

Subjectivity and Soundscape, Motor-bikes and Music

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Baby's soundscape

At the age of minus four months most humans start to hear. By the time we enter this world and long before we can focus our eyes on objects at different distances from ourselves, our aural faculties are well developed. Most small humans soon learn to distinguish pleasant from unpleasant sounds and most parents will witness that any tiny human in their household acts like a hyperactive radar of feelings and moods in their environment. You know it's no use telling baby in an irritated voice 'Daddy's not angry' because the little human sees straight through such emotional bullshitting and starts howling.

But baby's hearing isn't what most parents notice first about sound and their own addition to the human race. It's more likely they register the little sonic terrorist's capacity to scream, yell, cry and generally dominate the domestic soundscape. Babies are endowed with nonverbal vocal talents totally out of proportion to other aspects of their size, weight and volume: they have inordinate lung power and vocal chords of steel, it seems, capable of producing high decibel and transient values, cutting timbres and irregular phrase lengths, all vehiculating messages like 'change my nappies' and 'produce either breast or bottle for immediate consumption'. Maybe these tiny humans have to yell not so much because they can't speak as because they need to dispel whatever state of adult torpor we happen to be in, be it watching TV, chatting, reading or, worst of all, sleeping. Babies seem to know in advance that sharp timbres at high pitch and volume carry extremely well, cutting through whatever constant underlying hum or mumble there may be in the adult world, be it idle conversation, the TV on in the background, fridges, ventilation, etc. Also, irregular rhythms and intonation by definition avoid the sort of repetition that can gradually transform into ambient (background) sound: a baby's yell is always up front, foreground, urgent, of varying periodicity and quite clearly designed to shatter whatever else mother, father, big sister or big brother is doing. That sonic shattering is designed to provoke immediate response. Desires and needs must be fulfilled *now*, they cannot wait.

'Now' is the operative word in this context. Sonic statements formed as short repetitions of irregularly varying length are also statements of urgency, as well we know from the anaphones of news and documentary jingles — important, flash, new, the latest update. Babies seem to have no conscious past or notion of future: all is present. The baby's lack of adult temporal perspective in relation to self is of course related to its lack of adult senses of social space. This is in turn related to baby's egocentricity, essential for survival, and to omnipotence the poor little soul is forced to abandon in order to survive in the process of growing up and being an adult.

Sound, subjectivity and socialisation

In the perspective presented so far it is clear that nonverbal sound is essential to humans. We monitor it constantly from inside the womb until death or deafness do us part from its influence. We use our nonverbal voices to communicate all sorts of messages from the time we are born until we die or turn dumb. Together with the sense of touch, nonverbal sound is one of the most important sources of information and contact with social and natural environments at the most formative stages of any human's development. It is vital to senso-motoric and symbolic learning processes at the preverbal stage of development and central to the formation of any individual's personality. Moreover, everyone has experienced the process where we gradually learn that we are not the centre of others' constant attention, nor can we be constant objects of immediate consolation or pacification: we have to get used to being just one human subject and social object among many other fellow human subjects. We have to become part of whatever culture we belong to and we can no more hope to return to a state where we are the sonically dominant or foreground figures than we can hope to regain an imagined or real lost paradise inside or outside the womb.

Different cultures and subcultures establish and develop different patterns and norms for what course the process from baby via child to adult should run. The ultimate goal — being an ideal male or female adult — depends on whatever the society in question, on account of its material basis and cultural heritage, sees as desirable, useful and good. Assuming we have all been babies and if, as I suggest here, baby's power over the domestic soundscape is a biological necessity in the early development of every human and if this state of sonic domination must largely be relinquished for that individual to survive, then we ought to gain important insights into how any culture works by studying patterns of socialisation that relate directly to nonverbal sound. Assuming that one of music's main functions is to vehiculate socially relevant images of affective behaviour, states and processes in the form of nonverbal sound, this means studying music in that society. In our culture the only trouble is that music usually gets studied either as a set of motoric performing skills or as a quasi-mathematical idealised and imaginary system of suprasocial sound structures. Neither of these approaches can tell us much about how music socialises different people from different backgrounds and cultures in different ways. New models and approaches combining anthropological and semiotic method with more traditional forms of structural analysis are needed to free music and the humans using it from the conceptual prisons of 'autonomous' aesthetics and Fame school broilerism. What I want to suggest here is that music plays an essential part in socialising us as subjects in whatever culture we belong to and that our changing relationship as subjects to the soundscape (from egocentric sound dominating individual to one of cooperative interaction) can be traced in the way foreground and background are vehiculated in the music of different cultures. After all, we all carry a small, vulnerable but omnipotent little version of ourselves inside us until the day we die and, like it or not, each of us will have to find forms of containing, training and socialising that little idiot throughout our lives. Since nonverbal sound is so important to the construction of our emotional personality, music, perhaps more than any other symbolic system, is probably where we can best study how different cultures and subcultures at different stages of their development contain, train and systematise our subjectivity.

In what follows I would therefore like to present and illustrate two sets of ideas that can help make some sense out of the relationship between subjectivity, the soundscape, music and society. The first set of ideas — a sign typology of music — comes from recent empirical research in musical imaging; the second — notions of musical figure and ground — I have appropriated and developed from concepts presented independently by both Maróthy (1974) and Goldschmidt (1970).

Sonic anaphones

Table 1: Sign typology overview

<i>Anaphone</i>	sonic anaphone	perceived similarity to paramusical sound
	kinetic anaphone	perceived similarity to paramusical movement
	tactile anaphone	perceived similarity to paramusical sense of touch
<i>Genre synecdoche</i>		<i>pars pro toto</i> reference to 'foreign' musical style, thence to complete cultural context of that style
<i>Episodic marker</i>		short, one-way process highlighting the order or relative importance of musical events
<i>Style indicator</i>		unvaried aspects of musical structuration for the style in question

Musical signs in the context of what Middleton (1990:220-240) calls 'secondary signification' can be divided into four main categories, as shown in table 1: [1] anaphones, [2] genre synecdoches, [3] episodic markers and [4] style indicators. The anaphone, explained below, is the only sign type of direct relevance to this article and readers are referred elsewhere for a discussion for the other sign types (Tagg 1992).

To cut a long story short, the word 'anaphone' is analogous with the word 'analogy', the latter meaning another way of saying or writing something that already exists in spoken or written form, while 'anaphone' means another way of *sounding* something that already exists as perceptible sound, movement or touch. Anaphones are in other words musematic structures¹ homologous to events and experiences that are not necessarily musical. Only one subcategory — the sonic anaphone — concerns us here.

Sonic anaphones derive from sounds which themselves are not conceived of or intended as part of a musical discourse. Before becoming anaphones and thereby musical symbols, the sounds in question have to pass through technological and cultural filters. Sampling techniques, for example, allow virtually any sound to be reproduced and inserted 'as it is' into a musical discourse, whereas rock or swing bands or symphony orchestras, not to mention string quartets, must obviously use a far greater degree of stylisation when incorporating sounds into the musical discourse. Thus, as Rösing (1977) points out, 'real' babbling brooks and claps of thunder have very little in common with the musical brooks of *Die schöne Müllerin* or Beethoven's *Pastoral Symphony* storm when analysed in the 'objective' terms of sonogram print-outs. Similarly, the same 'real' rain does not sound the same in music by Vangelis and Richard Strauss because Vangelis (1984) could use a tape loop of recorded rain mixed into a multi-track montage while Strauss (1915) had to make do with violin semiquavers. These examples illustrate

1. 'Musematic structure', i.e. a museme or a museme string (syntagmatic museme compound) or a museme stack (paradigmatic museme compound). These terms are explained in Tagg (1979, 1981, 1987).

different degrees of sonic stylisation determined by *technological* factors.

However, sonic anaphones also pass through a *cultural filter* stylising the extramusical sound into the compositional norms of the music culture into which it is imported. For example, it is by no means certain that the Masai people would recognise Jimi Hendrix's B52 bomber over Vietnam in his *Rainbow Bridge* rendering of *The Stars and Stripes Forever* any more than we would recognise the cry of hyenas in Masai music. This is not just because the Masai may never have heard a B52 and we may never have heard a hyena, nor just because neither of us knows the norms of sonic stylisation of the other's music but also because we are just as unaware of what hyenas really mean to the Masai as they might be of what B52s mean to us, not to mention what they mean to the Vietnamese. However, although my music students may be unable to hear Laban's trickery in a correct harpsichord rendering of Kuhnau's *Jacob's Marriage* (1700), they are pretty good at thunder storms in Beethoven, Berlioz and Strauss, reasonable at Schubert brooks, competent at Hollywood sea swell and right on when it comes to distorted guitar motorbikes in rock music.

Figure/ground = melody/accompaniment

The second set of ideas which I have found useful in trying to understand musical expression of the soundscape is that developed out of a notion of musical figure and ground. Since at least 1600, the basic compositional paradigm of most European and North American music has been the melody-accompaniment dualism. It is what Haydn and AC/DC share in common, so to speak. It is by no means a universal phenomenon. Most West African traditional music, for instance, is based on the completely different principle of polyrhythm ('all accompaniment and no tune' to eurocentric ears?) while much Arabic music is heterophonic ('all tune and no backing?').

'Melody' has been defined as:

... a succession of musical tones, as contrasted with harmony, i.e. musical tones sounded simultaneously. Thus, melody and harmony represent the horizontal and the vertical elements of musical texture. (*Harvard Dictionary of Music*, 1958).

A succession of tones characterised by their total or partial appearance as a musical Gestalt, an integral structure (possibly standing out as a figure against an accompanying background). It stands out with such clarity as to be recognisable and reproducible. (Ingmar Bengtsson in *Sohlmans Musiklexikon*, 4, 1977).

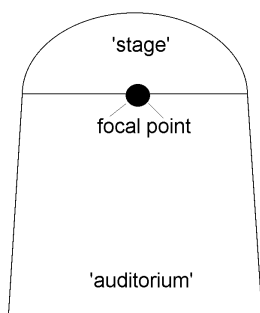
The operative words here are 'Gestalt' (figure), 'standing out against', 'recognisable' and 'reproducible'. Since many people play no musical instrument, the most common way of reproducing melodies is to sing them.² This is perhaps why melodies are not just recognisable little motivic figures like riffs (ostinati) or fillers, but the most consistently identifiable and singable strings of tones: tones at a singable pitch containing singable intervals within a singable range. Melody tends also to be singable in terms of phrase length (breathing) and surface rate tempo (not too many fast notes, not just one or two very long notes).

'Accompaniment' on the other hand is generally qualified as being 'subordi-

2. This corresponds to the notion of the *cantando* (lit. = 'singing') aspects in opposition to the *suonando* (lit. = 'playing') aspects of music (Goldschmidt 1970).

nate' to some other part of the musical texture and is defined by the *Harvard Dictionary* as [...] 'the musical background provided by a less important part' [...] while Bengtsson (*op. cit.*) makes quite clear that accompaniment exists in a subordinate background relationship to the main voice or melody. You could also say that the 'generality' of accompanying parts are musically understood as contrasting with the 'particularity' of the melody. Terms like 'backing' and 'backing vocals', 'lead singer', 'lead vocals', etc. emphasise this consensus about the dualism. In fact, as figure 1 (p. 5) shows, the lead singer, main soloist, conductor of a symphony orchestra, etc., i.e. of the most important human figure with whom the audience is supposed to identify, is located at the visual and auditive focal point, centre stage front, not backstage or in the wings. Such monocentricity is also characteristic of most pop record panning practices.

Fig. 1. Monocentric musical positioning



As Maróthy (1974: 22) suggests, the dualism of melody and accompaniment has played a major part in Western music. In fact this compositional paradigm can be compared to the figure/ground dualism of European painting since the Renaissance, a dualism that replaced the 'polycentric' works of artists like Bosch and Breughel with a monocentric relationship using techniques of central perspective (from *Massacre of the Innocents* or *Children's Games* to *Mona Lisa* or Vermeer's still life works). It seems probable that this change in the visual arts was paralleled in European art music's shift from ecclesiastical polyphony (e.g. Palestrina) to secular monody (e.g. Monteverdi) and that this

shift is related to the rise of bourgeois notions of individual emancipation. Seen in this light as a structural homology for a (then) new concept of human personality, the melody-accompaniment dualism, though definitely not a museme, can nevertheless be said to carry meaning in itself in that it parallels the European bourgeois perception of self in relation to both social and natural environments and implying a general strategy of socialisation that is clearly monocentric. This is important to bear in mind when discussing the semiotics of music, since connotations are not only constructed at the micro (musematic) level and by the processes created by repetitions, recapitulation, variation, block shifts, etc. (i.e. by the music's formal order of events) but also by the compositional norms of a given music culture (its 'style indicators'). In this context, however, the compositional norm will serve as a framework in which to understand the interrelationship of sonic anaphones inside the 'from-Haydn-to-AC/DC' tradition, the tune being largely interpreted as figure or individual, the accompaniment as background/backing and environment.

Psychotherapists in the urban soundscape

In 1983 I found myself having to explain the expressive qualities of heavy metal to psychotherapists at a weekend conference called 'Creativity in the Arts'. I did not succeed, partly because there was at that time considerable adult panic about the perceived aggressive qualities of the music and I was claiming that such music was essential to the survival of underprivileged young people living in harsh urban environments. Not until I met two of the conference participants on the street did I manage to get the basic point

across. The noise of the traffic was such that the psychotherapists could no longer speak to each other in the wonted pacificatory and confidential tone of their trade. To make themselves understood, they had to shout *above* the din of the traffic, otherwise the theme of their conversational interaction would have been drowned in the general mix of what ought to have been no more than a background accompaniment to that theme. In this context, the word 'above' has four senses: (1) *louder* than the ambient noise, (2) *higher* in fundamental pitch, (3) *sharper* in timbre and (4) *closer* to the ears of their interlocutor. I suggested that there was a struggle between them and the ambient noise as to who or which would gain the sonic upper hand (by being 'above'). How does this work?

The two psychotherapists were in a socially constructed sonic environment (the soundscape of a city street) and had to modify their sonic behaviour if they wanted to enter a different mode of social construction (talking to each other and hearing each other). Now, the social construct of the city soundscape can of course be interpreted in many different ways, depending on the hearer's relationship to the various activities giving rise to the soundscape's constituent elements. To illustrate this point, imagine firstly that you play a positively active and audible part in the soundscape, for example that you enjoy the discrete engine hum of the expensive car you drive to a well-paid and satisfying job or that you switch on the lighting (with its white noise) and ventilation (with its lo-fi hum) of your successful shop in an up-market mall. Next, imagine yourself as young and unemployed, without your own wheels, without anywhere to go, out there on foot amidst the noise of city traffic or the ventilation rumblings of a shopping mall. These two relationships to urban soundscapes might well result in diametrically opposed affective interpretations of their constituent noises, interpretations linked to each individual's power over those noises. In the first instance the everyday sounds of the city are part of you because you help make them and because their sources are part of what make you happy and successful, whereas in the second case you are debarred from the whole world that makes those sounds because you can't afford the goods you might want to buy from the shops, let alone a fancy car and, worst of all, you have no working part in the whole system: you are quite simply disqualified as an adult and unlikely ever to become a full member of the club and the sounds it produces. In this comparison it is clear that different 'readings' of the same sounds are also due to differences of class within the same general culture and economy: they are not solely contingent on differences between different general cultures and economies.³ It is also clear that we are dealing with the social construction of subjectivity, an important factor in understanding how music relates (groups of) individuals to the environment they populate and the question here is how music interprets and expresses different readings of different soundscapes.

3. See the different 'readings' of the sounds of hyenas and B52s earlier in this text. The observation about class 'readings' of the city soundscape also applies, in yet another way, to our psychotherapists and the noise drowning their conversation. Shunning the city's hubbub and stress, with all the 'aggressiveness' they probably associate with it, they can afford to move to a better social and sonic environment, perhaps to a nice house in a quiet suburban road or even out into the countryside, as far as possible from the madding crowd to which most of us belong.

Big boys, big bikes, big noises

We have already described the newborn baby's ability to dominate household acoustic territory. Baby's yells are obviously sonic 'centre-stage-and-up-front' figures piercing through the background hum of machines and conversation. Such 'sonic property ownership' works equally well in the public sphere. In *The Tuning of the World*, Schafer describes how the church was allowed to make the loudest noises in pre-industrial urban soundscapes (ringing bells) whereas those at the bottom of the social ladder (beggars, street musicians etc.) could be prosecuted for making far less noise. Similarly, some of the loudest foreground sounds in our society are produced by or on behalf of those wielding disproportionate amounts of economic, social or political power in the non-acoustic sphere. So, jet planes, helicopters and police sirens make with impunity far more noise than a group of rowdy teenagers in the street or a gang of greasers on noisy bikes. The latter groups are nevertheless officially regarded as creating the greater disturbance, not because the actual row they make is greater than that of a jet or helicopter — it isn't — but because their din disrupts the dominant socio-acoustic order in a way jets and helicopters do not. In fact, only exceptionally do ordinary citizens exercise control over the loudest of our culture's sounds; it is the big boys alone who may make the big noises.

This does not mean to say that 'little' people can be prevented from making big foreground noises altogether. In fact, enacting the attributes of perceived sources of social power (sonic or otherwise) seems to be an essential ingredient in a lot of children's games. For example, as small boys in the 1950s, my mates and I would charge round 'shooting' each other, using our voices to imitate the sound of revolvers or, if we were really cool, of sixguns with accompanying ricochet whistle. Around 1980 — probably in the wake of *Star Wars* (1977) — small boys seemed to be 'killing' each other off, using their voices to imitate the sound of laser guns. In other words, enacting one sonic aspect of the ultimate social power of life over death, 'bang' became 'peeewow'.⁴ Similarly, many European teenage males invest in mopeds which they tune to increase both speed *and* sound. Moreover, from the mid fifties until the early seventies, before crash helmets became mandatory and insurance premiums exorbitant, the motorbike was one of the most important means by which young European and North American males could, without having to spend a fortune, attain even greater levels of speed and loudness than most car owners.⁵ Not only could you overtake with greater ease and leave Smith, Jones and Robinson standing tail to bumper in traffic jams, you could also pierce the ambient rumble of other vehicles with the rivet machine roar of your single-cylinder four-stroke engine. As Steppenwolf (1968) put it in *Born to be Wild*:

4. There is a particularly interesting child enactment of sonic power in Sweden. Most of the country's geology being gneiss or granite, a lot of dynamite is used in construction work. To warn of immanent explosions, construction companies use a sort of siren producing a series of short, sharp horn blasts for one minute after which the explosion occurs. A loud, continuous tone lasting a few seconds signals the all-clear. In the 1980s I observed a group of Swedish seven-year-old boys enacting this powerful event. They all made loud beeps for about half a minute after which they yelled and pushed toys, stones, dolly prams, etc. from the roof of a play house in the yard, imitating the actual explosion. Then they all bellowed the same long note, dragged the scattered belongings up to the roof of the playhouse and started again.

Get your motor running, / Head out on the highway,
 / Looking for adventure / In whatever comes our way [...]
 I like smoke and lightning / Heavy metal thunder [...]

Steppenwolf singer John Kay, in his shades and leather, made clear sartorial reference to the same biker rebel tradition of James Dean and Marlon Brando that Peter Fonda and Dennis Hopper so obviously drew on in *Easy Rider* (1969), the film which *Born to be Wild* accompanied. Moreover, the first generally acknowledged public use of the expression 'heavy metal' occurs in the same song (quoted above) and clearly refers to the low-pitched, loud growl of a four-stroke motorbike, such as the Harley Davidson V-twin custom choppers driven by Fonda and Hopper in *Easy Rider*. The importance of this reference cannot be underestimated for five main reasons.

1. The motorbike was a recurrent prop in many postwar films featuring young and tough but misunderstood and vulnerable lone (male) wolves of the (then) new generation who sought fun, rebellion, independence, freedom, etc. The first of these movies was *The Wild One* (1953), starring Marlon Brando. It prefigured a run of films referred to as 'bike movies'. This genre includes such productions as *Wild Angels* (1966), *Born Losers* (1967), *Devil's Angels*, *Hell's Angels on Wheels* (1967), *The Seven Savages* (1968), *Little Fauss and Big Halsy* (1970) and, of course, *Easy Rider* (1969).⁶
2. Clear anaphoric links have been made frequently in popular music between motorbike and electric guitar using distortion. One obvious exploitation of this well-established connection is that made in a spot for the *Philishave Tracer* (1986) in which high-distortion electric guitar partially resembling the introduction to *Money For Nothing* (Dire Straits 1985) mickey-mouses shots of a lone motorcyclist, suitably garbed, revving up, cornering and changing gear.
3. During the seventies, heavy metal publicity shots often featured the artist (e.g. Alice Cooper, Suzi Quatro) in black leather astride a customised chopper. Such artists are associated with music relying heavily on electric guitar using plenty of distortion.
4. From the earliest uses of distortion on electric guitar (e.g. Yardbirds 1965), through recordings by power trios like Cream and the Jimi Hendrix Experience and into to the seventies and eighties, many leading figures of heavy metal and its precursors have been guitarists rather than vocalists (e.g. Eric Clapton, Jimi Hendrix, Angus Young, Eddy van Halen, Ted Nugent, Jimmy Page, Yngwie Malmsteen).
5. There is a four-way mutual link between (1) the sound of an electric guitar using ample distortion and the rocker ideal sound for a (preferably four-stroke) motor bike, (2) between such a motorbike and a postwar

5. Thanks to Mike Brocken (Chester), truly blooded Liverpool Angel (May 1970) with license to wear cut off denims, for most of the information here dealing with motorbikes and for reminding me of the 'heavy metal' reference in Steppenwolf. Brocken witnesses that 'the right sound' was as essential a part of greaser aesthetics as the right clothing, stating that it was common practice to remove the baffles from the silencers of four-stroke machines and to replace the silencer of two-stroke machines with an expansion chamber in order to obtain the correct bike roar. Two-stroke Kawasakis were frowned upon by rockers simply because they whined and buzzed rather than roared. The fact that the Kawasaki left your four-stroke BSA standing at the lights did not mean it was a better machine because it was faster: it was worse because it sounded wrong.

6. These are the films cited by Jelot-Blanc (1978a: 125-6) as representing the biker movie genre

European-North American male archetype associated with rebellion, freedom, independence, vulnerability and a spirit of go-it-alone, (3) between such male antiheroes on motorbikes and the foreground heroes of heavy metal, both guitarists and vocalists.⁷

If heavy metal guitarists are *foreground* musical figures establishing clear connotative links via fuzz and motorbikes between a canon of self-perceived musical 'rebellion'⁸ and other representations of antihero subjectivity, what, then, is the musical and paramusical *background* to such subjectivity?

Heavy metal figure and ground

Heavy metal accompaniment (backing, ground) is loud, metrically and periodically quite regular and full of constant broad-band sounds in the bass and middle register.⁹

In this way it resembles the ambient noise of postwar traffic, electric motors, ventilation, machines in processing industries, etc. Now, the relentless time-tabling of events, constant traffic and electric hum, etc. can all be experienced as the sounds of an inexorable societal machine over which we have little or no control. Still, if you *are* subjected to those noises and rhythms that seem to symbolise real power in your environment, they might be made a little less overpowering if you appropriate them, re-create them and 'in-tone' them in your own image. This does not mean that heavy metal accompaniments resulting from such appropriation *are* the said soundscape any more than Clint Eastwood *is* Dirty Harry or Coca Cola *is* 'it': to undergo such appropriation, re-creation and intonation, the soundscape passes, as suggested earlier, through technological and cultural filters and is both stylised and resocialised. In this way, Iron Maiden's music may sound more like power drills or motorbikes and less like digital watches or bar code cash registers than the music of Laurie Anderson but, to my knowledge, direct citations of any of the sounds just mentioned are rare in the music of both artists.

Similar observations can be made about rock's famous 'wall of sound'. With the acoustic horizon brought closer to our ears in the urban soundscape, there are few sounds which seem to reach us from afar. This is not because the city street contains no reverb.¹⁰ On the contrary, if you were to stand alone in the same street, to empty it of sounds and to shout, the acoustic space would be very large. Now fill the soundscape with traffic again. Since the noise is once more loud and, more importantly, constant, by the time

7. This connection is exploited in an advert for the Royal Automobile Club (RAC: *Knights of the Road* 1991-2) which uses *Gimme Shelter* (Rolling Stones 1967) to accompany a lone RAC serviceman (complete with helmet, visor, leather garb), driving his motorbike by night (or should it be 'knight'? — reference to the spoof hero of the US TV series *Knight Rider* (1982) —) to the scene of a breakdown.

8. This notion of 'rock rebellion' is adequately documented (and mystified) in much scholarly literature using the approaches of subcultural theory. For a critique of rockologist canonisations, see Tagg 1994. See also the passage in *Wayne's World* (1992) where Alice Cooper in full leather gear, beating his sadomasochistic cane and surrounded by groupies, holds a short lecture about the etymology of 'Milwaukee'. This situational joke relies 100% on the assumption that the audience identifies Alice Cooper a rebellious antihero of tastelessness, as Mr. *No More Mr. Nice Guy* proclaiming that *School's Out*.

9. Soundscape aspects of metricity, periodicity, etc., as well as the anthropological aspect of rock music's relation to the soundscape, are all discussed in greater detail in Tagg 1990.

10. Length and amplitude of reverberation are one of the main determinants of perceived acoustic space.

the sound of a car has had the chance of being perceived as reverberation,¹¹ it has been almost instantaneously drowned by more of the same (louder) original continuous noise from the same or from a similar source. This process impedes perception of large acoustic space. By drowning discrete reverb in this way, the overall impression of acoustic space in a busy city street is crowded and close. Shouting to a friend on the other side of the street becomes impossible because there is an impenetrable wall of sound between the two of you. This wall now becomes the acoustic horizon, much closer than its visual counterpart and far closer than the acoustic horizon in the same space devoid of traffic.

This aspect of urban soundscape is intoned in heavy metal accompaniment, not only by creating the sort of loud broad-band sounds mentioned earlier, but also by adding considerable amounts of reverb to a recording or performance. The effect is similar to that of 'actual' reverb on the busy street. This effect of crowding and homogenisation is further enhanced in heavy metal by compressing accompanying instruments, individually and/or en masse. In this intonation process, the relative quiet of decays is brought up to the higher dB level of the same tone's envelope, this 'filling in the holes' of the sound wall. Moreover, since decays are intrinsic determinants of the unique character of individual sounds, using compressors (along with noise gates and limiters) helps create that characteristically urban heavy metal sound — loud and close-up but full of different elements that can be hard to distinguish. Add to this timbric and registral re-creation of the soundscape its temporal aspects of collective subjectivity (too lengthy a topic to be discussed here)¹² and you have the rehumanised background of heavy metal against which the foreground figures can be musically painted.

On top of ('above') or in front of all this heavy metal backing comes the melodic line, usually delivered by lead vocalists or guitarists. Their melodic statements (phrases) contain divergences from the clock time already re-appropriated and subverted by backing instruments. At the same time, since the musical 'environment' (accompaniment, backing) is so heavily loaded with loud bass and middle-range sounds, soloists must raise the volume, pitch and sharpness/roughness of their voice or instrument to be heard. Even though microphones, which bring the singer nearer our ears, have been in use since the advent of rock, the male heavy metal vocalist raises his voice to an average pitch at least one octave above what he uses for normal speech, while the loudness and grain of his voice also bears greater resemblance to shouting and screaming than to talking or whispering. Whether the vocal expression be one of despair, disgust, celebration or anger, the dominant character of vocal delivery in heavy metal is one of effort and urgency.¹³

Heavy metal guitarists act similarly to the vocalists, except that they cut their way through the throbbing broad-band wall of sound by raising the vol-

11. Reverberation' is understood here phenomenologically as a continuous series of decreasingly loud signals from the same original source.

12. See Tagg 1990: 110-112, 'Who Runs Time?', 'Rock and Clock'.

13. Prime examples of male vocalists transposing their normal voice at least an octave up for the purposes of heavy metal are Bon Scott and Brian Johnson of AC/DC and Robert Plant of Led Zeppelin. Death metal vocalists on the other hand seem to have taken their lead more from Lemmy of Motorhead, using an angry, disgusted gruffness to grate through the heavy metal wall of sound.

ume and/or fundamental pitch and/or transient values of whatever comes out of their instrument, effects and amps. Just as the motorbike weaves in and out of traffic, the heavy metal lead guitar can cut in and out of its ambient movement and sound, as if transcending the (already subverted and stylised) restrictions laid down by the backing. Of course, such 'guitar distortion = motorbike' sounds are even more common as the heavy accompanying riffs of metal music, this adding a rough but relatively constant accompanimental roar which is as exciting as the noise of the bike as you drive it (while singing?) rather than a series of individual motorbikes passing you (lead guitar).

The heroes of heavy metal have tended to be guitarists or vocalists. It is they who make the most noticeable din and who make themselves heard above it, cutting through all the other noise and movement by using loud and frequently garish gestures of sound and vision. When fans at a heavy metal concert stretch their arms into a huge 'V', it is their victory too. At least in that moment you can feel what it might be like to win the battle against all those sounds and rhythms that seem to represent control over the rest of your life. It is a moment of true magic in the anthropological sense of the word because the heavy metal soloists have stuck loud and highly connotative sonic pins into the caricatured bogeymen of normality and they have emerged victorious.

However, unlike baby's ability to dominate the domestic soundscape, the particular relationships just described between musical sounds, motorbikes and the urban soundscape are in no way constant or universal: they merely illustrate one way in which certain young males were able to exploit the new technical possibilities of a certain instrument developed under a certain set of historically determinable material, cultural and social circumstances in a certain part of the world to enact a drama symbolising in sound the taming and defeat of an inimical system over which they in 'real' life felt they had little or no control and in which they had to survive. Through re-creating a *musical* version of that struggle for survival and controlling the struggle in that form, another solution, though unattainable in real social or political terms, was nevertheless imaginable because heavy metal demands by definition that you make yourself *heard* as well as seen.

However, since the mid seventies, by which time the majority of the heavy metal connotations just discussed were clearly established, a lot has happened to music, to sounds, to technology, to society and to the subjective strategies of young people — and it is not just a question of crash helmet legislation and motorbike insurance!

The post-biker era

Since Steppenwolf sang 'heavy metal thunder' we have had to suffer two decades of Reaganomics, Thatcheritis or whatever you want to call the sort of political disease whose symptoms are greed as a virtue and the destruction of collective conscience by perverted notions of non-cooperative individualism. Since *Easy Rider*, in the post-AIDS era of work-outs and Californian-style body cult, the corporeal has been promoted from division four to the premier league of capitalist culture. The rebellious illusion of lone bikers associated with rock and distorted guitar has become part of the brave 'new' individualism to the extent that young US-Americans are no longer recruited into the forces by Sousa marches but by Van Halen's *Iron Wings* and the *Top*

Gun anthem. Vauxhalls and Opels are sold to the tune of *Layla* and Fords to ex-Queen guitarist Brian May's *Driven By You*.¹⁴ Three decades after the emergence of guitar distortion in pop and rock, we have seen yuppies jogging in designer track suits, aerobic women doing hysterical physical jerks in pastel-shaded leg-warmers, steroid-inflated men on dubious vendettas, Madonna exposing herself and a drastic rise in unemployment, especially for young people. We've also seen the sadomasochistic acrobats of all-star wrestling, Aryan males with Hitler haircuts in synth pop videos or Calvin Klein adverts, anorexic female catwalk executives washing-and-going, the rise of video and of computer games (including a computer game war),¹⁵ the demise of the world socialist system and more unemployment, especially for young people. It would indeed be strange if young people ready to take their place in this brave new world needed the same sort of socialisation expressed through the same sort of music on the same sorts of instrument and through the same sort of attitude to both body and emotions that rockology and the heavy metal canon seemed to find useful.¹⁶

Although there are many examples of contemporary popular music enacting the struggle between individual and society in terms resembling those of rock from the late sixties and early seventies (e.g. Radiohead's *Creep*), there are two clear shifts in the contemporary musical presentation of oppositional subjectivity. One of these trends is rap music, which uses far more solely percussive backing tracks than heavy metal and which has exchanged vocalists and lead guitarists for lead figures who *talk*, not sing or play. Does this mean that rappers and rap fans find less value than rockers in the corporeal and emotional celebration of self and that it is more important to be verbally, not just musically, explicit about what is wrong?

The other main trend is represented by house music and its offshoots (rave, dance, acid, ambient house, techno, etc.). As I have suggested elsewhere (Tagg 1994), this music is such a radical departure from everything preceding it that its musical structuration and social connotations need analysing in great detail, not least because *house-related styles have little or no tune*: put simply, the melody-accompaniment dualism, valid in European and North American music at least since Monteverdi, no longer seems to exist as the main compositional principle. Indeed, the sounds of 'rave', 'dance' or 'house' pose a whole range of questions that cannot only be answered with reference to developments in music technology or to young people's relationship to that technology: they are also questions about connections between music, soundscape and subjectivity.

- Why is the kick drum metronomically explicit and more or less constant?
- why are the basic pulse and surface rates of the music so high?
- why are so many of the music's sounds so clearly and intentionally synthetic?
- Why are the aeolian and phrygian modes so common?

14. Referring to original 1991 music track of British TV commercials. *Layla* (Derek & the Dominoes 1970, including Eric Clapton) was rearranged classically and minimally for subsequent Vauxhall spots and *Driven By You* was later rearranged semi-classically to sell the Ford Mondeo (1993). A very recent Ford advert on British TV uses the classic 'biker' guitar distortion sound to underscore a new model sold with an image of independence and individualism: the biker/scooter generation continues its myths into a yuppie phase.

15. Remember those missiles cornering streets to enter Iraqi bomb silos?

16. By 'rockology' is meant the body of 'scholarly' work theorising the oppositional character of rock music in the spirit of subcultural studies. Such work is criticised in Tagg (1994) and more extensively in Tamlyn (1994).

- Why the constantly dense but distinct acoustic close-up in virtually all tracks?
- Why is sampling used so extensively to introduce sound effects or sound bytes from other music or from film and TV soundtracks?
- Why is there no prominent bass line?
- Why do tracks last five or more minutes and not four or less?
- Why are there so few sung male vocals?
- Why are women recorded singing short phrases in quite a high register with so much reverb?
- What does this male-female division of vocal 'labour' signify in terms of gender role ideals?
- Why is there so little tune and so much accompaniment?

There is no room here to answer any of these questions but it should be clear that our own generation's monopolisation of the 'learned' aesthetics of youth culture, through the romanticisation of rock rebellion and emancipation is unlikely to help much, not least because that aesthetics may well have contributed to the reactionary ideology of the Thatcher and Reagan years. What I am suggesting, however, is that a musicology of society needs to develop models helping us to understand the relationship between different structures of music and different collective subjectivities. I am also suggesting that the two notions described in this article — (1) sonic anaphones which relate musical structures to the soundscape, (2) the sonic, including musical, figure-ground dualism symbolising individuals in relation to their environment —, if historically contextualised with some care, can contribute to such an understanding. In short, if babies know instinctively how to assert themselves in their own acoustic environment, it is about time adults gained at least some *intellectual* control over the sounds, both in and outside music, of our society.

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