# Art-making and Timbre

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**Abstract**

This thesis explores the notion of timbre as it may apply not only to music or sound, but to art-making and to any objects in a post-medium artistic context. Timbre is a notion born to address the thinghood and precedence of sound as it became emancipated from tonal principles throughout music's developments in the last 150 years. Elusive and opaque, timbre pertains at once to the physical attributes of a sound and to its perceptual reach. It presents a paradoxical blend of the material and the evocative, yet truly designates neither. Timbre thus offers an insightful if complex prism with which to investigate art-making practices concerned with objects, oscillating as it does between integrity and connotation, source and effect, sense and signifiership, relevance and resonance. Timbre inhabits the space between a thing and what it conveys, revealing an objecthood which challenges straightforward instrumental uses.

The project is articulated in three interdependent and mutually informing parts: one, a portfolio of works made in the studio between Oct 2018 and Dec 2023 and through which much of this research was conducted; two, a text bringing together ideas on improvisation, divergent uses of objects as found in slapstick or foley, and aggregated forms perceived as either arrangements or envelopes—offering speculations on the notion of timbre and its integral role in art-making with objects; three, an exhibition of a single recent work echoing some of the ideas found in both folio and text. The relation between these parts is non-hierarchical and is intended as a mutual reflection proposing consonant forms of investigation.

Taken as a whole, the thesis develops and exemplifies aspects of the notion of timbre by questioning the use of objects at their most volatile, and exploring the elasticity conferred to them when objects are also events. The project proposes to consider objects as if they were sounds, between letting their known attributes take an associative lead, and circumscribing them through the sum of their effects. In drawing attention to a timbrality of objects, this thesis also ventures the prospect that the underlying skill central to contemporary art-making practices is a highly attentive form of listening.

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**Ripples**

Let's start with a simple anecdote.

Whenever I show my mother some recently finished artworks or what I am currently working on, they are invariably and almost instantly met with a quick *"qu'est-ce que ça veut dire?"*—French for "what does it mean?". This will ring as a common and familiar experience to anyone engaged in artistic pursuits whose close kin are involved in unrelated fields, and the efforts of attending to their curiosity with an unforced and gracious patience. My mother is not exactly one of such relatives however; she is a celebrated textile designer, visually literate, a worldly Parisian, a skilled draughtswoman, who has been through art-school education just like I have. Invariably, I am also taken aback as to how I should answer her. The pull is often either to reach for Rimbaud's famously tetchy words to his own mother, asking him the same of his *Une Saison en Enfer (A Season in Hell):* "It means exactly what it says, literally and in every sense".[1] Or mimic Woody Allen's lampooning of existentialist dread in front of a Jackson Pollock from *Play it again, Sam.*[2]
I usually settle for something blunter.

I hear in my mother's question a mixture of worry in being found wanting with regard to meaning and interpretation, and of a motherly impulse to respond to what I am showing her in an adequate manner—one which, she feels, needs to align with what she imagines were my intentions.
The thing is, my mother cannot conceive of art without it being in service of a statement or message. To her and unlike in the decorative arts for which she has quite the expert eye, an artwork is first and foremost a matter of meaning and its delivery—only when she thinks she has a grasp on the intended and unequivocal meaning of an artwork, can she appreciate all the nuances its

1. "J'ai voulu dire ce que ça dit, littéralement et dans tous les sens."As recounted by Arthur Rimbaud's sister, Isabelle. Isabelle Rimbaud, *Reliques, 3ème Edition,* Paris: Mercure de France. 1921. p 143.

2. "It restates the negativeness of the universe. The hideous, lonely emptiness of existence. Nothingness. The predicament of Man forced to live in a barren, Godless eternity like a tiny flame flickering in an immense void with nothing but waste, horror and degradation, forming a useless bleak straitjacket in a black absurd cosmos". Woody Allen. *Play it again, Sam,* Herbert Ross, dir. Los Angeles: APJAC Productions, 1972.

realisation alludes to. This assumption should partly be attributed to her training, more crafts-oriented, which taught her that, unlike textile, art is required to mean something. Adding to this, years of mediated content while visiting exhibitions have confirmed her clause that there is no art without some form of discursive address, or necessarily attached to an intended "about".[3] Much as I can understand my mother's eagerness to comply with my assumed *vouloir-dire,* what I want my work to prompt—and what she could gracefully perform if faced with a piece of woven fabric—is, on her part, a *vouloir-écouter.*[4]

Composer Aaron Copland writes of the role of the "gifted listener" in the appreciation of music. A listener which unites both a generous sensitivity "in opening oneself to musical experience" and an inkling to "evaluate critically that experience".[5] This gifted listener is an elusive figure: neither a backward listener who asks to be convinced by what he hears, validating his own tastes in the process, nor an initiate whose musical training compels him to unpack the structural decisions that went into a given piece of music—at the expense of a more personal response to the work. For Copland, the gifted listener is the embodiment of listening as a talent in its purest form: "a freely imaginative mind at the core of all vital music making and music listening".[6] Yet and nonetheless, Copland considers an ideal audience one which combines this gifted listening with an objective ear for the intricacies of composition as craft, and on its own merit.

But here is a paradox: wanting to court at once two modes of engaging with a musical work, even though they have already been remarked as exclusive. Needing the appraisal of measurable skills, and a dutiful account of the labour it produced on one hand, while yearning for feasts of imaginative responses towards an idealised completeness on the other, will seem as bare a split desire as can be. Moreover, retreating to the safety of good-old ascertainable craft makes any gifted

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3. She is guilty of sometimes picking up a museum audio-guide.

4. The French language is a fickle beast, for which *sens* means "meaning" and also means "sense" as in "making sense" and as in "sensing", "sensical", "sensible" or "sensory", etc. Yet, it offers the most clear-cut of dichotomies when one wants a contrast between meaning as willingness to signify: *vouloir-dire*, wanting to say; and its obvious counterpart: a willingness to make sense at the receiving end, a *vouloir écouter*, wanting to listen.

5. Aaron Copland, *Music and Imagination*, Cambridge, MA Harvard University Press, 1953. p 8.

6. Ibid., p 7.

listening entirely contingent on the elusive figure of the gifted listener. The composer wishes for an imaginative listener yet only has carefully orchestrated notes to contend with, and to then propose.

However—diligent application to a craft notwithstanding—the composer as a listener should also be held in consideration, if only, perhaps, on the simple basis that it takes one to know one.

Music is generally and widely known as the most abstract of all the arts, i.e. the one least dependent on representation or an about which needs conveying. Jean-Luc Nancy reminds that of all the arts, music is the one which underwent the most profound transformations in the last 150 years—technological changes, as well as economic ones, that have thoroughly altered the way music is produced, reproduced, amplified or distributed.[7] Music's sonic palette has come to encompass anything sonorous—including noises—and new processes opened to the possibility of synthesising sounds themselves, not merely producing them. Central to these changes were recording techniques which emancipated sound from the note, overthrowing the latter as the unit of musical currency, and further deposing tonality as the waning authority sanctioning western music. It is difficult to imagine what a mid-19th century composer would make of, say, John Cage's *Water walk* (1959), even though Cage's piece is only midway from then and now in this sequence of transformations.

Although musicianship of course endures, the notion of musical craft (i.e tonality) as a composer's singular and unified remit has been upended and made the object of persistent probing as well as constant redefinition since. Rather than a developing craft in want of an evolving listener, it would be sensible to think of this gifted listening as having become central to the work of composing. It is in fact the overarching theme of music's explorations during this period, whether fertile or not. More reasonable still would be to think of music as an exchange from one listener to another, and in which listening is precisely what has instructed and informed the reinventions of musical craft throughout—nurturing in the process the giftedness to recognise what is being sounded. When absolute principles are no longer the solid beacons they were thought to be, a craft becomes a fluid means for one listener to appeal to and invite another.

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7. Jean-Luc Nancy, "Ascoltando" in Peter Szendy, *Écoute: Une histoire de nos oreilles*, Paris: Les éditions de Minuit, 2001. p 11.

When speaking of *vouloir-écouter*, Copland's gifted listener has an obvious transferability to the viewer. As in music, the transaction between artist and viewer should be thought of as more complicated than that of artists showing their wares while hoping for viewers at the gifted end to appraise them. Even though art's own economic model has changed only minimally compared to music in the same time-span, art-making has seen, like music, a great many developments and upheavals. Central to these is an abjuration of traditional crafts, an effort to "transcend the debility of the manual gesture" and use it as a drive to redefine what it is an artist does.[8] In this regard, the notion of the composer as first and foremost a listener, is both a hint and a challenge for the notion of the artist as observer for when the artist is to navigate art-making in times of post-medium practices, no longer tied to craft-oriented media and techniques. If the critical observer is adept at grasping the world around him, he can only do so by objectifying the particular and putting himself at the remove a perspective necessarily requires, thereby prescribing the inwardness listening also implies. Is the observer then truly suited to responding to flux and its transformations, when he or she is condemned to designate and is bound by the craft of doing so?

A characteristic of sound is that it has a certain objecthood to it, a material existence in the tangible world, if only for having been produced, and even if itself ethereal and fleeting. A note on the other hand is a convention, a symbol for a measurement of frequency with differences in shapes informing of its duration, i.e. a designation. While one can command notes on paper at will, one can only harness sounds, or appropriate how they themselves combine. In order to do this, one has to of course first carefully listen to them.

One of the most noticeable transformations to have happened to art-making—more or less in parallel to music's own transformations—concerns the range of materials available to artists. Anything can now be of use, although with the caveat that none of it can truly be considered inert, plain, or at one's disposal. Raw materials have a provenance and a place in supply chains that are inherent to them and can no longer be ignored. Likewise, whether a material is by tradition noble or base will translate as attitude in reference to past usage. Representations have evolved to be meme-like, objects carrying a self-consciousness of both tradition and potential for pertinence that cannot

8. Leo Steinberg, "Other Criteria" in *Other Criteria with Twentieth Century Art*, New York: Oxford University Press, 1972. p 62.

be side-stepped—when they are not already clearly signalled as quotations. And then there are actual objects, put in place for precisely what they may purport. More than materials that will support whatever an artist desires to do with them, objects are manifestations of roles and functions, with a vibrancy expressing far more than solely their availability to intentions. Objects have an agency that will embarrass unwitting or inadequate usage and like sounds, they will not be commanded as mere placeholders. Again, the notion of observer, at the remove a perspective entails, can't quite satisfactorily cover this vibrancy.

Listening implies first a certain casualness, in that it will be prompted by interpellation—a break from merely hearing. Unlike eyes, ears cannot be shut, so a person (though it is also true for much of the animal kingdom) evolves permanently within a soundscape, itself in constant flux, and carried around one's own auditory range. The ear will pick up any disturbance in this soundscape, and if the sound is familiar enough it will inform on what caused it. If more surprising, the disturbance calls for eyes to verify in a focused and discriminatory glance to the immediate environment. Listening starts when a disturbance, a sound, is peculiar enough to warrant one's attention and the impulse to hear it unfold. It follows the thread that wants pulling.

Much as listening is active—or a talent—in pursuing how a sound unravels, the trigger is never truly clear. It is as much an exertion in directing one's attention, a command, as it is being commanded over by an occurrence or another in one's perceptual vicinity. In this regard, listening is at once a deliberate run of one's curiosity and an acknowledgement that things have their own course, independent of one's will. As precise and sharp as a listening may be, it is always also a response to an appeal. In *Sinister Resonance,* David Toop argues that hearing is the first of the senses to develop and is already active in the mother's womb.[9] As the other senses later evolve, they really will be catching up and helping make sense of the mysterious reality first encountered aurally. Listening, in this regard, is the incessant recurring of this head-start.

In music, whether someone listens to a sequence of notes or an assemblage of sounds constitutes a real rupture in considering the reciprocity one has with one's environment. In a sense, music's

9. David Toop, *Sinister Resonance: the Mediumship of the Listener*, New York: Continuum books, 2010. pp VII-XV.

reckoning with its own thingness in all the aforementioned developments was a slow crossing of a line in the sand towards the reciprocal. Being at the centre of a soundscape doesn't mean one is a master of it, or that it will obey one's disposal and commands. On the contrary, this soundscape is a burden—even when enjoyed—an inextricable persistence of activity one is perpetually thrown into. If one carries this bubble around, one also has to keep up with it. In terms of reciprocity, it is a place of stumblings, a constant hum of causes and effects. I mentioned listening as a response to an appeal, but also unclear is whether the listener stumbles on a sound, or whether the sound stumbles on the listener. A conundrum which requires in return a constant making of sense, caught in a feedback loop.

There is a shift in transitivity from "it means what it means" to "it means something" to "it means something to someone". A slippage which makes meaning more concrete as it gathers objects, but which as counterpoint requires some resounding—a ripple in need of meeting a shore.
A soundscape, even if a listener is by default at the centre of it, is not a uniform circle or clearly defined bubble. Its edges are a matter of guesswork, contingent on the reach and amplitude of the sound waves that constitute it. But even undefined, it is impossible to remove oneself from it. Listening in this respect is a process of discovery, of making sense, of surveying the contours and accidents of one's surroundings and of the trajectories and velocities of its dwellers. To encounter something new in it is to chart how disruptive it is to its activity or how well it accommodates itself with the whole. To attend to a sound is to gauge how jarring or harmonious its resounding. Meaning, as far as listening is concerned, is first a matter of resonance rather than relevance.

Veit Erlmann reminds that "while reason implies the disjunction of subject and object, resonance entails adjacency, sympathy, and the collapse of the boundary between perceiver and perceived".[10] There, a new question arises: that of compatibility between making sense and the anxiety of projecting relevance. Music by virtue of its abstraction is of all art practices the least under the imperative to signify, to demonstrate its meaningfulness. If the composer as listener can enjoy being left to explore his or her receivership of the outside world, isn't the artist as observer an obstacle to himself, constantly tripping over the imperative of stating one's position?

10. Veit Erlmann, *Reason and Resonance: a History of Modern Aurality*, New York: Zone Books, 2014. p 10.

A position which also regards meaning as having to be necessarily and readily meaningful, i.e. of reducing observations to objects and then objects to signs.

Much can hide inside a metaphor: switching from sight to aurality pertains not only to the sensory realm but also to one's outlook and attitude in grasping the real. As Kate Crawford writes in an essay on listening and attitudes in social media, a simple change of vocabulary can affect the comprehension of an inquiry. The terminology of visibility in use for online debates makes for conceited presumptions.[11] In qualifying those holding forth on media platforms as highly visible—in the spotlight—those not following suit or taking active role in a particular dispute are de facto spectators. When a dispute turns to outrage, these spectators become lurkers or voyeurs with pejorative implications: they are apathetic creeps who cannot summon the courage to voice their opinions and take sides. By calling them listeners instead, the circus is once again a forum of active and careful consideration, and their silence is a buffer, the mark of temperance sandbagging public debate against the loudest excesses, a rebuke of grandstanding.

Receptive doesn't mean passive or uncritical. Listening has a broad spectrum of attitudes with regard to what is being heard, from the floating attention of the open ear to the forensic focus of auscultation. Along this spectrum is a sense of depth—not however given by distance as would befit vision, but by the intensity and pointedness of its attention. The listener hears in, concentrating on a specific sound, isolating it. But it is just as apt at folding it back into the whole. To listen is to orientate oneself, to garner directional reach but without entailing perspective. An orientation which spans both temporality, e.g. how a sound unravels, and spatiality, how it sits in relation to other sounds (a practice that still requires devoted cultivation and exercise). Listening in this respect is a dissolvent, a critical tool with an aptitude at seizing the particularisms of an event while simultaneously having its perceived uniqueness rolled back into contextual hum.

11. Kate Crawford, "Following You", in *The Sound Studies reader*, ed. Jonathan Sterne, London and New York: Routledge, 2012. pp 80–83.

If “everything else is noise”, some who have entertained listening to a mastery will turn away from discourse with a zen-ish shrug, or push the insult to actually preferring the noise.[12]

My own impulse to engage in this doctorate was a realisation that what I knew of the objects I was using in my work, how I told myself what they were, was an obstacle to where I wanted them to lead. Their denotations or known associations were a barrier to other possible associations. Those would likely be suggested by the objects themselves, if I could only jump over the barrier. In this respect, I was becoming wary of my obedience to a general understanding of the material I was working with. A growing feeling was that I was using things in order to hit markers that were themselves set by convention. And if it were indeed the case, the markers were for the purpose of comforting an understanding of things that was already in place. Meaningfulness seemed less about meaning being produced, than about meaning orchestrating the production.

I was becoming frustrated with the idea of art as a sort of ice-skating, where corny stylistic quirks and kitschy arabesques can barely disguise a strongly imposed programme, subjected to validation. A discipline where figures are standards to conform to, calibrated in decimals, then judged according to very specific metrics and the swiftness in their execution (and tall and gangly as I am, breaking through on gracefulness alone is never an option).

I started looking to music, at once intrigued and bemused by the overly technical language composers and musicians use to talk about their works, a parlance which seems completely at odds with the elation one can hear in the actual output, as if they are actively avoiding the subject. Not having musical training, and not being even conversant with tonal matters, this brush with musicology wasn’t the escape from interpretative feedback loops or the grand liberation from the imperative of *vouloir-dire* it could perhaps have been. During the great upheavals that befell music in the last 150 years, a notion came to the fore: timbre. In the shift from note to sound, timbre was

12. “When I hear what we call music, it seems to me that someone is talking, and talking about his feelings or about his ideas... of relationships. But when I hear traffic, the sound of traffic here on Sixth Avenue, for instance, I don’t have the feeling that anyone is talking. I have the feeling that sound is acting, and I love the activity of sound. [...] I’m completely satisfied with that. I don’t need sound to talk to me”. John Cage, interviewed in the film *Écoute*, dir. Miroslaw Sebestik, Paris: Centre Georges Pompidou/ LaSept prod., 1992 (transcript).

this reminder that music had to be embodied one way or another in order to be heard and then listened to. Timbre came to denote the material signature of sound, but was also recognised as responsible for effects which defied a composer's control. Timbre, for some, was a source of great possibilities, for others a thorn that prevented moving from paper notation to sonic realm with unobstructed limpidity. It was a term born to address the thinghood of sound.

Jean-François Lyotard's *Discourse, Figure* is dedicated to the eye. More specifically, it is dedicated to the eye as a resistance to the equation of designation with signification—that to point at or show something is the same as meaning it.[13] The first third of the book sees Lyotard driving wedges in various linguistic models in order to pinpoint the dependency on signification as ultimate value in language systems. Its corollary where art is concerned is in holding designation to mean asserting signification, i.e representation. Lyotard then writes of a thickness, an opacity which appears to muddle the limpidity of the semiotic sign, lodging itself in between, and keeping designation and signification apart. Discourse is dislocated by this rupture, by the immediacy of communication being denied and disturbed. From this, the figural may irrupt and proliferate as the discursive's irrational opposite. Lyotard himself will look further for this thickness in Freud.

Although Lyotard doesn't directly broach the issue, or even use the word, what the severing of designation from signification calls into question is the idea of instrumentality—that language or representation's sole purpose is expediency of signification. With this view naturally comes the implication that language and representation are honed or designed for that purpose, that they are instruments which came into being to hit certain markers.

When asked—as artists are frequently enjoined—to provide a blurb to help locate 'my artistic practice' (while I try on my part not to smother it with too explicative an account), I am usually fond of alluding to a space which opens when viewers feel they understood but don't yet know what it is they understood exactly. A window where playful poetic possibilities compete with threats to certainties. A question for me was always how to prise this space open and more fully

13. "Ce livre-ci est une défense de l'oeil, sa localisation. [...] Attaquons-nous à la suffisance du discours." *This book is a defense of the eye, of its placing. Let us argue against the self-sufficiency of discourse. (my trans.).* Jean-François Lyotard, *Discours, Figure*, Paris: Klincksieck, 2017. p 11.

inhabit it in order to frustrate the becoming of an artwork as instrument, to delay the moment when it would simply deliver.

How opportune then to come across a notion like timbre, all thickness between an instrument and the note it is meant to administer. A notion which reminds an instrument that it is primarily stuff, and that the note as heard is essentially a noise. A term to denote an aural opacity and for which the visual would struggle to find an equivalent.

Timbre, along with pitch, rhythm, and amplitude, is one of the pillars of music. Also described as sound quality or tone colour, it is “that attribute of auditory sensation which enables a listener to judge that two nonidentical sounds, similarly presented and having the same loudness and pitch, are dissimilar”, i.e. how we can tell the difference between a cello and a saxophone both playing the same note at the same volume.[14] Moreover, it would be timbre which informs how a cello player will pick one cello over another, its sounding qualities intimating or confirming the musician’s predilections for tone; and even, as listener, how one would tell whether it was John Coltrane or Rahsaan Roland Kirk blowing into that horn, should they have been playing the very same note on the very same saxophone in the very same space.

Essentially, timbre denotes the footprint of a sound’s material existence: that this sound has been produced, exists in the real world and has contiguity with it: an informative sonic wake born out of the contact of various things, signalling to the ear their material properties. There is no escaping it. As soon as music leaves paper notation or a composer’s audiation to be made manifest it is condemned to be embodied, burdened by its necessary friction with reality. Music cannot not have a timbre. Yet, it is thanks to timbre that we can conceive of a sound conveyed by an instrument as a starting point in composing—when the quality and characteristics of a sound can inform the composition of a piece of music; and not that the notation necessarily takes precedent, only to pick the instruments that serve it best later. Timbre is the notion which accepts that musicians and composers can think materially—with and through sounds—in order to elicit perceptual responses

14. From the operative definition of timbre in use in scientific literature, "Acoustical Terminology ANSI S1.1–1994 (ASA 111-1994)". American National Standard. ANSI / Acoustical Society of America Standards Secretariat (1994).

in an audience. Should it be familiar or exotic, noticed or unidentified, how music sounds will trigger evocations for a listener. As such, timbre is a notion which provides a bridge between a sound's physical properties and its evocative reach—an improbable bond of emission and reception outside of any other more reliable variables such as pitch and amplitude.

Timbre has however no semantic field of its own. Either it borrows from the strictly material or it remains hopelessly vague. No vocabulary is adept at speaking for it. If physical characteristics are analogically infinite, qualitative attributes are either base tautologies (trumpets are "brassy", and vibraphones sound "metallic" whereas xylophones sound "wooden"); or they are flowery, at best unbefitting descriptions (violins are "sad" and "wailing", then again at other times they may be "sweet" and "jolly"—with no one ever asking the violins how they actually feel). The lack of adequate descriptors only became more acute as timbre gained in prominence and sonic palettes expanded. Synthesised sounds arrived when technologies evolved to permit it, but then how does one speak of a sound previously unheard, inexistent, and which has no materiality familiar enough to tack even a goofy epithet on it?

When non-musical sounds, noises of all sorts were progressively welcomed in music-making, the dearth of lexical qualifiers turned to inane redundancies. How does one qualify the sonorous aspects of a hair-dryer? of water-splashing? of a tennis ball? Remarkably, objects used in a musical context have their non-musicality noticeably emphasised by this semantic failure. They can only be designated as the object they are, reduced to acting as sonic one-trick ponies bereft of register and thus of true musical capability. Consequently, these are a menace to the fair and square musical instrument, tugging these right down to material fact. Yet, a timbre these non-musical objects also have. Acousmatically speaking, it is precisely how one would distinguish the sound of the hairdryer from that of the tennis ball without needing to see them or know these are the objects producing the sounds.

That no one can ascertain the extent of timbre, let alone even agree on where to locate it, is of course an impish delight and its main attractiveness. All volumes and articles on the subject have to start with a disclaimer telling of how impossible defining timbre is, and that easier would be to arrive at it thanks to what it is not. Timbre is often quoted as a "wastebasket" category—where

anything that can't be explained by pitch or loudness or any other musical notion will be tossed. To some it is a term devoid of scientific meaning that ought to be "expunged from the vocabulary of hearing science".[15] To others the problem lies in that limiting timbre to a strict physical phenomenon means ignoring all its perceptual aspects, while broadening it to all that is sonic renders the notion so large as to be entirely vacuous.[16] Pierre Schaeffer called it a "*lapalissade"*, a term of absolutely no guidance to appraise the sonorous and which needs replacing entirely (yet, his life's work is devoted to all that is understood as falling under the definition of timbre).[17] Michel Chion, following Schaeffer, has consistently railed against the notion as merely a causalist clause to maintain the "fiction of a homogenous listening field" and which ought to be "shattered" for sounds to be truly liberated.[18] Herman von Helmholtz—credited with establishing the notion as we know it today (then called *Klangfarbe*, tone colour)—was at pains to separate what are external physical factors from "internal perceptual representations", to cleave tone from sensation.[19] Accordingly and since, even though timbre is still thought of as an acoustic phenomenon, most of the scientific research conducted on timbre, complete with mathematical modelings, will come from the perceptual end in psychology departments.

Acousticians acknowledge no such term: they speak of frequencies balance "that musicians call timbre" (with the slight derisive air of a yesteryear scientist reporting on primitives worshipping some pantomime deity), marking the term clearly as music's problem only.[20]

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15. Albert S. Bregman (1990), *Auditory Scene Analysis: The Perceptual Organization of Sound,* Cambridge, MA: MIT Press and Keith D. Martin (1999), *Sound-Source Recognition: A Theory and Computational Model,* PhD thesis, Massachusetts Institute of Technology—Both as quoted in Kai Siedenburg and Stephen MacAdams. "Four Distinctions for the Auditory "Wastebasket" of Timbre" in *Frontiers in Psychology,* volume 8, Article 1747, published online 04 Oct 2017. p 1.

16. Carol L Krumhansl, "Why is musical timbre so hard to understand?" in *Structure and Perception of Electroacoustic Sound and Music*, eds. S. Nielsen and O. Olsson, Amsterdam: Elsevier, 1989. p 44.

17. *Lapalissade:* French word for a particularly dim-witted truism. Pierre Schaeffer, *Traité des Objets Musicaux (1966)*, Collection Pierres Vives (nouvelle édition), Paris: Editions du Seuil, 2010. p 232.

18. Michel Chion, *Sound: an Acoulogical Treatise*, trans. James A. Steintrager, Durham and London: Duke University Press, 2016. p 174.

19. As formulated by: Kai Siedenburg, *Perspectives on Memory for Musical Timbre*, PhD thesis. Department of Music Research, McGill University, 2016. p 16.

20. Trevor Cox, *Sonic Wonderland: a Scientific Odyssey of sound*, London: Vintage Books, 2015. p 131.

For composers, starting with Berlioz and Wagner, the various global "colourations" of sound one hears—as different sections of an orchestra coincide—was what ought to inform the entire structure of an orchestral composition, even before tonal considerations.[21] To Arnold Schoenberg, *tone colour* was harmonics' governing principle and therefore of also all music: "Pitch is nothing other than tone colour measured in one direction".[22] To Gerard Grisey, who in the 1970s was calling for a total "decolonisation" of music from tonality, timbre—whether in spectral or spatial consideration—was the only possible horizon left in composing.[23] To musicologists, it is a paradox inhabiting both a listener's acoustic and perceptual worlds, it acts as a sound's condition yet is imbued with a malleability which will drastically affect how music is perceived, regardless of whether a listener is conscious of it or not.[24] Timbre is also a thing of musicological wonder, at once an ontology and a phenomenology. It could wholly sustain musical materialism or idealism, but will commit to neither, only spoiling the tidy dichotomy when probed for answers (and resisting anything a Western tradition could construe as "method" in the process).[25] To philosopher and psychologist Carl Stumpf, *Klangfarbe* was indistinguishable from phenomenology itself—the key to tie structural laws of phenomena to mental functions.[26] To later post-structuralist philosophers, drawn to the notion like moths to a flame, timbre is a "stun grenade [that] makes philosophy black out",

21. As expounded by: Antoine Bonnet, "La Part de l'Insaisissable", in *Le Timbre, Métaphore pour la Composition*, ed. Jean-Baptiste Barrière, Paris: Christian Bourgois/I.R.C.A.M., 1991. p 336.

22. Arnold Schoenberg, *Theory of Harmony,* trans. Roy E Carter, Berkeley and Los Angeles: University of California Press, 1978. p 421. That Emily Dolan begins her chapter 'The Idea of Timbre' from the discovery of orchestral colouration (starting for Dolan with Haydn) onwards with this same quote, charts a trajectory in the evolution of composers' concerns with timbre and its growing importance in composing before recording techniques even emerged. Emily Dolan, *The Orchestral Revolution: Haydn and the Technologies of Timbre*, Cambridge: Cambridge University Press, 2013. p 53.

23. Gérard Grisey, *Écrits*, eds. Guy Lelong and Anne-Marie Réby, Paris: Editions MF/Collection répercussions, 2018. p 50.

24. Cornelia Fales, "The Paradox of Timbre", in Ethnomusicology, Winter 2002, Vol 46 n°1, Urbana-Champaign IL: University of Illinois Press, 2002. pp 56–95

25. Isabella Van Elferen, *Timbre: Paradox, Materialism, Vibrational Aesthetics*, New York: Bloomsbury Academic, 2021. pp 133–174.

26. Sebastian Klotz, "Timbre, Komplexeindruck, and Modernity: Klangfarbe as a Catalyst of Psychological Research in Carl Stumpf, 1890–1926", in *The Oxford Handbook of Timbre*, eds. Emily Dolan and Alexander Rehding, Oxford: Oxford University Press, 2018. p 609.

"the indistinction of passive and active sensing", "a resonance without signification".[27] Even then, it remains a term of envy, a siren call flaunting powers of making the abstract incarnate, or even reveal the precedence of plain carnality over logos.[28]

Timbre is thus a figure in its own right, entirely resistant to sustaining a unified discourse. Treacherously, it comes either clothed as a statement of material facts, or as an ethereal sensory fancy. Neither here nor there, timbre is that *explanans* playing the *explanandum* only to unrepentantly swap roles again before one's very ears. It is a butterfly of a notion that finds itself sometimes pinned as a graph, but not before having left its catcher gasping for breath after running around in erratic circles—and with the eternal caveat that a butterfly pinned doesn't have altogether much to say about what a butterfly does.

As a bridge between the physical and perceptual, it is also one between objective anchor to reality and surface that meets the ears—at once moored to natural laws and unabashedly superficial. In this regard, it is a notion of infinite elasticity moulding itself to any object of inquiry, corresponding with the "plasticity of listening" itself.[29] As methodological tool, its elusiveness lends itself equally to extremist casuistry as to common sensing—it scales itself up and down as a gateway from impossibly distinct to brazenly generic, and vice versa. And yet, far from an intentional vagueness, it is actually the most pertinent prism through which to look at objects vis à vis art-making. A notion apt to examining objects in terms of agency and their oscillations between parts and whole, signification and intimation, meaning and sensing.

Crucially, it is timbre which puts the "play" in playing music. It is the manifestation of an impulse of grabbing something for the sheer joy of making some noise with it and sense its effects—the aural equivalent of throwing a pebble in the pond to see the ripples it provokes.

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27. Naomi Waltham-Smith, "Deconstruction and Timbre", in *The Oxford Handbook of Timbre*, eds. Emily Dolan and Alexander Rehding, Oxford: Oxford University Press, 2018. p 60.

28. "Actually, I never stop talking about timbre, and as a philosopher I seek to give timbre [*timbrer*] to my discourse". Jean-Luc Nancy, *Listening*, trans. Charlotte Mandell, New York: Fordham University Press, 2007. p 39. (Square brackets and italics are from translator.)

29. Peter Szendy, "Écoute Plastique", in *Plasticité*, ed. Catherine Malabou, Paris: Editions Leo Scheer, 2000. pp 263–279.

The three following chapters will explore this idea of playfulness, not only with regard to objects and the perception of them, but also from the position of a listener rather than that of an observer, from being in the midst of objects. A position which reverberates with a form of ecological thinking, implying a reciprocity of agency between object and maker, as well as a temporality alternatively given by flux and spans of attention, making objects de facto also events.

These chapters will each concentrate on a specific aspect of timbre, corresponding to the customary partitions in how the notion is approached: the presence of overtones, the notion of instrumental timbre, then that of global timbre.

The Vines chapter will examine improvisation and associativeness in light of the overtone series. If timbre can be thought of as a sum of partials to a fundamental frequency, this partiality will express itself as profiles providing all manners of possible or unlikely congruences by virtue of harmonics. These congruences also invite metonymic conversions, happily ignoring designation whether it is conveyed by pitch or denotation.

The next chapter, Nudges, will look at identification and reliability but through the lens of disobedience and defamiliarisation. Instrumental timbre is matter of identity, the collection of attributes which consolidates the recognition of sound sources. While it provides reassurance, an understanding of normality and a bedding for common sense, it is also very easily derailed—a fabric which warrants (if not begs for) mischief.

One further chapter, Bubbles, will consider global timbre and the perception of aggregated timbres as envelopes. Between arrangements and assemblages, it will enquire what and for when is an object, with regard to fused events and matryoshka-like ensembles, shifting from the itemised to the hyper-form.

Taken as a sequence, these three chapters draw an arc which moves from a partially materialist conception of timbre towards its more speculative and subjective end, and with the middle chapter providing a slapstick flip. The motif of the arc is repeated in the coda, by way of conclusion, navigating graphs, diagrams, and listening.

**Vines**

In 1993, Jean-Luc Godard gave an interview to the French cultural magazine *Les Inrockuptibles* for the release of his 29th feature film *Hélas pour moi.* In a particular segment, he explains, in jest, how the conditions of production come to be made manifest in his films, by telling what would happen were he to direct *The Piano,* Jane Campion's 1993 Palme d'Or winning film and that year's notable critical and commercial success.

> If I or Anne-Marie Miéville were making *The Piano*, never could we ask to have a team deliver a grand piano on the beach. I would plan the shoot on a Tuesday but the piano would come on a Thursday, or it would be brought too early and be already eaten by sharks, or the movers wouldn't come at all… On big films it happens like it did for *The Piano*; but with us, it wouldn't happen like this at all. And neither would it with [Jean-Marie] Straub, probably. The set manager would say: "well, you asked for a piano, but all we could get is a fridge, is this a problem?" Straub would say: "then I am not shooting". I on the other hand, would say "it is not a problem", but the film would be changed, I would be making the film with a fridge instead of a piano. And people would ask: "I don't understand, a fridge playing Bach, what is it supposed to mean?…".[1]

By his own account, Godard's off-the-cuff decision to proceed and shoot the film with a fridge rather than the requisite piano is bound to go off-script and derail from the score. The effects of his quirky impulse are more than just a change of setting or register, one is only left to imagine a period drama degenerating into a somewhat wistfully invoked postmodern farce. Even if Godard speaks of a certain resilience in the face of budgetary constraints—a willingness to improvise—his dejected tone suggests some sort of relegation—of *having* to improvise—in his

1. Jean-Luc Godard, "L'homme qui en savait trop", interview with S. Blumenfeld, C. Fevret and S. Kaganski, in *Les Inrockuptibles n°49*, Paris: les éditions indépendantes, oct. 1993 (my translation).

pursuit of a certain ideal of cinema. One can also hear in Godard's interview a sense of pride hurt, the scandal of *being made* to improvise (supposedly at the mercy of cruel, sniggering studio executives bent on big returns). The implication is that more than being helpless at securing the relevant props, Godard is now denied, through lack of production budget, the necessary command and means to truly fulfil a creative vision with adequacy and diligence.

Aside from the defeatism, and the slight embitterment of Godard for being demoted to improvising with fridges while a new (in Campion's case, female and non-European) guard of filmmakers are now enjoying the privileges he used to have himself, Godard's anecdote will resonate vividly with any artist in the studio, contemplating the next work while being surrounded by a mass of accumulated bits and pieces. With regard to the dramatic role he gives his props (a fridge for a piano) and the power of conveyance he confers on them (even if told as an aside), he may unwittingly have exposed the modalities of working with objects today: the interplay of objects and their intended use. At the core of art production lies a seeming irreconcilability with regard to objects: whether they should be instrumental—with a collection of attributes to deliver or bolster an intention; or whether the object's contingency should be retained at the risk of evocation and associativeness running forever awry, when intentions and their respective acknowledgment by the viewer may no longer coincide. These diametrically opposed modalities made both more diluted and more separated when the use of ready-made objects becomes part of an artist's palette—a discrepancy evident in post-medium or installation practices involving both deliberately formed objects, and objects coming in with their own unrelated gestalt. Indeed, determining what belongs to which modality is—in the best cases—the crux of the assemblage, oscillating between arbitrariness and signifier-ship. Whereas Jane Campion gets to summon objects at her will to instil a coherent representation and construct a metaphorical image therein, Godard is having to let objects take the lead and redraw his script from what they could possibly infer. On the one hand, objects—or their assembly—respond to a command and assignation; on the other, the objects have precedence to the point of undermining the director's presumed intentions, a contrast made all the more noticeable, since the presence of either piano or fridge on a beach already plays on an incongruity. Although in the case of Campion, the piano weaves almost seamlessly into the

symbolic tenour of the film's intrigue; for Godard however the symbolism and intrigue are entirely to be re-addressed.[2]

While improvisation might indicate resourcefulness in contingent situations, for artistic endeavours it will most likely arouse suspicion, easily becoming a marker of an artist's failure to administer a purposeful vision. Improvisation is often belittled as a low-form in which meaning—as in *vouloir-dire*—couldn't be brought forth, kept in check, and successfully delivered. One of the adages of improvisation claims a disposition for "process over product".[3] Along with this inability to convey clear or actual intentions comes usually a presumed character flaw: he or she who engages in improvisation lacks in application, industriousness, and is seen as happy to indulge in some directionless noodling, only to be contented with some residuum of whatever-that-was. A flaw Godard admittedly bemoans having been de facto tagged with, and an attitude Eldritch Priest terms *Bartleby-ism* when courting the aesthetics of failure.[4]

Another disparaging view of improvisation comes from the other side of the critical spectrum, although it joins the former in accusations of directionless aberration: prowess for prowess' sake. The etymology of improvisation—i.e. from Latin for "unforeseen"—places it in a dichotomy where it is necessarily opposed to composition, where composing implies a studious preparation that improvisation eschews. If improvisation can be an artless meandering, it can equally be held, when competence cannot be questioned, as a sterile celebration of dexterity and skill, instances of techné turned self-indulgent to the point of onanism. Yet once again, it fails to be in service of anything other than an exhibition of virtuosity. As in the previous case, one tends to equate output with the maker/performer and vice versa (whether a character flaw or not).

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2. To mind: Jane Campion's film is called *The Piano* and not *The Fridge*. A clear signal as to what object gives the film its narrative unity.

3. George E. Lewis and Benjamin Piekut. "Introduction: On Critical Improvisation Studies", in *The Oxford Handbook of Critical Improvisation Studies, Volume 1*, eds. George E. Lewis and Benjamin Piekut, Oxford: Oxford University Press, 2016. p 5.

4. As in: *I would prefer not to...* propose anything which could be read as an authorial imposition only to lock into a recursive movement of failing by winning and winning by failing. Eldritch Michael Priest, *Boring Formless Nonsense: Experimental Music and the Aesthetics of Failure*, London: Bloomsbury Academic, 2013. p 1.

Instead of a freedom from composition, improvisation as a form is a space claimed—a conceit in which indeterminacy can be left to exist, or for mastery to shine unimpeded. In improvised music, chiefly jazz, this would be starting from a famous melody or musical theme to then take off from. The melody announces a scale which will act as a grid or baseline, before moving to permutations between different scales, or declensions within a mode. But however "free" and happily oblivious to musical constraints it progresses towards, "implicit in virtuosity was [is] an acceptance of the matrix—the ability to play in tune within the tempered system, to understand the rules of harmony and the language of notation, to articulate the machine of sound".[5] Improvisation in this latter case becomes its own cage, a spectacle in which improvisers "slip back into their likes and dislikes, and their memory, and they don't arrive at any revelation that they're unaware of".[6] Or in being identified with a distinctive manner of improvising they end up "peddling" it (a criticism also valid for distinctive modes of courting indeterminacy).[7]

Improvised theatre also takes the form of a conceit: the audience is first well-aware of attending improvised theatre, the various sketches usually run according to a clock and time-limit; and more importantly the improvisation follows a "golden rule" that requires the performers to only reply in the affirmative.[8] Each utterance agrees with the previous and propels it further, creating a finite conduit for volatility to mingle with coherence and plausibility. In both these forms of improvisation, the set-up is for mastery and quick-thinking abilities to shine through, a welcoming of accidents only to lend legitimacy to their responses. As much as volatility seems to be invited by improvisation, its reliance on rules or conceit is also what keeps it contained. To concoct a storm, it seems, one has to also engineer the right tea cup.

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5. David Toop, "Frames of Freedom" in *Undercurrents: the hidden wiring of modern music*, ed Rob Young, London: Continuum Books, 2002. p 240.

6. John Cage as quoted in: Sabine M Feisst, "John Cage and improvisation: an unresolved relationship", in *Musical improvisation: Art, education, and society*, eds. Gabriel Solis, Bruno Nettl, Urbana-Champaign, IL: University of Illinois Press, 2009. p 40.

7. Derek Bailey and Gavin Bryars in conversation: Derek Bailey, *Improvisation: Its Nature and Practice in Music*, Cambridge MA: Da Capo Press, 1992. p 115.

8. Also known as the *Agree-* or the *Yes... and-* rule. Tina Fey, *Bossypants*, New York: Reagan Arthur Books/ Little, Brown, 2011. pp 84–85.

The grievances towards improvised works—outside of their delimited space as spectacle—are their lack of relatable intentions on the side of the maker, from the appraiser's point of view. The absence of constructedness becomes notable. Some intended edifice for an appraiser to grab onto, and be able to inspect what is being presented, is missing—be it an image, a metaphor, or tonal motif. The moment of presentation will thus require the improvised genesis to gel as its own intentional framing. A further conceit that serves not to propel volatility but to establish that the artist knew what he or she was doing all along.

Yet this intentional edifice which gives the necessary stability for improvisation to exist, is precisely what is challenged by improvisation. Improvisation comes as a reminder that any element in a given construct could be permutated into another. A test of fitness-for-purpose, that may reveal that what was employed to fulfil a specific function could perhaps also have been any other thing. As an improvised response to a situation—in Godard's case, production budget woes—Godard had to make his decision in urgency which unsettles the stability of any intentional frame he may have had. An outcome can only depend on the elasticity of the variables of that frame. In improvisation, one resorts to exploring lateral options while having to forgo the ordinate scope of planning. When pushed for a reaction in emergency, the lateral options have to extend, if only in scrambling for the next best thing which will do—like a fridge for a piano. Inversely, when one has ordinate time in excess, the lateral options reduce to one optimal choice—like an unclocked chess player leisurely boiling down his potential next moves to a single devastating blow.

As the laterality expands outwards, the instrumentality of an object decreases and loses its primary function. The further along laterally one has to find a replacement, the more useless it will be at delivering the original intent. Godard's fridge is admittedly pretty far-out as the centre piece of a film that ultimately calls for a piano. When Godard says that the "film will be changed", what he implies is that is he will be scrambling for a new intended framing, a meaning the fridge would be instrumental to. In the absence of determined intentions however, the laterality would stretch to infinity, and one would be left with a single plane of never-ending metonymic possibilities.

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Appraising improvisation by looking at the resourcefulness of the improviser may uncover lots about resilience and subversive inventiveness, but it stays mum about what is being improvised with. Or what the improviser is improvising through. When laterality of thinking summons a entire metonymic field for alternatives, it is worth asking whether anything other than the indomitability of the improviser plays a role. Even Tarzan needs vines. If one turns the issue inside out, rather than the improviser finding a conduit to get out of a situation, it is the improviser which becomes the conduit. The question is: conduit to what exactly?

To use a carrot in place of a door-stop makes perfect sense. On the other hand, using a dusty old wooden wedge to make that butter-glazed *à la Vichy* classic is a terrible and entirely absurd idea. Nominally, the two objects have nothing in common. In terms of designation and functionality, they exist in completely separate realms. Yet, at the mere mention of both, it is possible to picture why one could replace the other, but not the other way around. In such an instance, one gets a brief glimpse that sense is vectored: it has an arrow, a path of least resistance, and has seemingly no time for symmetrical equations. It does not care for the equivalence which makes meaning stable.

The size, the slantedness and tapering that give the carrot its characteristic shape are an ideal configuration to fit in that gap under the door. The void itself seems to call for what these features of a carrot can provide. The carrot's taste however, its colour, its future as a perishable thing will either be totally useless or prove a problem if that door is to stay open for a longish stretch. A man-made object, like the door stop, can easily be imagined as the nexus of the different decisions that went into its making (with regard to shape, size, intended function, etc). It will not be so for something which grows in the soil, and which naturally develops into this state. Yet, in the same way Eric Hobsbawn remarked that as a listener, whether a piece of music was composed or improvised was of no importance—what is being heard is what is being heard regardless—any object to a perceiver is first to be perceived.[9] And much as an object is identified, it is also recognised as dissimilar to another, seized simultaneously as a collection of distinct features and whole towards that identification.

9. As quoted in: Andy Hamilton, *Aesthetics & Music*, London and New York: Continuum Books, 2007. p 201.

For someone who never explicitly wrote about objects Carl Stumpf had a wonderfully plastic vocabulary. He wrote of gestalts (plural) in his nascent theory of phenomenology, where different gestalts resulted in complex impressions through a *Verschmelzung*, (a fusion, a blending).[10] Phenomena to Stumpf were not reducible to a single factor, and compound gestalts provided all the nuances and differences in examining perception. In his research on the psychology of tone, he wrote of formants (also plural), adding a missing complexity to Helmholtz's focus on naturally occurring harmonic upper partials in musical tones.

Physically, formants are these spikes and stretches in the frequencies of the human voice, not necessarily harmonic, making speech intelligible and, in particular vowel sounds distinct from one another. All vowel sounds are produced through the mouth cavity, from larynx to lips. Small variations in the shape of the mouth, combined with muscle tension in the vocal chords and lips, would change the overall resonance of the cavity and dramatically affect the sounds resulting in A or E or I or O, etc. If anything transpires, whether called formants or gestalts, is a correspondence between the idea of forming and resulting impressions finding a manifestation and their evidence in overtones. Stumpf's interest was at the perceptual end, how all these variations of human vocal apparatus—changes of gestalts in the mouth cavity—would blend as singular events in speech recognition when heard.[11] Of concern in this chapter however is the reverse notion: how a perceived object can be mined down as series of gestalts finding their salience in overtones.

[That formants are called formants and overtones are called overtones is largely a hangover from the 19th century, when using the same word for the human subject and inanimate objects would have seemed untoward or crude, and collapsed generalisations of terms recklessly unscientific. The two terms are known now to denote essentially the same set of causes and effects, determining what has been called tone quality, tone colour or tone character. The difference in usage would indicate per tradition whether one is describing sounds from a voice or from an instrument.

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10. Albrecht Schneider, "'Verschmelzung', Tonal Fusion, and Consonance: Carl Stumpf Revisited" in *Music, Gestalt, and Computing Studies: Cognitive and Systematic Musicology*, ed Marc Leman, Heidelberg: Springer Berlin, 2006. pp 117–143.

11. Sebastian Klotz, "Timbre, Komplexeindruck, and Modernity: Klangfarbe as a Catalyst of Psychological Research in Carl Stumpf, 1890–1926", in *The Oxford Handbook of Timbre*, ed. Emily Dolan and Alexander Rehding, Oxford: Oxford University Press, 2018. p 609.

Formants also refer more specifically to the more minute and inharmonic aspects affecting a sound, clumped as group, whereas overtones refer usually to the harmonic series. For some instruments, brass especially, the two are virtually indistinguishable. As soon as a mouthpiece is applied to the tip of one's lips, formants transfer to the instrument as overtones and it all becomes timbre.]

When overtones become indices, the differences of form they reveal confer on an object transformative qualities. Objects acquire a sense of plasticity which confuses the alignment of instrument and expected outcome, by giving them a parity at once in the perceptual and in the physical realm. In plain language: one says colloquially that if it looks, walks, and quacks like a duck, then it is most certainly a duck. But thinking in terms of overtones means the different gestalts of looking like, walking, and quacking only amount to a *duck-ness* that may be related to a duck. It is but a matter of how pronounced the *duck-ness* is. If it looks and walks like a duck but doesn't quack like one, it may not be a duck but it still exhibits a persistent *duck-ness*. Inversely, some ducks may walk and quack like ducks while not looking like ducks: they still have their *duck-ness*, albeit less emphasised. The simple equation of *duck-ness* and duck—of designation and signification in Lyotard's terms—is threatened by the granularity and the distribution of attributes, and for which overtones provide indexicality. For an instrument, its timbre—the presence of overtones—opens "to the phantasmagoria that one instrument can sound like another, with the epistemic acumen of the music-theoretical instrument".[12] In terms of gestalts, this may extend to any object: fundamentally, a carrot is no door stop; but it most certainly has a *doorstop-ness* to it.

Harmonically speaking, timbre and pitch share a root in the same acoustic physics. Overtones and the tonal relationships on which western music is based both relate to the harmonic series, i.e the natural law of a fundamental frequency always being supplemented by upper partials of that same frequency through resonance. A note played on an instrument will also encapsulate other pitches of diminishing ratios and diminishing amplitudes albeit consonant with the fundamental. If the instrument is exquisitely built, these supplementary pitches will resound long and clear.

12. Emily I. Dolan and Alexander Rehding, "Timbre: Alternative Histories and Possible Futures for the Study of Music", in *The Oxford Handbook of Timbre,* ed. Emily Dolan and Alexander Rehding, Oxford: Oxford University Press, 2018. p 7.

When the instrument is on the cheaper side however, these tend to sound dissonant and flat.
In either case the human ear will blend all these overtones as one note, the lowest frequency called the fundamental.

A chord functions on the same principle: a root note supplemented by others, which will sound either harmonious or disagreeable (whether dissonance and consonance are cultural value judgements claiming legitimation in physics or not, i.e the “western” in western music, is a matter of contention—other musical traditions don’t call for this dichotomy). A chord can be made to have tonal stability (faithfully following the harmonic series), or made to have tension and ambivalence, thereby calling for other subsequent chords to either resolve the tension, or pursue the intrigue by cranking the tension further and delay its resolution. As a three or four notes summary of a scale, a chord provides harmonic points of convergence with other scales, pointing at combinations of notes belonging to several musical scales. The tempered system of western music has normalised the intervals between notes, making them equal and thus establishing a table of possible conversions between all scales. In tonal music, the accomplishment is in how deftly one moves within these scales while maintaining conformity to the governance announced in the tonic chord. To a jazz player, a chord becomes an escape hatch—its supplementary notes granting an ajar-ness through which to dodge and challenge the tonal governance. Improvisation only makes the process more volatile, a game of cat-and-mouse with the audience between yearning for resolution and the thrill of insubordination.

That overtones have similar converging or escapists traits will depend on where one decides timbre is. Whether it is perceptual or physical will prompt sensations that call for other tone qualities that either blend or contrast with the initial colouring, be it subjective or objective. Another question is whether the timbre is seen as a general quality of an instrument (some instruments or voices seem to pair very well, while others don’t even if in tonal harmony), or a specific quality of one sound in particular: an instrument locked in a case doesn’t have a timbre, the sounds it produces do. It is therefore more correct to speak of a timbre for every possible sound an instrument may produce,

rather than the timbre of that instrument.[13] Nevertheless in any of these configurations, timbre will be thought of as generating from the object. Counter to pitch, which is a metric convention, the overtones of timbre belong to that object independently of the operator—they are the mark of that object's resonant physicality. For all the permeations and capillarities they offer with anything else, when acting on the sound itself, the overtones dictate the range of tones which are possible to yield from that object. In that sense, the overtones actually play the player.

Remarking that intended function and usage don't have to equate, Sara Ahmed writes of a *forness* of objects: "Describing what something is *for* is a partial account of what it can be. *Forness* helps reveal the partiality of an existence. *For* can be loose enough to accommodate others; […]".[14] To Ahmed asking about the "for" of an object is a pretext for asking not only for *what* but also for *whom*.[15] If the design of a particular object seems to dictate what its usage should be, the *forness* errs towards queer uses of that object, a way to reclaim purpose while also redirecting usage in terms of attachment: a deviation that serves to make an object singular and personal but also undermines its instrumentality. If Ahmed's angle is pointed at the subject's agency with regard to a generic intended function of an object, her account of partials is the part that belongs entirely to the object itself. A mug is to drink hot beverages from, but its gestalt also allows for it to be used as pencil holder, flower pot, or even as some bell-like lid when used upside down. If the handle breaks (as in Ahmed's photo example for out-of-use objects), the mug undergoes a change of gestalt, of formants, making it far more suited to hold pencils than as drinking vessel.[16] In both these states, a person's attachment to the object can however be maintained.

To complement the *forness* as re-assigned to an object by its handler, perhaps it is worth acknowledging that objects entertain on their side a *forship* with people handling them and with other objects. Their features, or rather the distribution of their features as partials, endows objects

13. Stephen McAdams, opening address "'What is Timbre' vs 'What Can We Do With Timbre': Picking the right questions", in *Timbre is a Many-Splendored Thing (conference)*, convened Stephen McAdams, Schulich School of Music of McGill University, July 5, 2018. https://www.mcgill.ca/timbre2018/program.

14. Sara Ahmed, *What's the use*, Durham NC and London: Duke University Press, 2019. p 35.

15. Ibid., p 29.

16. Ibid., p 32.

with qualities that put them automatically in conversation with other objects or prospective uses. It may seem a matter of contradiction that the distribution of features which cements the identity of an object would also be its potential to take the place of anything else. Yet, if these overtones fingerprint the specificity of an object as instrument—an instrumental timbre like footnotes to a text or terms and conditions to a transaction—when its fundamental *forness* is circumvented or ignored, the partialities becomes suggestions. Any selective glance in an upper distribution of overtones turns to patterns that mould themselves to all kinds of corresponding gestalts and formants—like a carrot to a gap under a door. And yet, far from a descent into fanciful esoterica, the suggestions remain material, albeit webbed into an infinite and latent metonymic fabric. And far from being a big chaotic soup either, all these aspects are sensible attractions, carried by objects that have at least initially a purpose and intended function.

Partials, formants, gestalts, overtones, whichever word one chooses, are all character traits which serve to make an object or an instrument more real and distinct and yet provide escapism from their bottom-line role. They defeat flat delivery by making one object analogous to another. The partialities of objects offer profiles that want to hug others or prove incompatible. When the fundamental of an object—largely attributed by its nominality—is re-addressed and its *forship* left to spread out, the analogies it conjures will want resolution. In that respect an object is already in trope form; it wants to match with other forms and find congruences in order for sense to emerge. This is not to say that an object contains its subversive uses in itself (it absolutely does), but that its supplementary attributes have an independent kinship drawing them to mingle with another object's attributes, regardless of what the objects initially are. Toggle clamps will become piano keys, buckets and pots when upside down want to harmonise and transform into bells. A chandelier seen unhung in a box at a car-boot sale will appear as a wounded animal, sheltering from a bustle it can no longer face up to, its glass pieces twisted in dismemberment and jostling as if in frightened spasms, trying to ward off its vulnerability. Then again, that chandelier was also a mysterious orrery or such, taken apart by an enthusiastic child wanting to see how exactly the cosmos had been made to lodge inside the thing, but without having taken the necessary cautious steps to put all its bits and pieces back together as a functioning whole, and now left like a jack-in-a-box that won't close again. It was a thing that spoke of dying light and of its own astral centrism, even in obsolescence.

Godard's quip is far too on the nose to be an off the cuff comment. The fridge is not the most random of objects from a piano it first sounds like. The upright stature of the fridge is in unmistakable contrast to the horizontal plane of a piano. Its rectangular boxiness is a negation of the elegant, curved wing-shape of the piano. The customary powder-coated white-good white is diametrically opposed to the carefully polished black lacquer of the standard Steinway concert grand that pops into one's mind at the mention of piano. The humming drone of the fridge motorised cooling unit is inimical to the seven octaves of chromatic variation offered by the keyboard. The fridge door with vertical hinges that swings for swift access to its content is a world away from the piano's ceremonial lid that lets sounds bounce and radiate towards the audience. Both fridge and piano play on formal opposites, and Godard's fridge is a carefully studied rejoinder rather than a flippant first thing at the top of his mind. If an impromptu choice of object, it comes from someone well-honed at noticing these things.

In his novel *The Good Life*, Jay McInerney has a character setting up a soup kitchen in support of the world trade centre clean-up and recovery effort just after 9/11. In the few days before the generator to power the kitchen finally arrives, he takes to unscrewing the base plate on a lamppost and jump-leads an improvised power outlet from it. He goes on to explain that being a real New Yorker is "all about knowing where the juice is", "knowing how to connect the wires".[17] Once past sighing at another New-Yorker congratulating himself on being a New-Yorker, there is as profound an allegory for art-making as can be read in this passage. First, there is the idea of art as a grand ongoing conversation, and that the role of the artist is to contribute to it, to not let it die at one's work. To come across a trope that is a little worse for wear and in real danger of becoming a cliché, one has the charge of hooking it up, jumpstarting it afresh so off it goes again—with whatever means and resilience at one's disposal. It throws the idea of art-making into a permanent flux. Second, and this is Godard's predicament, is to not let sense get impeded by meaning—sense flows, it doesn't need to be understood in the manner of being recouped or validated. When the piano is the film's generator, but fails to materialise, in will come something else which will certainly do very well as replacement, if a little puzzling at first. Godard's mention of the fridge with all its formal oppositions to the piano, is his admission that the gestalts of either repel each other, and won't facilitate an intelligible congruence of this object and that. There are no overtones

17. Jay McInerney, *The Good Life*, London: Bloomsbury Publishing, 2007. pp 89–90.

that match, no juice for sense to flow. As the captain, he recognises he can't stay the course—all that is inferred by the presence of a piano cannot be maintained with a fridge.

Staying the course, or even conveying there is a course at all is improvisation's chief dilemma. In a metonymic field that infinitely expands laterally, sense can be left to propagate freely, without ever breaking through into meaning. "[...] Harmony is about listening and it's about perceiving relationships. Perceiving relationships through listening, that's what I think harmony is", is how Pauline Oliveros answered the question of what harmony is.[18] Of what these relationships consists however she gave no indication. As a composer who has clearly worked outside the margins of traditional tonality, the relationships Oliveros mentions will not be pitch-led hierarchies of notes. And yet harmony there is. Her comment suggests that this notion for her is still central to music and to offering it—if only, as composer, to vouch for the presence of a relationship that would warrant listening.

> "Originally the word harmony simply meant a fitting together of things in the most mundane sense [...]. The word "harmony" obviously needs to be freed from its implied restrictions to triadic/tonal music—but this is not enough. Even in a purely "horizontal" or monophonic/ melodic situation, the realities of musical perception cannot be described without reference to harmonic relations between tones. Clearly, a new theory of harmony will require a new definition of "harmony," of "harmonic relations," etc., and I believe that such definitions will emerge from a more careful analysis of the "total sound-space" of musical perception."[19]

The above quote is by composer James Tenney who, in the wake of John Cage's work, articulated the quest to redefine harmony away from the western and modernist set of restrictions it had shrunk to. For the generations of composers coming after Schoenberg, harmony had become a figure, a notion that should be entirely rediscovered, redrawn one attempt at a time.

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18. Pauline Oliveros, interviewed by Hans Ulrich Obrist, in *A brief History of New Music*, Zurich and Dijon: JRP editions and Les Presses du Réel, 2016. p 139.

19. James Tenney, "John Cage and the Theory of Harmony" (1983) in *James Tenney, From Scratch: Writings in Music Theory*, eds Larry Polansky and Lauren Pratt, Urbana and Chicago: University of Illinois Press, 2015. p 292.

This reinvention also meant steering away from harmony as a set of rules, a musical discourse, however innovative the play within those rules may have sounded. (Schoenberg himself had concluded in 1911 that the game was probably up for innovation and harmony in this strictest sense).[20]

In her *Deep Listening* book of meditative exercises, Pauline Oliveros writes of "inclusive" and "exclusive" listening.[21] Inclusive means striving to listen to all sounds concurrently: a flattening of the entire sonic field reaching the ears of the listener, and where not one sound has a hierarchy over another (these include the sounds the listener inadvertently makes and which are to be impartially folded in). Exclusive, on the other hand, is letting one's attention be drawn to one sound in particular, bringing one's awareness how it arises, unravels and disappears again while examining its singularity and intricacies. These two modes of listening are irreconcilable: one cannot listen inclusively and exclusively at the same time. For Oliveros the aim of these meditative exercises is to contend with this unfeasibility, and take to balancing both "focal" and "global" forms of listening as discipline.[22] In its inclusive form, listening is a matter of contiguity, with all sounds adjacent to one another. When exclusive, listening turns its ear to a continuity chasing a sound as it is flinching from the fray. The latter is transversal to the former's laterality. Sounds in these exercises acquire an objecthood, whether it is in the form of an observation—how objects present themselves in all their common activity—or as a kind of speculation when an object is singled out. Perceiving relations is thus a constant back and forth between the two modes of listening, to appraise how one sound may come to fit with another, regardless of whether they carry an ascertainable pitch or not. Turned into music, these dewy relationships are offered to attention as a re-ordering of a soundscape with a newly found coherence and comprehensibility.

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20. "I believe that continued evolution of the theory of harmony is not to be expected at present", Arnold Schoenberg, *Theory of Harmony,* trans. Roy E Carter, Berkeley and Los Angeles: University of California Press, 1978. p 389.

21. Pauline Oliveros, *Deep Listening: A composer's sound practice*, New York, Lincoln, Shanghai: iUniverse, Inc. 2005. p 15.

22. Ibid., p 13.

When tackling what he exposed as an irreducibility to either rhetorics or grammar, Paul de Man wrote of two opposing movements: a "grammatisation of rhetorics", and a "rhetorisation of grammar".[23] This irreducible tension stems itself from an undecidability with regard to a text's aim and intent. It is first a reader's problem: one cannot grasp the general, overarching meaning of a text and engage in the close-reading of it at the same time. For de Man though, this undecidability extended also to the author. The tell-tale sign of literature however, its literarity, was found in the deliberate and playful way with which the author would undermine the discourse of a text—its general meaning—by drawing attention to its distinct phrasing (grammatisation). Yet, concurrently the author is also demonstrating an extreme consciousness of the inference that the choice of words and syntax will have (rhetorisation). De Man's insight was originating from Roman Jakobson's opposition of metaphor and metonymy with its process of dissolution into words and letters, against their consolidation as meaningful images.[24]

Composer Kaija Saariaho lays down yet another two-axis formulation: that of sound versus noise.[25] To Saariaho, timbre is the synthetic notion that allows conversion from one to the other and vice versa. She hears timbre as the fabric which sustains the capacity to elect sounds from a noisy maëlstrom and making them worthy of dynamic harmony, or inversely, fade them back to an uninterrupted inharmonic stasis. The fusion and defusion of sounds in particular, i.e their alternatively global or focal qualities, provide "form-bearing elements" towards "harmonic structures" which are likened to syntax.[26]

To speak of the congruence of objects as harmonic relationships in the way Pauline Oliveros did, or as of metaphors gelling from metonymies, or as rhetoric from a grammar as would Jakobson or de

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23. Paul de Man, "Semiology and Rhetoric" in *Allegories of Reading*, New Haven and London: Yale University Press, 1979. p 16.

24. Roman Jakobson, "Two Aspects of Language and Two Types of Aphasic Disturbances" in *Roman Jakobson: Language in Literature*, eds Krystyna Pomorska and Stephen Rudy, Cambridge MA and London: Belknap Press of Harvard University Press, 1987. p 109.

25. Kaija Saariaho, "Timbre and harmony: interpolations of timbral structures" in *Contemporary Music Review Vol 2 issue 1*, Reading UK: Harwood Academic Publishers, 1987. p 93.

26. Stephen McAdams and Kaija Saariaho, "Qualities and function of musical timbre", in *ICMC '85 Proceedings*, Paris: I.R.C.A.M., 1985. pp 365–374.

Man, isn't so arbitrary. A congruence will be an intelligible form precipitated from the assembly of things that would have probably gone otherwise unnoticed. As such it has a currency of meaning that its elements on their own wouldn't have. When the man-made world is a metonymic field of objects, their congruences have metaphorical powers as much as they may have an harmonic tenour. A congruence offers structure, one can build on it as grounds to infer from.

One's personal preference of binaries or two-axis polarities notwithstanding, the activity of sense should be in the vector space therein: how the juice flows and forms patterns between the coordinates. Oscillations that give clout to Fred Moten's own mischievous, topsy-turvy take on that other famous adage of improvisation: "Improvisation is how we make nothing out of something".[27] Between the axes of *nothing* and *something*, one should perhaps speak of "stuff-isation of structure", and "structure-isation of stuff", an approach which implies handling objects as Oliveros would sounds and also suggests the artist in the role of a listener teasing out harmonic-like relationships.

As example: to encounter the work of Jessica Stockholder is to be first faced with a cluster of objects falling collectively under "junk"—even when they appear shop-bought and factory-fresh *(stuff-isation)*. Sometimes the works will be arranged in separate heaps, at others the junk will be spread as an in-situ installation taking the full expanse of the space. Quickly, these various objects will find a key, a tonal root to successively fall in tune with each other: be it their relative shapes, the calls and responses of their respective textures, or their colour (often helped with swaths of household paint roughly applied here or there). More than an organising principle, Stockholder lets her objects enact the most enduring and sweeping of metaphors for art itself: the brushstroke. More precisely still, it is *The Brushstroke*—that romantic touch of genius which transcends the material and lets it attain the status of image. From then on, the amassed objects will appear to strive to set as image, and therefore coalesce as globally meaningful *(structure-isation)*. The impulse of the viewer is then to walk around the works and aim to find a viewpoint from which the clusters will be at their most image-like as if the right perspective will finally deliver the rightful, elected meaning. But Stockholder will not give the viewer that easy release, all perspectives will fall short

27. Fred Moten, *come on, get it!*, The New Inquiry, published 19 February, 2018, https://thenewinquiry.com/come_on_get_it (last accessed 11.07.2023).

of a resolution. The metaphor remains frustratingly at once emergent and thwarted, with the objects perpetually falling back into being any metonymic junk again *(stuff-isation)*.

To see the work of Sarah Sze on the other hand is to meet a blob-like edifice over-spilling onto the floor or sprouting up the walls. A possibly sentient entity of organic contours which grows of its own accord, and in blatant contempt of the spatial etiquette of an exhibition space *(structure-isation)*. To come near it is not only to verify that the entity actually consists of myriads of smaller objects, it is to be made to itemise the objects as one recognises the various common household objects or pieces of stationery involved. Furthermore, it is to notice that these are all carefully staged or bound and that they are all brand new—with some still in their wrappers. A newness and a staging more consonant with planning, getting quotes and placing orders accordingly, and which comes into direct conflict with the sprawling and makeshift nature of their accumulated employ *(stuff-isation)*. In effect, these myriads, glue-gunned or sellotaped, allows Sze to displace the work (as in final product) towards the *Work* (the art-making an artist does). It likens the goods at disposal to lists of original intentions and shifts the efforts to the transformative and generative qualities of their usage—those that start to command their own directions towards that blob-like edifice and what is certainly a gallery registrar's nightmare. The structure as edifice becomes a structure of the thoughts that went into its genesis in the process *(structure-isation)*.

In practice, this *structure-isation/stuff-isation* finds its most common currency in the bricoleur's domain of making-do. There, far from being a posture revolving around an improviser's wily prowess, improvisation demands instead a surrender to the idea that nothing can ever be made ex-nihilo, an idea which renounces the radicality of the *tabula rasa,* as well as the phantasy of composition from scratch. It is to admit as equally questionable the notion that "all things undergo constant and unremitting change" without ever having been adapted from somewhere else and with improvisation as engine of progress.[28] This adhocist creed however is still in sole pursuit of design and purposiveness, irrespective of how titillating its associative cunning. This progressive purpose forces a direction upon the making-do, approximating it once again towards a conceit which is

28. Charles Jencks, "Adhocism part1", in Charles Jencks and Nathan Silver *Adhocism: the Case for Improvisation* (expanded and updated edition), Cambridge MA: The MIT Press, 2013. p 41.

all *forness* but very little *forship*. Introducing a timbrality to objects, as counterpoise to the bricoleur's craftiness, is to let objects take on the informative role, not only with regard to a design, but also to the poetry of playing with sense, inferences and ultimately meaning.

Maggie Nelson digs out a quote from Brian Massumi in her book *On Freedom - Four Songs of Care and Constraint*: "Freedom always arises from constraint—it's a creative conversion of it, not some utopian escape from it".[29] To think of art being related to freedom is to see it as an exercise not in setting meaning or purpose as goals, but to entertain the very possibility of conversion along with the aptitude to channel it. There is an expedient, but also perhaps slightly jaded logic to selecting objects for their obvious symbolism or the most immediately perceptible associative properties that would grant the flow of communication. When the object which would best signify or represent an idea proves unavailable, this assumed logic has to stumble backwards. The conversion shifts instead to how this same idea may manifest in spite of the constraint of expediency. Cornelia Fales writes of timbre that it is the parameter "most implicated in source identification but also most implicated in the discrepancy between signal and the percept it provokes" with the power "to disrupt perceptual complacency".[30] An effect of this power is to make the "freedom in conversion" supersede the original and more conforming representation, only to become the most salient (and communicable) element. It is entirely hostile to complacency—cue, a fridge on a beach playing Bach.

Whereas the eye is adept at homing in on evidence, it is worth reminding oneself of the leading role the ear plays towards non-conformity. Listening spills out of boundaries and set notions such as purpose or goals. It perceives objects in terms of activity and effects, in collections of partials rather than fixed entities and ahead of any notions of designation or signification that may arise. Alexander R. Galloway in an essay on the *analog* tracks the construction of the term and the etymology of other terms related to it, underscoring the relationship between discourse and

29. Maggie Nelson, *On Freedom: Four Songs of Care and Constraint*, London: Jonathan cape/Vintage, 2021. pp 155–156.

30. Cornelia Fales, "The Paradox of Timbre", in Ethnomusicology, Winter 2002, Vol 46 n°1, Urbana-Champaign IL: University of Illinois Press, 2002. pp 91 and 71.

measurements and their opposite: not hearing them.[31] *Analog* traces back to Greek *logos*, meaning both “speech” and “ratio”, and refers more specifically to the intelligible and sensible component of speech. This led to *logos* becoming more akin to “discourse”, while also later yielding the term of “logic”. The prefix *ana-* makes *ana-log* therefore mean “alongside-logos”, in the sense of “proportionate”. *Ratio* is a latinate offshoot of *logos*, meaning “ratio” as well as “consideration” (in the sense of “reckoning”), later becoming “reason”. However, it is mathematics which has prompted the development of these terms as we know them now. A number will be called *rational* when it can be reduced to a fraction, an exact measurement. Numbers whose decimals stretch to infinity will hence be called *irrational*. Another latin term was used for *irrational* in this case: that of *surd* meaning “deaf”. *Irrational* is therefore “deaf” to reason by virtue of being deaf to definite measurement. The step beyond this is of course *absurd*, i.e. beyond listening and obeying to any reason or measurement at all. And so *analog* has come to evolve from “proportionate” in ancient Greece, to the idea of continuous fabric of variables it now means in the digital age, with the notion of “analogy”, whether sensible or eccentric, evolving in parallel.

Worthy of note is the aural thread that runs through reason, logic, listening and conformity (to either measurement or discourse). As well as its counter-thread of being deaf to these measurements and discourses, choosing to listen instead to everything that fits in-between and drawing new analogies. Sense doesn’t know absurd from rational, and it has a propensity to remain intelligible regardless. When it comes to objects and their mingling, it seems that the only obstacle is one’s willingness to let them indulge.

31. This original essay by Galloway “What is the analog?” (in cultureandcommunication.com, published 29 December 2017) has now disappeared. A revised and extended essay called “Golden age of analog” (2022) has taken its place. Alexander R. Galloway, “Golden age of the Analog”, in *Critical Inquiry*, Vol 48, n°2 Winter 2022, Chicago: The University of Chicago Press, 2022. pp 211-232.

**Nudges**

I can never forget the look on my daughter's face the first time I knocked on the top of my head, while simultaneously tapping at the underside of the dining table with my other hand. My head sounded hollow, wooden, unusually loud, with an added rattle of cutlery. There was some alarm in her eyes, a bafflement hesitant at giving in to panic and start to cry. But there was also a joy awaiting a smiling confirmation from me. This joy came with a thrill, pending—the realisation that the world doesn't have to behave as one expects it should. Once revealed, the trick brought laughter, an immediate desire to replicate it, and an excited rush to try every single surface available for textural and sonorous variations.

As my daughter was a toddler—and around the time of the wooden head trick—she could get entirely lost in contemplation of various things or objects, stopping to gaze at them for what felt to me like a ludicrous amount of time, usually as we were on a walk or trying to get somewhere. Between two eye-rolls and my gentle suggestions that the bus stop or whichever destination we were heading for was now very near and that we may eventually get there if only we kept moving, I would usually surrender and patiently watch her watching whatever it was she was fixated on: a flower, a leaf, some insect, occasionally some disgusting thing she had picked from the ground but really ought to have left there. It was never a floating or vague gaze she had then, she would be fully concentrated in her examination of these things. She would touch them, turn them over in her hands (when she could), and looked herself utterly captivated by these objects. Her fascination bore both the signs of intense scrutiny, actively and exhaustively inspecting what was in front of her, and those of someone passively drawn, as if subjected, beguiled in wonderment.

Being quite the day-dreamer myself, I am no stranger to losing unreasonable chunks of time to looking at things. I have also been through life-drawing classes in which one strives to untie everything one already knows about the object to be drawn and see it completely anew. And yet for all this, I don't think I can observe a tree leaf in the same manner my daughter then did, nor for that long. I couldn't tell what she was seeing in these moments, watching these things. She was

guzzling everything they had to impart, all the information they had about them. It is a bewildering experience to witness someone engrossed in the action of perceiving, and yet be altogether unable to relate to what it is they might be perceiving, especially so from an object familiar enough to be considered trivial—the result of an "over-automatisation" Viktor Shklovsky decried.[1] I would then always be confronted with the reality that I no longer had access to perception the way she did. I know far too well—or at least think I do—what a leaf is, how it fits as a piece in the greater puzzle to be able to look at one in a manner entirely dissociated from what I know it to be.[2] If that is even what she was doing.

"Pure" is the obvious and rather trite epithet some may want to reach for in order to describe how a toddler will look at things—before these are filed in their correct boxes and the dots connected. But inchoate would be the better term. If I couldn't relate to what my daughter was perceiving in these instances, it is because these perceptions of hers were also unrelated to one another, discrete attentions still short of being collectively turned into sense. The crucial detail is that these suspended moments happened at an age when language wasn't yet my daughter's main or sole way of grasping and communicating—when semantics and syntax weren't yet fully providing the necessary path for thoughts to articulate, be strung like beads, and stop being entirely contingent.

Although my way of perceiving what is around me may no longer have the intensity of discovery and has perhaps become tainted by banality, it has however stopped being a series of hermetic occurrences. Where captivation has been lost, relatability was gained: a process of identification that can match perceptions with expectations, and which allows to draw analogies between those, as well as assume with some degree of precision that the sense I can elicit from various things or their configurations will be similar for someone else (short of calling it common sense).

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1. Viktor Shklovsky, "Art as Device" in *Literary Theory: An Anthology, Third Edition*. Edited by J. Rivkin and M. Ryan. Hoboken NJ: John Wiley & Sons, 2017. pp 8–14.

2. Cognitive linguists have a more mechanistic take on the process of cognition. Things are filed into frames, i.e. concepts within concepts in a russian-dolls-like arrangement: Charles J. Fillmore. "Frame Semantics and the Nature of Language" in *Annals of New York Academy of Sciences Volume 280, issue 1*. Hoboken NJ: Wiley Publishing, 1976; or propelled by a logic of consolidating metaphors, new experiences are acquired while being labelled accordingly: George Lakoff and Mark Johnson, *Metaphors We Live By (new afterword edition),* Chicago: University of Chicago Press, 2003.

Corrupt and tainted as they may be, and in contrast to the cognitive blank slate of my daughter's at that time, my perceptions have in fact also become currency. Far from being only a slow descent into conformity, from sensory to mere sensible, the relatability of one's perceptions allows for equivalence to and fro between those, the key to combine understanding with its physical manifestations or vice versa. Not only does it grant a reciprocity between my sensations and my reasoning, it allows for a receptiveness, glimpses into the feelings of others and their own process of making sense—a resonance, a sympathy which shuns having to be stated or explicitly verbalised. While this currency can be bemoaned as a leveller, a normalisation of one's perceptions to the laws of average, its *byt*, it also brings along a recognition of quirks—the capacity to be smitten, enthused, or charmed silly by someone whose way of responding to a routine or to normality is so unlike one's own.[3]

Along with this ability, comes of course the capacity to disrupt a presumed order of things and answer the call of mischief.

I actually remember having tried the wooden head trick on my daughter some time prior, but she didn't even register it then. She just stared at me blankly, and at this time I couldn't tell what she was not seeing. Slightly disappointed, having "bombed" in comedians' parlance, I walked away, promising myself to be patient and try again later. It was simply too early—to perform any kind of defamiliarisation, one must first have some familiarity. Likewise, there can be no mischief without a sense of how compelling expectations are, whether stated or implied.

An enticement would be to think of the way an artwork operates in terms of "phatic calibration"—after Malinowski's linguistic notion of "phatic communion".[4] Or for Jakobson, the function of

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3. The Russian word *byt* means "daily life" (literally translating as "being-ship"). For Roman Jakobson, it is "a stagnating slime, which stifles life in its tight hard mould", "the poet's primordial enemy", to which "the real antithesis is a slippage of [...] norms". Roman Jakobson, "On a generation that squandered its poets" in *Roman Jakobson: Language in Literature*, Krystyna Pomorska and Stephen Rudy eds, Cambridge, MA Belknap Press of Harvard University Press, 1987. p 277.

4. "phatic communion" establishes "ties of union" between interlocutors. "[...] we may say that language does not function here as a means of transmission of thoughts". Bronislaw Malinovski, "The Problem of Meaning in Primitive Languages", Supplement I, in *The Meaning of Meaning*, C. K. Ogden & I. A. Richards (1923) New York: Harvest Books by Harcourt, Brace and World publ. 1989. p 315.

language concerned with contact, serving "to establish, prolong, or to discontinue communication, to check the channel works" between an addresser and an addressee.[5] A communication, but in which the contact between emitter and receiver has been entirely deferred to a singular object and the relationship of both with regard to it. The bandwidth for the communication is established, but distributed indirectly through a proxy—that object then the central pivot connecting both parties. Typical phatic utterances are now tacit and replaced not only by what each addresser or addressee may perceive of the object, but also by what they recognise as having in common from their respective sensing. A dialogue of sorts, but in which all elements of verbal communication have been temporarily furloughed, and is instead left open for a play between participants in sensing the common channel, but by means of the object.

A friendly game of ping-pong is this kind of phatic calibration—when a rally goes erratic and unpredictable between two players and a reversal of rules ensues. The aim of the game flips. It is no longer to get an opponent to miss, or slam the ball past them quickly and efficiently, but is now to prolong the exchange as long as it can be made to last. The "playing" ceases to be competitive, and instead becomes collaborative. The attention of the players is redirected to the ball as central to the exchange, and the intent is now to keep it in play whatever happens. All the information needed to further the game will be grasped from the ball—its trajectory, its spin, its velocity, or its bounce, like so many possible inflections—and each return is a confirmation of these having been read and adequately decoded. As the game progresses, unplanned and gradually uncontrollable, the players will scramble, wrong-footed yet giddy and giggling in their increasingly desperate attempts not to be the one to let the rally come to an end—the kind of exhilarating fun that gets ruined the second someone utters the words "should we start counting the points?".

In a phatic encounter involving an object, the referentiality of the exchange is essentially redrawn. Addresser and addressee, or emitter and receiver, are no longer the agents of transmission but are

5. Preferred here is Jakobson's version of the notion which he asserts as an integral part of everyday conversation and communication (vs. Malinowski's study of the language of "savages"). Furthermore, Jakobson remarks that the phatic function is the first verbal one acquired by children, intent to communicate before being able to send or receive informative communication. Roman Jakobson, "Linguistics and Poetics" in *Roman Jakobson: Language in Literature*, Krystyna Pomorska and Stephen Rudy eds, Cambridge, MA Belknap Press of Harvard University Press, 1987. pp 68–69.

instead communing with each other in alignment with, and by way of the object. The object is suspended as a Saussurean referent, neither signifier or signified, but merely a prompt to ask *what are we going to make of this then?*[6] In effect, it annuls the genericness of the object as would be conventionally referred to, and shifts the attention onto all the material specificities and behavioural particularities of that object—in the moment—for all the indications it may bring to consideration and contribute to the cohesion of the communion. The object, like the ping pong ball in each return, becomes indexical to its occasion. No longer a generic item, but a specifically inflected form which, like the shifting morphology of a Russian verb, is at once particular "object" and precise "event".[7]

This phatic reversal is actually more of a rupture, a derailment of the economic efficiency of communication. It demands instead that perceptiveness should once again take precedence over mediated conventions, and be dissociated from the set of assumptions required to meaningfully communicate impressions. There is something deeply counterintuitive and unreasonable about this, as it also messes with the assumed order by which one normally makes sense of objects and their usage. The joy however—whether it is in capsizing the rules of ping-pong or in knocking the underside of the kitchen table—comes from disobedience: that of deliberately switching from one course of action to the other, of attending to expectations only to drag them into a perceptual space where they will be derailed. A suspension where one is suddenly no longer hearing the note the music plays for the sound the instrument makes.

The slapstick hero is someone who wants to do the "right" thing. He leaves a trail of mayhem in his wake, launches everything he touches into veering trajectories of derailments, tumblings, or amplifying catastrophes—but never out of ill-intent. He was only doing his best to help, join in,

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6. As clarified by Kaja Silverman in her comparative study of Peirce's and Saussure's semiotic models. While Peirce's interpretant offers a very fluid commutability with object and sign in his triad, Saussure's referent is neglected and somewhat vacant vis à vis signifier or signified. Kaja Silverman, *The Subject of Semiotics*, NewYork: Oxford University Press, 1983. pp 4–25.

7. An observation Jakobson made of the many possible suffixed conjugated forms a Russian verb may take, straying away from the genericness of its infinitive stem. Roman Jakobson, "Shifters, Verbal categories and the Russian Verb" in *Roman Jakobson: Selected Writings Volume II -Word and Language* - The Hague and Paris: Mouton & Co, 1971. pp 130–147.

or in a broader sense, fit in. His mishaps are the result of his zeal in applying himself to meet expectations, and not out of mutiny or villainy. The disasters the hero provokes are in fact his failures to go with the common flow, to correspond to the assumptions of functionality from society at large.[8]

Since slapstick comedy as a genre is rooted in silent film–making—when dialogues between protagonists could only be achieved through intertitles—interactions are enacted not through direct speech but demonstrated through how the protagonists themselves interact with commonplace objects (or sequences of). Differences in characters within the films are signalled by the divergences in handling these objects—e.g the "baddie" will not interact with a revolving door in the same characteristic manner as the hero will; likewise, how our protagonist strains to keep up with a factory assembly line, next to his colleagues, informs of his divergence from the norm when performing the same task.[9] The narrative situation for the characters is established through a normative use and presumed functionality of objects, but the common understanding of functionality is subverted by the hero and exemplified by his misuse of these objects.

Essentially, in order to follow the storyline and get a sense of the characters evolving within it, the viewer is required to relate in turn to the expected generic functionality of objects and to its specific deviant uses by the protagonist. The viewer, in effect, has to identify with the operations of both parties of a slapstick scene, even if these parties fail to identify with each other (usually, the longer lasting this failure, the more erratic—and funnier—it gets). Watching a slapstick comedy is paying attention to a series of correspondences and deflections of assumptions between common-sensical and unexpected. The interactions with objects portrayed on screen are inherently what define the characters, how their respective psychologies are demonstrated. In other words, the objects are

8. There are of course exceptions to this rule. I am basing this claim on a figure common to the two titans of the genre: Charlie Chaplin and Buster Keaton. This figure, at its most archetypal will be found in *Cops* by Buster Keaton, in which Keaton endeavours to become a respectable self-made businessman (in order to marry his love interest) only to launch a series of calamities which sees him by the end chased by all of the city's policemen. Buster Keaton, *Cops, dir.* Edward F. Cline and Buster Keaton, Los Angeles: First National Pictures Inc. 1922.

9. As exemplified in the famous sequences from, respectively: Charlie Chaplin, *The Cure*, dir. Charlie Chaplin, Los Angeles: Mutual Film Corporation, 1917; and Charlie Chaplin, *Modern Times*, dir. Charlie Chaplin, Los Angeles: United Artists, 1936.

these pivotal inflection points through which the relationships between the different characters are understood.

The slapstick comedy set is thus a collection of props to be orchestrated through various uses and misuses.[10] This however requires that the objects used are commonplace: they need to be generic enough in order to recognise their usage and function with the greatest immediacy. Objects with respect to their usage by the various characters then act as indices. The usage will be generic for "normal" characters, and deviant and specific for the protagonist. In either case, the objects need to be well recognised and identified for the viewer to relate to them as pivotal.

Not hearing the music for the sound the instrument makes is what happens in Helmut Lachenmann's *Pression*—a solo work for cello which bears all the hallmarks of slapstick in its premise. Moreover *Pression* (like much of Lachenmann's oeuvre) is a thorn in the musicologist's apparatus for which the conventions of music as ultimately tonal have to cave in, pointing instead to a need for another type of musical understanding.[11] In particular, *Pression* plays on assumptions of instrumentality and its correlate—mastery—as well as its dependability on causation.

At its core, *Pression* is a provocation, a piece for a single cello in which hardly a single note is played, and instead consists in a suite of noises a cello makes when not used like a cello should be —that is, to make the intended sounds it was built to produce as instrument. One may construe the piece as an exploration of the sounds a cello can make other than proper notes, but by judging by the concentration on the cellist's face, the piece seems far more an exercise in restraint and tautness of execution than mere random noising. Although, the work (as performed) is remarkable in the

10. The *Unknown Chaplin* 1983 documentary, makes this fascinatingly clear. Assembled from then newly discovered rushes, it shows the neverending quest for the right props and the radical transformations of the sets to coherently house them. Chaplin was famous then for improvising his scripts on set and during shooting. Kevin Brownlow and David Gill, *Unknown Chaplin*, 3-part documentary, London: Thames television, 1983.

11. A case made by: Christian Utz, "Liberating Sound and Perception: Historical and Methodological Preconditions of a Morphosyntactic Approach to Post-Tonal Music" in *Organised Sound: Sound and Perception in Twentieth-and Twenty First-Century Music*, Kunstuniversität Graz Muzik Theorien der Gegenwart issue 6, edited by Christian Utz, Saarbrucken, Germany: PFAU Verlag. 2013. pp 11–46.

profound attentiveness it demands and the controlled precision it displays (so much so that, as it progresses one comes to forget the provocative premise the piece is drawn upon), it remains a work of mischief in the slapstick vein. Not only is the cello not employed as the instrument it is designed to be, the cellist is here producing the kind of noises he is usually hired and under contractual obligation to suppress and avoid making. The contrast between the cello emitting any other sound than what a cello is expected to produce, and the deep focus involved in performing the work, only emphasises how intent it is at subverting and diverging from the expectations and assumptions of a cello as instrumental for a musical work.

Reading the gestures of the cellist while plainly seeing a cello in his hands, one is confronted with mixed and oscillating signals: one sees the cellist with the efficient touches of the expert—exerted with a solemnity certainly courted, and perhaps overplayed in the performance—while the sound itself, unseen, is more in line with the alternatively timid or strident attempts of the neophyte. As such the performance becomes a display of the relationship the cellist has with the instrument in his hands. While watching a performance of *Pression* one gets a sense of a palpable search for of control as well as its assertion. A scouring to connect matter with effect, touch with sound, but also of guessing, hinting at the instrument's gestalt while altogether circumventing its function.

An important notion is raised by the piece, that of "hearing-in", of needing to root the initial ambiguity of what one hears to an intended action.[12] Upon hearing an unexpected sound, an instinctive reaction is to find out what caused it in order to identify and rationalise it. In Lachenmann's *Pression*, the caveat which allows one to appraise the work as a piece of music is indeed that it requires the listener to effectively turn a sequence of noises into sounds, through associating them to a source: the actions of the cellist on the cello. During a performance of the work, the spectator plainly sees the cellist operating the cello, the sounds however come from outside the customary instrumental delivery of the cello. This has the contradictory effect of turning a listener into a spectator pre-empting the sounds about to be produced often at the detriment of the

12. A notion Christian Utz attributes to Andy Hamilton. Ibid, p 32.

purely aural content. Furthermore, this makes *Pression* a work to be seen as well as heard at the risk of remaining outside of its musical reach.[13]

Rather than "hearing-in", Andy Hamilton actually writes of a twofoldness of the musical experience: of hearing sounds, but then of also hearing them as produced for the purpose of being enjoyed as music. For Hamilton, the appreciation of music is both abstract and concrete, acousmatic—an art of tones independent of how these tones were produced—and non-acousmatic, a sensuous pleasure from these sounds having been produced at all (and with the latter facilitating the former).[14] In music, this second necessary step is usually fulfilled by having notes—ascertainable pitches conveying that the sounds heard have a tonal remit—or by having a graspable rhythm whereby the sequential repetition is the insistent evidence that music is being produced. That this process is often ushered unquestioned, doesn't mean it should be overlooked or considered dispensable. One ought to call it a phatic nudge.

*Pression* has however neither toe-tapping beats nor any sound that can be truly construed as a tone. Instead, the twofoldness is suspended between the instrumental and the merely causal. The sounds produced by the cello are so far removed from its usual tonal register—its instrumental framing—as to seem accidental or inadvertent. Yet the attention and the dexterity involved (matched with the earnestness of the cellist) preserves the hallmarks of virtuosity. An instrument has an actionable logic which is in this instance resisted, and gives the piece its slapstick tenour: the workflow of instrumentalist to instrument to rendition is rebuffed. Moreover, in avoiding playing notes all the sounds produced only serve to circumscribe the cello as object, rather than the instrument it is known

13. I have to confess here of having discovered Helmut Lachenmann's work through music literature, rather than having chanced upon it on my own. As a result I have first encountered the piece as a filmed performance on the Youtube channel of Pierre Boulez's Ensemble Intercontemporain. This means, perhaps regrettably, that I haven't experienced *Pression* as a series of steps towards identification of noises with corresponding gestures, and have instead come across the piece as fully disclosed, on video, thanks to the very adept switching of camera views, closing in on the cello and the cellist's gestures at the appropriate moment. Helmut Lachenmann, *Pression for cello* (1969–70, revised 2010). Performance by Eric Maria Couturier for Ensemble Intercontemporain, Cité de la musique-Philharmonie, Paris 04.12.2015. Published by Ensemble Intercontemporain youtube channel 25.02.2016, https://www.youtube.com/watch?v=Y-ELYzjFQcU (last accessed 23.09.2023).

14. Andy Hamilton, "The Sound of Music", in *Aesthetics and Music,* London and New York: Continuum books, 2011. pp108–111.

to be. And even though the work is scored and precisely timed, rather then a continued sequence of sounds which may articulate as music, the spectator has to contend with what may also only be a collection of discrete, noisy happenstances. This series of unrelated sound-events, combined with the delineation of the cello as object, are pivots to the becoming of the work as music. It is where both the musical lilt and provocation of the work are curled, waiting to be unfolded.

*Pression*, as a piece, evidently plays on this oscillation in hearing: of connecting musically to a sequence of carefully and deliberately produced sounds just past the edge of what may constitute music albeit with the help of a known instrument, while having this connection simultaneously deflated into a random series of surprising and abrupt noises emanating from that instrument as object. Clearly seeing the cello being played (even if atypically) anchors and classifies the sounds as those of a cello, any cello.[15] The eventness of the sounds one hears however annuls the genericness of "cello" as class of string instrument and instead shifts it to this very object being used at that moment (but which happens to be a slightly beat-up cello). And as much as there is hearing-in taking place in order to appraise the work musically, there is a counterpoise in hearing back out of it. When one hears out of the musicianship and instrumentality bond, sounds regain a certain ambiguity. In this indeterminacy arise the prospects of comparisons or analogies. Perhaps this motion rather than "hearing-out" should be called "hearing-else".

The foley artist also wants to do the right thing—and does it also through a divergent use of objects. The aim however is opposite with that of slapstick: where in slapstick the mis-application of objects is made salient, in foley work and sound design it is made inconspicuous. Its success is in that its effects should in fact go unnoticed. The divergent use remains, although it lies in that objects in foley are not at all what they are shown to be: bacon frying in its rendered fat will yield the pattering of rain; a bone breaking  in a fight scene is a celery stick being snapped; a heartbeat is a series of tugs at a tea towel; horses' hooves trotting on paving stones in a high-end victorian costume drama will actually be halves of coconut shells tapped on a formica table top.

15. Steve Beresford, doyen of the improvised music scene, multi-instrumentalist—but more often than not found at a piano—puts the toil of professional musicianship far too succinctly: "One of the great skills—and it's a particularly daft skill to have—is to make one piano sound like another". Steve Beresford in Andy Hamilton, *Pianos, Toys, Music and Noise -Conversations with Steve Beresford,* London and New York: Bloomsbury Academic, 2021. p 258.

Foley work is often conflated as an aural cousin of slapstick comedy for its cheering ingenuity and non-conforming use of objects, although the comparison only holds once the behind-the-scenes hocus-pocus is disclosed (the exception is in cartoons where sound-tracking is used to give presence and weight, and the sonic creativity applied competes with the visuals).[16] Where slapstick depicts contrasting interactions with objects to chart differences in characters, foley will seek to match expectations of the noise an object makes, with sound-events corresponding to what one sees in the rolling images. More often than not, the sounds employed to create that correspondence will be generated from the most unlikely of sources: an aberrant discrepancy which has a delightful slyness to it, when the sound expected and the sound used in its place are effectively indistinguishable, and yet couldn't be more unrelated.

Like the slapstick film-set, a foley studio is a large repository of objects each to be manipulated in a precise manner to help recreate and give presence to a representation of a world with which they bear no or only the flimsiest of relations. If the objects in slapstick need to be generic, instantly recognisable to act as pivotal, in Foley it is the sound which becomes generic in order to make the event irrefutable. Here's a remarkable ability: of being able to hear in the acoustic properties of an object, those of an altogether different object. And moreover, to hear a potential handling of an object—possibly in conjunction with another object—and tether the resulting sound into being something else entirely, but making it just as apt at passing for doggedly real. Reminding oneself while watching a film that none of the sounds that settle its diegetic realism are of what the objects present on screen actually are is both a startling and magical feeling which makes one wonder how extensive this trickery of perception may be. Foley turns sound-events into a cryptic charter which consolidates the presence of any images they may conjure.

An instrumental timbre is but one way of envisioning the broader notion of timbre. It is that which pertains to relatability, familiarity and characterisation of an instrument: a cello sounds like a cello because it is a cello. It gives the cello a cello-ness—the ideal tessitura of the instrument in

16. To mind is the term "slapstick" itself. A stick for the purpose of making a slapping sound. Originally called a *Battacchio* (literally: a "beater" in Italian) and used in *Commedia dell'Arte* to exaggerate the sounds of characters slapping each other. It is not even a stick—but consists of two slats of wood hinged or fastened at one end to form a clapper.

cardboard character form. As such, hearing an instrumental timbre is what disables the need for hearing-in. It provides instantaneous recognition of an instrumental source: a legit fingerprint with its own set of characteristics which marks it as distinguishable, and immediately identifiable from other known instrumental sources. Although instrumental timbre gives a musical composer a set to play with (a range of instruments to choose from), it also makes any instrument itself a generic set of tones (even if different from another generic set of tones). Fundamentally, it underwrites any music being sounded as causal.

This "causalist conditioning" is precisely what Michel Chion has spent most of his career wanting to see perish: timbre, in this sense, is that notion "which hardly disguises that you get out of it what you put into it".[17] Instrumental timbre reduces all sounds to their known source, an aural equivalent to objects whose names are the material they are made out of: the cork, the glass, the rubber, the tin...etc. Things condemned by their name to be archetypal, and whose very essence is the material integrity one insists is imbued in them. Timbre, still in this sense, is a sound's phenotype, its own causal determinism. To break away from its genericness and render a sound unique means delving into more causality by way of infinite regress in claiming the build of the instrument as truly one of a kind.[18] Or in ultimate quest for tone idealism by way of ever more gear purchased to help attain it.[19]

There is however no *the* timbre of an instrument, but instead *a* timbre for every single sound an instrument may produce, including non-musical ones. For Chion, this particular notion of instrumental timbre may only retain its value when applied to a very narrow tradition of tonal and orchestral music for which it serves as genuine variable and palette for sonic colouration. Extending timbre to not just any sound, but any sound-event—as the notion ought to but also as the evolution of music since strongly suggests—turns the notion into some gargantuesque "qualitative

17. Michel Chion, *Sound: an Acoulogical Treatise*, trans. James A. Steintrager, Durham and London: Duke University Press, 2016. p 174.

18. For example: the often silly mythology surrounding Stadivarii violins and their making, e.g. trees from a magically silent forest, selected and felled by the full moon by Antonio Stradivari himself...etc.

19. A case made by Robert Fink on the market for electric guitar effects in: Robert Fink et al, "Chasing the Dragon: In search of tone in popular music" in T*he Relentless Pursuit of Tone: Timbre in Popular Music*, edited by R. Fink, M. Latour, Z. Wallmark, New York: Oxford University Press, 2018. pp 1–17.

catchall" both inadequate and irrelevant. Maintaining the term only speaks, for Chion, of conservatism with regard to musical nomenclature. [20]

Taking inspiration from the Saussurean arbitrariness of the signifier-signified bond, Chion proposes instead the concept of synchresis in associating source and sound. Since arbitrary, the attachment is free of causalist underpinning and sounds liberated from having to have a ascertainable source to legitimate their being heard. Synchresis really denotes the spontaneous fusion of a visual phenomenom with an aural counterpart (or vice versa) regardless of causation (as exemplified in foley). It also turns the sound-event into a referent, this time loosened with regard to either cause or effect.[21]

That timbre is a contributor to a sound's source identification doesn't mean its effects are restricted to this function. On the contrary, a sound unidentified doesn't stop having a timbre, and the human instinct to immediately seek for a source upon hearing a sound-event—atavistically, to assess its threat-level—is precisely what will let all manners of evocations, analogies and images flourish to give a sound a grounding. An overblown shriek from a saxophone outside its typical and identifiable register will sound not unlike an asthmatic pelican having stepped on a sharp lego brick—the timbre switches from instrumental, objective to purely evocative and subjective. And if the likelihood of the sound's source is now highly questionable, its timbre remains present and very real.

Brian Kane, in his philosophical exploration of the notion of the acousmatic, posits that "the underdetermination of source and cause motivates a reification of the sonic effect. By bracketing an effect from its source and cause, I transform a sound from an event into an object".[22] Enticing a listener or viewer towards causal derailment and engagement in synchretic tomfoolery of perception is both playful, and abounds with image-rich promises. Accordingly, it will easily extend to not just sounds but to any object whose instrumental function is denied or eschewed.

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20. Michel Chion, "Dissolution of the Notion of Timbre", trans. James A. Steintrager, in *Differences: A Journal of Feminist Cultural Studies*, Vol. 22 issue 2 and 3, Durham: Duke University Press, 2011. p 237.

21. *Synchresis* is a portemanteau of *synchronisme* and *synthèse.* Michel Chion, *L'audio-Vision: Son et Image au Cinéma* (3ème edition), Paris: Armand Colin Editeur, 2013. p 57.

22. Brian Kane, *Sound Unseen: Acousmatic Sound in Theory and Practice*, New York: Oxford University Press, 2014. p 8.

Francis Ponge coined the term of "Objeu" to qualify his approach to poetic diversions from what a reader will assume and expect of the objects he writes about.[23] Ponge's writings take the form of descriptions of objects, forensic in precision but sly of intent, dragging these objects out of the safety of their known existence. A piece of steak becomes a factory, its fibres a pulsing network of pipes.[24] Scurrying shrimps in a tide-pool are punctuation marks to scattered thoughts escaping and dodging the desire for coherence.[25] More than odes to everything an object could be, Ponge's poems are instead stylistic exercises in examining an object's timbrality—a side-stepping and deliberate negation of their *topos* while remaining improbably precise descriptions of the objects nonetheless. Mastery of language aside, its po-faced objectivity as phatic prompt, reading Ponge is not unlike peering into the mind of someone absorbed in contemplation.

A bead curtain hangs right across the exhibition space. It is installed wall to wall and from ceiling (or lintel, or beam) to just short of the floor, partitioning the space and acting as threshold. Often, it is placed so that some more artworks will be visible on the other side of it, and it will dangle across the viewer's further continuation through the museum's rooms. It is more than a prompt or suggestion—one has to go through this bead curtain as part of the visit. The beads are golden, but not expressedly gilded. They are of the exact same mass-produced strands of beaded plastic one finds hanging in doorways of places southern and balmy enough to vouch for having windows and doors constantly open, and where such curtains prevent unwanted flying insects from wandering too far in, while letting people who inhabit these spaces go through as they please. These are moulded plastic beads of the golden variety, making a permeable and see-through screen inside a space.

Rather hackneyed as a saying, "being showered with gold" remains the stuff of myths. It is the vow of mythological kings to their heirs, the pacts of temporarily burdened princes to fairytale princesses, or the anointment of legendary warriors for having chosen the virtuous and moral fight.

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23. Portemanteau of *objet* (object) and *jeu* (game, play). [Le nous quant au soleil/ initiation à l'Objeu 133–136]. Francis Ponge, "Le Soleil placé en Abîme" in *Pièces* (1962), Collection NRF Poésie, Paris: Gallimard, 1997. pp 131–16.

24. Francis Ponge, "Le Morceau de Viande" in *Le Parti Pris des Choses* (1942), Collection NRF Poésie, Paris: Gallimard, 1997. p 64.

25. Francis Ponge, "La Crevette Seconde" in *Pièces* (1962), Collection NRF Poésie, Paris: Gallimard, 1997. pp 33–35.

Walking through the curtain speaks to the visitor of a reward for stepping into the beyond the strings of beads demarcate. A reward that could equally be a thanking gift for being there at all, an accolade for having made it this far into the exhibition rooms, or a promise, perhaps a lure, to pursue onwards with further hallowed offerings in the form of yet more artworks (note that these artworks may not necessarily be by the same artist as the curtain, and this reverence is very generously extended to other artists' own offerings).

A golden shower is also a very particular sexual act involving urination on a partner, an anointment of a whole different sort that is admittedly beyond the pale of most bedrooms. As the visitor goes through the curtain, the strings of beads with their colour and their sinuous motion espousing a person's features will become positively reminiscent of streams of urine. This inkling will find confirmation in the clickety-click of the beads, echoing that of droplets falling on a wet enamelled surface. Passing through, the viewer is confronted with a entirely different situation than the one conveyed when watching the curtain from afar. This viewer is met with a nudge and a wink, an invitation to hear in the curtain a divergent else, entirely unlike what the screen initially announces.

Going through the curtain is thus a baptism, but not in the form of a prank—nobody is actually getting soaked from bodily waste. Stepping through the beads is a mutual recognition of having grasped the licentious connection. As such it becomes a gesture of acknowledgement and tolerance for a sexual practice that can no longer be deemed deviant when it was so easily recognised.[26] One only had to go through a screen of beads, a screen permeating at once public and (extremely) private spheres, to make denial or acceptation of less normative dispositions just as permeable. The unwitting passage is very suddenly brought to wit, thanks to a perceptual sleight-of-hand—a metaphorical promise of riches while metonymically subverting it into a very different understanding only through little timbral peculiarities of an object as banal as a bead-curtain. The colour, concatenation, and clickety-click of the beads hold just enough inflections to turn a general image (i.e "showered with gold") into a playful, subversive mutual acknowledgement—much like the ping pong ball reversing rules at the beginning of this essay.

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26. This parable broaches poignantly on the artist's own homosexuality and gay rights activism. Rights which at the time of the AIDS crisis—when the artwork was made—were under a constant onslaught of admonition, and far too many bigoted claims of divine-or-whatever retribution for non-normative sexual preferences.

The further implication which brings the function of a curtain as object back to mind in very concrete ways is that the visitor unappreciative of the golden shower analogy will also stay irredeemably on one side of a metaphorical curtain, even while having physically stepped through it. Flimsy as a bead curtain is for a divider (i.e. not a bulwark between those who do get the analogy and those who don't), it still paradoxically performs a screening function: while all visitors go through, only those who did take the "golden" hint will receive tacit confirmation of having "passed". Tacitly still, it will encourage those visitors to watch others walk through the curtain in order to witness a similar recognition as they just had, or to silently cheer fellow visitors towards passing the screening.

Deeply irritating for many, Felix Gonzalez-Torres' systematic choice of titles—an *Untitled* followed by a singled word hinted in brackets—often registers as smugly convoluted and winded affectations.[27] Affected they most certainly are, but these titles also give a lovely and charming signal: a mark indicating that Gonzalez-Torres prefers not to cap his own work with a single resolution and smother it with an unequivocal meaning. The *Untitled* indicates that the work should stay open, free of rhetorics, while the brackets provide a little nudge in the direction of what the artist saw in the (usually appropriated) objects he employs. A spurring which never tries to compel but instead seeks to invite. The beauty in *Untitled (Golden)*—and this is to the artist's credit—is that the curtain remains "open". It doesn't seek to function as another metaphorical line in the sand: if not now, the golden hint will still be available at some other time. Yet, as porous as the bead curtain is—and the invitation to freely take the step and pass through notwithstanding—the acknowledgement is that there is indeed a curtain. A realisation more profound and accessible when one receives the full baptism.

This spurring also tells of Gonzalez-Torres' likely working methods, which cannot possibly operate from the isolation of the drawing table and programmatic calculations. Instead, it speaks of little, mundane yet precious epiphanies. One imagines Gonzalez-Torres, his mind busy and inhabited by various concerns, walking by chance through a bead curtain, suddenly realising that the combination of his action, the feel of the curtain's languid movements, its noise as the beads jostle

27. The artwork is *Untitled (Golden)* by Felix Gonzalez-Torres, 1995.

out and back into place, or the rippling consequential with his body moving through the screen, etc —all had an effect of crystallising and articulating these thoughts of his. A flash of congruence while passing through, which instantaneously made the bead curtain a clean and concrete precipitate, legibly mapping how concerns had a resonance outside of their expected and customary manifestations. Gonzalez-Torres has made several beaded curtains works. All work through sympathies, ripples in lateral planes and membranes carrying analogies of liquid surfaces enacted from transversal trajectories through them. They also carry the idea of exchange of liquids: perfusions, transfusions, ablutions, etc. Both *Untitled (Chemo)* and *Untitled (Blood)* have a clear subtext of invitation to empathy, with a more literal "going through...", while *Untitled (Water)* speaks of cleansing. *Untitled (Golden)* however appeals to the viewer's wit and cheek. It is the sole work of the series not to directly name the substance enacted by the beads. Instead, and by mere mention of its tinge, it intimates the viewer to complete the phrase.

The appropriation of ready-made objects in art-making is often termed a "deskilled" practice, with the implication of dilettantism in both general attitude and stance on workmanship in particular. This implication is however unfair when considering the studious attentiveness required in seizing how pieces of an intricate puzzle will fall into place, crystallised through the simple use of a common object—as is the case in Gonzalez-Torres' bead curtains works. On the contrary, and as in foley, there is a remarkable ability hiding underneath the expediency of means, the bona fide skill of hearing in—or hearing else—and of revealing the adjacency of unrelated matters in doing so. To intimate this joining of unlikely dots to a listener or a viewer, prompting a cheery commonality or rooting for the divergent interaction with a prop without needing to explicate any of it, is a further proof of competence in grasping the currency of these attentions. Thierry de Duve remarked in the inaugural use of ready-made objects by Marcel Duchamp that it reversed the hitherto expected appraisal of an artwork, from the subjective vision of the artist to something more universal. In the case of the ready-made, "the generic seems to precede the specific", a subversive vision coaxed out of an object which could only be designated as trivial and commonplace up until then.[28] The proficiency to achieve this reversal is perhaps other than the more traditional ones associated with art-making, but it is certainly

28. Thierry de Duve, *Kant after Duchamp*, October Book, Cambridge MA and London: The MIT Press, 1999. p 153.

not inexistent—it is only tacit and hiding in plain sight. In fact, this form of listening may be the single most noteworthy skill for art-making in a post-medium context.

Poetic meanderings need currency. They have to be grounded at the risk of only being the product of ethereal whimsy when not. Some familiar grit is needed to provide the friction for sense to reel out and flippancy to abate. One way to give any experience this shared currency is to reason it as such, then strive to give a thoroughgoing articulation as to how this specific experience relates to a wider and more common worldliness. The other way however is its inverse: to tap the generic and let its peculiarities spring back to when they weren't yet entrenched in the conventions that gradually made them unworthy of attention. It upends expectations of the commonplace by reminding that experience is a navigation of the generic and of its commonality more than it is a success at distancing oneself from it. Rekindling oneself with the anchoring of specific experience in the generic is a notion poet John Ashbery termed "the experience of experience".[29]

Perhaps, and at its core, the uneasy relation between experience and genericness unpicks what kind of reassurance one needs in the way knowledge is accounted for, when either traded or expressed. To validate knowledge is generally to correspond to some other party's assumptions, tick its boxes thereby confirming that agreement there is, only because the knowledge has thus been certified as mutual. However, there may actually be no greater proof of true comprehension than to have one tiptoe around the thing comprehended, contouring it with fiendish precision, only playfully and from without. An understanding delineated with the facetious agility of not engaging with it, but which lets one's counterpart erase, little by little, any doubt that understanding there is, skirting its edges like the Charlie Chaplin of *Modern Times* rollerskating next to a sheer drop missing a balustrade. It demands a suspension of the generic in order to look at its intricacies once again, to ignore the note for an instant just to appreciate its timbral details. It is irresponsible in some circles, proudly unaccountable in that it will shun explicit or literal stating, but also far, far more fun for those willing to lend an ear.

29. John Ashbery, interviewed by A. Poulin. JR., "The Experience of Experience: A Conversation with John Ashbery" in *Michigan Quarterly Review, Vol.XX, No. 3*, Ann Arbor: University of Michigan, 1981. p 245.

I recall another episode with my daughter when she was very young. We had taken her for the first time to the swimming pool at some special baby-friendly hour that some of these amenities offer. Since my daughter seemed to like the contact of water and very much enjoyed her bath-times, we had figured she probably would love the swimming pool; that a pool was much bigger than a bathtub entailed an even bigger enjoyment. She looked apprehensive straight away, alert but frowning even from the safety of her mother's arms. When we got into the actual pool, her expression turned to disquiet. She then started screaming in absolute terror at all these bodies and heads dissolving down only to reappear out of nowhere—a set-up which could have come straight out of a Cocteau film.[30] It turns out that water in large volumes when viewed from a certain angle under the mix of blue halide and orange sodium lights typical of sporting venues, will not only be mirror-like but a chaotic, mysterious and forbidding surface. I knew too well what a swimming-pool is. This I had forgotten.

30. The dark basin doubling as mirror and portal to the underworld from *Le Sang d'un Poète* is right on cue. Jean Cocteau, *Le Sang d'un Poète,* dir. Jean Cocteau, Paris: Vicomte Charles de Noailles, 1930–2.

**Bubbles.**

My father passed way in the course of pursuing this doctorate. The weeks immediately after his death were an endless stream of administrative chores and new queries about what to do with one thing or another, my father's possessions, subscriptions, etc—a constant bustle to contend with, along with the shock of his passing.

During this period, I also noticed something peculiar: my relationship with music had changed, in that I was no longer able to hear any. I would either get overwhelmed—and very quickly—or be intensely irritated by it. All my attempts at putting some music on were soon followed with shutting it down, swatting it like a pestering insect. To an onlooker then, I would have probably appeared to keep it all altogether, but this was evidence that my own self had been abraded raw to a point of finding any extraneous sound, even melodious, an intolerable nuisance. I was recoiling from music and found myself no longer able to ring along to it.

This was all the more incomprehensible since I was actually yearning for music, keen to find some of the companionable stability that it alone can impart, the warm weave of space and activity it brings to a domestic environment. I would have been happy then to feel I could rely on it.
If I was irritated, it was not because the music was unfamiliar or of a genre I disliked suddenly popping on the radio. The sounds would have been for the most part from my own record collection (though often prompted by some shuffling of playlists) and these would normally provide the aural backdrop of my being home, a uninterrupted sonorous fabric I usually freely listen in and out of. When overwhelmed, it was not because of the choice of music either. On the contrary, I would each time be surprised by the randomness of the effect. None of the musical numbers had a particular connection with my father which could have acted as a trigger. Nor would I select songs or pieces of a specifically stirring emotional range and put them on expressedly for the purpose of "having a moment". The stirring was totally inexplicable and seemed to operate far outside the margins of appropriateness.

It wasn't the music. It was me.

I was finding myself no longer fitting the image of my ordinary home life, and being cast out of the constellation of my own domestic setting—a universe of which I had assumed up until then I was the centre. Now I was the rogue one gone tone deaf in the choir, even when that environment was, at least purportedly, mine. The realisation was especially shocking since having embarked on this present research for a good three years by then, I was considering myself fairly attuned to matters of sound, presence, resonance, etc, and their ecologies. Discovering myself shut out of concordance with my own home life, and as result also taken to task on "my own" subject, was startling. Strangely, it brought to mind instances I recalled from parties as a teenager, which involved opening the parents' bottles of wine whenever the ghastly mixture we were previously drinking was depleted. As the first bottle would open, someone would usually mention that since we were about to drink wine, we should perhaps be drinking it from wine glasses. Only, some smart-arsed stoner would point out that the wine will be exactly the same whether drunk from a wine glass, the goblets we were already drinking from, or a cardboard cup. This remark had always sounded wrong, coarse and dismissive, but no one then ever had the wherewithal to dispute the implacable smart-arsed logic. And so, back at home after my father's passing, in silence, I couldn't help thinking that my immediate environment had been reconfigured, and that in this new distribution I was no longer the taster, the one calling the occasion, but the inadequate glass, an ill-fitting recipient unable to accommodate either sense of place or purpose.

It turns out that later in life one learns that the shape of the wine glass one drinks wine from is in fact terribly important. Without going as far as having separate sets for the pinot noir or the Barolo, one recognises that the glass does in fact affect the taste, and that the taste itself is really a matter of the wine mixed with one's perception of it. To drink wine from a specific wine glass is to let one's senses meet and blend with the wine's own compounds, but clearly it is the glass which facilitates and orchestrates this meeting. In that regard, it becomes easier to understand how matching a glass to a wine could become, at least for dedicated connoisseurs, a real interest or maybe, if not an obsession, a titillation and a quest for the most adequate host to initiate phenomenological rapture. In any case, perhaps it helps to think of the glass not as an existing vessel which serendipitously finds itself most suitable to a special vintage, but as a transparent contour drawn around a particular

event: an envelope. Each shape of glass already in the world would be, rather than template, a detailed memory tracing one such event, or a votive shape for one yet to come.

Although unexpected, learning that Giorgio Morandi spent a great deal of time arranging vessels on his studio table prior to painting them didn't come as a surprise. It was more of a comforting relief. I had always found Morandi's work enthralling, but I too had fallen for the lazy line of "the one who only painted bottles all his life" that usually introduces him—with the unfairly implicit hint that he was churning theses paintings out (which is not at all the case). So to imagine him in his studio staring blankly at groupings of bottles for days on end, before even thinking of building a stretcher in order to make the painting—as he apparently did—adds a welcome confirmation of the patient but blissful complexity of his work.

Aside from the obvious—that they depict objects on a table, and that they are in direct genealogy with Chardin and Cézanne—a good entry point in the figural nature of Morandi's work is to see several of his paintings at once. The apparent repetitiveness of the paintings will incite the viewer to look for what is different from one to the next. A prompt to look at what the image portrays which is not unlike seeing a photographic exhibition. Morandi's paintings will start to read like evocations of photographs. Old ones of family gatherings, where in commemoration of an occasion someone insists on a group picture in front of some doorway or other, documenting who was there at which celebration. Members of a family will start popping up in other images, just as one spots some bottles reappearing in different paintings. Sometimes a little flacon will crop up, hiding in the legs of a bigger parent bottle as if showing the family has a new member. And then, perhaps more historically accurate, they also look like picket-lines, cornered demonstrators in fascist-era Italy, or even more poignantly, comradeships of partisans taking one last group portrait on the morning before an assault, knowing full well that the same picture won't be as populous come the evening.

But they are not photographs, and they are not of people—they are paintings of groupings of bottles. They do not portray individual objects which can be separately parsed, but instead show how they stay in relation to each other—as Peter Schjeldahl very eloquently once put it "Morandi

cares less about what his painted objects are than about where they are".[1] And it is clear that Giorgio Morandi's concern was not what the various objects collectively present, but rather how they would decant as a group and enact their figural quality. As one looks, what becomes clearer still is that the grouping is not a sum of parts—on the contrary it is impossible to truly itemise the bottles again having seen them grouped. Temporally speaking, they are not photographs either. They resist acting as snapshots in time, as testaments sanctioning what was where and when. As paintings, they are outlines preserving a set of relationships, a contouring of a particular and precious meeting which envelopes each group of vessels like a breath caught in a soap-bubble.

As photos from his studio will attest, Morandi would actually paint the bottles themselves, chalk them, sometimes modify them, before starting with painting them on a canvas. This wasn't however simply to test for a colour palette, or for how the light would catch on the objects before being rendered in paint. He would actively work on the arranging of bottles and goblets as if this composition of objects were the artwork, and the painting of it mere documentation. In some cases, when the assemblage couldn't find a satisfactory outcome—and this could take days—he would resort to making the objects himself (usually by breaking and amending the existing objects with clay).[2]

As endearing as these anecdotes are, what is puzzling is the extent to which the two stages of his working—first the objects, then the painting—are independent from one another. They refute the idea of an integrated process, even though Giorgio Morandi has only ever produced two-dimensional works in the form of paintings and etchings. One could surmise that as a painter, he would work his families of objects from a certain angle and with a clear idea of how they would later appear on canvas. A cursory glance at how the line of the table meets the wall in the background of the paintings tells one however it is not so. He would move the canvas according to the objects, making the choosing of angles and perspectives positively part of stage two.

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1. Peter Schjeldahl, *The Revelations of an Unlikely Pairing,* "the art world" section, The New Yorker, issue 01 Feb 2021.

2. As recounted by: Laura Mattioli: in "Two Giants" in *Albers, Morandi: Never Finished*, New York: David Zwirmer Books, 2021. pp14-15; and "Giorgio Morandi: Questions of Methods" in *Giorgio, Morandi: Late Paintings*, New York: David Zwirmer Books, 2017. pp 83–88.

Furthermore, his preference for cylindrical or rounded objects indicates a certain wish to not rely on too-defined a perspective or on the clarity of straight lines. He sought a space where two and three dimensions would begin to blend into each other. Again, this only serves to make Morandi's obsessions with getting a groupings of bottles right all the more intriguing.

A guess is that Morandi was awaiting a sense of activity: for the behaviours of his bottles and vessels to collectively gel as one entity. It may well be something better understood in aural terms rather than visual—as a process made more graspable in terms of sound-image than of overall appearance, thus substantiating an activity that would be more heard than seen. Morandi's choice in applying colours can already be qualified as tonal—or even micro-tonal, judging by the thin greys, ochres, and beiges he was using at the end of his life, only just pulsating over their own faintness. But if this tonality maintains the contrast between the painted objects, it does not account for their being brought together prior to painting. In judging how nicely something comes along, the German language would say *es stimmt*, a verb which refers as much to the noun *Stimme* (the voice or the vote) and to *Stimmung* (a tuning, a mood, an atmosphere). More than looking for the completeness of a picture, he was listening for a collective clamour, a consonance the bottles would altogether have.[3] What accounts for the slow pace in finding a suitable grouping is the process of reconciliation from clamour to cumulative appearance. Eyes are brisk at isolating each element back out of a group, and the single perspective they imply already so discriminative. Ears, on the other hand, can strive to fold various elements into a cohesive if not entirely harmonic polyphony.

Morandi's paintings point to a mode of working more akin to how a composer would decide which instruments to include in a symphonic movement—for what is there called colouration. A process which is as simple or complex as trying different sonorities to hear how they weave but also paying attention to their effects when fused in combination. No one is supposing that Giorgio Morandi went around tinkling bottles and vases trying for sound, although the image that emerges from the sense of contiguity of all these objects sounding with one another is probably right. To borrow Michael Fried's words on objecthood, a "persistently renewed presentness" rather than a mere "presence", will be far more effected by the flux and adjacency of sounds than by the delineation of

3. In her *Listening to Images*, Tina Campt chooses "hum" for this phenomenon. Tina M. Campt, *Listening to Images*, Durham NC: Duke University Press, 2017. pp 3–6.

separate volumes—especially when these volumes are themselves are deliberately woozily handled.[4] Short of lending the photographs they evoke actual voices, thinking the arrangement of bottles as a chatter is just what may keep the soap bubble aloft.

Produced with a more avowed liminal outlook is *The Drift*—a 2006 Scott Walker album for which a documentary film was also made.[5] In the filmed interview, Walker speaks of wanting to rid the album of any musical clichés, and working the music as "block of sounds" with a conceptual, sculptural approach rather than a more traditional musicianship.[6] The album has no real melodic lines (apart from some sung ones), no grand instrumental embellishments, hardly any chords that would give each song a precise key or musical orientation. And although the music is by nature time-based, the overall impression upon listening to the album is that of spatial approach, of placing the sounds as objects in relation with each other—arranging them in front, on top, behind or beneath one another. Rather than working with a timeline as would befit musical notation, how the various elements in the music combine suggests they have been worked as if on a plane. Although the songs are finally rendered with a "heard" perspective, Walker's mode of working echos that of Morandi's placement of objects on a table.

And the sounds Walker wanted are objects, physically so. The footage from the documentary taken in the recording studio shows how each sonic element was produced independently of the others. All sounds (or specific sequences of) were recorded one at a time, to avoid the musicians falling in line with each other and start swinging. Furthermore, the sounds are conceived as objects. Even instruments—when used—are either detuned or played atonally to keep only a simple suggestion of instrumental texture as placeholder. Rhythms are upset and also produced individually, but not from customary percussive instruments. Sections of scaffold poles are banged with an array of different hammers, wooden, rubber, metal, plastic, or other random objects. In search of a literal

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4. Michael Fried, "Art and Objecthood" in *Art in Theory 1900-2000: An Anthology of Changing Ideas*, Edited by Charles Harrison and Paul Wood, Malden and Oxford: Blackwell Publishing, 2003. p 845.

5. Scott Walker, *The Drift*, London: 4AD (cad2603), 2006.

6. Scott Walker, *Scott Walker: 30 Century Man,* dir. Stephen Kijak, London: BBC and Verve Pictures, 2006. nb: the interview bits I mention didn't make the final cut, and will actually be found either in the DVD extras (distr. Oscilloscope Pictures and Missing in Action Films Ltd, 2006), or online: https://www.youtube.com/watch?v=WCtg1APFI1c.

deadbeat and to avoid the stereotypical wack-boom of a drumkit, the percussionist is seen punching and slapping a side of pig purchased from the butcher.

In 2006, most of these sounds could already have been digitally produced, outsourced or tweaked in a computer. What is remarkable is the extent to which the sounds are fashioned to the exact sonority Scott Walker wanted to hear. Contraptions are made, such as a big plywood cube on which a galvanised steel garbage bin is dragged, just so that microphones can be placed in order to capture both action and reverberance. If hearing these various sounds on the resulting album already suggest an assemblage, seeing them being produced puts them in a whole different light, these become sculptures in motion, densities and volumes put in relation for effect—fixtures and objects that could have been made by Giovanni Anselmo or Gilberto Zorio. Things upon things in activation, with their cumulative effect arranged further in the editing booth.

In both Giorgio Morandi's and Scott Walker's cases, objects are at once discrete and aggregated, individually there and folded into a whole. They are physical in the sense that neither can be sensibly perceived as entirely visual or aural, as exclusively objects or events. Composed, they retain an integrity that is exactly of what they are while also bringing something else. One speaks of a recalcitrance of materiality when approaching how things resist or conform to what one wants of them. The notion that raw materials need to be tamed into a form is indeed central to the old-fashioned dialectics used to describe the art-making of yore. Objects for Morandi or Walker are however handled with a very different kind of respect. They are more groomed than tamed, put into existence with dedicated attention, mindful as to how they will legitimately occupy their places. In this sense they are recognised as having agency, not conferred by use but inherent in the objects and on their own terms. This acknowledgement of agency in place of integrity alone opens on to a very different way of working with objects. If Morandi didn't bang his objects together, Scott Walker very much did—for both however the objects' sense of relation to one another coalesce as events.

What puts Morandi and Walker in relation to each other is a sense of *Klangfarbemelodie*, from Arnold Schoenberg's suggestion that differences in sonority, in timbre, are enough to carry a

melody even when all notes played have the same pitch.[7] Whether it is Walker purging his output from overly-expected musical features, or conversely Morandi arranging bottles until they return a satisfactory murmur, both combine attempts at spatial formations with a sequential lilt, the hint of successivity produced by combination. Isabella Van Elferen writes of timbrality as "the co-existence of ontic sound matter and imagined sound world", "the impossible presence of the most physical within the most ephemeral, and the other way around", a remark which applies here to the sense of activity from a collection of objects rather than, at its most basic, a single sonic event.[8] Borrowing sculptural terms used by Jason Gaiger, to an appraiser, whether viewer or listener, this activity entangles two forms of "imagining" in engaging with a work: a "projective" one in which the appraiser participates in what is being presented in a sequential manner, and an "ampliative" one in which he or she is prompted to speculate on the conditions within which what is presented has come to be.[9]

Rosalind Krauss, in her book *Passages*, puts the advent of modern sculpture at the moment when all the information of a sculpture slid to its surface. Everything to be read is now meeting the eye and is no longer relying on a skeleton known to be sustaining a form from within. Krauss sees the whole of Rodin's *Three Shadows* (one of her examples of modern sculpture zero) as the surface of an envelope, dissociated from the anatomy or sense of proportions that would have hitherto consolidated such a figurative sculpture in a viewer's eye. The entire surface is inscribed with the making of the sculpture —how it was shaped, what it is made out of, all perfectly legible from its outermost layer. Krauss's reading is brilliantly counter-intuitive, converting all notions of integrity—whether of the figures' bodies, or of the sculpture as material—as a topological script, a surface code offered to the eye.[10]

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7. Arnold Schoenberg, *Theory of Harmony,* trans. Roy E Carter, Berkeley and Los Angeles: University of California Press, 1978. pp 421–422.

8. Isabelle Van Elferen, "Timbrality: The Vibrant Aesthetics of Tone Color", in *The Oxford Handbook of Timbre*, eds. Emily Dolan and Alexander Rehding, Oxford: Oxford University Press, 2018. p 72.

9. Jason Gaiger, "Projective and Ampliative Imagining", in *Philosophy of Sculpture: Historical Problems, Contemporary Approaches,* Kristin Gjesdal, Fred Rush, and Ingvild Torsen (eds), New York: Routledge, 2021. pp 17-32.

10. Rosalind Krauss, *Passages in Modern Sculpture*, Cambridge, MA and London: The MIT Press, 1981. pp 18–31.

Krauss' view of the *Three Shadows* nods in a sense to Lyotard (without citing) in that it defeats the impulse to talk about three bodies. Their shunning of rational proportions and of their relatable immediacy steers them away from being designated as such, and instead asks that one addresses them as figures. They are now surfaces inscribed with the distortions and reality of their making, fused as a singular membrane offered to the viewer's eyes, keeping designation and signification apart. Krauss' reading has turned a heavy bronze sculpture into a soap bubble, iridescent with reach and oblivious to its own heft.

But then, how does one speak of a bottle? Or of any object whose gestalt designates what it is, where any liberty with shapes or proportions will simply change the bottle, to pitcher, to pot, to carafe, to flacon, etc., simply calling for another name for another object?

Assemblage is the go-to term in art for when things are thrown together. It came to be considered a rightful "new medium" in the course of the 20th century.[11] Its development, remarkably, runs parallel to the emergence of art's very own vacuum chamber: the white cube. Central to the assemblage is the issue of sum of parts, where the artwork is the global and collective impact of the elements which have been convoked—the forest to its constituent trees. To truly speak of an envelope in the case of the assemblage, rather than a collection, it would have to be one drawn from without. A contour which usually needs signalling by a frame, a screen, a plinth, a dedicated space. Nonetheless, there is a point at which the assemblage will be experienced by the viewer in the moment of viewing, shifting that experience from collected and contained vision to event.
The problem of an assemblage however, is not so much that the appropriated objects can't be seen as surfaces, but that their being known as objects actually inhibits it. That the objects can be named, are nominally specified as what they are, already confers them with an integrity that will disable their possible shift to envelope, be it singular or aggregated. Being identified dooms the object to being designated, a fact that forecloses its full integration to a bigger whole.

11. William C. Seitz, *The Art of Assemblage* (exhibition catalogue), New York: The Museum of Modern Art (distr. by Doubleday), 1961. p 87.

The notion of global timbre is distinct from that of instrumental timbre. If instrumental timbre denotes the set of characteristics that lead to the identification of a sound source, global timbre is the property of "fused events".[12] When two sounds occur simultaneously, their respective timbres merge as a third timbre: an event in its own right and which is itself distinct from the sum of its parts. While it may be explained as an aggregation of timbres, as an object of study this third timbre is actually modelled as an integral, i.e a brand new specific envelope contouring initially separate timbre dynamics. These initial timbres of course have distinct envelopes all of their own, so one is really looking at integrals moulding themselves into tortuous Venn diagrams.

Global timbre as phenomenon is heard in sound synthesis. A synthesiser produces envelopes of various sound-waves, which if reverse-engineered and thanks to perceptual fusion, will act as a set of overtones to a fundamental frequency. The range of envelopes they can produce is, at least in theory, infinite. These resulting infinite sounds however have the inconvenience of being unrelatable, so synthesisers are instead commonly used in mimicry of existing instruments—albeit with the convenience of a single set of controls.

Another aspect of global timbre is found in colouration—when the compounded sound of different instruments playing simultaneously transcends the additive familiarity of the instruments themselves. An orchestra can yield many different sonic envelopes, all different from the sum of the instruments involved. The orchestra becomes thus an instrument in its own right. This effect became an central preoccupation for symphonic composers as they attempted to learn how to control it. But to truly become a compositional tool it would have to be reconciled with how the voicings and tonal arrangements of singular instruments are laid out in paper notation.

This colouration feature of global timbre is besides a key to understanding how music separates into different genres that are instantly recognisable to a listener. And while one cannot speak of a timbre for polka or a timbre for hip-hop—the same way one may speak of the instrumental timbre of a instrument—a genre of music will have a fairly specific sets of characteristics given, not by the instrumental timbres, but by a tell-tale combination of envelopes and a rate of their occurrences

12. Kai Siedenburg and Stephen MacAdams. "Four Distinctions for the Auditory 'Wastebasket' of Timbre" in *Frontiers in Psychology,* volume 8, Article 1747, published online 04 Oct 2017. p 3.

following a signature rhythm. In this respect, it is not too different from considering genre paintings according to sets of pigments, and speak of the "palettes" of late 16th century Flanders or 18th century Loire Valley painters—or, incidentally, of early, mid-career and late period Giorgio Morandi.

Within a genre, global timbre reckons with alignment and the formation of envelopes. To hear a banjo, a fiddle and a piano each playing at the same time may well sound as three distinct, recognisable instruments playing concurrently. Yet, if heard with a certain configuration, a very special alignment of the sounds, a listener will stop hearing three distinct sounds and instead hear "country music". The understanding of the event is transformed. The consort of sounds is no longer a sum of parts, but a fully formed encapsulation and sound-event in its own right. Furthermore, this sound event is also sound-object, and as such it is a manifestation that stands for, in temporary and minute form, an entire genre of music with its own set of traditions and references. Access to this bigger sound-object was granted merely by the amalgamation of the three smaller and distinct sound-objects. Philosopher Timothy Morton would call this larger one a *hyperobject*.[13] If this transformation can explain what happens as Morandi moves from bottles to groupings of bottles, on to full composition, while also shifting from actual objects to painted representation, it remains within a certain class of objects. But while these objects have an inherent kinship, which lends itself to the grouping or composition, they point to an instance where their collective envelope is hyper to the objects therein—a new set to its members.

At this point, it is worth asking whether artworks have, or ought to have, an ontology as objects at all, or whether it is all a matter of fragile contourings of different congregations of things. The content of the contour is given levity by the activity therein, by its eventness albeit with a persistent and inexhaustible happenstance. Should that activity be too easily read or explained to become entirely communicable, the bubble pops. One needs to think of a contour as a resonance captured, the plangeance of disparate elements in contact with one another, but at the same time collectively cleaved from all other noises.

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13. In the sense that: "hyperobjects [...] are 'hyper' in relation to some other entity, whether they are directly manufactured by humans or not"—not in the sense that country music will outlive human kind or outlast ecological collapse. Timothy Morton, *Hyperobjects : Philosophy and Ecology after the End of the World*, Minneapolis: University of Minnesota Press, 2013. p 1.

Joyceisms have a percussive nature which sets them apart from other portmanteaux words.[14] Appraised in timbral terms, they are very neat to model how objects interact. The sonic accents of James Joyce's writings were a matter of obsession for John Cage who dedicated several works to the writer. Ever since he decided to forgo tonality and pitch altogether, Cage's efforts were directed towards appreciation of noises, as a way out of letting sounds fall back into musical stereotypes. Cage enjoyed sounds to have their own activity, independent of intentions, and disliked the idea of these being directed. This originally led Cage to concentrate on pieces for percussions only, which brings his attention to Joyce's compound words and to the singularity of individuated sounds in a very special light.[15]

An example is *smilesmirked*, from *Ulysses*.[16] If one follows Lewis Caroll's logic with *slithy* meaning "lithe and slimy", *smilesmirked* should really have become *smilrked* or *smirkled*: a complete blending of the two words to result in a third.[17] Encountering *slithy* without Caroll's explanation, a reader is unlikely to deduce both initial words from the result of the portmanteau operation. *Smilesmirked* is different is that it keeps both the initial words perfectly legible, albeit fused without an additive linkage or incremental accumulation by way of hyphens, conjunctions or commas. The compounded form underlines how it is a smile and smirk together and at the same time, with neither being more pronounced than the other. Importantly, *smilesmirked* is visual: it jumps at the viewer as two words in association.

Percussive instruments have an asymmetry built in. The sound is said to be that of the object at the receiving end. A cymbal being hit produces the sound of a cymbal, but is not acknowledged as the sound of a cymbal being hit by a wooden drumstick—even with the understanding it would sound

14. As termed in an interview between John Cage and Peter Dickinson: Peter Dickinson, *CageTalk: Dialogues with and about John Cage*, Rochester, NY: University of Rochester Press, 2006. p 26.

15. Nb: living in German-speaking Zürich, Joyce would have been well-acquainted with German compound words, which differ from the portmanteau in the english language literary tradition.

16. OED, s.v. Smilesmirk https://www.oed.com/dictionary/smilesmirk_v?tab=meaning_and_use Accessed 11.07.2023.

17. The OED attributes the word *portmanteau* to Lewis Carroll with *slithy* as first ever example. OED, s.v. Portmanteau (figurative 3.b) https://www.oed.com/dictionary/portmanteau_n?tab=meaning_and_use#29333096. Accessed 11.07.2023.

very different if hit with a cooked spaghetti. Likewise, a timpanist has at hand an endless panoply of sticks and mallets, and will constantly be swapping those to actually act on the sound. Nevertheless, the timpani, not the sticks or mallets, are considered the instruments.

A sounding is always the product of a contact—nothing spontaneously bursts into sound. To bang a bathroom door with a piece of two-by-four isn't the same as sounding a cymbal or timpani—it doesn't follow the above rule of instrumentality.[18] Both objects are acknowledged as contributors to the overall effect. It combines the properties of both objects, in that the sound would be other if one were to bang the door with a rubber duck, or a pedal bin with the two-by-four. Yet, the sound produced will be a merger, making it impossible to distinguish the bathroom door from the two-by-four—in portmanteau terms, it is a *slithy*. With *smilesmirked* however, the properties of both terms are maintained, ambivalent in that the meaning of each is contradictory to the other, indicating at once gladness and disdain. It is fused in the sense that both meanings are coincident and commensurate, neither having dominance over the other. As sonic event, it implicates the two sounds as fully identifiable but whose collective envelope has a jarring and uneasy quality. In terms of its production, it would be akin to hitting or dropping two vastly different sounding objects so that their resulting sounds occur at exactly the same time.

It is the same impulse that makes one write of "thing-power" or of "matter-energy"—an attempt to at once name the separate concepts while invoking their synergy as envelope.[19] It shows as a votive form, displacing the concepts towards a singular object: the product of the concepts' osmotic agencies.

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18. "If I want a sound, I usually feel better if I've chased it and killed it, skinned it and cooked it. Most things you can get with a button nowadays. So if I was trying for a certain drum sound, my engineer would say: 'Oh, for Christ's sake, why are we wasting our time? Let's just hit this little cup with a stick here, sample something (take a drum sound from another record) and make it bigger in the mix, don't worry about it.' I'd say, 'No, I would rather go in the bathroom and hit the door with a piece of two-by-four very hard'". Tom Waits, "The Sultan of Sleaze", interview with Pete Silverton *You magazine* (Late Summer 1985), in *Tom Waits on Tom Waits: Interviews and Encounters*, ed. Paul Maher Jr., London: Aurum Press, 2011. p 157.

19. As found in: Jane Bennett, *Vibrant Matter: A Political ecology of things*, Durham NC, and London: Duke University Press, 2010. p 2.; and Christoph Cox, *Sonic Flux: Sound, Art, and Metaphysics*, Chicago and London: University of Chicago Press, 2018. p 6.

A smilesmirking of two actual objects can be seen in an episode of BBC's *Human Universe*, in which Brian Cox sets to recreate Galileo's tower of Pisa experiment intuiting the nature of gravity —this time inside the world's largest vacuum chamber.[20] The experiment consists in concurrently dropping a bowling ball and a bunch of feathers from up high. With the doors of the chamber wide open, the bowling ball predictably hits the ground first, while the feathers scatter thanks to air resistance and slowly drift downwards. In the chamber now completely pumped free of air, the ball and feathers fall in concert, side by side, hitting a crate set to absorb the impact at exactly the same time. While seeing these two objects enact a physics entirely outside one's more ragged empirical habits is a fetching and unwonted sight, it is impossible to shake off the containment of the event. Taking place inside a vacuum chamber, the fall will naturally yield no sounding. It stays completely sealed off the bustle of reality beyond its reinforced aluminium walls. It certainly can't replicate the whipping, cacophonous effects Joyce's words have on his sentences or wider paragraphs.

For reasons that are entirely its own, the BBC team behind the program chose to air the footage only in slow motion and accompanied by a scientifically very dubious musical score. Perhaps it was to seal the event some more, making it appear thoroughly unreal. Perhaps a need was felt to adorn this seal with the filming conventions of suspension and wonder in order to soften the seclusion and make it less damning on screen.

This neutering by containment is also apparent in the recent series (2020-21) of digital "sculptures" by Urs Fischer, entitled CHAOS#1-500 and released as NFTs.[21] The series consists in 500 unlikely pairings of some 1000 found objects, each individually 3-D scanned, then animated in motions germane to their morphologies, so that the two objects on screen interpenetrate each other in endless loops. Many of these pairings fail to survive the sanctioning logic of juxtaposition, which wants as fast a resolution as can possibly be had. Some find slack rhymes of forms (e.g. dragon fruit with hand grenade, bagel and roll of tape, fortune cookie with a mouthguard), others invite quick rebus-like deductions (e.g. spark-plug and pregnancy test, neck-tie and chain). A few are obvious art-historical references that register more as clever asides than as fitting the premise of the series (e.g. Campbell's

20. Human Universe Ep.4: A Place in Space and Time, presented by Prof. Brian Cox, directed Stephen Cooter, BBC Two, first aired 28 oct 2014. (clip https://www.bbc.co.uk/programmes/p02985m0).

21. Urs Fisher, CHAOS #1–#500 https://www.chaosoahchaos.com.

soup can with blank canvas, a stool and bicycle wheel). The pairings which resists a quick conclusion and appear genuinely random are also the more genuinely intriguing ones. Yet, the objects never attain a chimera-like envelope state, as a portmanteau would. Instead, the two objects remain perpetually apart in a lifeless embrace, as if rather than converging in a balletic movement, the objects keep missing each other. One is left trying to link the two random objects, to gel them in a metaphor that never actually comes. Perhaps the point was that the coupling of these objects staying unresolved would become hypnotic, but the forms never truly mingle as would objects under observation. Rather than chaotic—as the title alludes—their rotation and motion are more consistent with the isometric self-sufficiency of mechanics, which has no need to reward an actual observer. Bereft of depth of field and against the white infinity background of floating product photography, the objects are condemned to stay themselves, sealed from everything else—a petri-dish in which nothing is predicted or initiated to happen. Unlike the bowling ball and feathers, they never hit anything, or come to the punchline of what one would call an event. Whether it is the hermeticism of a vacuum bell or that of a petri-dish, the isolation of what happens inside precludes its being read as envelope. Instead of a sense of activity, what transpires is a preserved, arrested state.

Concerns with the identification of sounds impending a genuine acousmatic experience of music are what led Pierre Schaeffer in search of a *Musique Concrète*. A tenet of this concrete music was that in order to experience music as acousmatic, listeners would need to engage in a "reduced listening".[22] They would need to concentrate on what they were hearing only and not connect it to anything outside of that present experience. Like the skeleton wielding the proportions of figures in a classical sculpture, the indexical information that led to a sound being relatable was for Schaeffer forbidding the requisite reduced listening. Any traceable indication of a source for a sound, or of the means that produced it were harking back to a traditionalist view of music, of a craft measured in competence and virtuosity that was an obstacle to a true art of sounds.

22. Michel Chion, *Guide des Objets sonores: Pierre Schaeffer et la Recherche Musicale*, Bibliothèque de recherche musicale, Paris: Institut National de l'Audiovisuel et Buchet/Castel, 1983. pp33-34. Chion with his *Guide* has endeavoured to write the glossary that was "inexplicably" missing from Schaeffer's *Traité des Objects Musicaux.* In it he highlights Musique Concrete's heavily indebted vocabulary to phenomenology and Edmund Husserl in particular, with concepts of "reduced" attention, of "bracketting", or "*époché"* among many others.

Schaeffer conceived *l'objet sonore*—the sound-object or sonorous object—convinced that sounds could exist independently of what caused them or from how a listener would pre-emptively perceive them—a sonic unit entirely free of information other than what it is as it is being heard. To form a sound-object required bracketing: isolating the sound-object from actual sounds thanks to the recording booth and tape-slicing techniques. A recording of a church bell would see its characteristic attack and decay cleaved off—once the clapper hitting the main body of the bell and the slow, persistent reverberation are rendered inaudible, relating this sound back to that of a church bell becomes impossible; only a pure plangent peal remains. In the case of the bell, the sound is pitched; but these operations on various sounds were also conducted on repetitive and mechanical sounds with no ascertainable or obvious musical value (e.g door creaking).

In some regard, Pierre Schaeffer anticipated Graham Harman's program with *Object-Oriented Ontology* and its positing that objects are always bracketed entities. For Harman objects exist in-between, they are bookended on one side by their possible *undermining*, and on the other by their *overmining*—an object is "anything that has a surplus beyond its constituent parts, and beneath the sum total of its effects".[23] An issue central to the *Musique Concrète* adventure was that clipping sounds from their indexical information meant getting rid of their timbres, both in the instrumental and global sense: on one hand, it got rid of the attributes with led a sound to be identified; and on the other, by singling out the sound-object it withdrew its propensity for blending with other sounds. From these bracketing experiments making sounds essentially abstract (yet called "concrete", with both terms used interchangeably), Schaeffer sought to constitute a new musical alphabet, a nomenclature of and for the sonic, wiping the slate clean of all musical conventions that had supported any harmonic theories up until then.

But in another sense, all that was left from these sounds after clipping was also their timbre, albeit in that aspect which offers no vocabulary that can truly express sonic distinctions. The pursuit of this alphabet therefore entailed finding a novel taxonomy for all the variables and acoustic features being yielded when tinkering with these sound-objects. The result was rather baroque in its

23. Graham Harman, *Object-Oriented Ontology: A New Theory of Everything*, A Pelican Book, London: Penguin Random House, 2018. p 50.

complication, and certainly didn't have the user-friendly universal appeal a steadfastly enthusiastic Schaeffer had hoped.[24]

Although Schaeffer's *Musique Concrète* research was pioneering for all the electro-acoustic developments that were to come, he did admit to the sterility of this initial scheme. Shelving the *Musique Concrète* project in 1952, he recognises that the sound-object when pushed into a systematic standardisation retreats into a "tiresome identity".[25] Robbed of any sense of reference, the sound-object becomes stilted—a shape both too abstract and too insistent to have the possibility of fittingness. Reassessing his approach to the sound-object in a closing statement to *A La Recherche*, Schaeffer thinks aloud, ogling in direction of the *arts plastiques,* impressed by seeing how Fernand Léger transforms an object observed into an abstract motif.[26] Years later, Schaeffer published a monumental treatise exploring what a sound-object *can* be, rather than what it *should* be. This volume proves much more attentive to the granularity of a sound-object, while not giving up on the acousmatic precepts of the original *Musique Concrète*. In many respects, the new-found attention to a sound-object's sense of reference prompts Schaeffer to think of these objects as pivotal in placing music between a science and an art, a language and a *jeu* (play).[27]

John Cage had profoundly different attitude to sounds from Schaeffer, one which tended towards assemblage. Like Luigi Russolo, Henry Cowell or Edgar Varèse before him, Cage renewed calls for more sounds becoming available to the composer.[28] The rationale was that this expanded palette

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24. Murray Schafer commented, wryly: "...a dazzling performance of French complexity". R. Murray Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World* (1977), Rochester VT: Destiny Books, 1994. p 134.

25. "L'objet résiste, il ne joue pas, il se fige dans une identité fatiguante, il s'impose." *The object resists, it doesn't play, it freezes into a tiresome identity, it imposes itself. (*my trans.) Pierre Schaeffer, *A la Recherche d'une Musique Concrète*, Paris: Editions du Seuil, 1952. p 177.

26. Ibid. p 184.

27. That *Le Traité des Objects Musicaux* begins with a battleplan of a chapter, a *Situation Historique de la Musique,* indicates that Schaeffer's ambition to reinvent music like one reinvents the wheel hadn't wavered. It had a newly-found vigour. Pierre Schaeffer, *Traité des Objets Musicaux (1966)*, Collection Pierres Vives (nouvelle édition), Paris: Editions du Seuil, 2010. pp 15–38.

28. John Cage, "For More New Sounds", in *Modern Music: A Quarterly Review*, vol. 19, no 4, New York: League of Composers, 1942. pp 243–245.

would affect the overall sound of the music being produced—steering away from the all-too-familiar sound and colour of the orchestra—prompting composers to reconsider what counts as tonal and harmonic (or atonal and inharmonic) and reinvent these relations from within these new sonic environments. Further calls asked for welcoming any noise at all in a non-discriminative sweep, and in stark contrast to Schaeffer's adamant commitment to assign musical value and operative metrics applicable to all sounds.

Cage's *4'33"* is infamous and has been held as anything from a spotlight on a re-imagined form of music to a clownish apotheosis of the modernist tradition it was claiming to break free of. It is however worth pausing over it with the concepts of bracketing and envelope in mind. The crux of the work is that even though no notes are played, the piece is far from silent—all the ambient noises become objects of listening, thanks in large part to the self-consciousness the piece arouses in its audience. Subsequently, the work is often mentioned as a kind of charlatan framing of nothing, but deemed artfully sufficient to proclaim that "everything is music" (in much the same grating way Duchamp is often said to have declared that "everything is art" thanks to a urinal). *4'33"* is bracketed by the decorum of opening and closing the work (David Tudor, the original performer was instructed to close the keyboard lid of the piano at the start of each movement, and re-open it as it finished—the piece has three parts). More pertinent than to wonder what has been bracketed in, is to look at what is bracketed out. That the piece made the events happening within more salient and consequently worthy of musical consideration is one thing, but another question should really be what the "silence" within does to the "silences" before and after the work. Presumably, either would have been even less silent than the non-silence at the core of the demonstration.

As Briony Fer notes in an essay on Eva Hesse's studio objects—objects which populated her studio and that Hesse never came to dub artworks—putting things under glass "sets them apart from all the potential things that may have been included". Fer questions whether this counts as a "hoard or a yield?", a way of safekeeping the object or of cementing it as artwork?[29] Cage's instructions for starting and finishing the piece would have hushed the audience, suddenly making the listeners aware of a window in which their attention was beckoned. In that opening, concentration was heightened,

29. Briony Fer, *Eva Hesse: Studiowork*, Edinburgh, New Haven and London : Fruitmarket Gallery and Yale University Press, 2009. pp 84–85.

and the hearing of silence as music made more likely. Absurd as it may seem to speak of vacuum bells for anything sonic, *4'33"* follows the principle of the assemblage in that it draws an envelope around a specific constellation to seal it as *hyper* from what is therein, i.e. music to ambient noises. Far from a transformation, the work is essentially a rhetorical cap over the event: a contouring of facts as paradigm, turning inadvertent noises for a given duration into an intentional episode—even if the trickery rests on the intentional glass cube being entirely inhabited by unintentional and discrete events. If *4'33"* has nowadays a more enduring legacy in the visual arts than in music, it could very well be because it is a visual gesture, a glass cube over aural phenomena.

An arrangement, as a musical term, is different from an assemblage in that it is more the reserve of a listener than of an an author. Because always a reconfiguration of what is already there, it can never be a grand authorial or rhetorical gesture. As Peter Szendy writes, an arrangement—if a signature at all—is one of a listening, of what an arranger has heard in the work of someone else. It can uncover aspects overlooked by or unbeknownst to the originator. Szendy remarks that it would be wrong to reduce an arrangement to the "adaptive or communicative function of a transcription".[30] Instead, and because it is an active reformulation of something that is already there, it is also a test of its plasticity. He calls it "*une écriture de l'écoute" (a writing of listening)*.[31]

Arrangements in the traditional sense belong to a time when music, not having the dissemination permitted by recordings, had to be transcribed to paper in order to circulate. An arranger would make versions of a piece of music. This would be a transcription from one instrument to another—taking care to adapt the phrasing of the notes to the physical and playing constraints of that instrument—or an arranger would perform acts of radical translation, from a fully scored symphony to chamber orchestras, to quartets, to duos, to piano alone. Oftentimes, arrangers had had no encounter with a musical work other than on paper, leaving the transcription entirely open to interpretations and personal sensitivities (although these renditions mainly pertained to tonal

30. Peter Szendy, "L'Arrangement Dérange...", in *Arrangements/Dérangements: La transcription Musicale aujourd'hui*, ed. Peter Szendy, Collection "Les Cahiers de L'I.R.C.A.M.", Paris: I.R.C.A.M. et L'Harmattan, 2001. p 10.

31. Peter Szendy, *Écoute: une Histoire de nos Oreilles*, Collection Paradoxe, Paris: Les éditions de Minuit, 2001. p 53.

matters). Paradoxically, as timbre opened a new dimension in sonic exploration with the advent of recording techniques, this type of arrangement started to disappear. A piece and how it sounded to the ear thanks to the new means of circulation was more likely to become enshrined as definite in this captured sonic form: a perfect adequacy of tonal and sonic, entirely consistent with the composer's intentions. Although the role of traditional arranger became obsolete from then on, attention as to how a piece is made manifest and would sound to its listeners has invaded all aspect of music-making: composers and musicians in search of the ultimate tone, but also conductors, record producers, sound engineers, etc. The difference is that the arranger can't quite remove himself from an arrangement the way the assembler can distance himself from an assemblage.

The narrator from Tom McCarthy's novel *Remainder* is struck with amnesia after an accident involving an object falling onto him.[32] He decides to use the handsome compensation he receives to re-enact what may or may not be a memory. The re-enactment involves the congregation of several varied instances, each with its own granularity and impossible scale of details: a crack of a precise line in the plaster of a bathroom wall, a fridge door whose catch upon opening has a peculiar yield, the smell of the downstairs neighbour's frying of liver wafting through the window, another neighbour fixing up his motorcycle in the yard, footsteps of cats on a red-tiled roof, the sound of a pianist two floors below rehearsing (and struggling) with a passage from a Rachmaninov concerto, etc. All of these have to find a fastidious if hazily sketched alignment. Blocks of flats are purchased, redone entirely in specific colour charts or tiles patterns in the common areas, bannisters are changed, the yard landscaped anew, a roof is added, participants are hired to be on call 24/7 for frying liver or playing piano or fumbling in the caretaker's cupboard. A luxury concierge service is contracted to oversee it all while keeping at the narrator's beck and call.

One problem the narrator encounters repeatedly is that no-one involved really understands what they are doing or why they are doing it.[33] The narrator himself grows capricious, and apart from the handful of people contracted to enable him, he doesn't see a need for any of the participants to know why they are doing what they are asked to do. This problem stems largely from the fact that

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32. Tom McCarthy, *Remainder* (2006), Richmond UK: Alma Books Ltd, 2011. nb: the episode I refer to is told in 6 chapters in the first half of the novel. pp 57–161.

33. Ibid, p 107.

the object, the project's intent and purpose, is different for the narrator than it is for the participants. Because this object is so elusive, rather than integrity it is a matter of fidelity. As far as the participants are concerned, they are employed to help shape someone's vision, each detail attended to in order to consolidate a bigger picture—a scheme, however, they are not made privy to. For the narrator the project isn't a grand realisation as the product of his imagination. On the contrary, he wants to anchor sensations he is convinced of having had before. He is trying to regain what he has lost, and seeks to ground all these impressions in a tangible reality that corresponds exactly to the one he feels he has already encountered. To him, the details are not reinforcements towards a general image but strands that need to map out, tracings waiting to find their perfect congruence and alignment to become once again present. All are thrown into a process of constant rehearsing, a chaos of scrapping and refining over and over, made all the more difficult to conclude when only he can gauge if the results share an accuracy with that patchy memory of his.

The object for all parties is an envelope, an integral in perceptual space of different features. More exactly, it is an envelope of envelopes, each of these features, when itemised, already a careful congregation of smaller features. But even so, an envelope is an envelope: it encompasses more or less, its foil warps according to what it contains only to meet the viewer's eye or the listener's ear (nb: in *Remainder*, it touches the whole sensory gamut, visual, aural, olfactory, haptic). No one involved in this project is inside a vacuum, yet all are thrown into the same bustle of activity: there are constant misunderstandings, logistic issues, things seemingly refusing to behave the way they are expected to. To all involved apart from the narrator, the project is entirely conjectural. They strain to circumscribe how all the various fragments will amount to a coherent whole, as a realisation which can only be achieved from without. To the narrator, the project is very real and coherent from the start, but it needs to be verified through the exactitude of details and of their concordance. The narrator scrambles to find this slice of a Venn diagram where the project is actually beneath the sum total of the effects (a sum all participants think they are working towards), but at the same time still in surplus of each individuated scene. He is working it from within. They fail to understand each other because while to everyone else the project is an assemblage, to the narrator it is an arrangement.

"Being true to the work" (*Werktreue*) as Lydia Goehr writes, is the romantic notion which cemented the idea of the autonomous artwork as a fully coherent entity. For musical works, it condemned any staging as an approximation of that idealised scheme which, right up until the emergence of recording techniques, had to be preserved in paper form. Goehr suggests that historically the concept of *Werktreue* in music is partly a transfer from "articulations of concepts of autonomy in eighteenth century Fine Art".[34] Although Goehr stops at this mention, it is worth remarking that artworks at the time had a clear delineation thanks to frames (or pedestals in the case of sculpture), insulating an image from others, or from the florid wall-tapestries on which they were most likely hung. Artworks then always had a very physical and gilded contour, preserving their activity as inherent. Musical works, to adopt this work-concept, not having the possibility of carrying a tangible frame, had to cohere from within.

When the phonograph arrived, the true, idealised work-concept in music could finally be enshrined in technique and laid on grooves as definitive. With this advent Friedrich Kittler ventured the prospect of a music rid and free of both human authors and listeners: "Thanks to the phonograph, science is for the first time in possession of a machine that records noises regardless of so-called meaning".[35] To be thrown into the world doesn't mean only vying for space with others or with all the stuff that is already there. It does imply however that one can't help but interact with things as a given—there is no walking without putting one's foot on tarmac, soil, parquet flooring, etc. Kittler's phonograph playing its autarkist and counter-humanist tune will still have a timbre if plugged-in or wound-up at all: a latent static buzz, a brittleness in its brass pavilion if old, or a huff in its speakers when more recent. There is no Hi-Fi equipment that can't betray having been made at all, as if it could shake off the noise of its presence anymore than dismiss its own shadow. And that is before one acknowledges the place made for that gramophone, how it warps the space around it, how it is invited to fill it with the waves it is built to emit. In that regard, it is but one element of a bigger elastic and fluid object. An object apparent only as an envelope but encapsulating a congregation the death of a parent can dramatically alter, commanding the

34. Lydia Goehr, "Being True to the Work", in *The Journal of Aesthetics and Art Criticism*, Vol 47, n°1 (winter 1989), Hoboken NJ: American Society for Aesthetics and Wiley-Blackwell, 1989. p 55.

35. Friedrich A. Kittler, *Gramophone, Film, Typewriter* (1986), trans. G. Winthrop-young and M. Wutz, Stanford CA: Stanford University Press, 1999. p 85.

gramophone to silence, ousting its listener from the bubble that was drawn at least temporarily around a situation. And yet, even then the gramophone's silence made itself felt.[36]

Jean François Lyotard never mentions timbre in *Discours, Figure.* He will repeatedly visit the notion in much later works, and in *L'Inhumain* he likens it to colour and its nuances, as "that which always differs" and "*désempare"* (disarms, overwhelms) therefore indeterminate and unrepresentable.[37] Lyotard also relates the two to the experience of the sublime, that which is perpetually missing precisely because it escapes the possibility of representation. Timbre and *nuance* suggest an "infinite continuum" outside of what can be explained, an uninterrupted but unamenable stability contrasting with the necessarily fragmented self of the post-modern condition.

To have a notion that speaks of minute material intricacies, of small meetings of distinct properties, while at the same time manifesting itself as surface to one's perception, implicating its listeners and tainting their affects, should be unthinkable. Neither deconstruction nor amalgamation, it is a notion which flouts every rule in constructedness or representation, jumping from neglected detail to compelling whole. Neither definitely perceptual nor absolutely physical, it brackets any sense of reality between these two, while also bookending that same sense between an ungraspability of the truly material and the nagging sentiment of being categorically there nonetheless. And yet, when it comes to objects and art-making, one has to wonder: what else is there?

36. Graham Harman does insist that one should however "maintain an independence of artworks and all other objects: not because nothing is never affected by anything else, but because nothing is affected by everything else". Graham Harman, *Art+Objects*, Cambridge: Polity Press, 2020. p 138.

37. Jean François Lyotard, *L'Inhumain: Causeries sur le Temps*, coll. Débats, Paris: Editions Galilée, 1988. pp152–154.

**Coda**

A graph starts to appear on the blackboards right behind Professor Paul Fry, as his *Introduction to Literary Theory* course progresses.[1] It will continue to appear in several lectures, with different entries and in different form as subsequent authors revisit the material of their predecessors stretching into a sequence which spans much of the development of ideas in the 20th century. The first graph to be seen in the sequence is in Lesson 7. Russian Formalism ***(Fig. 1)***. The graph is a standard cartesian X and Y (arrows missing), with "auto" scribbled under the X axis and "syn" to the left of the Y one. It is borrowed from Yuri Tynianov's own charting of the *syn-* and *auto-* functions, where *syn-* denotes how an element is "interrelated with different elements within the same work", while the *auto-* function refers to uses of that same element as "interrelated with similar elements in other works in other systems".[2]

The graph appears again in Lesson 8. Semiotics and Structuralism ***(Fig. 2)***, where it is now used to represent Ferdinand De Saussure's separation of language into *langue* and *parole* (on the blackboard shown as language and speech, with the French terms in brackets); as well as his opposition of synchrony and diachrony—whether a fixed snapshot in time or an unfolding along it (and with synchrony equated with Tynianov's *syn-function,* the only one of the two permitting for Saussure a genuine systemic approach to the study of language). Saussure is actually the originator of the graph seen on Paul Fry's blackboard. Saussure's graph is mostly known for having X as syntagm and Y as paradigm—although this is a later distillation of his work (probably from the Prague linguistic circle). The original graph from the *Cours de Linguistique Générale*, shows axes of *succesivités* and *simultaneités*—the order in which words must come, and all that these words may be in that given order.[3]

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1. Prof. Paul Fry, "Introduction to Theory of Literature", Open Yale courses (recorded and made available online 2009), Yale University. https://oyc.yale.edu/english/engl-300 (individual lessons available under sessions tab).

2. nb: Tynianov himself never used a graph in his essay: Yuri Tynianov, "On Literary Evolution" (1927), in *Readings in Russian Poetics: Formalist and Structuralist Views,* ed. L. Matejka and K. Pomorska, Cambridge MA and London: The MIT Press, 1971. p 68.

3. Ferdinand De Saussure, *Cours de Linguistique Générale* (1917), ed. T. de Mauro, Paris: Editions Payot et Rivages, 2005. p 115.

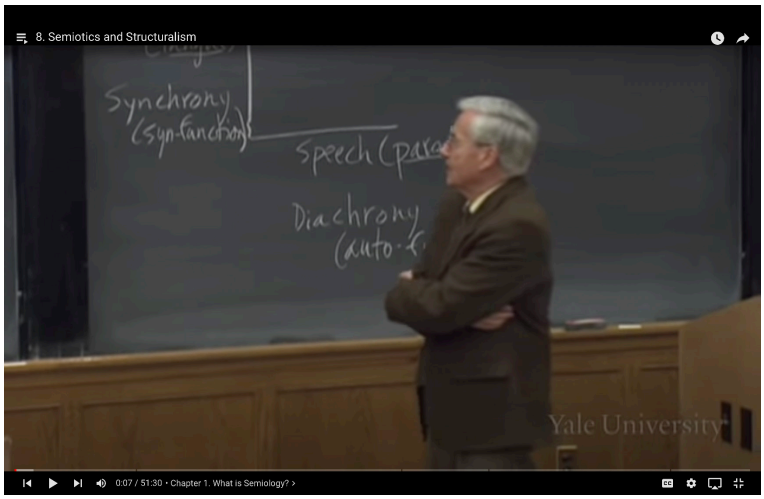
## Coda. Figures

*Fig. 1*




Screenshot from: Prof. Paul Fry, “Introduction to Theory of Literature”, https://oyc.yale.edu/english/engl-300/lecture-7. Recorded 2009.

*Fig. 2*




Screenshot from: Prof. Paul Fry, “Introduction to Theory of Literature”, https://oyc.yale.edu/english/engl-300/lecture-8. Recorded 2009.

In Lesson 9. Linguistics and Literature ***(Fig. 3)***—which introduces the works of Claude Levi-Strauss and Roman Jakobson—the graph now also reads the following entries: *rows* and *columns* (X, Y respectively), *metonymy* and *metaphor* (X,Y), *axis of combination* and *axis of selection* (X,Y). While rows and columns draw on Levi-Strauss and the fundamentals of structural analysis, the other two entries refers more specifically to Jakobson's essay *Two Types of Aphasia*, which uses the two figures of speech, metaphor and metonymy, to parallel the difficulty of either selecting or combining words in people affected by the ailment. Because Jakobson also uses the essay to explain the interplay of inference between metonymy and metaphor, the graph acquires a curve with an arrow pointing to the X asymptote.

Lesson 10. Deconstruction I, focuses on Jacques Derrida's response to structuralism and to Levi-Strauss' work in particular. On the graph are now inscribed ***(Fig. 4)***: *Voice (full presence)* on the Y axis, contrasting with *writing* on the X; *signification (signifier/signified)* on Y in opposition to *supplemental signifying* on the X; and *différence* (Y) diverging from *différance* spelt with an *a* (X), after Derrida's famous quip pointing at a difference that can be expressed and noticed in writing but not heard in discourse. The axes of the graph are also doubled with dotted lines—the X also has an interrogation mark between brackets at the right-hand end—as Derrida questions the stability and relevance of the graph as edifice.

Lesson 11. Deconstruction II, picks up from the previous lesson to concentrate on Paul de Man's work in relation to Roman Jakobson's. The graph shows once again Jakobson's articulation of metonymy and metaphor (for X and Y), although they are now between brackets ***(Fig. 5)***. Directly above each are written Grammar and Rhetorics (again X, Y respectively), after de Man's 1973 essay "Semiology and Rhetorics", condensing the two figures of speech as separate pursuits—towards discourse or towards writerly aims. The graph accordingly repeats the curve that was also visible in Jakobson's version of the graph, convex to the origin, with the difference that now both asymptotes have arrows pointing outwards. Although de Man adopts the interplay of inference from one axis to the other, also present in Jakobson, he introduces the idea of undecidability, making the two axes irreconcilable but also any text irreducible to one axis or the other.

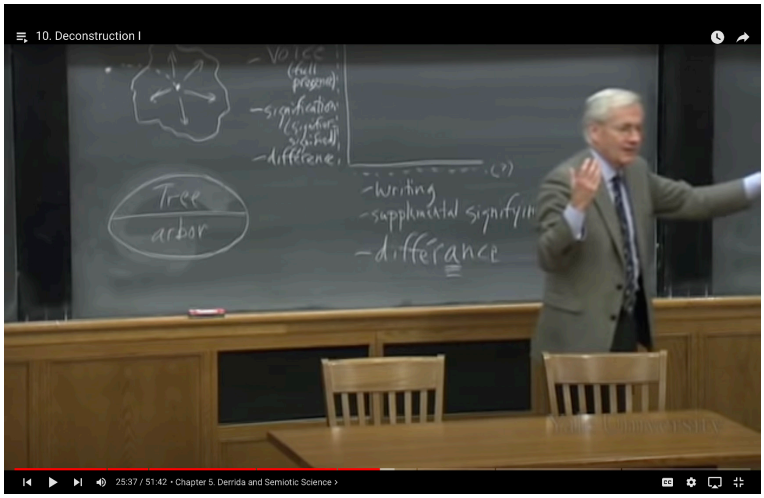
From then on, the graph in its customary cartesian form no longer appears. This doesn't however stop Prof. Paul Fry from invoking it in comparison with newly introduced thinkers, or from adding yet more references and articulations to the X or Y, by authors who did build on what the graph has so far established. In Lesson 12. Freud and Fiction and Lesson 13. Lacan and Theory, metaphor

*Fig. 3*



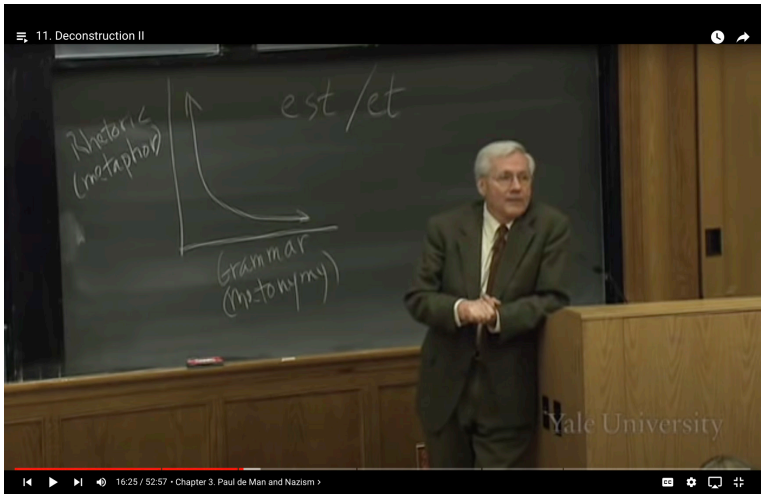

Screenshot from: Prof. Paul Fry, “Introduction to Theory of Literature”, https://oyc.yale.edu/english/engl-300/lecture-9. Recorded 2009.

*Fig. 4*




Screenshot from: Prof. Paul Fry, “Introduction to Theory of Literature”, https://oyc.yale.edu/english/engl-300/lecture-10. Recorded 2009.

*Fig. 5*




Screenshot from: Prof. Paul Fry, “Introduction to Theory of Literature”, https://oyc.yale.edu/english/engl-300/lecture-11. Recorded 2009.

and metonymy are mentioned once again, this time in relationship to psychoanalysis. For Lacan, fusing psychoanalysis with linguistic theories, *metaphor* equates with *condensation* (from Freud's *Verdichtung*), a process whereby an object of desire or trauma becomes more manifest or graspable as different mental images coalesce and are revealed as versions of that object. And inversely, *metonymy* is equated with *displacement* (*Verschiebung* for Freud), where an object is substituted or deferred by another illusory object or image. For Peter Brooks, whose work uses Freud's theories in the stricter scope of literary criticism, *condensation/metaphor* and *displacement/metonymy*, become *unity* and *detours* in studying the structure of the novel and its denouement—as it navigates the pursuit of the object of desire, its necessary delay, and the death-drive.

In Lesson 15. The Postmodern Psyche, while expounding on Deleuze and Guattari, Fry likens the notion of *arboresque* and *rhyzomatic* to the vertical and horizontal axes, although by then the two are no longer truly connected as graph, but are distinct representations of different (still actually opposed) modes of proliferating—one centered, the other decentered.[4]

It is not only the entries of the graph which are subject to change. The graph itself, its morphology, is adapted although this happens mostly when the entries themselves come to question the validity of the graph as graph. Ferdinand de Saussure's initial graph is actually a cross ***(Fig. 6)***. It consists of one horizontal axis with A to the left and B to the right, crossing—orthogonally so that both cross in their middle—with an arrow pointing downwards with C at the top and D at the bottom. Worthy of note is that the AB horizontal axis in Saussure is that of simultaneities, while the arrow going south is the axis of successivities. The later much maligned "vertical axis" in its original form is actually horizontal and pointing right. When one encounters the work of Saussure nowadays, if adorned with diagrams, the graphs used are always the cartesian X,Y type—never is Saussure's own graph featured. Prof. Fry certainly didn't come up with the graph as visual tool, and while the authors he introduces in the lectures do use Saussure's terminology and indeed write of axes, none of them go as far as drawing the actual graph as visual aid themselves (e.g. Tynianov, Jakobson). Exactly when the graph turned 90° anti-clockwise and lost the cross to keep only the adjacent axes is very difficult to trace, but its likely earliest appearance is from Louis Hjelmslev in 1928, a visual of X as *synchronique*, and Y as *diachronique* ***(Fig. 7)***.[5]

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4. *Arboresque* and *rhyzomatic* are the words coming out of Prof. Fry's mouth. Various copies of Gilles Deleuze and Felix Guattari's *Mille Plateaux,* whether in original French or in English translations only make mention of *arborescent* and *rhyzomic.* I will keep the terms of Prof. Fry.

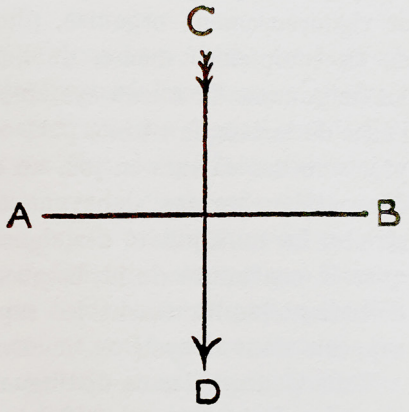
5. Louis Hjelmslev, *Principes de Grammaire Générale* (1928), Deuxième édition, Copenhagen: Munskgaard, 1968. p 48.

*Fig. 6*

l'une un travail et un salaire, dans l'autre un signifié et un signifiant.*

[166]

Il est certain que toutes les sciences auraient intérêt à marquer plus scrupuleusement les axes sur lesquels sont situées les choses dont elles s'occupent ; il faudrait partout distinguer selon la figure suivante : 1° *l'axe des simultanéités* (AB), concernant les rapports entre choses coexistantes, d'où toute intervention du temps est exclue, et 2° *l'axe des successivités* (CD), sur lequel on ne peut jamais considérer qu'une chose à la fois, mais où sont situées toutes les choses du premier axe avec leurs changements.

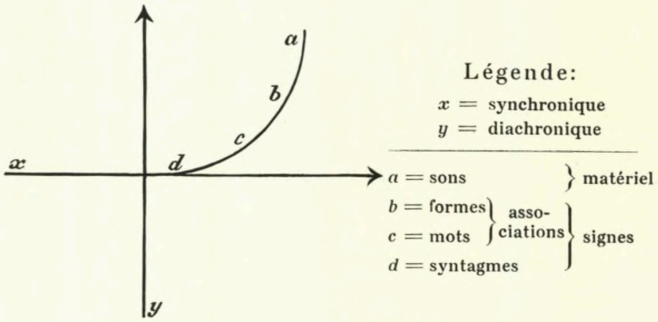



Pour les sciences travaillant sur des valeurs, cette distinction devient une nécessité pratique, et dans certains cas une nécessité absolue. Dans ce domaine on peut mettre les savants au défi d'organiser leurs recherches d'une façon rigoureuse sans tenir compte

Ferdinand De Saussure, *Cours de Linguistique Générale* (1917), ed. T. de Mauro, Paris: Editions Payot et Rivages, 2005. p 115.

*Fig. 7*

La direction nécessaire que doit prendre cette courbe fera éclater avec évidence les rapports entre les deux ordres de subdivisions:



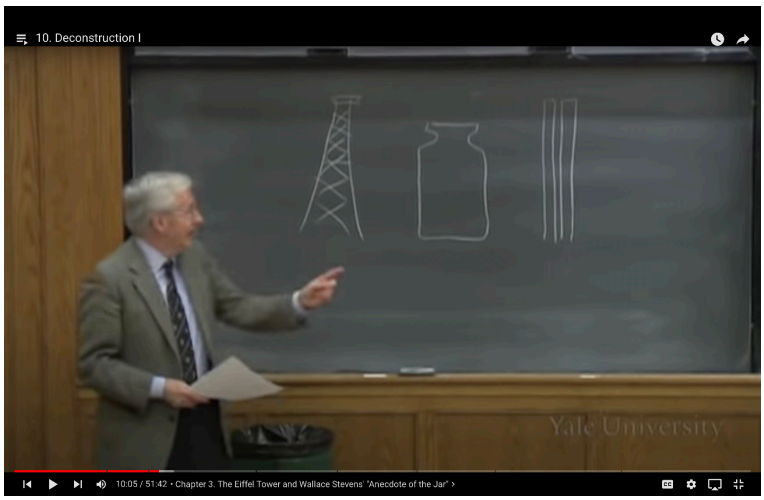

Ce que fait voir cette représentation graphique, c'est que, la théorie des sons étant encore en équilibre entre les

Louis Hjelmslev, Principes de Grammaire Générale (1928), Deuxième édition, Copenhagen: Munskgaard, 1968. p 48.

Paul Fry is no illustrator, as he himself confesses, and the transformations of the graph are, for a few, only cursorily attempted with chalk on the blackboard. They are however amply described. Roland Barthes' famous essay on the Eiffel Tower actually opens the first of the lessons on deconstruction (Lesson 10) ***(Fig. 8)***, providing a glimpse of the relative relationship between the vertical and horizontal axes. As the visitor goes up—a structuralist without knowing it—the circle and scope of observation expands outwards. The graph is now no longer exactly two-dimensional but instead consists in a plane, a priori circular, whose area is dependent on the elevation of a vertical axis necessarily placed right at its centre. As such, it is the first crack in the structuralist edifice: a device that describes far more the mechanism of the method and the place whoever employs it has with respect to it, than actually fulfilling what the method aims to solve. Further in the same lecture, and alongside the entries to the graph attributed to Derrida, is a visualisation of what the graph would look like if it stayed true to Derrida's critique. The plane from Roland Barthes is now indistinct in shape, puddle-like ***(Fig. 9)***. It has a boundary but is uncertain, and the cross which should indicate a possible centre, is reported outside of it thanks a curved arrow drawn with a dotted line—the paradox being that though the notion of structure, or of boundaries, can only be intended from the outside, there isn't really an outside to it.

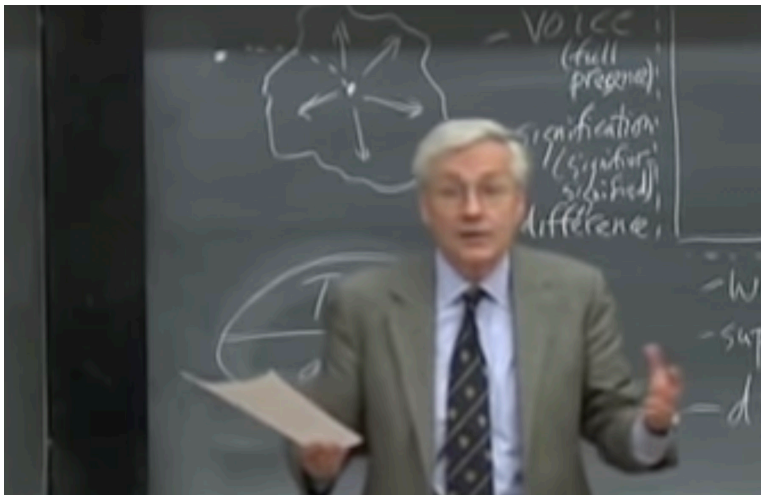
In this same lecture is a mention, coy at first, that the vertical axis is also "something else" while hinting at the feminist body of criticism. It is only in Lesson.13 on Lacan, that the axis is named—but not drawn—as a phallus bringing together the notion of phallogocentrism, of the phallus' central role in psychoanalysis, and with a nod to Laura Mulvey, to the dominant character of the male gaze. Still in Lesson 13—and this time drawn—is a visualisation of the idea of signifying chain according to Lacan ***(Fig. 10)***, bringing thickness to the X axis. It consists in a series of circles, themselves made from concatenated circles (like necklaces) locked in recursive soliloquy, all representing signifiers. The points at which the chain of bigger circles joins are associations of a signifier to a signified, knots as arbitrary as the Saussurean sign. To the analyst (a Y axis) these points will collectively suggest particular images of desire, or obsessions to work on with the patient.

***Fig. 8***



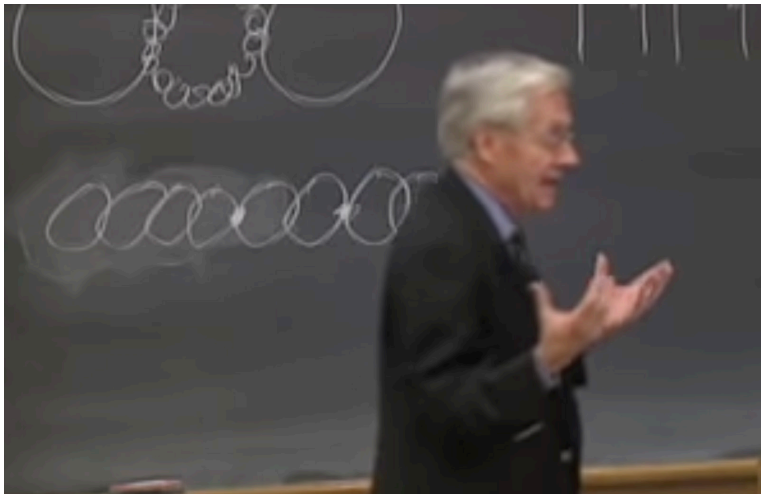

Screenshot from: Prof. Paul Fry, "Introduction to Theory of Literature", https://oyc.yale.edu/english/engl-300/lecture-10. Recorded 2009.

***Fig. 9***



Screenshot from: Prof. Paul Fry, "Introduction to Theory of Literature", https://oyc.yale.edu/english/engl-300/lecture-10. Recorded 2009.

***Fig. 10***



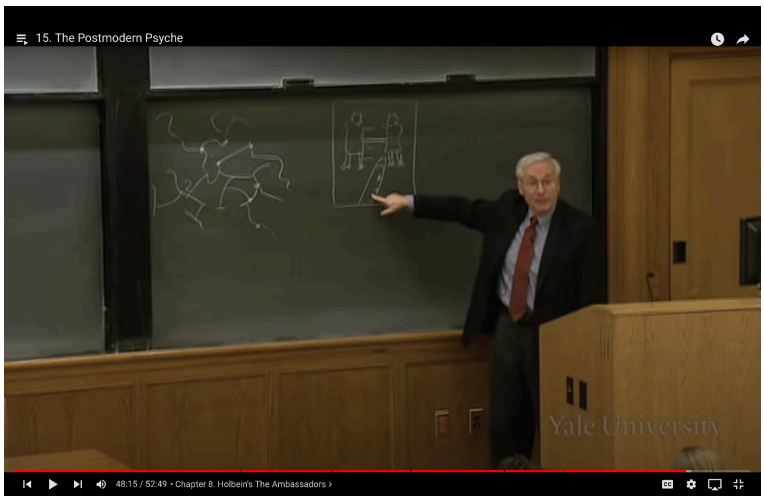
Screenshot from: Prof. Paul Fry, "Introduction to Theory of Literature", https://oyc.yale.edu/english/engl-300/lecture-13. Recorded 2009.

In Lesson 15, along with Deleuze's concepts of the arboresque and of the rhyzomatic—of which only the rhyzome is attempted on the blackboard ***(Fig. 11)***—are two other descriptions. One relates once more to Lacan with regard to condensation and displacement, and where the graph takes the form of a musical stave ***(Fig. 12)***. Essentially the upward pendant to Lacan's signifying chain from Lesson 13, as condensation makes the sense of self clearer it goes higher on the stave with signs stacking the way chords do in sheet music—only to dissipate and move back down with displacement. Paul Fry compares this circulation up and down a stave's lines with Deleuze and Guattari's concept of *plateaux*. These are no longer lines but planes, and there are a thousand of them engaged in fully decentered and interactive living.

One of the temptations in studying timbre, or matters of listening, would be to add to the graph ***(Fig. 13 and 14)***. In the later stages of the graph, as structuralism becomes post-, and the Y vertical axis comes to represent discourse with a distinct overbearingness, a temptation is to simply put meaning (in its commonly agreed upon, rhetorical form) as the vertical axis, and to put sense, as in making sense (grammatically) as the X axis. Another would be to oppose relevance and resonance in the same manner, the former implying a haughty clarity while the latter evokes a rippling contiguity. One could also put note and sound there, stressing the systemic fixity of one in the Y axis, while letting the temporality and contingency of the other run wild horizontally ***(Fig. 15)***. Indeed a comparative study of any of three above, with a single version of a graph from literary theory would probably find some merit as a thesis on its own.

Instead, what transpires from Prof. Paul Fry's blackboard is the sense of an instrument being made, tinkered into an almost tangible object as various thinkers try it out for resounding, each having a go at tuning it to hear what effectuation it may return. As these different tunings are applied to the graph and new shapes are adduced from them, they will recall the posters charting the evolution of musical instruments, typically seen on the walls of music practice rooms. Rudimentary beginnings make for gradual changes as the tessituras are explored, tweaked little by little into becoming the instruments in their current forms—folkloric ad-hoc dulcimers growing into grand pianos as gourd-like luths splinter into many different guitar shapes. The changes are physical as the designs are perfected, but they also follow the registers most germane to the music of their respective era and geography. Any sense of the instrument growing in sophistication and edging towards an optimal form is somewhat offset by the search for more specific sonorities or registers, leading to new, breakaway instruments or extensions of the family.

***Fig. 11***




Screenshot from: Prof. Paul Fry, “Introduction to Theory of Literature”, https://oyc.yale.edu/english/engl-300/lecture-15. Recorded 2009.

***Fig. 12***



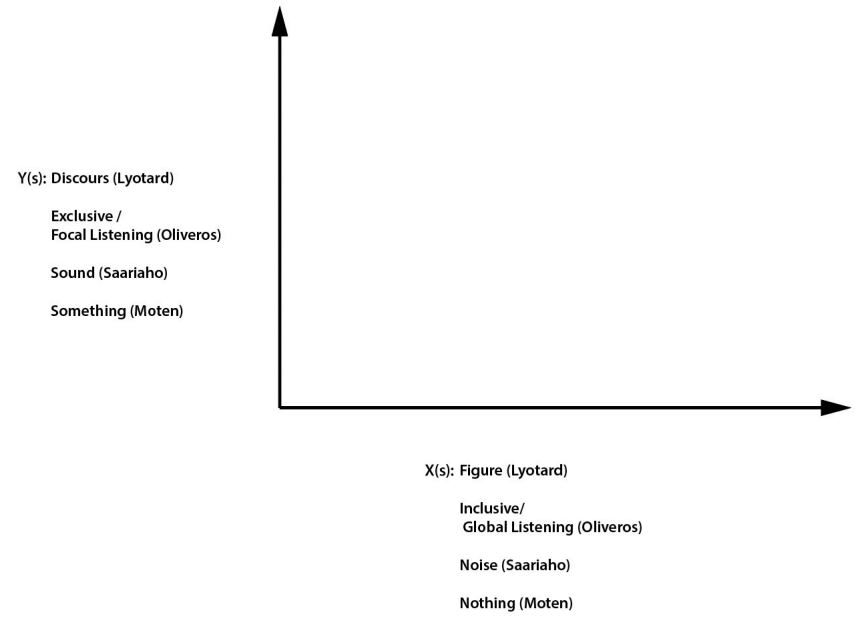

Screenshot from: Prof. Paul Fry, “Introduction to Theory of Literature”, https://oyc.yale.edu/english/engl-300/lecture-15. Recorded 2009.

***Fig. 13***



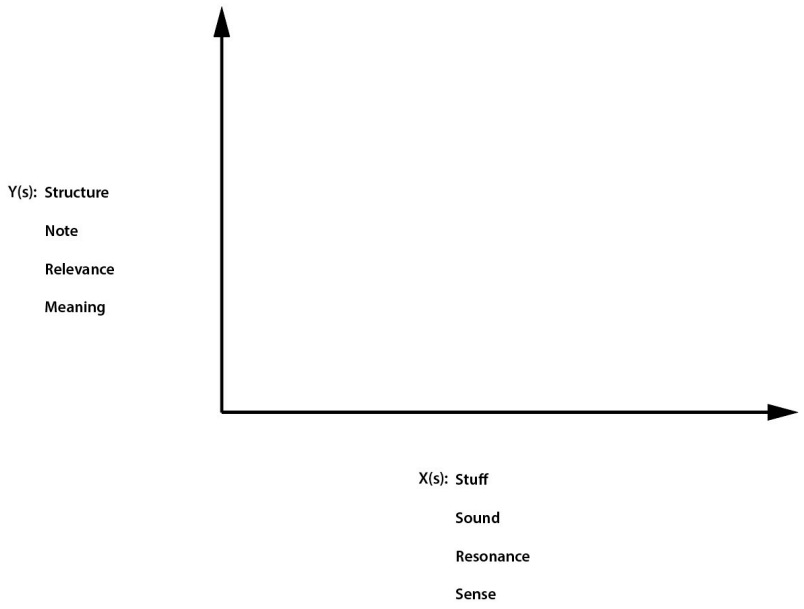

Graph with collected entries from Prof. Paul Fry, “Introduction to Theory of Literature”

***Fig. 14***




Graph with collected entries from other two-axis formulations in the present paper.

***Fig. 15***




Graph with speculative entries mentioned in the present paper.

***Fig. 16***

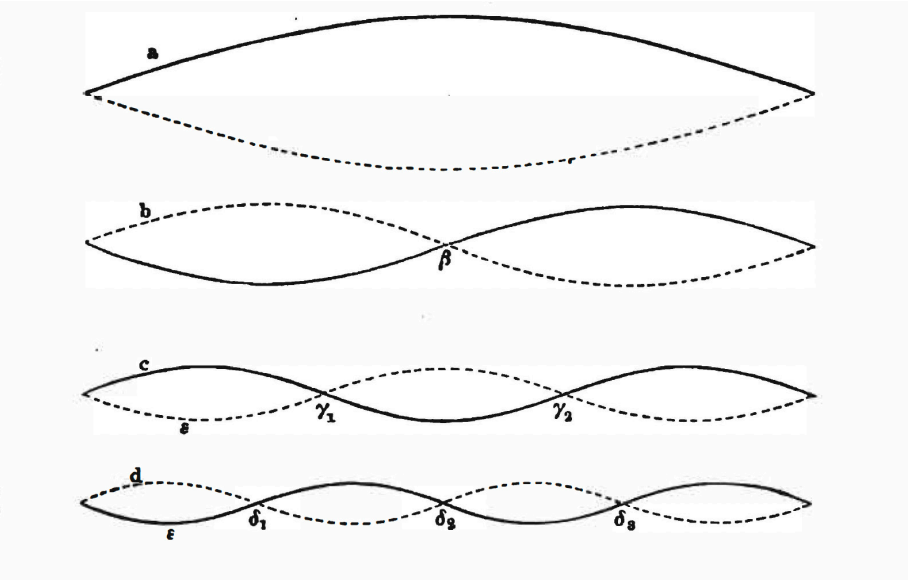



Diagram of harmonic partials in strings sympathic resonance: Hermann von Helmholtz, *On the Sensations of Tone as a Physiological Basis for the Theory of Music* (1863), trans. Alexandre Ellis, Fourth Edition, London: Longmans, Green and Co, 1912. p 46.

While the graph's own registers range from the oddly specific and precise tone (e.g. displacement in the sense of Freud's *Verschiebung*), to a hazy and tentative one (e.g. supplementary signifying), to universal blanketing terms (e.g. grammar!), they have in common that they all try for an anchoring pitch, they search for the right key. More than an instrument, the graph is a tuning fork of sorts which brings out the resonance from which to attune meaning—a two-pronged resonator of abscissae and ordinates, with which one can hit any textual material and return a constant pitch of a certain purity.

Incidentally, the tuning fork is what Hermann von Helmholtz used in his exploration of timbre (*Klangfarbe*). The world already knew quite a lot about vibrations and harmonics long before Helmholtz published his "On the Sensations of Tone as a Physiological Basis for the Theory of Music" in 1863. Ever since Pythagoras worked out that definite pitches could obey a mathematical formula, and established ratios determining intervals for notes within the octave, people knew about partials. These ratios were perfected when applied to lengths of strings, which not only predictably sounded the correct pitch, but also offered the vibrations for observation thus clearly demonstrating harmonic partials to a given fundamental, i.e. the harmonic series ***(Fig. 16)***. These ratios led to new string instruments of various sizes and registers, and to new holes being drilled in flutes and wind instruments of an ever more complete range of notes. Inversely, and also thanks to these ratios, when new instruments were being conceived (e.g. the piano) makers knew exactly how long strings should be. All instruments were already remarked as having their characteristic sonic colouration and tone qualities, and partials were suspected of playing a role, but not to the extent of superseding the ear in "creating" the colours.

The tuning fork however, invented by John Shore in 1711, was not an instrument per se but rather an instrument to calibrate other instruments—a tool acting as standard in tone purity and pitch exactitude. They could be made with tines of varying lengths and thickness to certify a given pitch, much like weights for scales. And yet there was a nagging sense that even though they were tools of "pure" tone calibration, unfailingly returning the same note when applied to different surfaces, they wouldn't entirely return the same sound. Before Hermann Von Helmholtz, the French mathematician Jean-Baptiste-Joseph Fourier had already devised a series a mathematical projections converting complex periodic waves obtained from vibrations into distinct sine waves—essentially allowing for squiggles like those of a seismograph to be rendered into separate and legible frequencies—a technique now known as a *Fourier transform*.

One of Helmholtz's novelties was to apply *Fourier transform* to pure musical tones (Fourier's original research was on thermal waves and heat dissipation) thanks to apparatuses picking up the vibrations of tuning forks ***(Fig. 17)***. Not only it was a confirming experiment of the hypothesis that partials were indeed contributing to tone quality, but it actually revealed that their presence and distribution was the whole story, the single determining factor. Now that all these partials, or overtones, could be projected onto a graph, one could assess the differences in tone qualities according to the registered amplitude of each. Helmholtz was convinced that if there was a physical evidence of overtones to determine a tone, there should be a mirrored process in the human ear, a physiological pendant to pick up the distribution of overtones. Helmholtz chose in his study to concentrate solely on musical sounds as "a musical tone strikes the ear as a perfectly undisturbed, uniform sound which remains unaltered as long as it exists, and it presents no alternation of various kinds of constituents".[6] Musical tones were thus "the simpler and more regular elements of the sensations of hearing, and that we have consequently first to study the laws and peculiarities of this class of sensations".[7]

To this end, Helmholtz had resonating devices made, now called Helmholtz's resonators ***(Fig. 18)***. These are brass jars of various volumes, activated by the vortices of air carrying sound vibrations (like blowing across the top of a bottle). Each volume is specifically determined to amplify a single frequency from the harmonic series. These allowed Helmholtz to act on the amplitude of each overtones and understand how different combinations yielded different tone qualities. Helmholtz commissioned several instruments—some only finally realised after his death—involving either resonators or tuning forks of various pitches that could individually activated, letting the user act on the tone quality in any given pitch. Essentially, these instruments are the first synthesisers ***(Fig. 19)***.

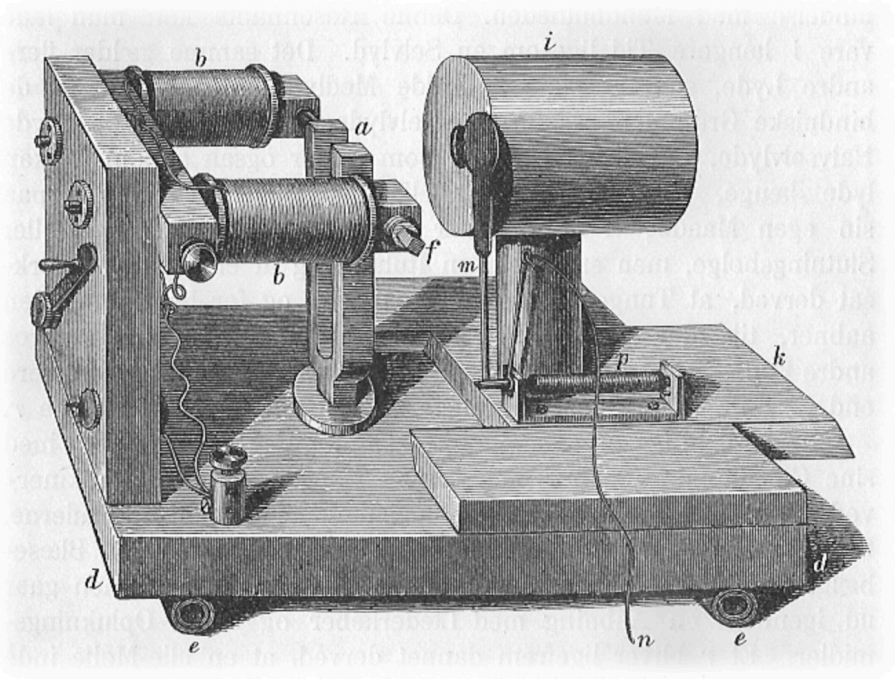
Even though Helmholtz was first in identifying the presence of overtones, the study of tone colour in graphic form really started with Carl Stumpf. A proper study of *Klangfarbe* for Stumpf should also include non-musical sounds and be able to account for different dynamics towards their perceptual fusion (*Verschmelzung*). In other words, it should chart not only the presence but also the variations of amplitude from all possible tones. What Carl Stumpf needed was a spectral visualisation of tones, but unfortunately that technology would have to wait until after WW2 to be developed inside Bell Laboratories. That didn't however stop him from trying (or rather students of

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6. Hermann von Helmholtz, *On the Sensations of Tone as a Physiological Basis for the Theory of Music* (1863), trans. Alexandre Ellis, Fourth Edition, London: Longmans, Green and Co, 1912. p 8.

7. Ibid., p 9.

***Fig. 17***



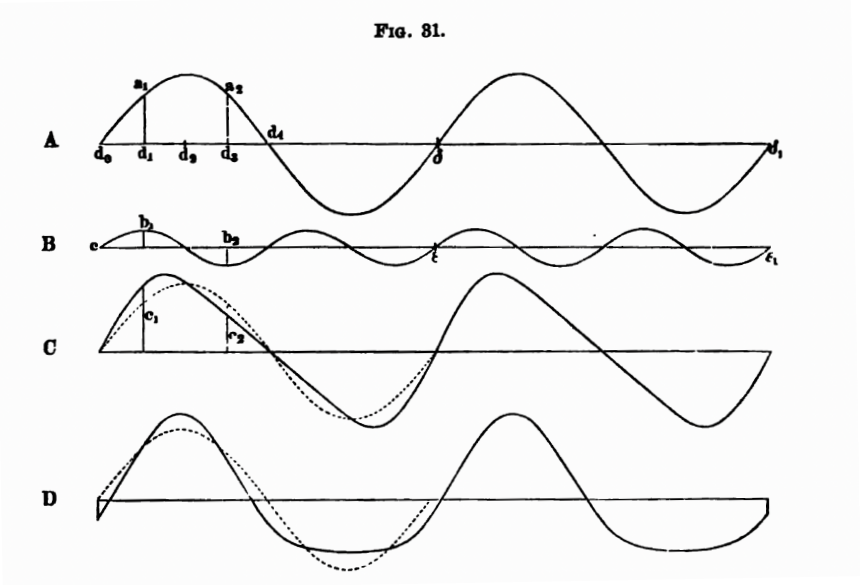



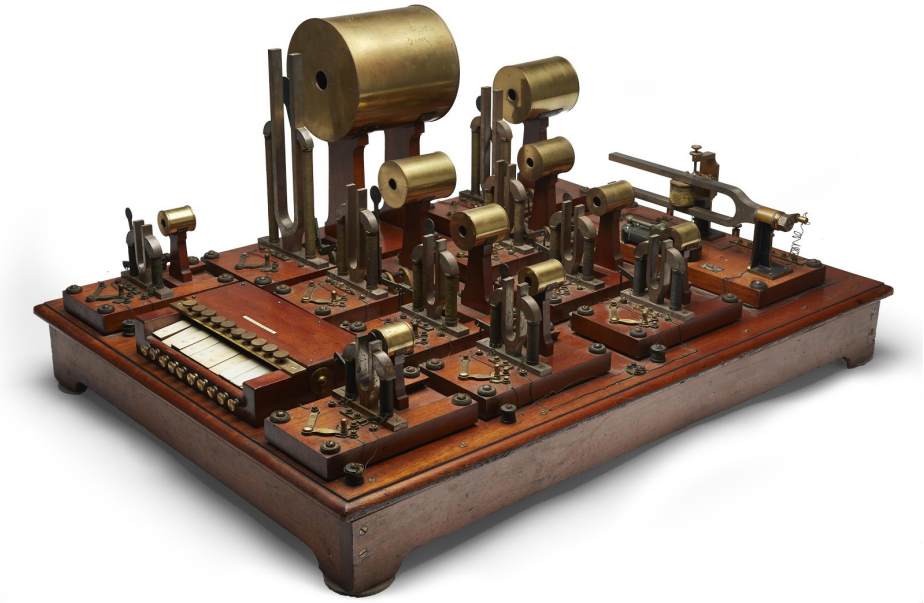

Illustration of resonating device with two electromagnets maintaining a constant tone from a tuning fork and resulting curves from experiment. Hermann von Helmholtz, *On the Sensations of Tone as a Physiological Basis for the Theory of Music* (1863), trans. Alexandre Ellis, Fourth Edition, London: Longmans, Green and Co, 1912. p120–121.

***Fig. 18***



Set of Helmholtz resonators (manufactured by Rudolph Koenig, Paris 1890) from The University of Toronto Scientific Instruments Collection, online catalogue https://utsic.utoronto.ca/collections/(last accessed 29/09/2023).

***Fig. 19***



Helmholtz Sound Synthesiser manufactured by Max Kohl. Germany, 1905.
Image sourced from *120 Years of Electronic Music:The history of electronic musical instruments from 1800 to 2019,* http://120years.net/helmholtz-sound-synthesiser-max-kohl-germany-1905/ (last accessed 29.09.2023).

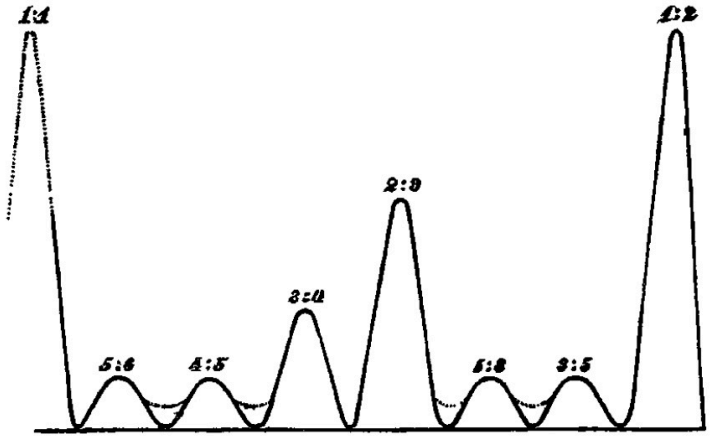
Stumpf and acolytes who pursued the research initiated in Stumpf's two-volume *Tonpsychologie*), and indeed sowing the seeds for all the visualisations of sounds that were to come. In a quest to represent complex waveforms, Stumpf's graphs started tracing different frequencies over one another towards visualisations which approached an account of the dynamics between amplitudes and sequences of overtones ***(Fig. 20)***. Some of these renderings involved squeezing tiny mirrors on to some volunteers' eardrums, shining lights on them and recording the reflections on photosensitive surfaces.[8]

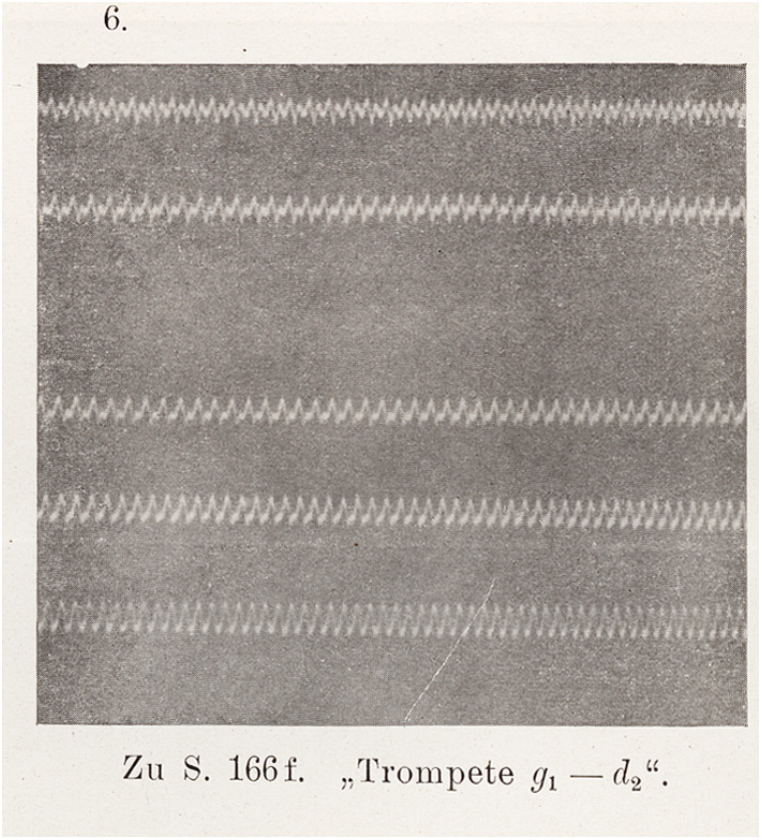
Soon after Stumpf's experiments, the phonograph was invented, and recording techniques have been perfected ever since. Phonography allowed for capturing sound, writing it down directly—first on wax cylinders—with a faithfulness that had the undeniability of playback. In 1946, came the sound spectrograph which could show all overtones frequencies distinctly stacked over a fundamental from any complex waveform ***(Fig. 21)***. Once the sound capturing was delegated to machines with ever more precision, the graphs turned more schematic. Their use was diverted to extrapolating patterns or inferring typologies, i.e. *interpolations* ***(Fig. 22)***, from all sorts of sounds, whether harmonic or not. Spectrograms offered the possibility of partitioning the audible into integrals according to spectral densities which could be rendered as envelopes when transposed back to waveform visualisations ***(Fig. 23)***. Ever since the emergence of synthesisers in the mid 20th century, the synthetic parlance of envelopes, whether additive or substractive, was established. In these still analog days, the controls and their variables were offered through an array of knobs and dials and the capacitors and potentiometers they activated within the machine. The temporal envelope of a sound in particular, called ADSR (attack, decay, sustain, release), became a chief characteristic that could mirror the temporal traits of some instruments while applying sets of overtones from others. It is however with the emergence of digital synthetic sound that the ADSR envelope acquired a standardised graphical form ***(Fig. 24)*** .

8. As recounted in: Sebastian Klotz, "Timbre, Komplexeindruck, and Modernity: Klangfarbe as a Catalyst of Psychological Research in Carl Stumpf, 1890–1926", in *The Oxford Handbook of Timbre*, ed. Emily Dolan and Alexander Rehding, Oxford: Oxford University Press, 2018. pp 614–615.

*Fig. 20*

Verschmelzungsstufen folgendes Bild machen:




Top: Chart showing different amplitudes of perceptual fusion in response to tones, Carl Stumpf, *Tonpsychologie II,* Leipzig:Verlag Von Hirzel, 1890/ digital edition Cambridge: Cambridge University Press, 2013. p 176. (Last accessed 20.04.2023).

Below: Visualisation of trumpet overtones from G1 to D2 from:Wolfgang Köhler, “Akustische Untersuchungen. I” in *Beiträge zur Akustik und Musikwissenschaft, 4* (1909)/ Digital edition Berlin: Max Planck Institute for the History of Science, http://echo.mpiwg-berlin.mpg.de/MPIWG:34XYKFYM (plate 51) (last accessed 29.09.2023).

***Fig. 21***

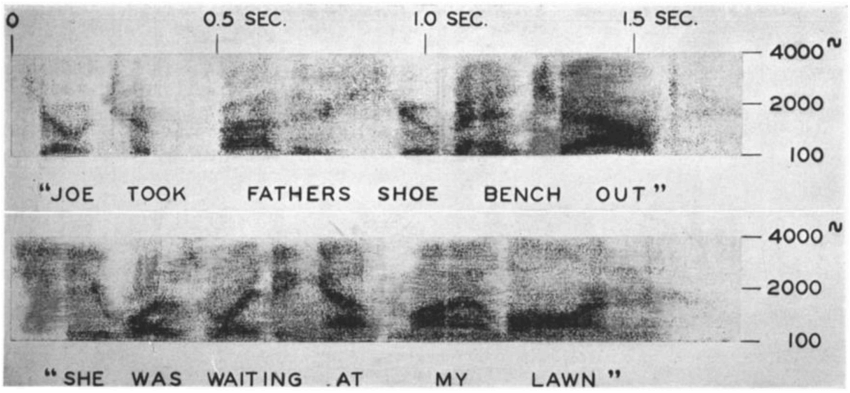
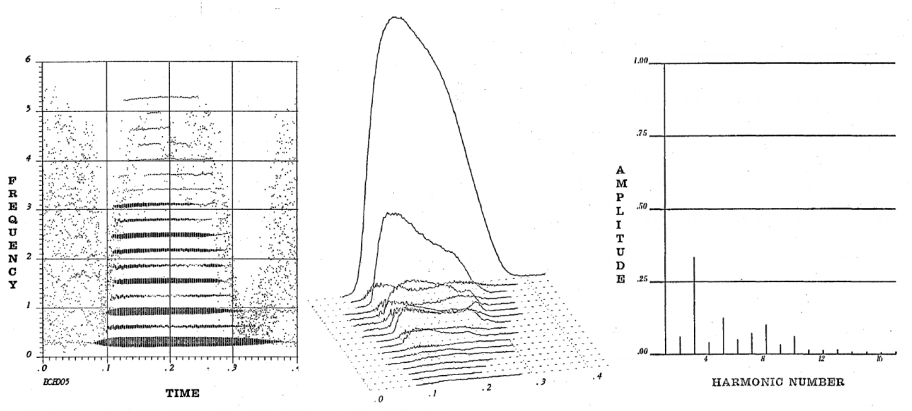



FIG. 8. Spectrograms made with the first laboratory model assembled from available equipment. The vocal resonances are clearly indicated. Further description of the features of spectrograms will be given in connection with subsequent illustrations.

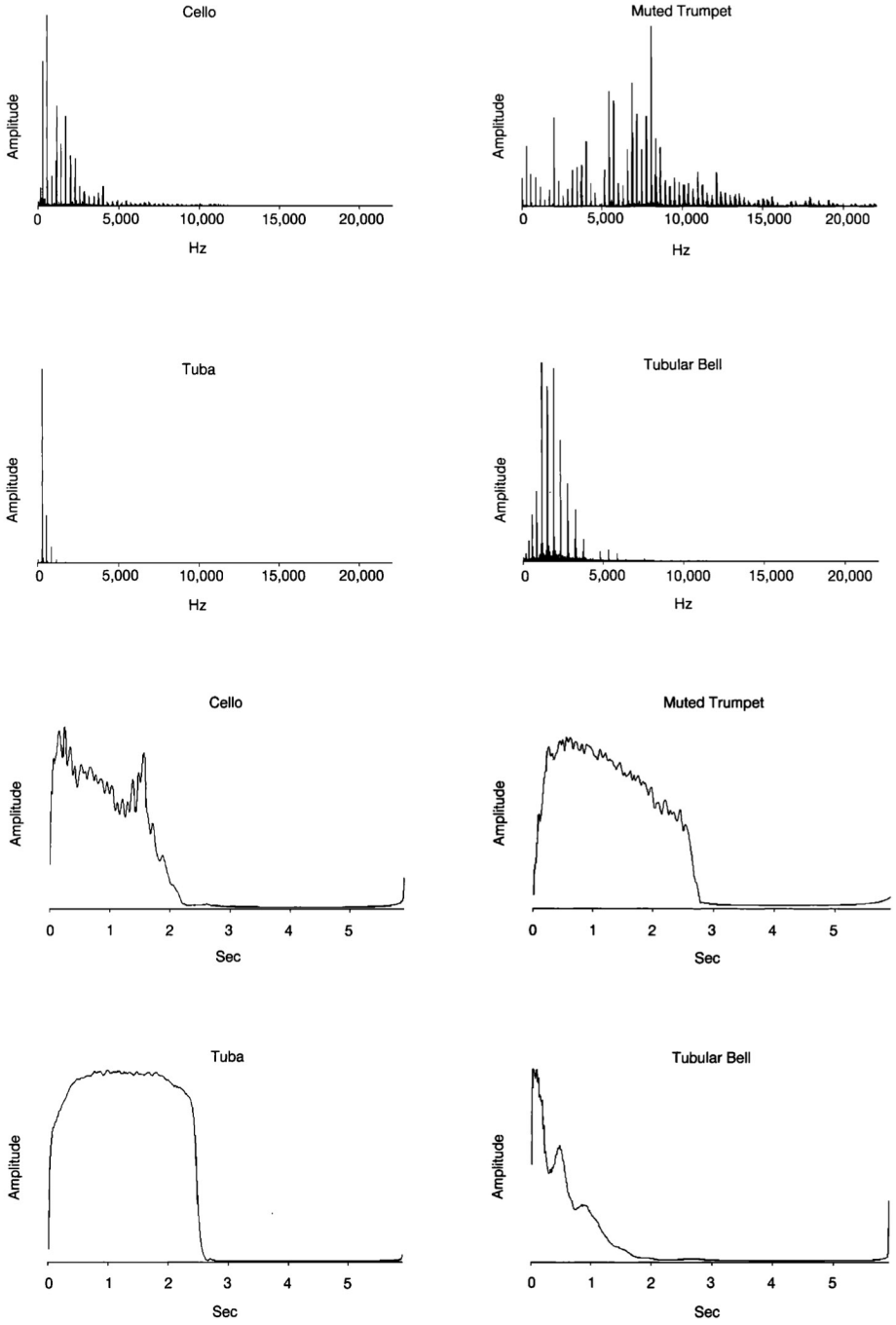
W. Koenig; H. K. Dunn; L. Y. Lacy, "The Sound Spectrograph" in *The Journal of the Acoustical Society of America*, Vol 18, issue 1, July 1946. Digital edition American Institute of Physics (AIP), 17.06.2005. (last accessed 19.04.2023).

***Fig. 22***



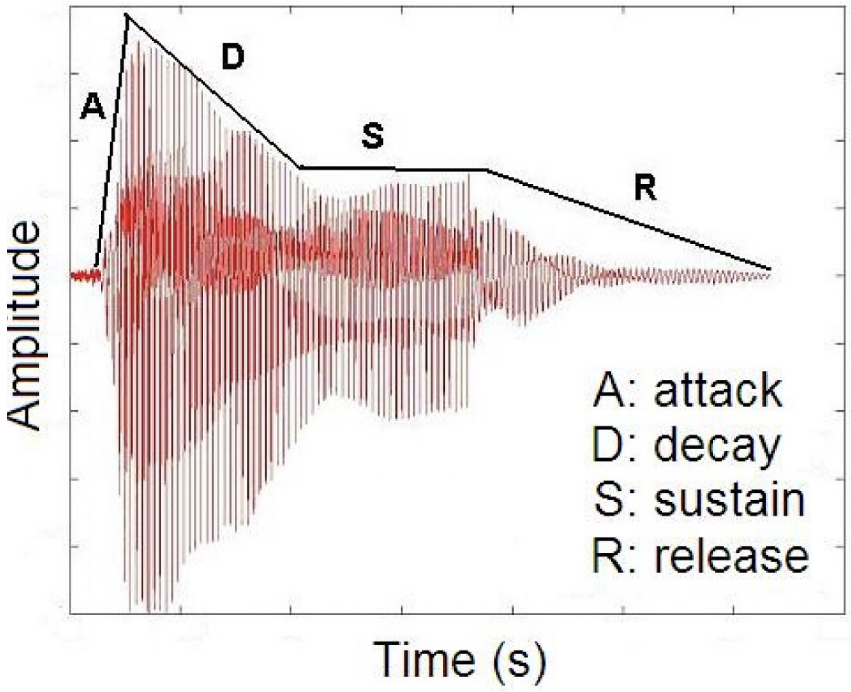

Three different interpolations from a signal: John Michael Grey, *An Exploration of Musical Timbre using computer-based techniques for analysis, synthesis and perceptual scaling,* PhD Dissertation, Departement of Psychology, Stamford University, 1975.

***Fig. 23***




Renderings transposed from overtones distributions histograms to waveform envelopes: Paul Iverson, Carol L. Krumhansl, "Isolating the dynamic attributes of musical timbre", in *The Journal of the Acoustical Society of America*, Vol 94 , issue 5, November 1993, Melville NY: Acoustical Society of America, 1993.

*Fig. 24*




Graph showing aggregate waveforms of overtones from a wind instrument and its ADSR contour. From: Marcelo Caetano, Juan José Burred, Xavier Rodet, "Automatic Segmentation of the Temporal Evolution of Isolated Acoustic Musical Instrument Sounds Using Spectro-Temporal Cues", in *Proceedings of the 13th Int. Conference on Digital Audio Effects (DAFx-10), Graz, Austria, September 6-10, 2010,* Paris: I.R.C.A.M, 2010.

Typologies were what Pierre Schaeffer was after in wanting to re-invent a musical vocabulary from the ground up ***(Fig. 25 and 26)***. Sounds, all of them, needed a new taxonomy. Graphs as a result became axiomatic, representing various patterns sounds could be sorted into, and offer a combinatory system expanding the possibilities of harmonics ***(Fig. 27)***. Gérard Grisey, pioneer of what is known as spectralism, made use of similar graphs as Schaeffer's as composing guides. Spectralism was a rejoinder to the serialist form of composing that came just before it. Where serialism was strictly sequential—diachronic, syntagmic— spectral composing would aim for synchrony, a sequence freeze which decanted all the microtonal and timbral dynamics that could be perceived in a musical motif, using duration to unfold and articulate them ***(Fig. 28)***. Grisey's graphs show simple, elegant functions which can be visually applied to a stave as templates to inform a composition or to instruct its performance ***(Fig. 29)***.

As the possibility of sound synthesis promised new frontiers for music and computers became increasingly available to propel this search, music labs where musicians and engineers work in consort to explore new technologies were established. Research on timbre nowadays focuses on timbre-space, analyses of different acoustic correlates for which the graphs have acquired a third axis, a z to the x and y ***(Fig. 30)***. Three-dimensional visualisations which may include several instruments and describe compositional pathways for a given piece of music ***(Fig. 31)***.

Another type of visualisations in which timbre plays a central role is MIR, for Music Information Retrieval, which examines interpolations of many different variables with regard to music recognition: alignments of rhythm, pitch, timbre but also genres, lyrical content, popularity, listeners' demographics etc. Worth of note is that these researches have gone far beyond the broadening of musical horizons, with applications more suited to the distribution of music, i.e new compression formats, copyright protection, etc.

*Fig. 25*

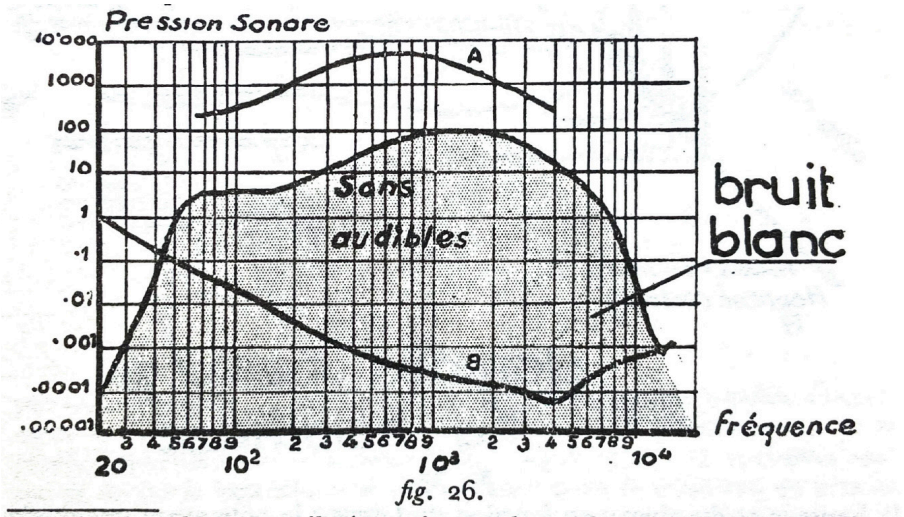



*fig.* 26.

1. Il existe des appareils (enregistreur logarithmique) qui fournissent directement la forme de la note.

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"There exists machines (logarithmic recorders) which directly provide a note's shape": Pierre Schaeffer was an engineer by training, and pioneered many of the graphic forms in his research premises at the O.R.T.F, the then national radio-television broadcasting office. Note that all of Schaeffer's visuals from the Musique Concrète period (1948–1952) are drawn by hand. Pierre Schaeffer, *A la Recherche d'une Musique Concrète*, Paris: Editions du Seuil, 1952. p 208. (Image courtesy of Editions du Seuil)

*Fig. 26*

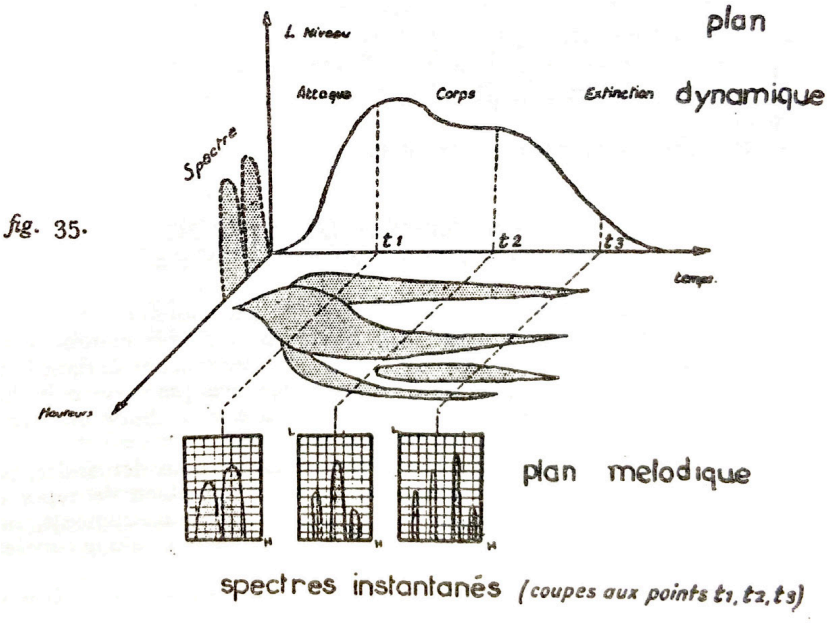
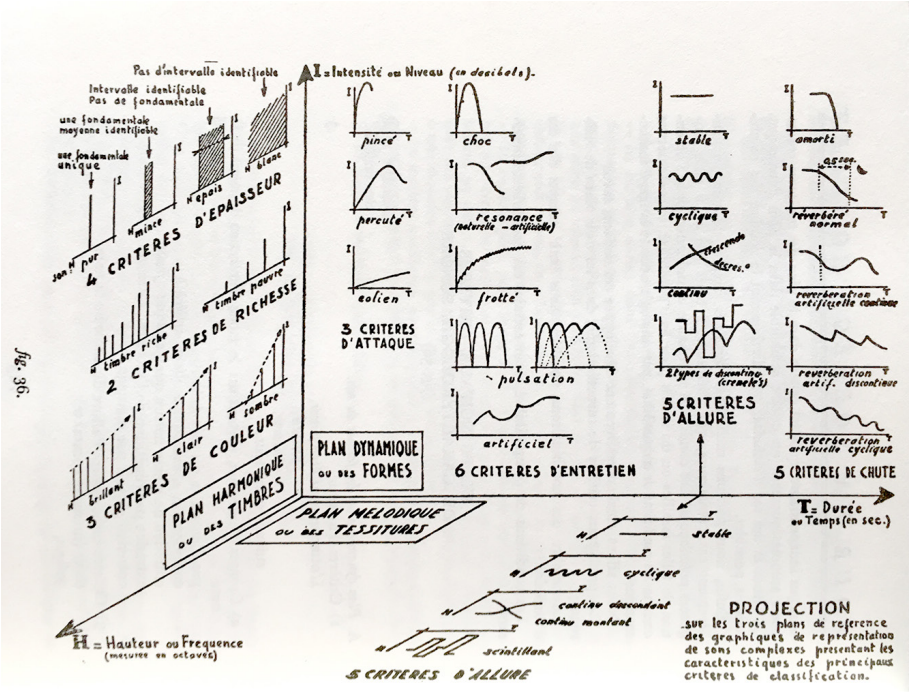



*fig.* 35.

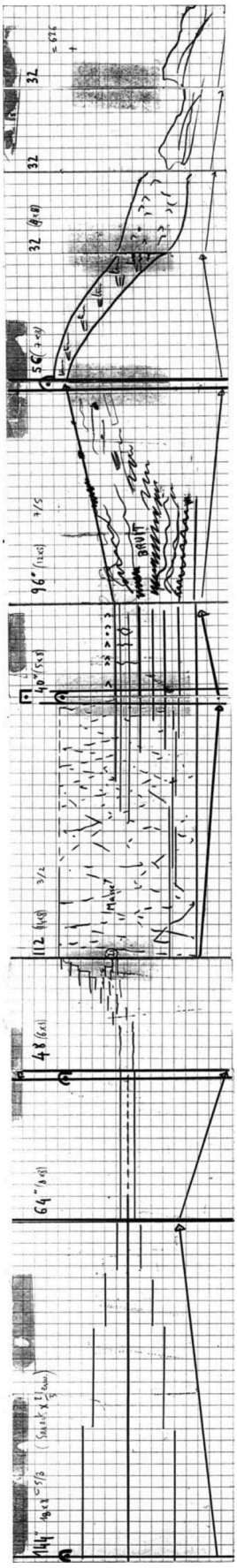
Early graph attempting interpolation of spectral and temporal envelopes: Ibid., p 221. (Image courtesy of Editions du Seuil)

***Fig. 27***



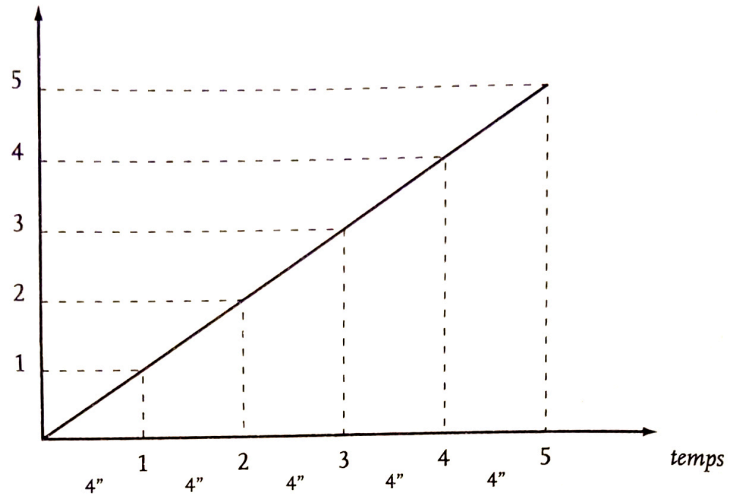

"Projection of complex sound representation graphs onto the three reference planes presenting the characteristics of the main classification criteria". Ibid., p 224. (Image courtesy of Editions du Seuil)

***Fig. 28***

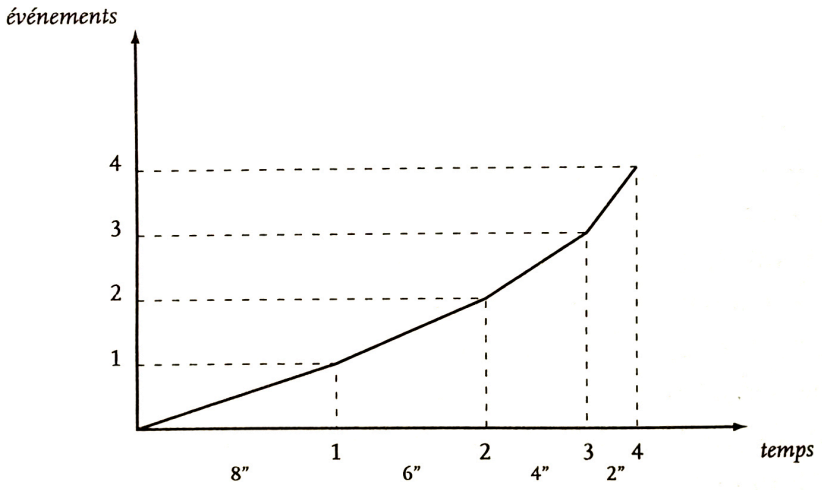



Gérard Grisey, study outline for *Périodes* (1974), as a single scroll: François-Xavier Féron, "The Emergence of Spectra in Gérard Grisey's Compositional Process: From Dérives (1973–74) to Les espaces acoustiques (1974–85)", in *Contemporary Music Review, Vol 30, issue 5,* Abingdon OX: Routledge, 2012. p 360. (Original held by Paul Sacher Stiftung, Basel, Switzerland)

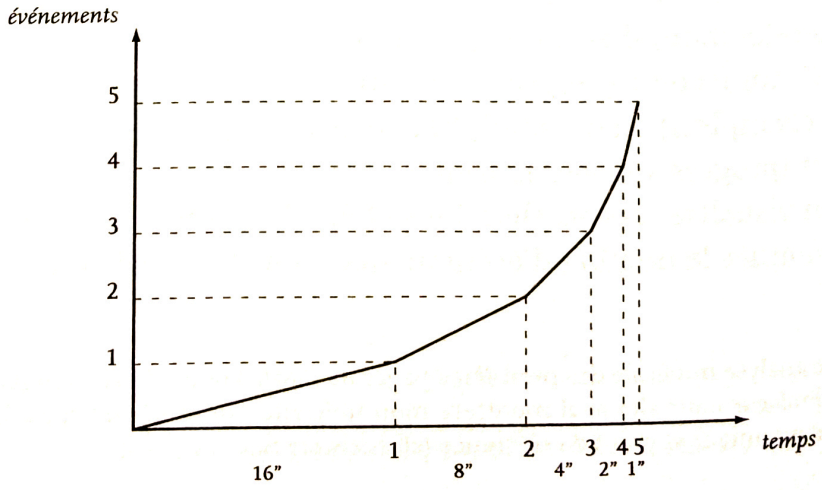
***Fig. 29***




*Exemple 3* : Périodicité




*Exemple 4* : Progression arithmétique




*Exemple 5* : Progression géométrique

"*Progressions évenements/temps"*, which can be transposed to "*harmonicités/frequence linéaires"* to correspond to timbre, as compositional methods: Gérard Grisey, "Tempus Ex Machina" (1982-85), in *Gérard Grisey: Ecrits* eds. Guy Lelong and Anne-Marie Réby, Paris: Editions MF/ Coll répercussions, 2018. p.72. (Images courtesy of Editions MF and Raphael Grisey)

***Fig. 30***

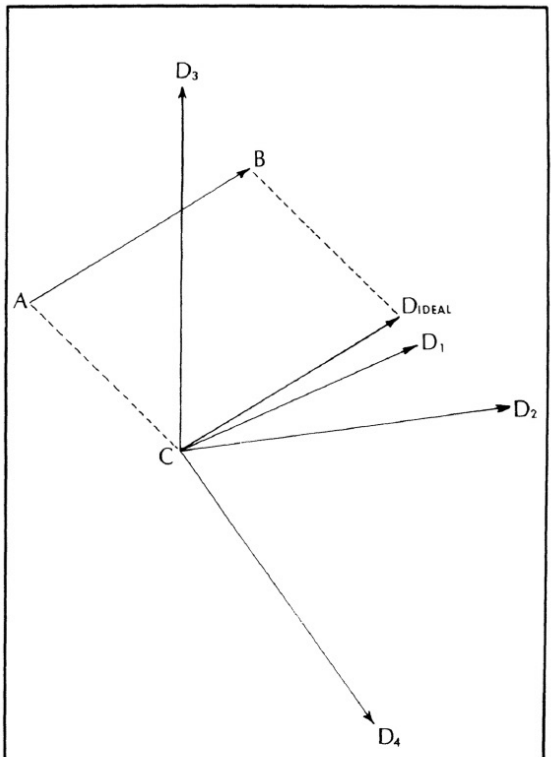
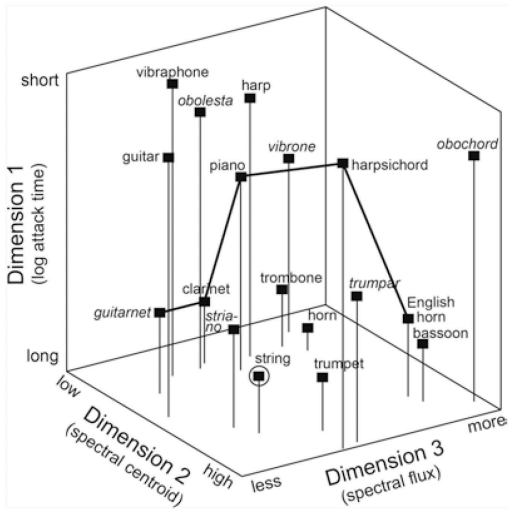



FIGURE 3. Parallelogram model of timbre analogies. $A \rightarrow B$ is a given change in timbre; $C \rightarrow D$ is a desired timbral analogy, with $C$ given. $D$ is the ideal solution point. $D_1$, $D_2$, $D_3$, and $D_4$ are the actual solutions offered to the listeners.

Graph showing "possible visualisation of parallel timbre analogies, taking global timbre and fusion as compound vectors in third dimension". David L. Wessel, "Timbre Space as a Musical Control Structure", in *Computer Music Journal, Vol. 3, issue 2, Jun., 1979,* Cambridge MA: The MIT press, 1979. p 50.

***Fig. 31***




Graph showing "perceptual scaling of synthesised musical timbres: common dimensions, specificities, and latent subject classes" by McAdams et al, 1995, sourced from: Stephen McAdams, "Timbre as a Structuring Force in Music" in *Timbre: Acoustics, Perception, and Cognition*, ed. Kai Siedenburg et al, Cham, CH: Springer, ASA Press, 2019. p 214.

One of my first encounters with the notion when I started looking into timbre, was an article for which writer Tim Falconer visited "perhaps the world's leading expert on the subject", Stephen McAdams of McGill University.[9] The purpose was to ask him what exactly is timbre. The article opens with McAdams describing some melodic lines from Richard Wagner's *Parsifal* overture, swellings of notes starting with violins, then thickened with other instruments, adding others to open up the brightness of the sound at its peak, and gradually come back down with instruments falling out—"Actually, I am just getting goosebumps just thinking about it". Like Falconer, I wasn't familiar with the piece, so I also went to have a listen.

I got my goosebumps but I also remember being surprised by how seamless the instrumental additions were in these swelling notes. Because all instruments were in unison, essentially playing a single pitch but with staggered arrivals and intensities, the sound itself was an eerie alchemic transformation. The real bafflement however was in trying to tell myself what I was hearing. McAdams' description betrayed a musical training, of knowing when to speak of *diminuendo*, of dynamics, of pitch contours, etc. He sounded like he could actually make out what the instruments coming in were, cellos, violas, bassoons, oboes—although this could be because he actually parsed Wagner's score to study the sonic effects. I had none of this information. To me it sounded like a note swelling in intensity and coming back down to end exactly how it started, only it had physically transformed. These short phrases, sometimes just a note, drew an arc. It went from quiet to quiet, from symbol on a stave to symbol on a stave, from graph back to a graph. In between, it soared, its embodiment at first expected, then transformative touching on magical. The phrase wasn't made of the same material throughout. It had changed from string to wood to brass, undergoing a actual physical change—like a piano turned into fridge.

It called to mind Bruce Nauman's tunnels experiments from the late 70s, his loops and lengths of plaster casings whose inner structure morphed from square to circle to triangle—shapes whose denotations make them exclusive to one another in absolute terms, yet rendered perfectly logical when parallelepipeds are made to become cylinders, to become triangular prisms and back again.

Or it called to mind the motif by which Rodin's *Gates of Hell*, an early work, became a portal from which many of his later works emerge, haunting it by forever revisiting this first vision as common source. And how this motif is found again in Duchamp's *Large Glass,* albeit worked across many

9. Tim Falconer, *Everything We Can't Describe in Music*, Hazlitt (Penguin Random House), published April 15th 2016. https://hazlitt.net/feature/everything-we-cant-describe-music.

years in parallel or retrospectively as a kind of Rosetta Stone with which Duchamp assuaged his own doubts, while looking to confer the transparency of coherence and a sense of *Grand Oeuvre* to objects growing more detached from one another and gradually losing the artist's touch. And still, how that motif re-appears again in Pierre Huyghes's work, this time with boundaries collapsed, the frame erased, in the form of a safety net, a last thread to connect elements of an environment before that last leap into a void which may well make the idea of the artist irrelevant. Or, it called to mind how a preposterously perilous visual gag by Buster Keaton turned to stone-cold deterministic gravitas when re-enacted by Steve McQueen, where this conceit to show resilience in escape is transformed, turned inside out to reveal inescapable conditions of conceited endurance. Or it called to mind how Cy Twombly's monuments to no-one in particular, fragile and vulnerable as models, yet haughty and supercilious in their expectations to be scaled up as some grand tomb in some lofty future, turn goofy and gauche when visited by Rachel Harrison, as if embarrassed by their own quick assemblage, left fidgeting and opting to make themselves serviceable to the viewer, perhaps to have fun right there and right then instead.

Listening to these swelling and transforming Wagnerian notes, I couldn't help thinking this was very, very good sculpture.

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