

CHAOS, TERRITORY, ART

Deleuze and the Framing of the Earth

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COLUMBIA UNIVERSITY PRESS
NEW YORK



CONTENTS

Acknowledgments ix

ONE

Chaos. Cosmos, Territory, Architecture 1

TWO

Vibration. Animal, Sex, Music 25

THREE

Sensation. The Earth, a People, Art 63

Bibliography 105

Index III

2

VIBRATION. ANIMAL, SEX, MUSIC

Speaking is a beautiful folly: with that man dances over things. How lovely is all talking, and all the deception of sounds! With sounds our love dances on many-hued rainbows.

—FRIEDRICH NIETZSCHE,
THUS SPOKE ZARATHUSTRA

Music acts on human beings, on their nervous systems and their vital processes. . . . The man inhabited and possessed by this intruder, the man robbed of self, is no longer himself: he has become nothing more than a vibrating string, a sounding pipe.

—VLADIMIR JANKÉLÉVITCH,
MUSIC AND THE INEFFABLE

In this chapter I present the outlines of an ontology of music, looking at music's most elementary relations to chaos and to what all of life somehow extracts from chaos—a sense of the body and the earth—relations that music shares with all the arts as well as with science. Each is constituted out of the peculiar and unique relations it adopts to the most tangible forces of the real, those we live (in relation to the body and the earth) and those that remain unlivable by us but nevertheless impinge on us (chaos, the unpredictable, forces, events), which we as living beings have no choice but to address.

Art and science, but equally philosophy, are those products of evolution that have hijacked the intimately adapted nature of individual variation (tested in terms of its survival capacities by natural selection) through the excessive or nonadaptive detours of sexual selection, sexual taste, and erotic pleasure. It may be that we can come to understand the relations between art and science neither as cooperation or as competition but rather as a kind of incommensurable summoning up of the same forces and contingencies through different, possibly untranslatable, goals and techniques. Art and science are not alternatives to each other: art “competes” and “cooperates” only with other art practices, as science, specific scientific doctrines, techniques, and principles, “compete” and “cooperate” only with each other. Each is a practice the living perform on chaos to extract some order and predictability or some force of a concept, quality, or intensity from chaos that it, in turn, gives up to particular types of living being in particular ways. Chaos is not the object of life and its encounters but life’s condition and provocation; life is the extension of chaos in directions and forms that go beyond its own inventive and provocative effects. In brief, I hope to understand music as a becoming, the becoming-other of cosmic chaotic forces that link the lived, sexually specific body to the forces of the earth.

Art, science, and philosophy are three relatively autonomous ways to approach chaos. This is not to say that they are three modes of delivering order to chaos, only that each needs to utilize or elaborate some elements, features, or qualities of what goes by many different names within different conceptual frameworks, among them chaos, disorder, unpredictability, force, the infinite, profusion, intensification, materiality without measure, nature without norm that are in excess of the principles by which we attempt to know and regulate them. Chaos is not the absence of order but rather the fullness or plethora that, depending on its uneven speed, force, and intensity, is the condition both for any model or activity and for the undoing and transformation of such models or

activities.¹ This concept of chaos is also known or invoked through the concepts of: the outside, the real, the virtual, the world, materiality, nature, totality, the cosmos, each of which is a narrowing and specification of chaos from a particular point of view. Chaos cannot be identified with any one of these terms, but is the very condition under which such terms are capable of being confused, the point of their overlap and intensification.

Deleuze and Guattari have postulated, beyond the postmodern obsession with representation and discourse, with forms of order and organization, that is, with systems and structures, that philosophy develops nothing but *concepts* to deal with, to approach, to touch upon, harness, and live with chaos, to take a measured fragment of chaos and bound it in the form of a concept. Philosophy is not a philosophy of language, an image of the world or a series of truths mediated through representations, but a philosophy in which language is only as valuable as the work it does, the concepts it produces and circulates, the effects it has on the real, on the outside. Philosophy is one mode of addressing chaos, one way of living with it rather than a way of giving it its true or inner order.

If philosophy is primarily oriented to the creation, elaboration, and development of concepts, according to Deleuze and Guattari, science primarily develops *functions* (“functives,” formulae, algorithms) to address and exchange with chaos; and art elaborates, produces, and intensifies *affects* and *percepts* as its mode of response to and contamination by chaos. Philosophy, art, and science are three among the vast planes—Deleuze and Guattari call them “brain-becomings”²—we throw over chaos in order to extract an

1. “The first difference between science and philosophy is their respective attitude toward chaos. Chaos is defined not so much by its disorder as by the infinite speed with which every form taking shape in it vanishes. It is a void that is not a nothingness but a *virtual*, containing all possible particles and drawing out all possible forms, which sprung up only to disappear immediately without consistency or reference, without consequence” (Deleuze and Guattari 1994:118).

2. “The brain is the junction—not the unity—of the three planes” (Deleuze and Guattari 1994:208).

element, a quality, a consistency from chaos, in order to live with it. There are no doubt other planes we could also invent—technical, material, organizational, administrative planes—each slowing down, ordering, highlighting those fragments or features of chaos that the living can use for itself according to their principles of organization.

Philosophy invents concepts to create a consistency from chaos, the arts frame or compose chaos so that sensation can be created and proliferate, and science functions to slow down chaos in order to extract from it limits, constants, measurements—variables it can use to generate predictabilities. Each has its own engagements and struggles with chaos, each takes with it little shards of chaos through which it wrenches a consistency, an intensity or a predictability in order to set itself on the other side of chaos, in order to compose, calculate, or conceptualize.

Art, philosophy, and science each erect a plane, a sieve, over chaos, a historicotemporal and mutually referential field of interacting artworks, concepts, and experiments (respectively), not to order or control chaos but to contain some of its fragments in some small space (a discourse, a work of art, an experiment), to reduce it to some form that the living can utilize without being completely overwhelmed.³ Chaos, the virtual in all its entwined complexity, can be understood as the ongoing possibility of infinite planes, or the plane of all planes that is the condition of every work and the ability of each work to somehow address the others with which it copopulates the plane. Each plane, Deleuze and Guattari suggest, cuts chaos in a different way, through a different angle, which is why each is unique, irreplaceable, and incommensurable with any other, yet why, in some sense, all the planes address similar problems, similar events, and similar forces, why the planes can utilize and develop their connections, the strata they form, with other planes.

3. Deleuze and Guattari insist that the various planes—the plane of consistency or immanence for philosophy, the plane of composition for the various arts, and the plane of reference for the sciences—are the prephilosophical, preartistic, and prescientific conditions for the emergence of philosophical discourses, artistic works, and scientific experiments.

There is an obvious but indirect link between the enjoyment of music (whether performing, participating, or simply listening) and sexual or erotic pleasure. Of all of the arts, music is the most immediately moving, the most visceral and contagious in its effects, the form that requires the least formal or musical education or background knowledge for appreciation, though of course, as with all cultural forms, music cannot be considered universal or culturally unmediated. Along with dance, with which it is closely aligned, music generates movement and activity in the listener/participant. Music has long been recognized as the most seductive of the arts, the one that most immediately enhances a sense of well-being, the art that most directly enchants (or equally infuriates).⁴

Music is central to Charles Darwin's explanation and understanding of the role of sexual selection in the operations of natural selection. Sexual selection, the ability to attract sexual partners (which is not in itself to be conflated with successful reproduction: the aim is sexual relations, even if the most measurable form for sexual success is the generation of offspring), not only works in cooperation with natural selection but at times functions in conflict with it, placing individuals and species in potential danger to the extent that they attract partners. Darwin sees sexual selection commonly but by no means universally in terms of the active but useless competition between males of the same species to attract the attention and discernment of females (or vice

4. Darwin suggests that music is primarily affective: it functions to stir, intensify, enhance affect. Although it has no particular or given emotional content, it produces an intensification of affects, a heightening of muscular forces, a stirring of emotions: "Music affects every emotion, but does not by itself excite in us the more terrible emotions of horror, rage &c. It awakens the gentler feelings of tenderness and love, which readily pass to devotion. It likewise stirs up in us the sensation of triumph and the glorious ardour for war. These powerful and mingled feelings may well give rise to the sense of sublimity. We can concentrate . . . greater intensity of feeling in a single musical note than in pages of writing" (Darwin 1981: 335-336).

versa).⁵ Darwin discusses the costs incurred by the peacock for the magnificence of its plumage, the risk of predatory attack, which is precisely commensurate with its ability to attract the dowdier and more safely camouflaged peahen. Sexual appeal imperils as much as it allures; it generates risk to the same extent that it produces difference.⁶

Even at its very origins, evolutionary theory is divided in how it considers music (and the other arts) and whether it sees music as derived from language (and the visual arts as forms of rehearsal for and representations of past battles, hunts, and various struggles for survival) or whether language is seen as an evolutionary outcome of musicality. If music is derived from language, so the argument goes, then music is fundamentally based on natural selection and served the purposes of self-preservation. If, on the contrary, language derives from music, then it may be that music and the arts are the product of sexual selection, the ability to attract a mate. At stake in this discussion, in other words, is the question whether music remains frivolous, part of sexual amusement, or a more serious and necessary rehearsal and preparation for what is life sustaining. Is music what we share with animals, an outcome of our animal heritage; or is it that which distinguishes the human from the animal?

5. It is significant that Darwin is less sexist and heterocentric than his contemporaries and especially his neo-Darwinian followers. He argues that males commonly compete with each other to attract females and that females commonly exert their powers of discrimination, although he admits that it may not be the powers of preference that females exert so much as the powers of distaste. Rather than claim females chose the most attractive males, Darwin suggests that they simply chose the mates least distasteful for them! "The female, though comparatively passive, generally exerts some choice and accepts one male in preference to others. Or she may accept . . . not the male which is the most attractive to her, *but the one which is the least distasteful*. The exertion of some choice on the part of the female seems almost as general a law as the eagerness of the male" (Darwin 1981:273; emphasis added).

6. Zahavi describes this as the handicap principle: whatever bodily form is enhanced through sexual attractiveness imposes a cost on its bearer that is a heightened vulnerability to predation. The more beautiful the peacock's plumage, the more visible it is for all. See Zahavi et al. 1997.

Herbert Spencer, with whom Darwin so strongly disagreed, believed that music was the indirect outcome of the advantages bestowed on language use for survival. As language use developed, its emotional resonances and excited uses particularly emphasized the prosodic or melodic elements of speech, which became gradually uncoupled from words and attached to sounds. Music is a playful but largely epiphenomenal residue of language. For Spenser, and for the entire tradition of social Darwinism that links him to E. O. Wilson and Steven Pinker, language is primarily acquired because of the benefits it bestows on its speakers in terms of their enhanced fitness, that is, their capacity for survival. Music (and poetry) are at best the playful offshoots of language, the ways in which we rehearse, prepare for, and complicate language, which is ultimately a more useful and powerful tool than nonlinguistic communication. Music is considered a kind of excess or remainder left over from language use.

For Darwin himself, however, music precedes language and is the direct result of sexual selection not of natural selection. Its origins lie in its erotic and enticing appeal; language is the normalized adaptation of this primarily sexually elaborated characteristic.⁷ Darwin believed that the differences between male and female forms of vocalization, as well as the differences in vocal physiology between the two sexes (male vocal cords are commonly 50 percent larger than female ones) was the direct result of sexual,

7. In a careful footnote, Darwin outlines his difference from Spenser and the strange appeal of his own claim: "Mr Spenser comes to an exactly opposite conclusion to that at which I have arrived. He concludes that the cadences used in emotional speech afford the foundation from which music has developed; whilst I conclude that musical notes and rhythms were first acquired by the male or female progenitors of mankind for the sake of charming the opposite sex. Thus musical notes became firmly associated with some of the strongest passions an animal is capable of feeling, and are consequently used instinctively, or through association, when strong emotions are expressed in speech" (Darwin 1981:336n).

Thus it is the sexual origins of language that explain its affective force, rather than its descriptive or designatory capacities that enable it to refer and transform affects and emotions.

not natural, selection, which explained the differences in cadence and timbre between the sexes:

Although the sounds emitted by animals of all kinds may serve many purposes, a strong case can be made out, that the vocal organs were primarily used and perfected in relation to the propagation of the species. Insects and some few spiders are the lowest animals which voluntarily produce any sound; and this is generally effected by the aid of beautifully constructed stridulating organs, which are often confined to the males alone. . . . In the class of Mammals . . . the males of almost all the species use their voices during the breeding-season much more than at any other time; and some are absolutely mute excepting at this season. Both sexes of other species, or the females alone, use their voices as a love-call.

(DARWIN 1981:330-332)

He claims that there is something about music that is seductive, even dangerous: music intensifies and excites. Music, like striking coloring or plumage, attracts and allures, it makes one notice, it alerts one to a spectacle, it becomes part of a spectacle. As such, it belongs more to the order of sexual than natural selection. Such displays do not serve to protect the musical creature or to enable it to acquire useful, pragmatic survival skills. Indeed, they may actively endanger it. Nevertheless it is the erotic, indeed perhaps vibratory, force in all organisms, even those without auditory systems, that seduces, entices, mesmerizes, that sexualizes the body, metabolizes organs, and prepares and solicits it for courtship. There is something about vibration and its resonating effects on material bodies that generates pleasure, a kind of immediate bodily satisfaction. For Darwin, this seems as close to a universal postulate as anything he claims: rhythm, vibration, resonance, is enjoyable and intensifying:

The perception, if not the enjoyment, of musical cadences and of rhythm is probably common to all animals, and no doubt depends on the common physiological nature of their nervous systems. Even Crustaceans, which are not capable of producing

any voluntary sounds, possess certain auditory hairs, which have been seen to vibrate when the proper musical notes are struck. It is well known that some dogs howl when hearing particular tones. Seals apparently appreciate music, and their fondness for it “was well known to the ancients, and is often taken advantage of by the hunters at the present day.”

(DARWIN 1981:333)

In short, there is something about vibration, even in the most primitive of creatures, that generates pleasurable or intensifying passions, excites organs, and invests movements with greater force or energy. This force is not directed to survival, to the acquisition of pragmatic skills, except perhaps indirectly; instead it is linked to expression and intensification, to sexual selection, to the increasing differentiation of the sexes from each other and to the operative value of attractiveness and taste in the appeal that individuals of each sex exert (or do not exert) for their desired partners. In affirming the radical distinction between natural and sexual selection—that is, between skills and qualities that enable survival, and those that enable courtship and pleasure, which sometimes overlap but commonly do not—Darwin introduced an excessiveness into the development and transformation of species. Species are no longer natural collections or kinds developed to survive and compete, they are also the a posteriori and ultimately incalculable consequences of sexual taste, appeal, or attraction. Perhaps sexuality itself is not so much to be explained in terms of its ends or goals (which in sociobiological terms are assumed to be the [competitive] reproduction of maximum numbers of [surviving] offspring, where sexual selection is ultimately reduced to natural selection) as in terms of its forces, its effects (which can less contentiously be understood as pleasure in indeterminable forms), which are forms of bodily intensification. Vibrations, waves, oscillations, resonances affect living bodies, not for any higher purpose but for pleasure alone. Living beings are vibratory beings: vibration is their mode of differentiation, the way they enhance and enjoy the forces of the earth itself. Music is “charming”; that is why it survives and why it is so culturally universal:

The suspicion does not appear improbable that the progenitors of man, either the males or the females or both sexes, before they had acquired language, endeavoured to charm each other with musical notes and rhythm. . . . The impassioned orator, bard or musician, when with his varied tones and cadences he excited the strongest emotions in his hearers, little suspects that he uses the same means by which, at the extremely remote period, his half-human ancestors aroused each other's ardent passions, during their mutual courtship and rivalry.

(DARWIN 1981:337)

For Darwin, though not for most of his followers,⁸ our appreciation of and orientation toward music is one of the more primitive characteristics of life and is part of man's most ancient animal heritage.⁹ Darwin suggests, in terms that perhaps ironically anticipate a feminism of difference, that the elaboration of the voice as an instrument of seduction must have occurred before the human was fully human, and before human cultures became patriarchal, where the female voice exerted a beauty and appeal perhaps as strong if not stronger than that of the male voice. Perhaps the musical manipulation and constitution of timbre, tone, pitch, rhythm, beat, melody holds as much appeal for the human as it does for man's earliest primate ancestors:

So little is known about the use of the voice by the *Quadrumana* during the season of love, that we have hardly any means of

8. There are of course a number of contemporary exceptions—evolutionary biologists or anthropologists who affirm Darwin's hypothesis about the sexual origins of music and its relative independence from language acquisition. See, for example, Miller 2002.

9. As Darwin suggests, music and song are among the most primordial characteristics the human shares with other primates: "Whether or not the half-human progenitors of man possessed . . . the capacity of producing, and no doubt of appreciating, musical notes, we have every reason to believe that man possessed these faculties at a very remote period, for singing and music are extremely ancient arts. Poetry, which must be considered as the offspring of song, is likewise so ancient that many persons have felt astonished that it should have arisen during the earliest ages of which we have any record" (Darwin 1981:334).

judging whether the habit of singing was first acquired by the male or the female progenitors of mankind. Women are generally thought to possess sweeter voices than men, and as far as this serves as any guide we may infer that they first acquired musical powers in order to attract the opposite sex. But if this is so, this must have occurred long ago, before the progenitors of man had become sufficiently human to treat and value their women merely as useful slaves.

(DARWIN 1981:337)

MUSIC AND THE ANIMAL

I argued in the last chapter that for Deleuze and Guattari, along with Darwin, art does not begin with the exteriorization of one's own body and the creation of materials that are originally corporeal; art begins with the animal, which is itself a conjunction of bodies and bodily forces with territories (1994:183, 184). For Darwin, art is not the productive arrangement of qualities. It is the coupling of disparate elements on different levels, the coming together of bodily forces with the organization of territory. All art begins with the animal, for it is the animal, and not machines, minds, or subjects, that carves territories and bodies simultaneously: minds, machines, subjects are themselves the artistic products of this coupling of bodies and milieus. Art is not the accomplishment of "higher" existence, whether conceived mentally or spiritually, but is an elaboration of the most primitive and elementary fragments of an ancient animal prehistory.

Darwin believes that we cannot explain the emergence of song, or indeed any of the arts, in terms of natural selection alone. While there is some selection in terms of "fitness," that is in terms of survival, this selection is always negative: it eliminates the unfit or the less fit rather than privileging the fittest. Darwin's argument is that music did not evolve through natural selection but primarily through sexual selection. Music has survived, in other words, not because it is reducible to something useful or practically relevant in everyday life, precisely because it is *not* useful but serves the vaguer purposes

of evocative intensification and pleasure. Music develops and survives not because it bestows upon us, its agents and listeners, some direct advantage but because it is pleasing and thus serves to attract others to us and us to others:

As neither the enjoyment nor the capacity of producing musical notes are faculties of the least direct use to man in reference to his ordinary habits of life, they must be ranked among the most mysterious with which he is endowed. They are present, though in a very rude and it appears latent condition, in men of all races, even the most savage.

(DARWIN 1981:66)¹⁰

For Darwin, it is perhaps birdsong that most clearly reveals the sexual nature of song, the productive role of sexual selection in the elaboration of the arts, and the mutual entwinement of the arts of decoration, performance, staging, and so on, with each other.¹¹ Birdsong is for him essentially music, music at its most represen-

10. Darwin finds rare confirmation in the writings of Charles Hartshorne, who agrees that music is useless but overwhelmingly pleasurable: "Bird songs resemble human music both in the sound patterns and in the behavior setting. Songs illustrate the aesthetic mean between chaotic irregularity and monotonous regularity. . . . The essential difference from human music is in the brief temporal span of the bird's repeatable patterns, commonly three seconds or less, with an upper limit of about fifteen seconds. This limitation conforms to the concept of primitive musicality. Every simple musical device, even transposition and simultaneous harmony, occurs in bird music. . . . Singing repels rival males, but only when nearby; and it attracts mates. It is persisted in without any obvious immediate result, and hence must be largely self-rewarding. It expresses no one limited emotional attitude and conveys more information than mere chirps or squeaks. In all these ways song functions like music" (Hartshorne 1973:56).

11. Darwin makes an interesting aside: that it is significant that the vast majority of songbirds are rather plain in their appearance, and the vast majority of exotic and decoratively colored birds do not sing: "Hence bright colours and the power of song seem to replace each other. We can perceive that the plumage did not vary in brightness, or if bright colours were dangerous to the species, other means would have to be employed to charm the females; and the voice being rendered melodious would offer one such means" (Darwin 1981:56).

tative, and cannot be seen as a simplified or anticipatory version of human song. It not only contains tones, pitch, melody, tempo, and rhythm, at least in some forms, it also expressed changes in key and forms of variations and improvisation. Some species of birds have been known to have a repertoire of as many as nine or ten songs and a remarkable capacity to add to and change existing melodies.¹² Birdsong, above all, intensifies emotions—fear, anger, joy, and triumph—that birds experience or observe in others. Predominantly a male activity, birdsong remarkably increases during breeding season.¹³ As in human song, in birdsong emotions are elaborated and intensified: something like “love” or courtship functions as the most common theme, which tends to confirm its primarily role in sexual functioning.¹⁴

Birdsongs serve a number of different functions. They highlight and locate the singer within a particular milieu or territory; they signify a particular set of qualities or skills in the singer—loudness, beauty of melody, number of variations; they mark out a territory that is both desirable (for potential suitors) and dangerous (for potential rivals);¹⁵ they are not always restrained to the operations of

12. See Storr 1992:4–5.

13. “With birds the voice serves to express various emotions, such as distress, fear, anger, triumph, or mere happiness. It is apparently sometimes used to excite terror, as with the hissing noise made by some nestling birds. . . . The true song, however, of most birds and various strange cries are chiefly uttered during the breeding season, and serve as a charm, or merely as a call-note, to the other sex” (Darwin 1981:51–52).

14. “Nearly the same emotions, but much weaker and less complex, are probably felt by birds when the male pours forth his full volume in song, in rivalry with other males, for the sake of captivating the female. Love is still the commonest theme of our own songs” (Darwin 1981:336).

15. Darwin asserts that the season of love is also that of battle (1981:48), and that coupled with or as the underside of the elaborate courtship rituals related to the attainment of a sexual partner is not an actual rivalry with members of the same sex and species, but at least the semblance or representation of a rivalry. Although there is sometimes fierce competition between rivalrous males in courtship competitions, Darwin affirms that many of these relations, particularly within bird species, seem more directed to the attention of female observers than to engaging in any real and dangerous rivalry with other males. The rivalry is often in part directed to its audience (see Darwin 1981:50).

the voice itself, for as Darwin himself recognized, birds and other animals more generally are capable of generating a diverse range of sounds, both vocal and “instrumental” (Darwin mentions peacocks and birds of prey rattling their quills or moving their wings rapidly [Darwin 1981:61–62]). He talks of the mesmerizing and appealing power that birdsong exerts not only for members of the same species and opposite sex but also for other species, including mankind:

There can be no doubt that birds closely attend to each other’s song. Mr. Weir has told me of the case of a bullfinch which had been taught to pipe a German waltz, and who was so good a performer that he cost ten guineas; when this bird was first introduced into a room where other birds were kept and he began to sing, all the others, consisting of about twenty linnets and canaries, ranged themselves on the nearest side of their cages, and listened with the greatest interest to the new performer.

(DARWIN 1981:52)

There are a number of ways in which birdsong resembles human music: birdsongs (along with the most sophisticated animal music—the music of whales) are commonly learned rather than innate, a melodious movement of tones rather than a fixed repertoire of signals. Because they are commonly learned, this means that the songs performed are capable of being spontaneously modified, either through the addition of new learned elements or through the modification of existing elements. Like humans, birds (and whales) are particularly susceptible to learning new songs and new musical elements the younger they are, and their range of improvisational skills depends on when they acquire new sounds and calls. Although Darwin insists on their similarity and the possibility of developing a more elaborate conception of song using the elementary fragments of birdsong elaborated step-by-step into a more complex melody (“It is not difficult to imagine the steps by which the notes of a bird, primarily used as a mere call or for some other purpose, might have been improved into a melodious love-song” [1981:66]), most evolutionary theorists today tend to see human song and birdsong

(and whale song) as elements of convergent evolution rather than as gradual steps in the linear development of music.¹⁶

It is clear that there is no direct line of development between birdsong and human music, for there is no line between the bird and the human: my claim is not that the bird influences the human, but that the songbird (and the songs of whales) accomplishes something new in its oratory, a new art, a new coupling of (sonorous) qualities and milieus that isn't just the production of new musical elements, materials—melodies, rhythms, positive music contents—but the opening up of the world itself to the force of taste, appeal, the bodily, pleasure, desire—the very impulses behind all art.

What music and the arts indicate is that (sexual) taste and erotic appeal are not reducible to the pragmatic world of survival, although of course subject to its broad principle as a limit: they indicate that those living beings that “really live,” that intensify life—for its own sake, for the sake of intensify or sensation—bring something new to the world, create something that has no other purpose than to intensify, to experience itself. Music and art are the opening up of the pragmatic world of performed and judged actions to qualities, the opening up of life to taste, to sexuality, to erotic appeal, to excessiveness. While it is the world of nature that is central to the operations of music (in ways that are commonly not recognized by evolutionary scientists), it may be that there is a less literal connection between them than either imitation or linear development. It may be that, if we follow the movement not only of those creatures who produce sonorous arts but of that counterpoint that is nature and its various conjunctions, then the natural world can itself be construed as musical, as the playing out of a certain number of musical themes, the movement of duets, trios, quartets, orchestras to create natural sonatas, love songs, requiems.

Perhaps this music of nature is itself acted out, performed not only in the constitution of human musicality and the adoption of

16. See, as one of the critics of Darwin's postulate of the nonhuman origins of music, Steven Mithen's *The Singing Neanderthals* (2005).

formal principles of composition and performance but also in the contrapuntal relations between the very bodily schema and its lived milieu that is enacted in nature itself. In other words, is it not the case that the voice and the ear in human subjects are contrapuntally tied to each other? Is not the ear itself a refrain that is continually deterritorialized by the voice?¹⁷

NATURE AS COUNTERPOINT

The writings of the Estonian biosemiotician Jakob von Uexküll have been influential both on those working on the lifeworld, the *Umwelt*, of particular species of animal (in a sense his work can be considered the earliest attempt to develop a phenomenology or a biosemiology of animal life) and particularly on the writings of Deleuze and Guattari, who use his work to develop an account of the centrality and species-specific notion of milieu in understanding the ways in which particular species experience their lifeworlds. Species cannot be understood as entirely separable from the milieus in which they find themselves, for these milieus are involved in a kind of coevolution. Uexküll discusses what he understands as the “musical laws of nature” [*Weltgesetz*,] the “laws” binding together the development, or, rather, coevolution, of the spider and the fly, the tick and the mammal, the wasp and the orchid, the snapdragon and the bumblebee, “each of which serves as a motif for another. Nature as music. . . . A melodic or rhythmic plane” (Deleuze and Guattari 1987:314). For Uexküll, music is not just a useful metaphor for understanding highly context-specific relations between living elements within given milieus, it is a literal form by which nature can be understood as dynamic, collective, lived rather than just fixed, categorized, or represented.

Uexküll argues that an animal is not immersed wholesale in a given milieu, but at best engages with certain features that are of significance to it, that counterpoint, in some sense, with its own organs.

17. “The ear is itself a refrain, it is shaped liked one” (Deleuze and Guattari 1987:302).

Each organism in every species is surrounded by its Umwelt, an “island of the senses” (Uexküll 2001a:107) that is always a considerable simplification of the information and energy provided by any milieu. The Umwelt of the organism is precisely as complex as the organs of that organism—Uexküll advocates an extreme perspectivism in which objects are not autonomous or independent sets of qualities and quantities, but opportunities for engagement that offer themselves in particular ways to particular organs and remain otherwise indiscernible.¹⁸ Organisms are sense-bubbles, monads composed of coextensive overlapping beings and fragments of milieus, enclosing and carrying with them elements, one might even understand them as musical counterpoints, that are only given outside, to which the organism is itself a brilliant and inventive response.

Perhaps Uexküll’s best known example, the one Deleuze repeats in a number of his writings, is that of the tick in its Umwelt. The tick is blind, deaf, and mute. It sees and hears nothing; at most it feels temperature through its photosensitive skin and has an acute but highly focused sense of smell. After the female tick has mated, she moves up a twig or branch toward the light, which serves to position her so that she may access the body of a mammal, whose warm blood she needs to feed on. Her organs of smell are well developed, oriented to discern only one particular smell, that of butyric acid, an odor common to all mammals in their sweat. When this odor passes below the leaf or stick on which it is perched, the tick falls on the skin, seeks a spot more or less free from hair, and proceeds to suck its blood. The warmth of the animal is a trigger for the tick to begin sucking, which engorges the tick with blood. Bloated to the size of a pea, it drops off the animal, deposits its eggs, dies, and the tick’s life cycle begins again.

18. “Every object becomes something completely different on entering a different Umwelt. A flower stem that in our Umwelt is a support for a flower, becomes a pipe full of liquid for the meadow spittlebug (*Philaenus spumarius*) who sucks the liquid to build its foamy nest. The same flower stem becomes an upward path for the ant, connecting its nest with its hunting ground in the flower. For the grazing cow the flower stem becomes part of a tasty morsel of food for her to chew in her big mouth” (Uexküll 2001a:108).

Traditional physiological or biological accounts would suggest that these actions are made of reflexes, automatic reactions to a given stimulus, an unleashing of pre-given behavioral cues. But for Uexküll what is significant is that the tick is responding to perceptual signs, significances, rather than causal impulses.¹⁹ The tick's world is made up of three affects—the smell of butyric acid, the warmth of the sun and the mammal's skin, and the taste of blood. The tick and the mammal create a kind of provisional totality, a bubble-world: the mammal is the tune whose melody the tick has to play. It cannot discern the qualities of the mammal it falls on, it cannot perceive the vast bulk of information that even the branch it alights on could provide some differently structured organism. The tick lives in a simplified world, a harmonic world of its own rhythms and melody, a melody composed by its Umwelt, the conjunction mammal-twig-sun, in which it is a connective, an instrument. Each animal is itself a kind of creative response—an improvisation of a score that is provided by its Umwelt: "Every Umwelt of a normal animal is a faultless composition of nature—you have only to understand how to look for its themes and its notes" (Uexküll 2001a:120).

Or take the case of the honeybee. It too lives in a profoundly simplified world, a world of vision and smells, in which it can only discern two kinds of visible shapes—the cues for opened and closed forms, round and semicircular shapes, that will enable it to distinguish flowering from closed buds and the cues for four basic colors—ultraviolet, blue, green, and yellow. It also lives in a world overwhelmed by many different kinds of smells, the perfumes of many flowers. Uexküll argues that if we adequately understand the theme of its Umwelt, we can understand the nature and form of its perceptual cues, its forms of attunement to its milieu, that is, its active selection of those milieu elements that signify for it. The

19. "We are not concerned with the chemical stimulus of butyric acid, any more than with the mechanical stimulus (released by the hairs), or the temperature stimulus of the skin. We are concerned solely with the fact that, out of the hundreds of stimuli radiating from the qualities of the mammal's body, only three become the bearers of receptor cues for the tick" (Uexküll 1957:11).

melody the honeybee performs is that of its flowers, the flowers' life cycle, of which it is an active part:²⁰

The theme of the music for the honeybee is the collection of nectar and pollen. To find them the path that leads to them has to be marked with perceptual cues. This explains the choice of properties of flowers that become form, color, smell, and taste perceptions to the bees. A honeybee meadow is something very different from a human meadow. It is a honeybee composition made up of bee notes.

(UEXKÜLL 2001a:120)

For Uexküll, the music of nature is not composed by living organisms, a kind of anthropomorphic projection onto animals of a uniquely human form of creativity; rather, it is the *Umwelten*, highly specifically divided up milieu fragments that play the organism. The organism is equipped by its organs to play precisely the tune its milieu has composed for it, like an instrument playing in a larger orchestra. Each living thing, including the human, is a melodic line of development, a movement of counterpoint, in a symphony composed of larger and more complex movements provided by its objects, the qualities that its world illuminates or sounds off for it. Both the organism and its *Umwelt* taken together are the units of survival. Each organism is a musician completely taken over by its tune, an instrument, ironically, only of a larger performance in which it is only one role, one voice or melody.²¹

20. "The number and nature of perceptual cues can to a certain extent be predicted as soon as one knows the theme of the music (*Lebensmusik*) that the *Umwelt* of the animal is playing" (Uexküll 2001a:120).

21. The idea of the organism as a melodic counterpoint to its milieu, the milieu that comes to compose its territory is elaborated through many examples in Uexküll's writings. For example: "The dependence of the cellular musicians on the tune was already evident from the sea urchin experiments by Driesch. Cutting the embryo of the sea urchin in half reduced the number of cells to half but did not change the building tune. This was continued by the other half. This applies to all orchestras. When half the musicians leave, the other half of the orchestra goes on playing the same tune. Spemann reports an astonishing experiment. Inserting frog cells, that normally evolve

Its milieu is not a determinant in the elaboration of the qualities of the organism, which emerge randomly; rather its milieu is an ongoing provocation to the organism to utilize its randomly emergent qualities maximally. The organism is a provisional response to that provocation: it generates as many senses, organs, actions as it is capable of using to extract what its body needs and can harness from this highly stylized environment. It is not an effect or product of its environment, but is a master of its Umwelt, through which it can occupy and be part of an environment. The organism is not a reaction to a milieu now regarded as stimulus: rather, the milieu is a pregiven counterpoint with which the living being must harmonize if it is to survive, to recognize its food, its enemies, its possible partners.

One final example may help make this clear. Uexküll discusses the production of the spider's web as a kind of spatial counterpoint to the movements of the fly. The web is not entirely comprehensive, and its form is not adequately explained unless we understand its relation to the fly. The threads of the web must be both strong enough to capture the spider's prey, yet invisible enough for the prey to be unable to see them. There are, for example, two kinds of thread in every web: smooth radial threads that the spider is able to stand on and spin from and sticky parallel threads that function to catch flies (or other prey). The size of the net, its holes and gridding, is an exact measure of the size of the fly. The fly is contrapuntal to the web—or, equally, the fly, the web, and the spider form a unique coupling, a milieu qualitatively inducing and selected for specific pairings, specific productions. The “properties of lifeless things” like the web “intervenes contrapuntally in the design of living things” (Uexküll 2001a:122). For Uexküll, it is significant that not only can relations between an organism and its Umwelt be taken as a musical symphony, the very evolutionary relations—the

into frog brain, in the mouth area of a triton larva, the insert obeys the mouth building tune of the triton larva, however, it does not become a triton mouth but the mouth of a tadpole, true to its origin. One could do a similar experiment with a strong orchestra. When replacing the violins with horns in a certain movement, the orchestra can go on playing the same tune but with a very different tonal quality” (2001a:121).

relations that explain both natural and sexual selection—can also be conceived as part of a natural musical order. Male-female relations, the relations of sexual difference and sexual selection, for example, are interwoven as duet, as the blending of two different melodies and rhythms into a single composition: “the male-female duet is a theme that is interwoven in a thousand variations into the orchestration of the living world” (Uexküll 2001a:118) and “Nobody will deny that males and females are composed in counterpoint through nature.” (Uexküll 2001a:122).

If nature can be seen as the contrapuntal relation between at least two biologically connected musical themes, the harmonious note-by-note connections between at least two different melodies, then milieu or environment is not entirely separate from or outside the living organism: it is already mapped or composed in terms of the musical cadences available to that body. The fly is already mapped, signaled, its place accommodated in the spider’s bodily behavior before any particular spider has encountered any particular fly. The melody plays on, seeking the instruments it needs to continue its rhythms, pacing, harmonies: what remains central, though, is not finding precisely the right instrument for each musical movement, but continuing to play with whatever is at hand, a kind of musical bricolage in which the central musical themes must be played and in which the very bodies of organisms are the instruments.

MILIEU AND TERRITORY

What is it that constitutes music or indeed any of the arts? We have already suggested that it is the coupling of two disparate orders, those of bodily affects or percepts and those governing the geology of the earth or territory: art is always the coupling of extracted elements from the cosmological order and their integration into the lived experience and behavior of organisms. Art is of the animal to the extent that art is the consequence, the unexpected, unpredictable effect, of the coupling of a milieu or territory with a body, and the extraction of qualities, whether sonorous, visual, or tactile, framed through the constitution of a (history of) form.

We have already mentioned the relations between the arts, sciences and philosophy and chaos: our immersion in chaos and the various attempts that humanity has undertaken to organize, structure, and map elements of this chaos have only most recently led to the elaboration and development of these knowledges and social practices. More primitively, chaos has divided itself, through the elaboration of life, into precisely the Darwinian units that define individual variation (the living individual, variable subspecies, and heterogeneous species) and natural selection (the environment, the ecological niche, the milieu, a territory). Yet, as Uexküll has shown us, the operations of evolutionary elaboration entail that the organism of individual variation already contains within itself something of the score or resonance the milieu has chosen to highlight and perform through this organism.

In order to explain this ontology of music, it is necessary to discuss the movement by which the whirling chaos of forces that constitute the cosmological order are slowed down, minimally structured, delimited, named, charted, harnessed. The earth is the region of chaos in which all known life abides. It is the most ordered yet intimate location and frame for the structuring of behavior. But the earth itself, at least as far as each species is concerned, is nothing but an abstraction, for the bulk of energies, forces, movements that constitute the earth as a totality are indiscernible to particular lifeforms, which at best perceive and access only those elements or fragments available within a limited geographical and meteorological range. If the earth is the cosmological frame for all terrestrial life, no form of life lives on the earth per se. Each living thing inhabits only a region of the earth, a delimited location, a milieu, a small always locatable zone within a larger surrounding region.

A milieu, though, is not yet a territory. A milieu is what the fly inhabits, an indeterminable but limited space highlighted through significant elements or qualities—cues to prey, rivals, love objects, and so on. For Deleuze and Guattari, art only emanates from the conjunction of a *territory* and qualities, and a milieu is not yet a territory, although it provides it with most of its characteristic features. The spider together with its milieu constructs a territory whose emblem or placard is its web. It is from a milieu that a ter-

ritory is drawn, and we have learned from Uexküll to what extent a milieu imprints itself as the counterpoint of bodily organs and processes. A territory is the delimitation of a milieu in accordance with the force of a rhythm, it is the rhythmic alliance of a limited milieu and a restricted range of bodies and body movements.²² Both rhythm and milieu are the slowing down, the provisional formalization of elements of chaos: a milieu, the congealing of a block of space-time, and a rhythm, the emergence of a periodicity, are not separable from the block of emergent territoriality.

A territory is the delimitation of a milieu or sometimes even the compression and compaction of a number of different milieus. It is an external synthesis, a bricolage, of geographical elements, environmental characteristics, material features, shifted and reorganized fragments from a number of milieus (chaos itself is nothing but the milieu of all milieus), that create both an inside, an outside, a passage from the one to the other, and a space that is annexed, outside, contestatory, a resource: a cohesion inside, a domain outside, doorways from one to the other and energy reserves to enable them to reconfigure or reorchestrate themselves.²³ Which is another way of saying that without the unpredictable juxtapositions brought about by life there could be no territories, and no milieus but only chaos, only the outside. Only when those fragments or elements of milieus—colors, shapes, materials, plants, geographical features—cease to operate functionally, causally, predictably, that is, cease to be regulated in their relations to living beings by natural selection alone, do they become expressive, acquire rhythm, or become dimensional (Deleuze and Guattari 1987:315). In other words, it is only when a rhythm and a milieu cohere, form internal

22. "The territory is in fact an act that affects milieus and rhythms, that 'territorializes' them. The territory is the product of a territorialization of milieus and rhythms" (Deleuze and Guattari 1987:314).

23. "A territory borrows from all milieus; it bites into them, seizes them bodily (although it remains vulnerable to intrusions). It is built from aspects or portions of milieus. It itself has an exterior milieu, an interior milieu, an intermediary milieu and an annexed milieu. It has the interior zone of a residence or shelter, the exterior zone of its domain, more or less retractable limits or membranes, intermediary or even neutralized zones, and energy reserves or annexes" (Deleuze and Guattari 1987:314).

relations with each other, induce each other to come together, the rhythm functioning now as that particular temporal form of a region, that a territory can emerge, that the raw materials of art can erupt and the processes of deterritorialization, which are the condition of art, can begin. Territory enables new functions to erupt and new forces to regroup.

Territory and quality are two sides of the one movement: neither can exist without the resonating of a milieu or region with a rhythm. Territory is not the background or context for the eruption of sensory qualities, marks, significations, in the language of Uexküll, but rather it is the mark, sensations, qualities, that enable a territory to appear: "Territorialization is an act of rhythm that has become expressive, or of milieu components that have become qualitative" (Deleuze and Guattari 1987:315). Territory is artistically inscribed, the consequence not of a naturally selected "territorial imperative" but of an artistic movement: the creation of a marker. The first artist, for Deleuze, is the architect, the one who distinguishes inside from outside, who draws a boundary, as we have discussed previously. This boundary is not self-protective but erotico-proprietorial: it defines a stage of performance, an arena of enchantment, a *mise-en-scène* for seduction that brings together heterogeneous and otherwise unrelated elements:²⁴ melody and rhythms, a series of gestures, bows, and dips, a tree or a perch, a nest, a clearing, an audience of rivals, an audience of desired ones.

Territory operates according to a double imperative: a proprietorial relation to a piece of the earth and a qualitative relation to properties unleashed or newly available. Expressive properties and detachable qualities: "A milieu component becomes both a quality and a property, *quale* and *proprium*" (315). Rhythm, which is

24. "The artist: the first person to set out a boundary stone, or to make a mark. Property, collective or individual, is derived from that, even when it is in the service of war and oppression. Property is fundamentally artistic because art is fundamentally *poster*, *placard*. As Lorenz says, coral fish are posters. The expressive is primary in relation to the possessive: expressive qualities, or matters of expression, are necessarily appropriative and constitute a giving more profound than being" (Deleuze and Guattari 1987:316).

the differential relation between different milieus, creates territories and expressive qualities, marking possession. The brilliant coloring of certain birds, which Darwin notes tends to imply their poor singing abilities, distinguish territorial birds from gregarious yet plainly colored birds. It is almost as if each bird can only contain so much intensity, sonorous or visual, and no more, that it can entice and seduce in one particular way rather than in many. Singing is clearly as much a territorial marker as coloring: they are each forms of allure, but an allure that can only exert its effects in a space-time marked off from other spaces and from the dangers and distractions of other species, predators, and rivals for one's own species.²⁵ Their markings, their sonorous abilities, are the qualities that unleash, and are unleashed by, the attainment of a territory.

It is significant, and particularly ironic, that among the most continuously surviving native peoples living today, the traditional indigenous groups inhabiting the central western desert in Australia, there is an explicit awareness of the interplay between the constitution of a territory and the eruption of the refrain and its impulse to becoming-music, as if humans did maintain an unbroken connection with the territoriality of the animal, and based their own on the extent to which the human can become-animal. It is this that may account for the so-called songlines outlined in Bruce Chatwin's remarkable text of the same name (1987) that compellingly describes, from the point of view of a "European" outsider, traditional Aboriginal people's relation to their land, a relation that is indeed marked by possession or stewardship, even though it cannot be construed as private property. It is because there is a direct connection between the forces and features of the earth and those that produce the body, it is because the earth is already directly inscribed contrapuntally in the body, that the body can sing the

25. "Territory is first of all the critical distance between two beings of the same species: Mark your distance. What is mine is first of all my distance; I possess only distances. Don't anybody touch me, I growl if anyone enters my territory, I put up placards. Critical distance is a relation based on matters of expression. It is a question of keeping at a distance the forces of chaos knocking at the door" (Deleuze and Guattari 1987:319-320).

earth and all its features, which both mark these features as theirs to preserve and look after, but also mark their debt to and affinity with the earth and its particular qualities. The songlines are those lines that cut through and inscribe both the earth and the bodies that abide there; they are the resonating lines of force that separate and then join a people to a territory, to movement through a territory, as we shall elaborate in further detail in the next chapter.

Totemic ancestors, while traveling across the country during the prehistoric Dreamtime, would sing out the names of everything they came across—every living thing, plants and animals, every natural feature, river, mountain, valley, literally singing the territory into existence. This trail of words, rhythms, and melodies, along with dance and painted forms, religious and cultural rituals, commemorates and celebrates this primordial origin—the origin of territory out of natural milieus and chaotic forces, the origin of bodies, individual bodies and the bodies of a people marked by and tied to this territory: “In theory, at least, the whole of Australia could be read as a musical score. There was hardly a rock or creek in the country that could not or had not been sung” (Chatwin 1987:13). The land itself, indigenous territories, indeed all the territories of all groups, are mapped through song and as song, a song that cannot be sung in front of enemies or rivals, a song with the power to affect the land and other groups. A song sings the earth and signs a body, a song brings a body to earth and the land to the body, enabling one to touch the very core of the other, singing the story of a past while bringing about a new future, a new marking of the earth, a new inscription of bodies and territories.²⁶ Lest this be construed as a romantic “orientalism,” a story that refers only to a romanticized native other, it needs to be made clear that the occupation of ter-

26. The song, the name, the very resonance of language is directly tied to a land and a body. To honor those who have died, who can no longer speak or sing, Aboriginal peoples will no longer speak the name of the deceased or must refer to them by some other name: “When someone dies, Australian Aborigines cease pronouncing the name with which the person was hailed and addressed, and if the person had done paintings, museum curators of collections of Aboriginal art will have to remove paintings bearing that name from public display” (Lingis 2007:19).

ritory, whether the consequence of war or stewardship, requires a kind of binding of bodily forces to the natural forces of a territory that music best accomplishes: music has led troops into countless wars and has stirred numerous past and present patriotic, as well as resistant, hearts. Indeed a history of war music, of music used to stir and reinforce patriotism, of music that can induce all the warrior forces of a body, is still waiting to be written. Every people sings the earth and their own bodies into existence only by identifying those earthly elements that tie into or counterpoint their bodies and bodily needs: the earth, however rarefied and abstracted, still marks every body and is the condition for every body's artistic capacities. It is because the earth frames and engulfs the body that the body can sing the earth and the stories of its origin.

THE REFRAIN, MUSIC, AND VIBRATION

A living organism is a material organization that is sensitive to and makes vibratory rhythm part of the operation of its organs.²⁷ The tapping a child makes in wandering around aimlessly, the humming we sometimes unconsciously perform as we anxiously wait for something or someone, the small piece of annoying music that sticks in our heads despite our loathing it—these are all version of the refrain, a small capture of melodic and rhythmical fragments that, while they are not the raw materials of music, are the con-

27. The first vocalizations in any articulated life are those of a cry: sobbing, gulping, breathing with a more and more intense rhythm. Pain articulates itself in many creatures, even those without vocal apparatus in roars, hisses, screams and squeals. For *Lingis*, expression is bound up with the rhythmic forces inhabiting and transforming bodies, the pleasures and pains the body comes to articulate: human infants laugh and weep before they can speak, and they laugh and “weep with one another's laughter and tears. Human infants, and now biologists, recognize that that chimpanzees, prairie dogs, and rats laugh. The distinctive colors, patterns, and cries that individuals recognize and that are attractive to others of their kind may also attract individuals of another species. Golden pheasants join flocks and courtship circles of Lady Amherst pheasants; buffalo have mated with yaks, lions with tigers, bottlenose dolphins with false killer whales” (*Lingis* 2007:69).

tent of music and are what music must deterritorialize in order to appear.²⁸ The refrain prevents music while at the same time being the smallest anticipation of a music to come.²⁹

The refrain is a kind of rhythmic regularity that brings a minimum of livable order to a situation in which chaos beckons. It is the tapping out of a kind of order of safety that protects the body through the rhythms of the earth itself. To repeat, every refrain, for Deleuze and Guattari, has three basic components: first, a point of order or inside—a home, nest, or space of safety that filters out or keeps the forces of chaos temporarily at bay (“A child hums to summon the strength for the schoolwork she has to hand in” [311]); second, a circle of control that defines not only a safe inside but also a malleable or containable outside, a terrain to be marked, a field to be guarded (a cat sprays strategic objects at the boundary of its territory, a bird marks the field below its nest as the space of its sonorous and rhythmic performance); and, third, a line of flight to the outside, a movement of migration, transformation, or deformation (the long march of lobsters across the ocean floor, the path of migratory ducks or monarch butterflies flying north or south each year; 1987:311–312).³⁰ Every refrain is

28. It is because it is unclear whether the refrain is the condition of music or an impediment to music, and because pop music is considered automatic or programmed music, that there is within Deleuzian circles something of a debate regarding the status of pop music. In addition to Buchanan 2000; Buchanan and Swiboda 2004; see also Bogue 2003a, 2003b.

29. “We are not at all saying that the refrain is the origin of music, or that music begins with it. It is not really known when music begins. The refrain is rather the means of preventing music, warding it off, or forgoing it. But music exists because the refrain exists also, because music takes up the refrain, lays hold of it as a content in a form of expression, because it forms a block with it in order to take it somewhere else” (Deleuze and Guattari 1987:300).

30. “Hearing distant melodies, we can set forth from the zone we inhabit, never to return. Salmon at breeding season leave the territories where they live and return to where they were born to lay their eggs and die. Periodically the lobsters of the Caribbean march off in single file into the open ocean; biologists believe that their long march follows the advance of glacial periods on Earth, the last one ten thousand years ago. Migratory birds, responding to the seasonal tilting of Earth in its orbit, follow the lines of the Earth’s magnetic field” (Lingis 2007:15).

marked by all three aspects or movements, a home, a yard, and a way out, which nevertheless vary in their incantatory force, in their combination, in their emphasis.

Music submits the refrain to the process of deterritorialization, removing it from the place of its "origin" and functionality, enabling the refrain to free itself from a particular place, purpose, rhythm or force: "Music is a creative, active operation that consists in deterritorializing the refrain" (300). Music, whose vibratory force is perhaps more immediate, more visceral, more neural than all of the other arts, consists in deterritorializing the voice, deterritorializing sound, making each resonate with a different set of vibrations than those (chaotic forces) the refrain attempts to ward off. The refrain wards off chaos by creating a rhythm, tempo, melody that taps chaos by structuring it through the constitution of a territory and a mode of occupation of that territory, a musical frame. It is only when the territorial organization is itself upset, reconfigured, and abstracted through autonomous qualities that music can work its intensifying effects on individual and collective bodies.³¹ Only then do rhythms become detached from their functional role and operate instead as expressive qualities, seeking to resonate not only from within the territory from which they are extracted but outside, elsewhere, in the world beyond. Music is a line of flight from the home that the refrain constructs. The tick and the mammal whose blood it extracts, the spider and the fly it captures, are contrapuntal or harmonic forces, dueting features that must be considered as part of one and the same refrain. In this

31. "Music seems to have a much stronger deterritorializing force, at once more intense and much more collective, and the voice seems to have a much greater power of deterritorialization [than art or the face, which it deterritorializes]. Perhaps this trait explains the collective fascination exerted by music, and even the potentiality of the 'fascist' danger . . . : music (drums, trumpets) draws people and armies into a race that can go all the way to the abyss (much more than banners and flags, which are paintings, means of classification and rallying). It may be that musicians are individually more reactionary than painters, more religious, less 'social'; they nevertheless wield a collective force infinitely greater than painting" (Deleuze and Guattari 1987:302).

sense, although they are musical, they stop short of being music. They produce a differential rhythm, a kind of melody but not yet music, which requires the deterritorialization and deframing of the refrain to move it out of the circle of existence regulated by natural selection and into a line of flight toward the world of autonomous qualities regulated by sexual selection.

Refrains, then, are rhythmic, melodious patterns, small chants, ditties, that shape the vibrations of milieus into the harmonics of territories, the organization of a wall or barrier. Music is the reverse movement, the liberation of these harmonic and rhythmic patterns from their originating location and their placement into a double movement, both musically, beyond the smallness of the refrain and on, to the song, the tune, the sonata, the duet, the symphony, other forms of music, genres, and so on, to forms as yet not even conceivable on the plane of composition; and spatio-temporally, beyond territory, to individuals, peoples, races, bodily movements, performances.

What seems to be transmitted, transformed, located, and relocated in this dance of forces that moves from chaos to milieu and then to territory and, conversely, from rhythm to the refrain and then to music is nothing but *vibration*, resonance, the mutual condition both of material forces at their most elementary levels, and of music at its most refined and complex. ("Every milieu is vibratory" [313].) What is transmitted and transmuted throughout this vast evolution is nothing but vibration, vibrations in their specificity, vibrations as they set objects moving in their wake, as they produce harmonic and dissonant vibratory responses. Vibration is the common thread or rhythm running through the universe from its chaotic inorganic interminability to its most intimate forces of inscription on living bodies of all kinds and back again. It is vibration that constitutes the harmony of the universe with all its living components, enabling them to find a vibratory comfort level—neither too slow or too fast—not only to survive but above all to generate excess, further vibratory forces, more effects, useless effects, qualities that can't be directly capitalized. Vibration resonates through the cosmos, constituting the very possibility of

those rhythms that come to territorialize the earth and the pleasures of the living who mark it as their own.

These rhythms of the body—the rhythms of seduction, copulation, birth, death—coupled with those of the earth—seasons, tides, temperatures—are the conditions of the refrain, which encapsulates and abstracts these rhythmic or vibratory forces into a sonorous emblem, a composed rhythm. This rhythm works, has its effects, not in terms of the beauty of its composition or performance (whatever criteria might be used in their assessment) but in terms of its impact on other living forms, those most like it, its own species. Rhythms, regularized patterns of vibration or resonance, are what move from the refrain to the body. What else is both labile enough and appealing enough to slip from its material to its most immaterial effects, from the energy of the universe to the muscular oscillations that constitute pleasure and pain in living things? What else enables the body itself, the internal arrangement of its organs and their hollows, to resonate and to become instruments of sonorous expression?³²

Vibrations are oscillations, differences, movements of back and forth, contraction and dilation: they are a becoming-temporal of spatial movements and spatial processes, the promise of a future modeled in some ways on the rhythm and regularity of the present. Vibrations are vectors of movement, radiating outward, vibrating through and around all objects or being dampened by them. Music is the result of the movements of territorialization, deterritorialization, and reterritorialization of vibratory force in its articulation of (the division or difference between) the body and the earth.

32. Arguably the first musical instrument was the hollow crest of the long extinct *Parasaurolophus*, which it used as a kind of trumpet or bodily resonator: “What makes *Parasaurolophus* interesting is that it produced not just any old sounds, but musical instruments—*tones*. Its crest was one of the first musical instruments. . . . Musical tones are formed from particular patterns of sound produced only by the vibration of certain simple shapes. Such shapes hardly ever occur naturally. Wind may occasionally whistle and brooks may sometimes babble melodiously, but nature mostly makes noise” (Jourdain 1997:31).

While music makes use of the refrain as its condition of existence, it also removes the refrain from its intimate relation to the constitution of territory: it deterritorializes the refrain. Music addresses the refrain as its condition but also as its problem (Deleuze and Guattari 1987:300), as that which presses on it and to which it must respond with invention. The history of music consists in nothing but the invention of lines of flight, forms of escape from the capture of the refrain, the extension and transformation of the refrain beyond the territory and home that it establishes into a world it no longer binds and keeps at bay. If the refrain protects us from chaos and entices us to abide and enjoy in a region provisionally enclosed from chaos, music opens up and transforms us, making of both our bodies and of the earth itself a new site of becomings toward a differently contained and directed chaos, to the opening up and exploration of chaotic elements.³³

The refrain is fundamentally constructive: it brings together a series of disparate elements all fundamentally vibrational—sights, sounds, rhythms, material objects, geographical features, found objects, its own bodily reactions—into an organized synthetic totality, a territory that now contains or locates expressive qualities—colors, textures, tones, tempi—all made into a kind of assemblage, a natural creation. The refrain decomposes elements in order to recompose new totalities that amuse, protect, and enhance. The refrain needs to be deterritorialized, its elements transformed and reoriented away from its incantatory relation to a location and specific bodies and their sensibilities toward the cosmos itself. Music is the addition and subtraction, the resonance or dissonance of the refrain elements that are now let loose on their own musical trajectory:

33. Claire Colebrook has understood that art is the way in which life gives itself the power to intensify itself, the way in which thought “approaches infinite speed” (2006:100). “Once sensation is liberated from a produced relation, or sensation as it is lived, [in art] we reach sensation as it stands alone, the vibration or *power to differ* of life, from which relations are effected: ‘sensation in itself’” (99).

the refrain is a prism, a crystal of space-time. It acts upon that which surrounds it, sound or light, extracting from it various vibrations, or decompositions, projections, or transformations. The refrain also has a catalytic function: not only to increase the speed of the exchanges and reactions in that which surrounds it, but also to assure indirect interactions between elements devoid of so-called natural affinity, and thereby to form organized masses. The refrain is therefore of the crystal or protein type. The seed, or internal structure, then has two essential aspects: augmentations and diminutions, additions and withdrawals, amplifications and eliminations by unequal value.

(DELEUZE AND GUATTARI 1987:348-349)

Music is not the conversion, translation, or restructuring of the natural, evolutionary order's refrain into human musical notation, vocalization, or instrumentation, but the rendering sonorous of forces, ultimately the forces of chaos itself, that are themselves nonsonorous. Music sounds what has not and cannot be heard otherwise. It does not utilize the bricolage technique of the refrain, whose inventiveness consists in the juxtaposition of elements that do not without external intervention belong together, but the inventiveness to follow a line (of flight), a musical theme, a polyphonic interplay of themes, a particular melody, range of tones, or tempi, as far as they will go, giving voice or sound to what has not been heard before. That is why, for Deleuze and Guattari, music is always minoritarian, a block of becoming, which is also a mode of giving voice to social minorities—a becoming-woman, a becoming-child, and a becoming-animal that cannot speak or articulate itself as such—even as it is a majoritarian or popularizing, capitalizing, and imperializing of the arts (indeed the most majoritarian and popularizing, the most capitalizable of all the art forms).³⁴

34. "What does music deal with, what is the content indissociable from sound expression? It is hard to say, but it is something: a child dies, a child plays, a woman is born, a woman dies, a bird arrives, a bird flies off. We wish to say that these are not accidental themes in music (even if it is possible to multiply examples), much less imitative exercises: they are something essential. Why a child, a woman, a

Music is an escape from the refrain even as it draws the refrain along with itself: it is the freeing up of sonorous movements and soundless rhythmic forces from the constraints imposed on sound, vocality, vibration, resonance from codes, contents, and specific effects even as it reissues and reinstates other codes, contents, and effects that are no longer recognizable. Music thus both breaks and dislocates; it breaks down the refrain, it dislocates it from its home and from the safety zone it marks around itself.³⁵ Music intensifies the refrain through the creation of new forms, patterns, musical shapes, new echoes of other sounds and forms that leave behind what is recognizable to engender an unknown, a joyful (or excruciating) movement of invention. What is deterritorialized from the refrain is now reterritorialized as music, that is, not positioned in a definable geographical territory but within a plane of composition in which it summons up primordial fears, desires, and pleasures (as does the territorializing power of the refrain) only to direct them, reterritorialize them, onto the plane of music itself. The becoming-music of the refrain is also the becoming-excessive or the becoming-cosmic of sound, the freeing of sound from any origin or destination and its elaboration as pure movement—movement without subject or goal, aim or end:

Of course, Messiaen says, music is not the privilege of human beings: the universe, the cosmos, is made of refrains; the question in music is that of a power of deterritorialization permeating nature, animals, the elements, and deserts, as much as human beings. The question is more what is not musical in human beings, and what already is musical in nature. . . . It is necessary for

bird? It is because musical expression is inseparable from a becoming-woman, a becoming-child, a becoming-animal that constitute its content. Why does the child die, or the bird fall as though pierced by an arrow? Because of the 'danger' inherent in any line that escapes, in any line of flight or creative deterritorialization: the danger of veering toward destruction, toward abolition" (Deleuze and Guattari 1987:299).

35. "Music has a thirst for destruction, every kind of destruction, extinction, breakage, dislocation. Is that not its potential 'fascism'?" (ibid., 299).

the nonmusical sound of the human being to form a block with the becoming-music of sound, for them to confront and embrace each other like two wrestlers who can no longer break free from each other's grasp.

(DELEUZE AND GUATTARI 1987:309)

THE PLANE OF COMPOSITION

Art does not need science or philosophy to function: it is a perfectly autonomous activity. Although it borders and touches on the same elements that concern science and philosophy—those elements that I have called chaos, territory, and body—art does so in its own ways, using its own techniques to develop its own objects and practices, its own binding plane of cohesion that brings it together with all other works of art, those that predate and postdate it, those with which it engages and others it criticizes. The work of art, whether pictorial, tactile, or sonorous, is a block of intensities, a compound of sensations and affects, of intensities that have gone beyond a subject to become entities themselves.³⁶ But these sensations and affects do not in themselves make up art (on the contrary, art is composed of materials, sounds, colors, textures, melodies and not affects or sensations). They are the products of art, what art makes, what enables art to stand on its own, independent of its creator and of the circumstances of its creation.

A work of art is thus not a series of sensations that depend on either a creator (composer or performer) or an audience, but an autonomous block of sensations, affects, forces, intensities that lasts

36. "Percepts are no longer perceptions; they are independent of a state of those who experience them. Affects are no longer feelings or affections; they go beyond the strength of those who undergo them. Sensations, percepts and affects are *beings* whose validity lies in themselves and exceeds any lived. They could be said to exist in the absence of man because man, as he is caught in stone, on the canvas, or by words, is himself a compound of percepts and affects. The work of art is a being of sensation and nothing else: it exists in itself" (Deleuze and Guattari 1994:164).

eternally, preserving itself as such.³⁷ This is not a block of throbbing bodily sensations a subject might carry around in joy or anger, but sensation of this or that substance or material, sensation embodied as and in material forms, “the smile of oil, the gesture of fired clay, the thrust of metal” (Deleuze and Guattari 1994:166). The plane of composition draws itself toward and produces itself only through a material plane, through and as material objects, whether those of the visual or of the musical arts. Art works through and as materiality, but it is the event of sensation and its autonomous life that transforms a random material composition into a work of art, even though there can be no work of art without the particular materialities it has utilized.³⁸

Can the material bear the sensation it upholds? And can the sensation stand upright, express itself, produce pure sensory qualities, through the material forms and forces it lays hold of? These are the questions to which art addresses itself, properly artistic questions. What affect is produced? And how does this affect wrench from its materiality what has not been perceived or sensed before? How does the work of art bring about sensations, not sensations of what we know and recognize, but of what is unknown, unexperienced, traces not of the past but of the future, not of the human and its recognized features, but of the inhuman?³⁹ Is this not the very goal

37. “In music, the minor mode is a test that is especially essential since it sets the musician the challenge of wresting it from its ephemeral combinations in order to make it solid and durable, self-preserving, even in acrobatic positions. The sound must be held no less in its extinction than in its production and development” (Deleuze and Guattari 1994:165).

38. “What is preserved by right is not the material, which constitutes only the de facto condition, but, insofar as this condition is satisfied (that is, that canvas, color, or stone does not crumble into dust), it is the percept or affect that is preserved in itself. Even if the material lasts for only a few seconds it will give sensation the power to exist and be preserved in itself *in the eternity that coexist with this short duration*. So long as the material lasts, the sensation enjoys an eternity in those very moments. Sensation is not realized in the material without the material passing completely into the sensation, in the percept or affect” (ibid., 166–167).

39. “In short, the being of sensation is not the flesh but the compound of nonhuman forces of the cosmos, of man’s nonhuman becomings, and of the ambiguous

that art sets itself—the exploration of the sonorous and pictorial becomings of the universe that are always coupled together with the becoming-cosmic and becoming-other of the living subject? Art is the extraction of those qualities of materials, from the particularity of sounds and colors that enable sensations of a life to come to appear, to mark eternity, to resonate with the (inhuman, unperceived) forces of the universe itself. Art is what enables chaos to appear as sensation, as intensity, without imperiling or engulfing the subject. Art unleashes, intensifies, and celebrates precisely the creative and destructive impact of vibratory force on bodies, on collectives, on the earth itself: it protects and enhances life that is and announces life to come.

What does this have to do with science? The material plane of forces, energies, and effects that art requires in order to create monuments of sensation that are artworks are shared in common with science. Science, like art, plunges itself into the materiality of the universe, though with very different aims in mind. Where science seeks the regularities, predictabilities and consistencies—the patterns—of this chaos, art seeks its force, its impact. This is not to say that art does not draw on science or that science does not draw on art, but in drawing on the other's resources each must transform the work of the other into its own language and its own purpose. Art thus directs many of its technical questions to science; indeed it may even draw on scientific techniques and methods for its own artistic production. But this work must be situated on the artistic plane of composition. Art addresses not matter's regular features as science does, but its expressive qualities, its "aesthetic" resources, its capacity to sustain and bring forth sensations. If art frames chaos in order to extract from it the materials and energies, the territory and subjects it requires to embody sensation, then science grids chaos, placing over chaos a network of coordinates, a plane of reference, in order to extract variables, formulae, probabilities, a mode of comfort and order, a form of predictability, in the world.

house that exchanges and adjusts them, makes them whirl around like winds. . . . Is this not the definition of the percept itself—to make perceptible the imperceptible forces that populate the world, affect us, and make us become?" (ibid., 181-182).

What science and art share is precisely the vibratory structure of the universe, the emanating vibratory force of chaos itself. Art makes of this vibrational force a sensation (sensation, after all is nothing but a vibratory difference capable of resonating bodily organs and the nervous system) whereas science makes of it a pattern and, eventually, measurement, ratio, or formula. Sensation contracts the vibratory waves of matter, of the earth and ultimately of chaotic cosmic forces, into sensory forms that are capable of functioning as a stimulus to the nervous system. Art transmits vibratory force through its successful transformations from energy to sensation to stimulation. Art contracts, which is to say it synthesizes and compresses the materiality that composes it, transmitting the force of materiality, its vibratory resonance, from a work to a body.⁴⁰ By contrast, science contains vibratory force within a series of representations, symbols, that transform it from quality to quantity, placing boundaries, limits, experimental conditions on those forces so that their vibratory effects become predictable, produce constants, creating invariable relations between apparently independent factors. Art unleashes and intensifies, through the principles of composition, what science contains and slows down through the plane of reference, precisely the creative and destructive impact of vibratory force on bodies, on collectives, on the earth itself. And it is only philosophy that is able to understand this common element shared by the arts and the sciences, for it is only through the mediation that philosophical concepts offers that artistic sensations and scientific theorems can interact without colonization, without the one taking over the operations of the other.

40. "Sensation is excitation itself, not insofar as it is gradually prolonged and passes into the reaction but insofar as it is preserved or preserves its vibrations. Sensation contracts the vibrations of the stimulant on a nervous surface or in a cerebral volume: what comes before has not yet disappeared when what follows appears. This is its way of responding to chaos. Sensation itself vibrates because it contracts vibrations. It preserves itself because it preserves vibrations. It is Monument. It resonates because it makes its harmonics resonate. Sensation is the contracted vibration that has become quality, variety" (*ibid.*, 211).