'affective' meanings so subtly expressed by a slight modulation of the voice colors, modes, or rhythms. '*The ears provide far more information than the eyes do. Yet, everyone – philosophers, editors, educators and the media – seems to think and behave against that self-evident truth.*' (Serres,

2011: 97). In this regard, ethnomethodology is probably an exception in sociology: the famous Garfinkel exercises (1967: 35-75) opened the way to an active listening of everyday life. But the researcher can hardly find tools to further develop that sociological ear on the field of social polyphonies. Steve Reich's music can certainly provide some guidance in that direction, and prepare the sociologist for an epistemology of the ear – the question of the understanding (*Verstand*) – closely linked with the debate over measure – the question of involvement.

Finally, Steve Reich's music provides interesting leads for music sociology. His music is also a theory of the musical work, an ideal type of the work of art, a heuristic three-dimensional tool that the music sociologist could well seize in order to study and compare other works and other forms of music by asking: (1) Does the musical work somehow encompass a musical theory? (2) Is that theory built on an empirical basis? (3) Is it a political act of some sort? From this perspective, music sociology's relationship to its object of study becomes highly relevant, in so far as the object itself can provide the outline and the main conceptual tools for its analysis by the social scientist.

Notes

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² In this sense, psalm 19 – that Reich set to music in the *Tehillim* – aligns with that idea: '*Without speech and without words, nevertheless their voice is heard*'.

³ Reich left unpublished works from this period, such as *Pitch Charts* (any instruments) (1963), works for magnetic tape such as *Melodica* (1966) and *Slow Motion Sound* (1967), and works for magnetic tape and live instruments such as *Music for three or more pianos and tape* (1964), *Reed Phase* (for soprano saxophone and tape) (1966) and *My Name Is* (for three or more performers, tape recorders, and audience) (1967).

⁴ He performed at Yale University, the New School, Berkeley, the Walker Art Center of Minneapolis, the Whitney Museum of Art, the Fylkingen Festival (Sweden), and at the Orchestral Space Festival in Tokyo, amongst others. He also composed the soundtrack for two 'underground' movies shot in San Francisco by Robert Nelson: *The Plastic Haircut* (1963) and *Oh Dem Watermelons* (1965).

⁵ Members of this ensemble are: Nurit Tilles, Edmund Niemann and Steve Chambers (piano/organ), Shem Guibbory (violin), Jay Clayton (voice/piano), Bob Becker, Russell Hartenberger, James Priess, Garry Schall and Glen Velez (percussions).

⁶ Steve Reich explains the conception of this work for string quartet and magnetic tapes as follows: '*when I was one year old, my parents separated. My mother moved to Los Angeles and my father stayed in New York. Since they arranged divided custody, I travelled back and forth by train frequently between New York and Los Angeles from 1939 to 1942 accompanied by my governess. While these trips were exciting and romantic at the time, I now look back and think that, if I had been in Europe during this period, as a Jew I would have had to ride very different trains. With this mind I wanted to make a piece that would accurately reflect the whole situation. In order to prepare the tape, I had to do the following: 1) Record my governess Virginia, now in her seventies, reminiscing about our train trips together; 2) Record a retired Pullman porter, Lawrence Davis, now in his eighties, who used to ride lines between New York and Los Angeles, reminiscing about his life; 3) Collect recordings of*

Holocaust survivors Rachella, Paul and Rachel – all about my age and now living in America – speaking of their experiences; 4) Collect recorded American and European trains sounds of the 1930s and '40s.' (Reich, 2002: 155).

⁷ The vocal samples as well as the train sounds were transferred to a magnetic format through the use of a sample keyboard and a computer. The Kronos Quartet realized four separated recordings, subsequently combined with the voices and the train sounds to achieve the final product.

⁸ Steve Reich, *The Cave*, Elektra/Nonesuch, Germany, 1995.

⁹ Use of sound samples such as car honks, doors noises, car breaks, underground buzzers, car alarms, heartbeats, boat, police or fire brigade sirens, etc. Use of vocal samples recorded on the streets of lower Manhattan (in the first movement), in a political gathering of mainly African-Americans near New York City's Town Hall (in the third movement), or radio communications from the New York Fire Brigade recorded on the day of the WTC bombings (26/2/93).

¹⁰ Note that Reich showed a scarce interest in Indian music, which makes his position somewhat unusual within the 'minimalistic movement' (Carrera, 1996: 221).

¹¹ Translated from the original publication in French.

¹² As noted by Jérôme Bodin-Clair, this piece is also the exploration of a 'new tonality', diverging significantly from the traditional attractive role of the dominant (cornerstone of classical tonality) and based upon the idea of independent 'tonal centers'. It relates to the modal music of Miles Davis and John Coltrane, or that of Erik Satie (Bodon-Clair, 2008: 75-83).

¹³ Etymologically (from the Greek *theorein*: observe, examine, contemplate), a form of knowledge based on observation and experimentation, a model or framework for apprehending natural, social, or human processes.

¹⁴ About the question of practical impossibility of perceiving the tone rows (pitch, timbre, duration, etc.), see Gribenski M. (2005).

¹⁵ In music theory as it is commonly taught today, musical time is counted in 'measures' (or 'bars'). The measure constitutes the standard rhythmic unity, and is divided in beats. As a quick reminder, it was not always the case: free measures with no downbeat appeared around the year 1500, while measure as we know it today would only be defined at the beginning of 17th century.

¹⁶ Translated from the original publication in French.

¹⁷ Translated from the original publication in French.

¹⁸ Let us consider a few examples: in *Music for 18 Musicians* (1976), in the absence of a conductor, the clarinet and the vibraphone provide indications to the whole ensemble to announce section changes; in *Drumming* (1971) or *Music for Mallet Instruments, Voices and Organ* (1973), the performers' nods are means to coordinate collective actions. Note that this 'conducting from the inside' was the norm during the Baroque era and is still the rule in chamber music today.

¹⁹ This mode of political commitment is not new to the discipline. It echoes a strong North American tradition, not least the sociology of G.H. Mead, whose commitment towards the Chicago social reform was based on a form of both ethical and political pragmatism (inspired by Dewey) and a conception of democracy as the 'telos' of history (Mead, 2006: 363). Steve Reich's political commitment can also remind Habermas' position (1991; 1999), as well as more recent works on the concepts of *deliberative democracy* (Elster, 1998; Bohman and Rehg, 1997).

²⁰ As a rare exception, we found that Kaufmann (1996: 80) insists on the importance of listening over and over to recorded interviews with a '*floating attention*'. We could also mention a fascinating study of the voices of a French electric utility company's customer

service and their intonation curves (tonality, envelope, attack, etc.) by Michèle Grosjean (1995).

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