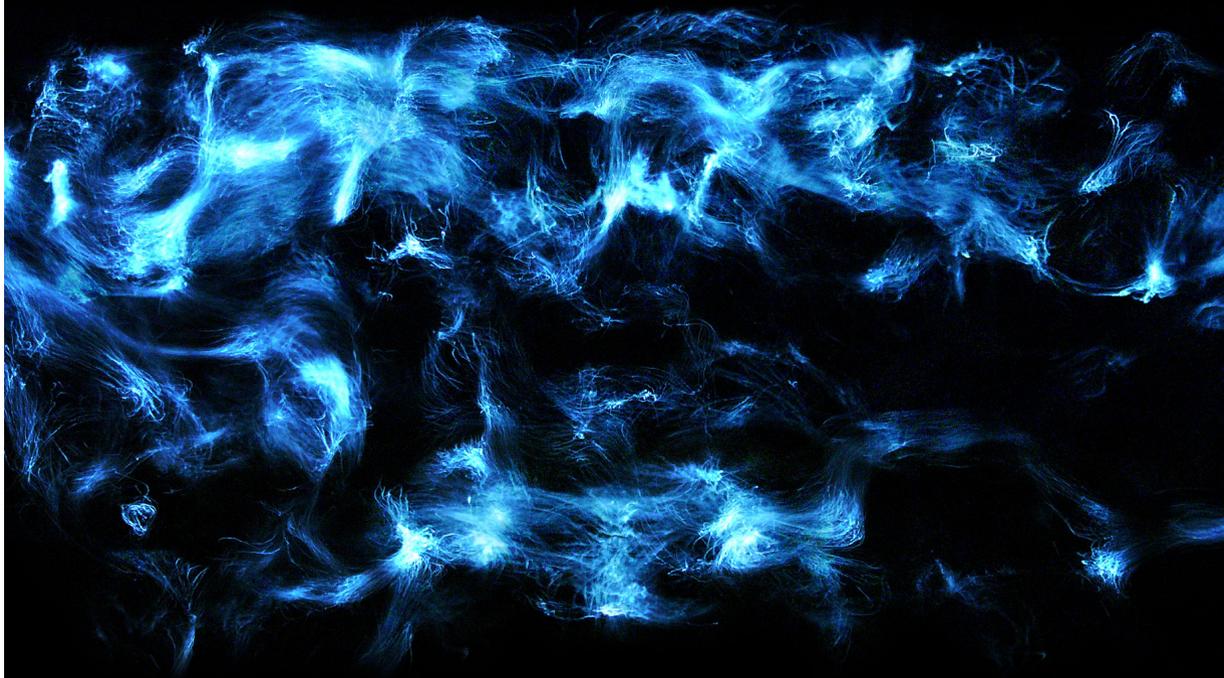
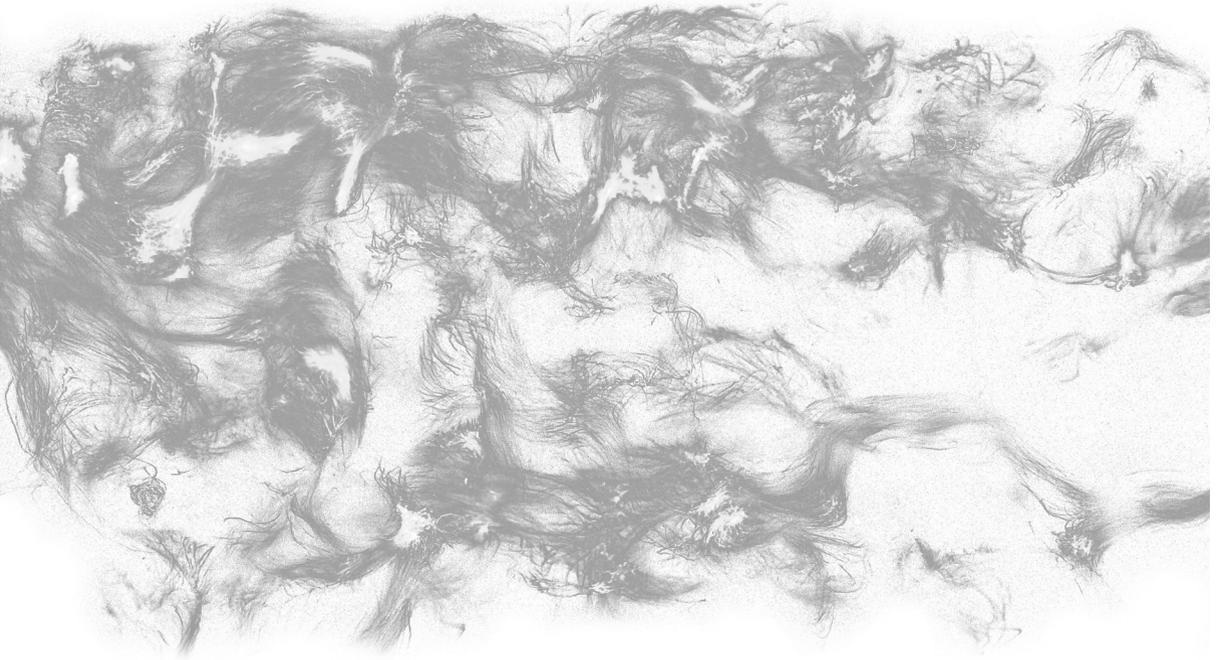


TO HEAR THE WORLD WITH NEW EYES



A CULTURAL HISTORY
OF THE SYNESTHETIC
AND CROSS-SENSORY ARTS

By Thomas Bey William Bailey



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Thomas B.W. Bailey, 2016

IMAGE KEY

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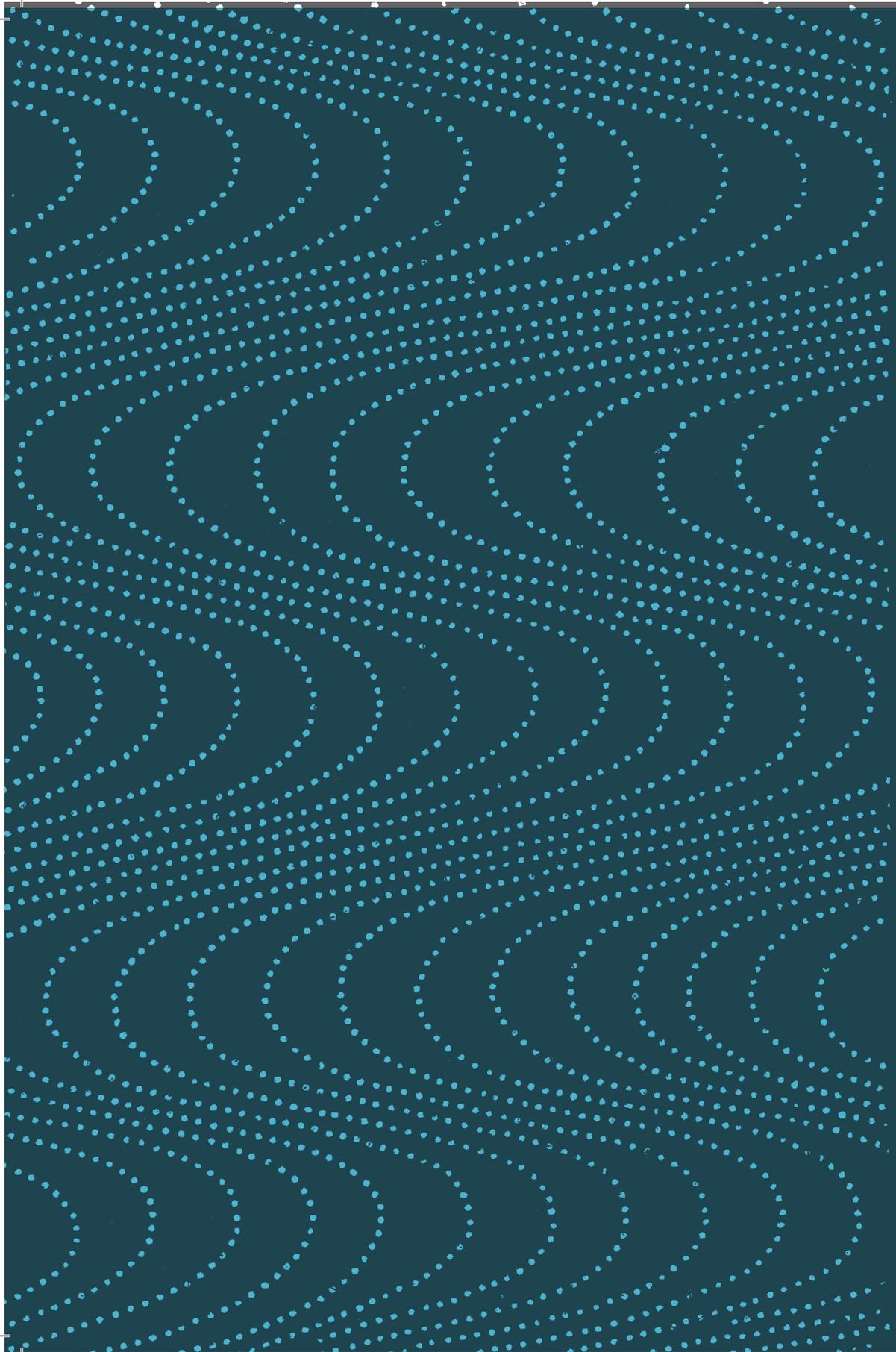
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CONTENTS

INTRODUCTION:

SYNESTHESIA, THE UNIVERSAL ANOMALY	07
1. WHAT IS A SYNESTHETE (AND WHY DO THEY MATTER)?	21
2. AN INVENTORY OF SENSORY ASYMMETRY.....	48
3. ARCHAIC TECHNIQUES OF SYNESTHESIA?	77
4. THE SENSORIUM IN THE TRANSITION TO MODERNITY	102
5. THE FLOWERS OF ROMANCE: OR, THE RISE OF THE GESAMTKUNSTWERK	129
6. THIEVES OF FIRE - SYMBOLISM'S ART OF CORRESPONDENCES	159
7. "COLOR IS THE KEYBOARD OF THE SOUL": SYNESTHESIA IN THE FORMATION OF ABSTRACT ART.....	187
8. ENTHUSIASM! CROSS-MODAL EXPERIEMENTS IN THE SOVIET ERA.....	215
9. OTHER CINEMA: FROM KINETIC PAINTING TO CONCRETE FILM	239
10. TOWARDS REALITY ITSELF: ON OLIVIER MESSIAEN AND IANNIS XENAKIS	263
11. BEYOND "MULTI-MEDIA", AGAINST DESENSITIZATION: THE NEW STATE OF THE CROSS-MODAL ARTS	295
EPILOGUE	324



INTRODUCTION

SYNESTHESIA: THE UNIVERSAL ANOMALY

DANCE OF THE SENSES

Wherever you may be at the time you are reading this, try to briefly imagine yourself at a packed techno club or clandestine party on a good night. As often happens, the individual conversations of the dancers are blanketed over by the synthetic, faultlessly cycling pulse beat, with only wordless shouts of exultation and encouragement occasionally leaking through during transitional moments or pauses in the musical flux. Yet, in spite of this impossibility of verbalization, *communication* seems to be everywhere: it has simply been displaced onto a different kind of transmitter. We can sense it, for example, in fanning formations of concentrated light beams sweep across the floor like some sort of massive, celestial garden rakes, and in the way that the flickering lights bestow an eerie vitality onto the tangled skeins of fog rising from that same floor. Elsewhere, the dancers' hand gestures and bodily tics synchronize with synthetic noises in uncanny moments that, while spontaneous, look as if they could have been meticulously choreographed. It seems as if their gesturing bodies are *initiating* the sounds rather than responding to them - this can be seen, for example, as an enthusiastic dancer rhythmically opens and closes his hand in sync with the rapid filtering sound of a single synthesizer tone.

As a kind of synergistic relationship unfolds between the sights and sounds in this unique stimulation zone, we might even begin to have an illusory sense of other sensory data perfectly 'meshing' with that provided by the audio-visual experience: perhaps a plethora of new smells will seem to be communicating the same information that is being relayed by the audio-visual output, with even this most maligned of senses contributing to the permeating, re-energizing atmosphere. The organicism of this kind of drama, which is being initiated with the help of sophisticated technology,

seems to paradoxically evoke an ecstatic and atavistic sense of continuity with prior modes of existence, in the process lifting this drama above the banal escapism that its critics will routinely accuse it of.

Much has already been written about how these types of environments' special magic comes from their ability to rekindle a dormant sense of community among the participants; to induce a "seeing of oneself in the other" that is strangely absent from other situations in which close proximity alone does not suffice to create a sense of shared values (e.g. the madness of morning subway commutes in Tokyo, or the daily warehousing of humans in call centers and 'cubicle farms.'). Yet, while not discounting or dismissing this positive aspect of the communal dance environment, I feel that their appeal arises from something more than just the promise of real empathic togetherness in an increasingly alienating and atomized world. I feel that the synergistic quality of the sensory information imbibed in these environments is as much a part of their appeal as the social drama that unfolds there, and that the intake of this data either complements or provides a striking metaphor for the reconciliation of social divisions that often lies at the heart of these events.

RE-SHIFTING THE 'GRAVITY OF EXPERIENCE'

The ascent of the scientific method, and of instrumental rationality, has been accompanied by a relentless drive to slice all observable phenomena into clearly delineated constituent parts. Whatever other benefits this process has conferred, it has not escaped criticism for 'solving' certain problems that were never considered problems to begin with. Phenomenologist Maurice Merleau-Ponty, for example, acidly and memorably proclaimed that "scientific knowledge shifts the gravity of experience so that we unlearn how to see, hear, and generally, feel."¹ As this process has accelerated, the arts have continually done their part to sustain the value of irrational

1 Maurice Merleau-Ponty, *Phenomenology of Perception*, p. 229. Trans. Colin Smith. The Humanities Press, New Jersey, 1962.

thought or pre-rational sensation, and to return to a sense of wholeness uninterrupted by scientific delineations and demarcations, e.g. the 'psychic automatism' or stream of consciousness technique used by the Surrealists. The genesis of avant-garde filmmaking, especially that which used camera equipment as something other than just a recording tool, was also very explicitly associated by its early champions (Hans Richter, Viking Eggeling, etc.) with the process of "re-educating the eye"² - a process which, in itself, often involved synchronizing visual information to other types of sensory information. Within the sonic arts, the rebellion against continual scientific subdivision came about with the help of composers like Pierre Schaeffer, who viewed the totality of sound - rather than just harmonic tones - as the fundamental unit of composition (Schaeffer's concept of the *objet sonore*, or "sonic object," also conceptualizes sound as a kind of palpable material perceptible by more than one sensory mode).

The unitary phenomenon that these creators have been aiming at, and what was illustrated in the dance club scenario above, is alternately referred to as synesthesia - a term which is a portmanteau of the Greek *syn* (unity) and *aesthesis* (sensation). Synesthesia is most literally defined as a neurological condition through which the sensory data received by one sensory modality is "translated" by a second, in a way that seems, to the perceiver, to be perfectly natural (to the point where synesthetes are often revolted by what they see as ugly incongruity in 'multi-media' forms like music videos).

Perhaps because the campaign to re-educate the senses through their re-integration is so closely associated with the irrational urges of representatives from the historical avant-garde art movements, and also congruent with the aims of numerous mystical movements, this subject has

2 "...after centuries of naturalistic paintings, people had lost the gift of perceiving pure plastic forms and colors and of appreciating light and line relationships that did not represent or symbolize anything. Creators of abstract films, like Marcel Duchamp, Viking Eggeling, and Hans Richter, were engaged in reeducating the eye." Esther Levenger, "Czech Avant-Garde Art: Poetry for the Five Senses." *The Art Bulletin*, Vol. 81, No. 3 (Sep., 1999), pp. 513-532.

been off limits for serious academic research until very recently (from the 1990s onward, there is a marked increase in academic papers containing the words “synesthesia” or “cross-modal” in their titles). Countless criticisms have been flung at the unreliability of synesthetes’ testimonials, though pioneering synesthesia researcher and neurologist Richard Cytowic defends their accounts on the basis that “there is a remarkable consistency among subjects, with all of them claiming to have had the experience as long as they could remember, everyone reporting that the secondary sensations remain constant over time, and all and sundry amazed that others like them exist.”³ While most synesthetes will eventually come to recognize their unique perceptive abilities as an illusion rather than the way of objectively perceived reality, they rarely find it necessary to seek treatment for this and would find the loss of their synesthetic faculties traumatic and disabling.

This condition is not at all limited to the sort of sight-sound synthesis that music videos aim for, and we should immediately get it out of our heads that any and all audio-visual, “multi-media” experiences represent the full content of “synesthetic” experience. Synesthesia marshals the conventionally recognized five senses in all kinds of different combinations: synesthetes will report an ability to ‘taste shapes,’ for example, to ‘hear colors’ or perhaps even to ‘smell sounds’. The most commonly reported type of synesthesia is color-grapheme synesthesia, or a condition in which textual elements like letters or words may be bonded to single colors (to the point where many synesthetes have their own carefully systemitized ‘color alphabets,’ and also leading to the mental imaging of colors as being ‘red’ or ‘blue’ even though they may appear on a page before the viewer’s eyes in basic black). More esoteric forms of synesthetic hallucination have been reported, such as “mirror-touch synesthesia” (in which the observation of another person being touched will cause a tactile response in the observer) and audioalgesic synesthesia (in which certain

3 Richard Cytowic MD, *Synesthesia: A Union of the Senses*, p. 7-8. MIT Press, Cambridge MA, 2002.

sounds can produce a haptic sensation of pain in areas of the body not normally associated with hearing).

Invoking these kinds of hallucinations may confirm what the phenomenologist Casey O'Callaghan says of synesthesia - that it is too "systematic and persistent" to adapt to environmental conditions in a way that would really benefit its hosts, and that synesthetic responses are to be clearly differentiated from more "advantageous" forms of learned cross-modal correspondence (which are "intelligible solutions to unusual or extraordinary situations.")⁴ However, a counter-argument comes from some famous cases whose inherited synesthesia gave them an exceptional ability to memorize key information - an ability stemming from the ability to mentally associate a name or date with a color as well as with its phonetic sound, thus giving numerous ways to assist in memory recall.

Statistically, synesthesia of the inherited variety (rather than a learned or adventitious kind) affects only a small percentage of the adult population. This often leads to an outcast status among those who speak openly of their unique ways of sensing and perceiving - especially during the formative periods of their lives - and especially since legitimate synesthetes' perceptions are often attached to strong and irrevocable emotional resonances. However, there is some evidence - particularly in the psychological studies conducted by Daphne Maurer & Catherine Mondloch - that a much larger segment of the population experiences it at some point in their lives, particularly in their developmental or neo-natal stages. Owing to the process of physiologic necrosis, which involves a sort of "pruning" of superfluous neuronal connections in the infant brain, the decrease of synesthetic perception with age is a given for all but the aforementioned small number of adult synesthetes. If we go further back still, to the pre-natal period of human life, we encounter another synesthetic state in which "there is no clear biological border between feeling and hearing [...] these are the two sensations with which

4 Casey O'Callaghan, *Sounds: A Philosophical Theory*, pp. 174-175. Oxford University Press, Oxford, 2007.

we have the longest continuous experience.”⁵ Furthermore, the status of synesthetes as “cognitive fossils” that still perceive in ways similar to their ancestors in the mammalian order is a topic of much spirited debate (although that debate is beyond the scope of this introductory chapter, and will have to be returned to later).

UNITY AND UNIVERSALITY

By now, it is probably clear that a truly “synesthetic” art is impossible to achieve for anyone but clinically recognized synesthetes. Yet if we merely scratch the surface of cultural production over the past few centuries, and make even a cursory survey of our own linguistic and semiotic conventions, the habit of *simulating* this condition seems very widespread. Not only has artwork of a “cross-modal” nature persisted and resisted the many thematic vicissitudes of the art world, but cross-modal communication itself has become an invaluable tool for making obscure and complex concepts more easy to intuit. Bulat Galejev, one of the leading thinkers dealing with synesthetic art and culture, also argues for a kind of universality of this condition - if not as a paradoxical anomaly that is universally experienced, then certainly as a phenomenon whose nature is universally *understood*:

...everyone can understand synesthetic transferences in poetic and ordinary language (such as “bright sound” or “flat timbre”). As I have shown before, synesthesia is an essential aspect of language and, more generally, of all figurative thinking, including all imaginative thinking (for all kinds of art, including music).⁶

Galejev’s comments here lend credence to a theory that I will expand on later in this book: i.e. that some vestigial traces of synesthesia still drive our species-wide capacity for understanding how certain stimuli could be interpreted by two or more senses.

5 Paul DeMarinis, “Gray Area.” *Leonardo*, Vol. 29, No. 4 (1996), pp. 270-272.

6 Bulat Galejev, “Evolution of Gravitational Synesthesia in Music: To Color and Light!” *Leonardo* vol. 36, no. 2 (2003), pp. 129-134.

Indeed, a fascinating thing about synesthesia is its resilience in the public imagination, and its consequent ability to be adopted by any and all human cultures and ideological inclinations as being “their own.” From the medieval concept of the *Harmonia Mundi*, to the Russian Futurist and Constructivist dalliances with *intra-modal* synesthesia (in which single colors were inextricably bound to single shapes) there have been centuries’ worth of globally dispersed studies into the phenomenon of sensory unity. Gene Youngblood states that synesthesia is “as old as the ancient Greeks who invented the term,”⁷ although even they most certainly did not inaugurate the concept itself, despite having coined the term we still use to describe cross-modal perception. More recently, i.e. within the past two and a half centuries, numerous speculations have also been made into the possibility of non-synesthetes “training” themselves to perceive their environment as legitimate synesthetes do, and to reap a variety of spiritual or evolutionary rewards from this process.

More interesting still have been the speculations that, insofar as there is some survival of consciousness post-mortem, it will involve a return to the synesthetic perception of all phenomena. It has not been uncommon for individuals to step beyond the bounds of mortality itself with their synesthetic speculations, as is the case with Columbia theology professor Mark Taylor musing on the afterlife (he writes that “through a synaesthesia I do not understand, I hear the night beyond the night as an endless murmur, something like the white noise that is indistinguishable from silence.”)⁸ The conception of sentient human life as being “book-ended” by periods of pre-natal and post-mortem synesthetic consciousness takes us into spiritual territory that I don’t expect will interest all readers of this text, but it is still essential to make a survey of this type of thought in order to better comprehend the enduring attraction to synesthesia.

7 Gene Youngblood, *Expanded Cinema*, p. 81. Clarke, Irwin & Company Ltd., Toronto / Vancouver, 1970.

8 Mark C. Taylor, *Field Notes From Elsewhere: Reflections On Living And Dying*, p. 4. Columbia University Press, New York, 2009.

We will soon discover more examples showing that synesthesia, and related creative developments, are not the exclusive province of one ideology or nation. The geographic diversity in approaches to the idea of sensory fusion, and their distribution across the timeline of human cultural and technological developments, are indeed notable. Yet this book could capably investigate the synesthetic arts as they developed within a single country, and still contain enough material between its covers to be fascinating. The aforementioned Russia, for example, has long been a wellspring for much of the activity relating to synesthetic studies. The deeply ambitious and mysticism-infused compositions of Aleksandr Scriabin approached synesthesia from the viewpoint of an individual who “gradually came to encompass all of the Symbolists’ philosophical and religious obsessions: the Scriptures, the philosophies of Nietzsche and Schopenhauer, the ecumenical religion of Vladimir Solovyov (1853-1900), and the Theosophical Doctrine of Madame Helena Blavatsky (1831-1891).”⁹ Certain Romantic compositions of Nikolai Rimsky-Korsakov (specifically his 1890 opera *Mlada*) and of Vladimir Kandsinsky (*The Yellow Sound*, 1911) cemented the Russian role in synesthetic study for this time period - it was also Kandinsky whose synesthetic theories partially laid the groundwork for an entire galaxy of abstract art to come.

The interest in synesthesia’s cultural applications was not at all diminished, either, after Russia’s turbulent transformation into the seat of the Soviet empire: the filmmaker and theorist Sergei Eisenstein, who has long since confirmed his place as the foundation stone for avant-garde cinematic techniques, called upon the aesthetics of Japanese *kabuki* theater and the “organic wholeness” principle of Hegel in order to develop the then-radical film montage technique (see the “Battle on the Ice” sequence in *Alexander Nevsky*) that we now perceive as a common feature of the most mainstream cinematic fare.

As evinced by Eisenstein’s own influences, even a nation like Russia, with its unimpeachable track record of synesthetic theory and practice,

9 Simon Morrison, “Scriabin and the Impossible.” *Journal of the American Musicological Society*, Vol. 51, No. 2 (Summer, 1998), pp.283-330.

remains just another player in the cultural history of synesthesia. It can be intriguing to note the role that a national spirit plays in deciding the extent of synesthetic study, though it is equally intriguing to see what happens when cultural 'imports' are reinterpreted by the locals, as was the case when the heavily synesthesia-flavored French Symbolist poetry (of Baudelaire, Verlaine, Rimbaud etc). spawned a uniquely Japanese movement known as the *shin-kakukanha* [新感覚派 "New Sensualists"], who saw in the French poets an echo of Basho's *haiku* poetry during Japan's Meiji Restoration era. A striking amount of cross-modal creativity is cross-cultural as well.

In the process of uncovering and comparing the salient features of multiple "cultural synesthesias" as they appear in distinct territories of the globe, this journey will naturally require us to make yet more important distinctions: with the example of the Anangu peoples in Australia's western desert, we can compare the Western conception of synesthesia as a mental occurrence with one that the local culture considers a "transformation of the whole body,"¹⁰ a perceptive quirk that causes concepts like "greenness" to refer to much more than just perception of color (within the same culture, songs are sensed as having *mayu* or flavors). Branching off from this discussion, many readers will rightly wonder how synesthesia as experienced by clinical synesthetes differs from that induced by psychedelic drugs or by certain types of folk medicine (the multifarious "plant allies" researched by the late Terence McKenna). Studies of the latter show us that synesthesia as a means of orienting oneself in a natural environment is, among pre-modern or traditional cultures, far from an uncommon feature.

For example, ethnographer Marina Dobkin de Rios noticed during her initiation into Peruvian ayahuasca ceremony, effects such as "the mind's eye fill[ing] with a rather complex and detailed panorama of primary colors and variegated forms," whose whirling chaos she saw as a synesthetic correlation to her "perception of the speed of the healer's music"

10 Diana Young, "The Smell of Greenness: Cultural Synesthesia in the Western Desert." *Etnofoor*, Vol. 18, No. 1 (2005), pp. 61-77.

(conversely, she noted how “a lack of vision in various ayahuasca sessions could generally be correlated with inadequate musical ability on the part of particular healers.”)¹¹ Furthermore, Dobkin de Rios claimed that the ritual inculcation of synesthesia was very much a deliberate part of healing ceremonies rather than simply an unintended consequence, and that this fact was not limited to the specific groups she personally observed.¹² All this aside, the synesthetic and psychedelic worlds are not entirely the same despite a good deal of perceptual commonalities: one fact we will return to is the discovery that many clinical synesthetes have experienced no additional quirks of perception when experimentally dosed with psychedelic drugs.

SYNESTHESIA AND TECHNOLOGY

Because we live in an age that is typified by dramatically expanding technological re-shaping of our individual bodies and natural terrain, it seems like a near-certainty that much of this book’s narrative will be the story of how increased cross-modal perception has gone hand-in-hand with new technology. However, it is my sincere hope that this book will not be read as a simplistic piece of techno-utopian proselytizing, nor as a book that argues for an evolutionary process in which technology drives culture (rather than a more mutual arising of culture and technology). Scenarios like the one opening this chapter are a very good example of how cross-modal sensory stimulation can either lead to or symbolize a completely new “way of life,” yet the level of technological advancement necessary for this lifestyle transformation can vary wildly. Such synesthetic rituals as the Japanese tea ceremony have also been viewed as a whole

11 Fred Katz and Marlene Dobkin de Rios, “Hallucinogenic Music: An Analysis of the Role of Whistling in Peruvian Ayahuasca Healing Sessions.” *The Journal of American Folklore*, Vol. 84, No. 333 (Jul. - Sep., 1971), pp. 320-327.

12 “Most traditional drug-using societies not only recognize this scrambling of sensory modalities, but actually *program* [italics mine] their rituals so as to heighten all sensory modalities.” Marlene Dobkin de Rios and Fred Katz, “Some Relationships between Music and Hallucinogenic Ritual: The ‘Jungle Gym’ in Consciousness.” *Ethos*, Vol. 3, No. 1 (Spring, 1975), pp. 64-76.

"way of life" (specifically as *chadou* [茶道、"way of tea"]) of which Hamamoto Soshun claims "[the] true practice of Tea brings all senses to function simultaneously and in accord, and leads us to the realm of immovable tranquility."¹³ In sharp contrast to the modern club experience with its computer-driven showers of stroboscopic light and carefully sculpted electronic sound, the implementation tools of the *chadou* are uncomplicated to the point of being brutally austere. I contend, though, that both of these modes of synesthetic experience are capable of unlocking hitherto unrealized nuances of perceptibility.

THE MORALITY OF SYNESTHESIA

In the end, I feel that it will be necessary for me to also try to justify the propagation of synesthetic and cross-modal creativity on moral or ethical grounds. Already, given the breadth of scientific and esoteric thinking that considers synesthesia a return to 'the primordial' or to some originary form of sentient life, my work here is going to be questioned - after all, is a less developed form of life necessarily a 'better' one? Why would we wish to return to a way of perceiving that we have presumably evolved out of, or that naturally recedes as we grow from infants to adults? And, as regards evolution, was the capacity to sense synergistically *lost* when we claimed for ourselves an elevated place among the biosphere's inhabitants, or was it merely *disowned*?

Plenty of theorists have already come to an ethical conclusion: that the encouragement of synesthetic communication is essential to our development as more efficient, empathetic and less generally destructive creatures. For Youngblood, who wrote in the early 1970s that "synaesthetic cinema [...] can function as a conditioning force to unite us with the living present, not separate us from it,"¹⁴ the ethical value of this activity was

¹³ Steve Odin, "Blossom Scents Take Up the Ringing: Synaesthesia in Japanese and Western Aesthetics." *Soundings: An Interdisciplinary Journal*, Vol. 69, No. 3 (Fall 1986), pp. 256-281.

¹⁴ Youngblood (1970), p. 82.

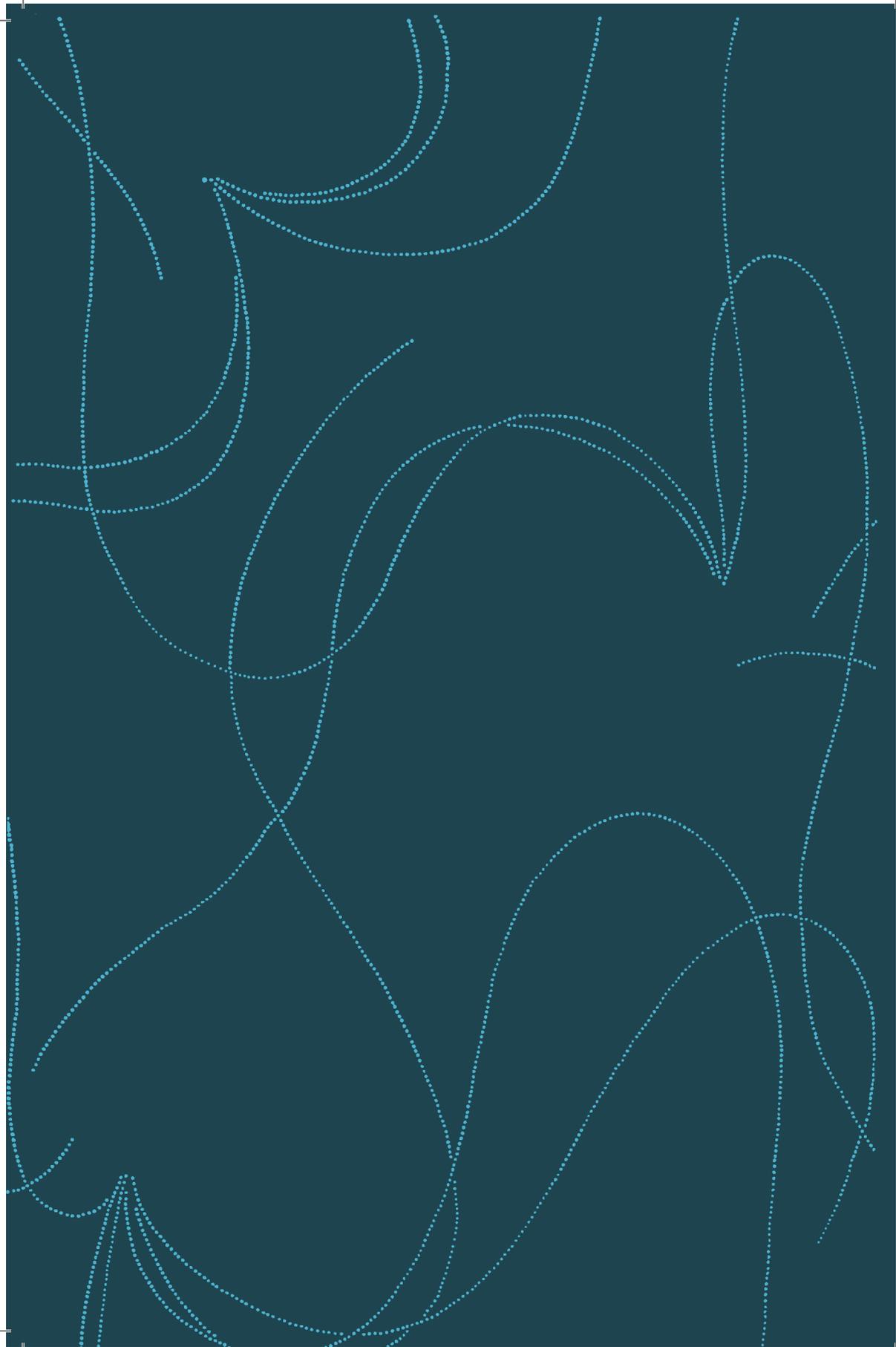
clear and unequivocal. As such, he would very likely see the scenario that opened this chapter as having this same positive effect in a different setting, and with different communications media.

To be sure, not all that calls itself 'synesthetic' culture will end up having any kind of long-term significance, and not every novel fusion of sensory data will have any use beyond simple narcissistic self-indulgence (a good fictional model for this is provided by the decadent, misanthropic aesthete Jean des Esseintes from Huysmans' classic novel *A Rebours*). We cannot expect all the synesthetic culture of today and tomorrow to be any freer from bogus attempts at transcendence than the psychedelic explosion of the 1960s, and much of this culture may never rise above a status as a hip lifestyle affectation. Meanwhile, given the term's attractiveness to theorists of synergy and holism, it is likely to be highly misused or misapplied: even in Youngblood's well-considered classic *Expanded Cinema*, the definition of synesthesia as "cross-modal correspondence" is almost completely ignored in favor of a more ambiguous, personalized definition concerning the unrestricted flow of "psychic impulses" and the totality that will be perceived as a result. Youngblood and other like-minded thinkers have occasionally attempted to redefine synesthesia as being something more profound than "unity of the senses" - if anything, Youngblood seems to suggest that an understanding of the "human sensorium" will come about as a result of shedding other deeply ingrained psycho-sexual inhibitions, and not the other way around.

Nevertheless, this book will attempt to argue that the opposite is true: namely, that understanding of the synesthesetic impulse is as valid a starting point as any towards larger and more far-reaching awakenings. What happens after these awakenings is up to each individual to ultimately decide, and I can only steer people so far in a certain direction. If the synesthetic experience affords individuals the opportunity to "merely" be fascinated by the world anew, and to once again view life as being more than just a death sentence, then this is already a "net gain" where I am concerned, and I would not wish for any greater species-wide benefit than

this. However, the tale of the synesthetic impulse throughout history is worth telling for reasons that go beyond even this very therapeutic and beneficial fascination: knowing its history, and the myriad reasons for its persistence throughout very different eras of human endeavor, is to know much about the forces guiding 'human endeavor' itself.





CHAPTER 1

WHAT IS A SYNESTHETE (AND WHY DO THEY MATTER)?

All of our cultural knowledge, and in fact all of our life experiences, are initially dependent upon the relaying mechanism of our senses. Most of us seem comfortable in the knowledge that the information we receive is conveyed by five distinct sensory methods, or modes, of interpreting the phenomena that constitute our world. We also understand that each incoming physical stimulus generates a unimodal perceptive experience - for example, the perception of sound waves produces hearing and the perception of light energy produce the sensation of vision. As Evelina Domnitch and Dmitry Gelfand contend, though, the senses are a contested terrain for scientific researchers, a domain in which further classification and distinction seems inevitable:

Despite all the invaluable advances in psychophysics, biochemistry, and quantum biology, there is no agreement on the number of human senses. There is also no suitable classification of the senses that will distinguish them according to a single criterion. Some of these newly acknowledged senses include nociception (pain), equilibrioception (balance), proprioception (position) and kinesthesis (motion), chronoception (time), thermoception, weak magnetoception, and more interoceptive senses are being considered.¹⁵

And, on the cultural front, things are somewhat different again. The steadily accelerating speed of modern communications has led many to feel a profound sense of speeding towards a state in which phenomena tend to collide or merge more often than they separate or develop further

¹⁵ Evelina Domnitch and Dmitry Gelfand, "Hyperspectral Perciption." Previously unpublished manuscript (2012).

distinctions from one another. The so-called information age is, at least for those who can afford relatively unrestricted access to information, one of apparently unyielding cross-pollination. In the sphere of culture, new hybrid forms rise and fall with an ephemerality that can make it maddening to follow their progress. Harmonizing processes denoted by a “syn” prefix (synergy, synthesis, synchronization) remain the watchwords of the day - while these are all too often used as emphatic but empty buzzwords in company meetings, their increasing use in public discourse does point to a serious and pervasive interest in such processes. As the “infosphere” continues to expand at an ever-increasing velocity, there is a fear that information overload will render increasing numbers of the population unable to comprehend it.

With synchronization as a goal of the marketing campaigns and design teams whose stock has steadily risen in this information-saturated era, it seems appropriate that they would move beyond the synchronization not just of contrasting signifiers or events, and take an interest in aligning the senses themselves. Untold amounts of time and money are spent on conjuring a state in which two or more of our sensory modalities are stimulated in a way that seems harmonious and completely natural, with the assumption that doing so can only double the impact of whatever information is being presented - be it a television ad campaign or a dance performance - and thus make it more desirable and memorable. However, this state is not the sole province of these would-be design geniuses, nor anything exclusive to the age of broadband information transfer: it is an innate feature of a small portion of the human population, and has existed in humans since pre-history. It goes by the name synesthesia.

Synesthesia, for those who do not know of its acceptance as a neurological condition, has the otherworldly or legendary cachet of a “superpower” (indeed, the 2006-2010 sci-fi TV series *Heroes* featured a character who had synesthetic perception, visualizing sound as mobile shrouds of light). When poet and author Diane Ackerman relays accounts of individuals who “see yellow on touching a matte surface, or smell the passage of

time,"¹⁶ it can be difficult to believe that such individuals exist, let alone spend the majority of their lives in this state without any extra intervention from pharmaceuticals or, in fact, any voluntary means of producing an altered state of consciousness. Ever since Aristotelean logic solidified the idea that there were five distinct senses, there has been a perception of synesthetes as being on par with psychics or clairvoyants: though it is a problematic comparison, it does at least testify to their ongoing ability to conjure mystery in a world where this is an increasingly rare commodity.

The commonly accepted definition of synesthesia, the term deriving from the Greek *syn* [together] and *aisthenisthai* [to perceive], is as follows: it is a neurological state in which the triggering or stimulation of one sensory modality leads to the stimulation of a second (or a third, as the case may sometimes be). There is plenty of evidence for the senses being physiologically connected in some manner - see, for example, the phenomenon of musical stimulus causing increased blood flow in cortical visual regions, or the fact that *silent* videos of mouthed words manage to activate the auditory cortex. Yet the type of sensory "translation" involved in synesthesia is very different from either of these examples, since the means of analyzing it are fewer, and synesthetic percepts are far more subjective and individualized than these other physiological transactions.

The most popular understanding of this phenomenon is that of the individual who "hears" colors, and some evidence does exist that this is indeed "the most prevalent form"¹⁷ in addition to its being the form that most seizes the public imagination. Several other variants do exist, proving that synesthesia is certainly not limited to the audio-visual realm: odors, for example, can influence tactile sensations perceived by the synesthete to be as parallel in their nature as the more commonly cited audio-visual examples.

16 Diane Ackerman, *A Natural History of The Senses*, p. 289. Vintage, New York, 1991.

17 Crétien van Campen and Clara Froger, "Personal Profiles of Color Synesthesia: Developing a Testing Method for Artists and Scientists." *Leonardo* Vol. 36, No. 4 (2003), pp. 291–294.

The origins of synesthesia are a topic of ongoing study, though one of the most commonly cited neurobiological origins for the condition is the portion of the brain's temporal lobe dealing with number recognition - the fusiform gyrus - which is situated next to the region normally associated with processing color information. The so-called visual grapheme area, which would be responsible for the processing of information related to text, also shares this region of the brain. The researchers Ramachandran and Hubbard, largely responsible for forwarding this hypothesis, seem to have replied in the negative to their own question: "can it be a coincidence that the most common form of synaesthesia involves graphemes and colours *and* the brain areas corresponding to these are right next to each other?"¹⁸ They recognize that the fusiform gyrus has other functions as well - namely, that it contains cells tasked with recognizing faces - and wonder why this would not also lead to a situation in which synesthetes associate specific faces with colors in the same way that they do with printed text. Here, too, the researchers claim to have encountered "at least one synesthete"¹⁹ who did claim such a perceptual connection.

CHARACTERISTICS OF SYNESTHESIA

There are many salient characteristics of synesthesia worth noting in addition to this fundamental fact of "cross-wiring" between sensory modes. Inherited or "developmental" synesthesia is the type most commonly studied by neurological researchers, and it differs from adventitious or chemically induced synesthesia in key respects: its onset typically occurs before individuals are four years of age, and its imagery is distinct from that which is normally produced by the imagination. When these stimuli are produced, they are involuntary rather than conjured on a whim by the synesthete, and can thus cause much of the behavior that leads synesthetes to be seen as quirky eccentrics, e.g. the need to turn down a

¹⁸ V.S. Ramachandran and E.M. Hubbard, "Synesthesia: A Window Into Perception, Thought, And Language." *Journal Of Consciousness Studies* Vol. 8, No. 12 (2001), pp. 3-34.

¹⁹ *Ibid.*

radio broadcast of music during a car ride because the synesthete is being “blinded” by it. In his own studies of the phenomenon, the structural linguist Ferdinand de Saussure affirmed that this condition’s involuntary nature was accompanied by an inability to explain exactly why synesthetic percepts occurred:

The subjects cannot explain with certainty the reason for their experiences, why - for example - a vowel reminded them of the color red, and not blue. The only thing we can say is that these phenomena lie at the boundary between the conscious and the unconscious; the intersection between depth psychology and the analysis of language.²⁰

This involuntary quality of synesthesia also places us in a position where, this early in the game, we already need to disqualify much of what is called “synesthetic” art and call it by another name. Paul Hertz is essentially correct when he claims that, since “persons, not artworks, are synesthetic... ultimately there is no such thing as synesthetic art” (but he is also correct when he follows this statement with “...but that has not stopped anyone from trying to create it.”²¹) It is more convenient, therefore, to use the term “cross-modal” art to distinguish those artworks *inspired* by the synesthetic experience, rather than actually being created by artists with the unique neurological wiring that would make them synesthetes.

Synesthetic phenomena also show a remarkable consistency over time: it is not unusual for synesthetes to claim that certain sensory correspondences have been with them as long as they could possibly remember. Partially owing to this lifelong intimacy (and the feeling that such synesthetic

²⁰ “Les sujets ne savent pas expliquer avec certitude la raison de leur expérience, pourquoi par exemple la voyelle a leur rappelle la couleur rouge et pas le bleu. La seule chose que l’on peut affirmer, est qu’il s’agit de phénomènes à la limite entre le conscient et l’inconscient, point d’intersection entre la psychologie des profondeurs et l’analyse du langage.” Marco Mazzeo, “Les voyelles colorées: Saussure et la synesthésie.” *Cahiers Ferdinand de Saussure*, No. 57 (2004), pp. 129-143. Translated from the French by the author.

²¹ Paul Hertz, “Synesthetic Art - An Imaginary Number?” *Leonardo*, Vol. 32, No. 5, Seventh New York Digital Salon (1999), pp. 399-404.

perceptions are entirely one's own), the experience of synesthesia is also emotionally charged. Synesthetes will often have a sense of "satisfaction of apprehending a connection,"²² or a certain heightened joy of self-discovery during new sensory experiences. A full spectrum of emotions is involved during the process of experiencing these percepts, as evinced by Ramachandran and Hubbard's tests in which "one of our synaesthetes claimed that incorrectly coloured numbers were 'ugly' and felt like 'nails scratching on the blackboard... conversely, when numbers were the correct colour it 'felt right, like the *aha* when the solution to a problem finally emerges."²³

It might not be too far off to say that this condition evokes something similar to the extreme affectivity felt during dream states; a heightened emotional range that follows the heightened sensitivity to perceptual phenomena. For those who have had a lifelong acquaintance with synesthesia, loss of this faculty - through a severe injury, etc. - can be emotionally disastrous; something akin to the feeling that an individual with colored vision would feel upon suddenly being limited to a grayscale perception of the world. The emotional character of synesthetes is also compounded by the fact that they initially feel their own perceptive abilities to be the norm rather than the exception, and the gradual revelation of their uniqueness can add to the feeling of their percepts as being "meant" specifically for them. However, there are exceptions to this rule of individualized percepts, such as Patrick Martin's discovery of "the almost universal agreement, amongst those who bear this ability, that 'O' has a brown texture and 'I' has a whitish hue."²⁴

Synesthetic percepts are "projected" or "spatially extended," meaning that synesthetes have a very keen awareness of their percepts existing somewhere other than the imagination. Generally these percepts are

22 Richard Cytowic, *Synesthesia: A Union of the Senses*, p. 290. MIT Press, Cambridge / London, 2002.

23 Ramachandran and Hubbard (2001).

24 Patrick Martin, *Synesthesia, Metaphor and Right-Brain Functioning*. Reproduced online at <http://barneygrant.tripod.com/synaes.htm>. Retrieved March 14, 2014.

within reach, whether they are perceived as static or mobile. This condition can be particularly fascinating when more than two sensory modes are triggered: the “taste-smell-touch” synesthete “MW” reported “reaching out to rub ‘cool, glass columns’” upon tasting a mint flavor, and also “reaching through” these rows of columns and “turning [his] hand’ to rub back the curvature.”²⁵ In many synesthetes, this sense of spatiality is also the source of unique mnemonic devices by which they can remember common serial concepts - calendar dates, events in history, etc. - as having specific directional “locations” on an externalized “map” of sorts.

As far as visual perception goes, synesthetes do not experience the kinds of things typically associated with hallucinogen intake, i.e. complex narrative scenes inhabited by anthropomorphic or theriomorphic forms. Rather, they see a limited variety of photisms including geometric images, latticework, and amorphous or undulating colored patterns (which, despite the limited number of such reported image types, are nonetheless extremely varied in the subjective interpretation of characteristics like color and repetition). Like other forms of hallucination, synesthetic visuals may have a quick “decay” time in spite of their memorability, and the additional illusion of liveliness that they confer with their small inventory of “animations” (e.g. pulsing, spiraling, or rotating).

Among two of the more remaining salient characteristics are that “typically [synesthetic] subjects lack of recollection of any learning [their percepts]”, and “the sex ratio in synaesthesia is 6:1 [female=male].”²⁶ The latter item will make much of art in this volume seem suspect as “genuine” synesthetic art: though females account for the great majority of confirmed instances of synesthesia, the artists most commonly associated with “synesthetic” art have been male. It is true that those with synesthesia, whatever their gender, are more likely to be artists, an assumption backed up by

²⁵ Cytowic (2002), p. 178.

²⁶ Simon Baron-Cohen et Al., “Savant Memory in a Man with Colour Form-Number Synaesthesia and Asperger Syndrome.” *Journal of Consciousness Studies*, Vol. 14 (2007), pp. 2-15.

experimental research conducted in 1989.²⁷ From those who seemingly pass the criteria for genuineness - e.g. the painter David Hockney, or the composer Olivier Messiaen - to those who can only be called synesthesia enthusiasts, we encounter an overwhelmingly male pool of talent, though one that is occasionally challenged by innovators such as Mary Hallock-Greenewalt. There is no doubt that fascinating female artists with synesthesia do exist, such as Carol Steen, who began her painting career after a visit to an acupuncturist intensified her special perception and made her synesthetic photisms more memorable. Why such artists are not considered as canonical as a quasi-synesthete like Kandinsky (whom Steen praises nonetheless)²⁸ is a question with no simple, single answer, and the attempt to determine this is perhaps outside the scope of this book.

At least one of those male artists associated with this condition - the author Vladimir Nabokov - has been verified as a legitimate synesthete, and in the process has pointed to another intriguing aspect of this condition. The ability to inherit synesthesia is no secret among researchers in this field, with a "possible genetic predisposition transmitted by an X-linked autosomal dominant gene"²⁹ being the commonly cited cause of synesthesia as experienced by relatives of previously identified synesthetes. Nabokov, who testifies about his synesthetic condition in both "Portrait of My Mother" (1949) and in his autobiography *Speak, Memory* (1966), gave birth to a son - Dmitry - who was also found to possess grapheme-color synesthesia. More interestingly, Nabokov's wife Vera even claimed to have this condition. It is thus no surprise that a few

27 This comes with a caveat: "While this study has the advantage of using an experimental method to assess creativity, it suffers a severe limitation in that no experimental tests were conducted to assess synaesthetic experiences. Further studies making use of our objective experimental measures of synaesthesia are clearly required to confirm this result." Ramachandran & Hubbard (2001).

28 On Kandinsky, Steen says "I saw a sphere like the one in Kandinsky's *Blue* in one of my acupuncture sessions. Since it is really hard to explain your visions to someone, I assume Kandinsky was a synaesthete." Quoted in Jessica Griggs, "Windows To The Mind." *New Scientist* Vol. 207 No. 2778 (2010).

29 Anina N. Rich and Jason B. Mattingley, "Anomalous Perception in Synesthesia: A Cognitive Neuroscience Perspective." *Nature Reviews / Neuroscience*, Vol. 3 (January 2002), pp. 43-52.

characters in Nabokov's fictional canon are themselves synesthetes, and his condition has influenced the titling of works themselves. The "Ada" in his 1969 *Ada or Ardour: A Family Portrait* was chosen for the fact that the alternating "A" and "D," being perceived as "black" and "yellow" to the author, reminded him of the markings of a favorite butterfly (the book's titular character aspires to be a lepidopterist).

Further confirmation of the heredity of synesthesia comes from Ramachandran and Hubbard, who also claim confidently that "every study of synaesthesia has agreed that synaesthesia seems to run in families,"³⁰ citing a specific example of Baron-Cohen's 1996 survey of synesthetes. This revealed that Nabokov's situation was far from an isolated one, with up to a third of the survey respondents acknowledging that they had family members that were also synesthetes. From the time of Galton's studies in the late 19th century, the genetic quality of synesthesia has been presumed, though estimates of the exact genetic distribution have changed wildly over time (anything from 1 out of 20 individuals, as per Galton, to 1 in every 20,000 individuals).

Ramachandran and Hubbard, being two of the most widely cited researchers dealing with this subject, make another important distinction among synesthetic types: in their estimation, there are "higher" synesthetes and "lower" synesthetes. Using color-grapheme synesthesia as an example, a "higher" synesthete would need only the *concept* of a number or letter to trigger a synesthetic association, whereas a "lower" synesthete would need to have this same letter or number physically present in order for this mental correspondence to happen. Or, put more simply, a "higher" synesthete would experience alphanumeric characters as physically having a different color than what would be seen by non-synesthetes, and for "lower" synesthetes this percept would exist in "the mind's eye." These types would alternately be known as "projector" or "associator" types, respectively, and though the research team of

³⁰ *Ibid.*

Dixon and Smilek have contested this differentiation in the same year that Ramachandran and Hubbard announced their findings (2005), more researchers have sprung up to defend the conclusions of the latter. The team behind a 2009 study from the Helmholtz Institute in Utrecht believes their experimentation proves that “synesthetic experiences can apparently arise as a result of both bottom up (perceptual) and top-down (attentional / inhibitory) processes, or as a result of top-down (attentional / inhibitory) effects only.”³¹

Before continuing any further, the prevalence of “grapheme-color” synesthesia as the most common type should certainly not be relegated to a side note here, since it has strong implications for the relationship between art and language. In this book, we will encounter several artists who proclaimed that the adoption of their personal synesthetic correspondence system would be a portal to an emancipatory world of previously hidden linkages, and consequently to a kind of international social unity. One problem with this - which may already be obvious to astute readers - is the fact that phenomena such as grapheme-color synesthesia, or perhaps colored hearing of phonetic sounds, do not remain consistent across different languages. Saussure, being a linguist by profession, would have been in as good a position as any to affirm this, and indeed he found himself in a position whereby “the color value of a vowel within a German word [was] generally different from the one he [took] from a French word.”³² Even this remains a subject open to debate, though, as another noted linguist - Roman Jakobson - insisted that vowel sounds and colors had synesthetic correspondences “even among persons speaking different languages,”³³ owing to a set of fifteen different phonetic “atoms” that were common to all human tongues.

31 Titia Gebuis, Tanja C. W. Nijboer and Maarten J. Van der Smagt, “Multiple Dimensions in Bi-Directional Synesthesia.” *European Journal of Neuroscience*, Vol. 29 (2009), pp. 1703–1710.

32 Mazzeo (2004).

33 Jakobson, Reichard and Werth, “Language and Synesthesia”, 224-231. Quote from 224.

RESEARCH DEVELOPMENTS AND TESTS OF AUTHENTICITY

Though many of the arts have striven towards a synesthetic condition, the term itself has not entered into common usage until fairly recently. Synesthesia was only 'formally' recognized - that is, in peer-reviewed literature - in 1812 by Dr. G.S.L. Sachs (interestingly, Sachs' paper did not deal exclusively with synesthesia, but with "the natural history of two albinos," which referred to Sachs himself and his sister). Another interesting fact was that, though the European arts communities at the time remained relatively separate from the communities conducting this kind of research, this was the era of heady Romanticism and other forms of so-called "decadent" art that saw synesthesia as a catalyst for individual mind expansion and (occasionally) social revolution.

Almost as soon as it did become an accepted term for a neurological condition, it was recognized as an abnormality: after all, research conducted just a year earlier by Charles Bell insisted that "each sensory modality has its characteristic sensory quality, regardless of the physical means by which the peripheral nerve was stimulated. Thus, signals traveling up the optic nerve are always experienced as visual activation, whether stimulated by optical, tactile, sonic or electrical activation of the photoreceptors."³⁴ This insight was widely accepted as true in spite of the synesthetic character to the physical energy triggering the peripheral nerves; i.e. the ability to simultaneously hear and receive a tactile sensation from audible vibrations. Elsewhere, the research of psychiatric professor Eugene Bleuler - who was responsible for introducing the term "schizophrenia" to the language - also contributed to the view of synesthesia as pathological upon noting the synesthetic characteristics of his pupil Karl Lehmann.

Since that time, numerous methods have been put into play to determine what sort of experiences synesthetes have. These have developed from simple studies of subjective, anecdotal tellings to more experiment-based

34 Amy Ione & Christopher Tyler, "Neuroscience, History and the Arts - Synesthesia: Is F-Sharp Colored Violet?", *Journal of the History of the Neurosciences: Basic and Clinical Perspectives*, Vol. 13 No. 1 (2004), pp. 58-65.

research and technologically aided studies utilizing neuro-imaging. In the late 1980s, Cytowic monitored the cerebral blood flow of a synesthetic test subject, and this was succeeded by experiments using PET [positron emission tomography] and fMRI [functional magnetic resonance imaging.] As synesthesia research has progressed and become a subject respectable enough for inclusion in peer-reviewed journals, such research has only emphasized that the condition is one that would be called 'anomalous' by the respectful and 'freakish' by the not so respectful. The terminology presently used to describe the developmental conditions that trigger synesthesia is a good indicator of this, e.g. the theory of synesthesia as a result of "modularity breakdown."

The fantastic and seemingly super-human aura associated with this condition, and its inevitable production of a steady flow of wanna-be synesthetes, has necessitated some sort of testing to separate the 'clinical,' involuntary synesthete from those who tend to voluntarily brainstorm such perceptions and who neglect many of the above criteria for proper diagnosis as a synesthete (most notably, the ability to "change their mind" over time or revise what kind of sounds might correspond to what kind of visuals). Baron-Cohen's consistency test - the Test of Genuineness for Colored-Word Synesthesia - only became standard practice in the 1980s, and is limited in scope to color-grapheme synesthesia, though it has already gone a long way towards separating synesthetes from dreamers. In one instance, it was reported that "subjects who reported synesthesia gave exactly the same color correspondences 93% of the time, in spite of being tested over 1.5 years later...subjects without synesthesia were only 38% accurate, despite being asked only 1 week later to try and remember the colors they had associated with the words."³⁵

Synesthesia researchers Crétien van Campen and Clara Froger, though well aware of studies like the above, still largely believe that "the artistic and scientific studies of synesthesia have grown along separate lines,

35 van Campen and Froger (2003).

more by tradition than by logic.” In order to rectify this problem they developed the Netherlands Color Synesthesia method, or NeCoSyn, which branched off of previous verifications by making use of the multi-dimensional Swedish NCS [Natural Color System] to compare how color dimensions were perceived by those experiencing one of four major types of synesthesia. More specifically, it tested not merely for perception of color resulting from another sensory stimulus, but for the perception of the color constituents of hue, chroma, and blackness. The authors of this test argue that it will present a cheap alternative to brain imaging and will thus be administered to larger populations of test subjects (with, perhaps, an implication here that a greater percentage of synesthetes may be discovered to exist with a more efficient testing method).

LINKS TO THE PAST

The hypothesis that synesthesia was once universally experienced in humans has led, naturally, to speculations that it may somehow be regained, or that such latent perceptual abilities may be brought to the surface of consciousness if one just tries hard enough. It may seem, after all that has been said here already, a proposal bordering on magical thinking, but this is not exactly a bad thing. Without the conviction that adventitious or “learned” synesthesia was possible, much of the art in this book simply would not exist, and it stands to reason that much of the interest from the scientific community would be diminished as well. Elsewhere, artists such as Domnitch and Gelfand seem to hold out the possibility that the evolution of human brain structure is far from being a completed work, and that the synesthetic minority is already pointing the way to what may eventually be in store for us as a species. They speculate that

...at present, mental functionality and knowledge are advancing much faster than one’s senses. Contrarily, the capacities of synesthetes and savants have always gleamed on the horizon as a potential step in the evolutionary race

of cephalisation, re-folding the brain into ever finer and more interconnected fissures.³⁶

At first glance, this theory seems to be at odds with the scientific consensus that synesthesia is “evolved out of.” Yet the statement’s writers remain convinced that a synesthetic future remains a possibility for humankind.

How much synesthetic perception, then, is available to us at present? One notable experiment, the “Kiki and Bouba” experiment initiated in 1929 by Wolfgang Köhler, should not go unmentioned in this list of ways that non-synesthetes can occasionally unify their senses. This experiment, first conducted on the island of Tenerife, required test subjects to simply look at a pair of line drawings - one prickly / sharp in nature and one round / amorphous - and determine which shape should be given the name «takete» or «baluba.» Data showed that an overwhelming number of test subjects associated «takete» with the sharp object and «baluba» with the rounded one. Not content to leave it at that, Ramachandran and Hubbard repeated this experiment in 2001, but this time re-named the prickly object «kiki» and the smoother one «bouba,» while also seeing what the results would be if spread across multiple languages (test subjects were either American college students, or speakers of Tamil).

Still, only about 2% of the test subjects deviated from the previous result. The implications of the result of this experiment - that synesthetic mappings can be fairly universal - has led to further discussion over the role they play in developing our linguistic capabilities, and gives added weight to the «synesthesia antedating language» hypothesis mentioned above. As Ramachandran and Hubbard insist, language is «rich with synesthetic metaphors (‘loud shirt’ or ‘hot babe),»³⁷ and with phrases that use the sensory data from one modality to describe sensations received in another (cheese that tastes “sharp” even though it is soft to the touch).

³⁶ Domnitch and Gelfand (2012).

³⁷ Ramachandran and Hubbard (2001).

Our lexicon of metaphoric language shows that we all seem capable of some quasi-synesthetic intuition, though this requires some reasoning on our part that is not required of the synesthete proper. We can, as Nicholas Cook proposes, universally understand a statement like “love is war” because “love and war exhibit shared characteristics: each involves two (or more) parties, and both may feature conquest, planning, strategic retreats, and so forth.”³⁸ The synesthete, on the other hand, makes associations without ever resorting to this level of reasoning, depending on an instinctual sense of the “rightness” of their personalized sensations. The challenge for would-be creators of “synesthetic art” is to attempt forging “new” sensory connections that seem to lie outside this zone of reasoning, or to exploit those already identified areas of mostly consensus perceptual crossover, i.e. the correlations between audible pitch and visible shape / tone discovered by Karwoski *et al.*³⁹

One hypothesis, by Daphne Maurer, posits that *all* newborn infants have a synesthetic awareness, and consequently “grow out of it” in 6 months’ time. Other estimates place this shedding process at around three months *post partum*. This leads us to believe that eventual splitting of the sense modalities is one necessary step on the road to maturation- and thusly, those who sidestep this process are “vestigial remnants.” It is also suggested that synesthetic experience is older, in evolutionary terms, than the individual perceptions that are associated with the cortical areas.

The view of synesthesia as a vestigial remnant of earlier consciousness puts us in another interesting position, because it arouses curiosity about the evolution of sensory faculties from animal to human. Consequently, it allows us to view this condition not as a means towards the mystical ends of transcending humanity, but as a means of better understanding

38 Nicholas Cook, *Analysing Musical Multimedia*, p. 70. Oxford University Press, Oxford, 2000.

39 “High pitches evoked light colours and appeared angular in shape, whereas low pitches elicited dark colours and were more rounded.” T.F. Karwoski, H.S. Odbert, & C.E. Osgood, “Studies in Synesthetic Thinking II: The Role of Form in Visual Responses to Music.” *Journal of General Psychology*, Vol. 26 (1942), pp.199–222.

“lower” orders of life (and maybe these two activities are not totally at cross purposes). Synesthetic research opens a window onto what biologist Jakob von Uexküll called animals’ *Umwelten*, or life environments. Already great disparities between human and animal means of perception exist, especially when considering the aural sense (note the enhanced mobility of many species’ ears, e.g. the horse’s auricle and its 17 muscles)- it is therefore not a stretch to assume heightened synesthetic perception would exist in non-human life. So, synesthesia may be a more common occurrence in so-called “lower” animals than in humans (see Paul Schiller’s experiments with fish, in which said fish, “having learned to discriminate between a bright and a dark chamber, synesthetically related brightness with a ‘bright’ odour and darkness with a ‘dark’ odour.”)⁴⁰ When all this is taken into consideration, we are left with a situation whereby synesthesia actually pre-dates human language, and as such it can be further argued that synesthesia played a role in shaping language (both as a general precept) and regional variants on it.

There are other instances in which trans-sensory stimuli can be experienced by individuals not clinically designated as synesthetes. Meditative practices have been suggested as one potential gateway (Cytowic quotes Zen monks in his clinical guide to synesthesia, and concurs that “meditators may be an untapped subject pool for studying synesthesia and cross-modal metaphors.”⁴¹), while the number of anecdotes dealing with synesthetic experiences initiated by psychedelic drugs are manifold (to the point where legitimate synesthetes are often stigmatized as drug-gobbling miscreants). However, pharmaceutical consumption is hardly the only method of bringing this state about in people who spend the majority of their lives as non-synesthetes. Not every “trip” launched by LSD or some other anti-serotonergic chemical will bring about a state of synesthetic awareness, and, curiously, actual synesthetes given the drug have shown remarkably little intensification of their condition (some with

40 Andreas Mavromantis, *Hypnagogia: The Unique State Of Consciousness Between Wakefulness And Sleep*, p. 243. Thyros Press, London, 2010.

41 Cytowic (2002), p. 122.

no reaction whatsoever). Pharmaceutically induced synesthesia is, per Ramachandran and Hubbard, “not based on the same neural mechanisms as the congenital, lifelong experiences of *true* synesthetes, in spite of the superficial similarities.”⁴²

Hypnagogia, defined as “hallucinatory and quasi-hallucinatory events taking place in the intermediate state between wakefulness and sleep”⁴³ and taking its name from the Greek *hypnos* [sleep] and *agogeus* [leader, conductor], is a conscious state in which one can temporarily experience sensory ‘translations’ ranging from sublime to startling. For example, H. Hollingworth claims of one patient that

...as he became drowsy while attending a concert, the three finishing blasts of the musical piece turned into “the movements of some huge bug which came sailing from behind the wings, suddenly alighting on the stage, first on the two hind feet, then bringing down the middle pair, and finally the two front feet with the final blast.”⁴⁴

As this example may hint at, synesthesia coming about during a hypnagogic state may often have more of a ‘narrative’ element than the experiences encountered by grapheme / color synesthetes or sound / color synesthetes, along with a tendency to anthropomorphize sensory stimuli - that is to say, a sound stimulus may result in the hallucination of some corporeal form (animal, human, or otherwise), which in turn appears in the hypnagogue’s optical field rather than in the “mind’s eye.” With the intensity of the visions ratcheted up as such, the emotional responses to hypnagogic visions can range from detachment to enchantment to full-on terror (as to the latter, many ‘UFO abductee’ reports, out-of-body experiences and otherworldly visitations have been later attributed to hypnagogic shock). When hypnagogic experiences are extreme enough, they also bear striking

42 Ramachandran and Hubbard (2001).

43 Mavromantis (2010).

44 H. Hollingworth quoted in *Ibid.*, p. 31.

similarities to the mental phenomena encountered in the daily lives of schizophrenics (e.g. a feeling of identification with the universe, dissolution of boundaries between internal and external reality, and impaired volitional action). Curiously, reports of these types of visions usually involve the subject being aware of the hypnagogic vision first, and only later becoming aware of the triggering stimulus from another sensory mode.

THE SYNESTHETE: IDEAL OR OUTCAST?

While many do covet synesthetic awareness of the world, the condition is for many synesthetes a ticket to social ostracization as well as a means of confounding the simplest inter-personal transactions (e.g. wondering why a paint would have a whitish tone when it smelled "blue.") In spite of this, the increasing number of interviews with synesthetes suggest a world where cross-modal sensory awareness can not only be applied to advancing music, visual art and so on, but can also be highly therapeutic and can act as a major boost to faculties like attention span and memory.

Synesthesia has been attributed, for example, to Daniel Tammet, who recited the number Pi to 22,514 decimal places - thus becoming the European champion for this feat. In a 2005 television documentary, *The Boy with the Incredible Brain*, he confessed that such a voluminous memory was made possible by the ability to perceive numbers as having qualities of color, shape, and texture. His outstanding faculties for memory are something also suggested by the studies of Rizzo and Eslinger, who found that a "sound-color" synesthete was able to associate a new, randomly selected color with a musical note after a single such pairing was suggested by the researchers - a quickness of association that far exceeded the abilities of non-synesthetes undergoing the same test.

An equally colorful and celebrated account comes courtesy of the protagonist of A.R. Luria's *The Mind Of A Mnemonist*, "Patient S." "S" is a remarkable individual whose lifelong synesthesia is the key to

a photographic or savant memory (first discovered during his stint as a newspaper reporter, when it was found that “S” could repeat an assignment verbatim without having taken any notes). The cases of “S” and Tammatt have added fuel to the fire of the theory that savant memory itself is powerful enough to cause synesthetic perception, though, owing to the large number of synesthetes who possess only an average memory, this has been refuted by Baron-Cohen and by others⁴⁵.

While acting as lightning rods for curiosity surrounding synesthesia, individuals like these have also shown just how poignant and socially challenged the world of the synesthete can be: Tammatt has been portrayed as a minutiae-obsessed outcast who calls numbers his “friends” and barely made eye contact until the age of thirteen. Tammatt, while scoring 90% on Asher’s synesthesia-validating test, scored an abysmal 8 points out of a possible 80 on the “empathy quotient” or EQ test, well below the mean achieved by individuals affected with Asperger’s Syndrome (a condition that he was eventually diagnosed with after exhibiting 13 of a possible 18 symptoms). While his shortcomings differ from other “neurophysiological impairments” that can affect synesthetes - e.g., “left–right confusion, poor arithmetical reasoning and deficient topographical cognition”⁴⁶ - they are illustrative of why synesthetes do not always find themselves embraced by normative society.

“S,” meanwhile, is often portrayed in Luria’s account as a somewhat tragic man-child who becomes overwhelmed by his impressions, remains fairly passive, and “had no clear idea what he wanted out of life.”⁴⁷ His synesthetic experiences are seen by Luria as both giving and taking away, leaving us doubtful as to whether this ability constitutes an overall gain for him: “the rich synesthesia of his memory images, their very completeness, prevents his fusing the simultaneous with time-contextualized planning...

45 Baron-Cohen, S., Wyke, M. & Binnie, C. “Hearing Words and Seeing Colours: An Experimental Investigation of a Case of Synaesthesia”, *Perception*, 16 (1987), pp. 761–7.

46 Rich and Mattingly (2002).

47 A.R. Luria, *The Mind Of A Mnemonist*, p. 9. Trans. Lynn Solotaroff. Harvard University Press, Cambridge / London, 1987.

as if one system won out over the other, or a hypertrophy of one prevented the other from developing."⁴⁸ All the same, who wouldn't be tempted to use synesthesia as a means for dealing with pain effects, as "S" claims he can do:

Let's say I'm going to the dentist. You know how pleasant it is to sit there and let him drill your teeth. I used to be afraid to go. But now it's all so simple. I sit there and when the pain starts I feel it...it's a tiny, orange red thread...I'm upset because I know if this keeps up, the thread will widen until it turns into a dense mass...so I cut the thread, make it smaller and smaller, until it's just a tiny point. And the pain disappears.⁴⁹

It is the brilliance of "S" in some areas, and his failure in other areas that calls into question the status of synesthetes as an elite "mutant" group both intellectually and perceptually. Other cases besides this one have pointed to synesthesia as a valued perceptual tool for those who might otherwise experience great challenges in this area, particularly Ramachandran's discovery of "a subject who was genetically color blind [and] reported that numbers evoked sensations of 'Martian colors' that he had never seen with direct vision...the implication [being] that the synesthesia activated color-coding circuitry within his brain that could not be reached through the defective wiring from his photoreceptors."⁵⁰

As we will see time and time again, the non-scientific (and occasionally anti-scientific) representatives of creative disciplines have come under withering scorn for professing a faith in their own synesthetic abilities, or for projecting such an ability onto a larger portion of the total population than is really feasible. To use just one example, the French Symbolist poet René Ghil - who developed a poetic system known as *l'instrumentation*

48 *Ibid.*, p. xvii.

49 "Patient S" quoted in *Ibid.*, p. 141.

50 Ione & Tyler (2004).

verbale, in which each phoneme had a corresponding musical timbre to it - is acidly chided for such efforts by the scholastic Louis Marvick:

It would have made no difference to René Ghil to be told that strong synesthetic associations occur in only 12 to 13% of the tested population (Cuddy 346; Peacock 488), since he himself, the true *voyant*, was one in a million. He did not recognize that the complexities and irregularities described by Helmholtz, whose treatise he read in translation around 1887, gave no reason to suppose that an objectively valid, universally acceptable system of correspondences could ever be worked out. He understood only that scientists were on the job and took heart from the meticulousness of their procedures.⁵¹

However, Marvick does argue only half correctly that, for these scientists, "the accumulation of negative results has discredited the view that synesthetic associations are innate, rather than learned."⁵² In fact, a growing body of scientific research points to precisely the opposite; that only a minority of synesthetes report having acquired their abilities in adolescence or later, while the majority recalls having this ability for the duration of their conscious existence. As Cytowic notes, synesthetes' abilities also "[do] not seem to be highly - if at all - modifiable by environmental influences."⁵³ So, eccentrics like Ghil are hardly the only ones invoking the work of "scientists" while having an incomplete grasp on the realities of synesthesia.

Marvick suggests that, far from providing hope for a more unified society, the acceptance of any single, arbitrary model of synesthesia would result merely in more hammering down of individuals unable to perceive as they are told, i.e. "the price of such [synesthetic] certainty is

51 Louis W. Marvick, "René Ghil and the Contradictions of Synesthesia." *Comparative Literature*, Vol. 51, No. 4 (Autumn, 1999), pp. 289-308.

52 *Ibid.*

53 Cytowic (2002), p. 59.

an intolerance of deviation...possessors of absolute pitch cannot bear to hear music performed a semitone higher or lower than the key in which it was written."⁵⁴ Marvick paints a portrait of the synesthetic artist as being naturally inflexible, and therefore ill-suited to lead any type of creative movement that has unity of some kind as its stated goal: such individuals would merely contribute to a culture already marked by petty, yet inflamed, squabbles over stylistic concerns and taxonomy.

The promises held out by synesthesia are very much the same as those held out by trance dancing, by psychedelic experimentation and by other forms of "immersive" aesthetic experience. While some may view a state of synesthetic dissipation as nothing other than another item in a catalog of hedonistic diversions (a la the character Des Esseintes in Joris-Karl Huysmans' *A Rebours*), others see its powers of sensory dissolution as the key towards a much more ambitious project of dissolving social boundaries, resolving long-standing conflicts, and allowing a wealth of repressed information to resurface. As to the latter, R.D. Laing - in his intense jeremiad *The Divided Self* - makes an observation that has some bearing on this discussion:

Our civilization represses not only 'the instincts', not only sexuality, but any form of transcendence. Among one-dimensional men, it is not surprising that someone with an insistent experience of other dimensions, that he cannot entirely deny or forget, will run the risk either of being destroyed by the others, or of betraying what he knows.⁵⁵

This is a common theme among those who, like Laing, side with the so-called "outsider artist" against the standardizing impulses of society, or champion any individual or group whose thoughts and dreams seem impervious to changes in mass consciousness.

⁵⁴ Marvick (1999).

⁵⁵ R.D. Laing, *The Divided Self*, p. 11. Penguin, London / New York, 1969.

The argument that Laing advances is perhaps a familiar one to anyone who has ever felt themselves to be marginalized, namely that it is the “outsiders” who have really cornered the market on authenticity and creativity, while the so-called “normal, adjusted state” is no less than “the abdication of ecstasy, the betrayal of our true potentialities,” and the acquisition of “a false self to adapt to false realities.”⁵⁶

Laing’s invocation of “ecstasy” here is important, since the original meaning of *ek stasis* - “standing outside of” - has much broader ontological implications than its somewhat over-simplified, popular meaning of “pleasure that is greater than usual”. Ecstasy is not just bliss, in other words, but a bliss that comes from the state of pausing life long enough, and separating oneself from inessential or trivial communications long enough, to better comprehend life’s infinite minutiae. Laing’s protests come from the fact that, in a purely utilitarian society, any form of open-ended or non-purposive transaction is detrimental to that society’s progress, and this certainly includes the synesthete’s inability to ignore the highly subjective, non-normative signals that they receive. Cytowic is also aware of the synesthete’s cultural role as an ecstatic:

Ecstasy is simply any passion by which the thoughts are absorbed and in which the mind is for a time lost. In *The Varieties of Religious Experience* (1901), William James spoke of its four qualities of ineffability, passivity, noesis and transience. We should note that these are also qualities of synesthesia.⁵⁷

With this realization, we have a salient reason for why synesthesia has historically had a role in the shaping of influential cultural movements, and why it continues to do so.

⁵⁶ *Ibid.*, p. 12.

⁵⁷ Cytowic (2002), p. 319.

James himself, after having defined these qualities, made an impassioned protest against critics of the typically maligned “genius artist” types that applied strikingly well to criticisms of synesthetes’ perceptions:

Now do these authors, after having succeeded in establishing to their own satisfaction that the works of genius are fruits of disease, consistently proceed thereupon to impugn the *value* of the fruits? [...] Do they frankly forbid us to admire the productions of genius from now onwards? And say outwards that no neuropath can ever be a revealer of the truth?⁵⁸

As long as it is considered beneficial to exceed our subjective experiential limitations by means of art, our new cultural developments will continue to be closely tied to this striving for the ecstatic. While many believe our present acceleration of communications technology to be ultimately leading towards a sort of evolution through ecstasy - providing this simultaneous loss of subjectivity and awakening of universal consciousness - I do not feel that high tech alone will be able to achieve this, and that study of more deeply ingrained, innate ‘ecstatic techniques’ is a necessary supplement. I would also argue that the much-promised simplification of life through the acceleration of technology has failed to materialize, and - despite the ever-intensifying claims of technology conglomerates to the contrary - has not brought us *that* much closer to a global, reciprocal understanding and appreciation of cultures and phenomena that were previously alien to us.

Again, an observation by Paul Hertz - that “both the silencing of the senses (anesthesia) and their fusion can be used as symbols of transcendence”⁵⁹ - forces us to not be satisfied with the “will to transcendence” as the sole motivation for synesthesia’s enduring study among cultural agents. After all, why do some who commit to a “synesthetic” art not also consider the possibilities implied by an “anesthetic” art, or vice versa? Hertz does

⁵⁸ William James, *The Varieties of Religious Experience*, p. 17.

⁵⁹ Hertz (1999).

concede that “poetry embraces both extremes” of sensory fusion or annulment, and many contemporary artists working in media like film and audio do oscillate between modes of sensory deprivation and sensory saturation (often deliberately attempting to show the uncanny similarities in these states’ influence upon creative thinking). There is no easy, pat answer to this question, although the “hypermodern” state mentioned at the beginning of this chapter may have something to do with artists’ favoring synesthesia as a truly revelatory condition: much of the fatigue of the information age is associated with the desensitization process, and with the de-materialization or etherealization of aesthetically pleasing objects that once worked on multiple sensory modes (see the ongoing lamentation over the failure of digital media players to replicate the kinetic experience of playing vinyl records). In an atmosphere where further sensory annulment seems like a capitulation to an already destructive trend, it seems that more creative minds will idealize synesthetic perception in an act of defiance.

PERSISTENCE OF VISION

In some respects, the ongoing curiosity over this condition has only increased in the wake of negative press or public censure. Cytowic’s comments upon all artists - not only synesthetic ones - is very meaningful in this context:

Artistic giants know full well that their visions are not shared by most people. Even when persecuted or abandoned because of their vision, artists persist. This is all that they can do because their visions are their reality, and for many of us they subsequently become our reality when we later experience their art.⁶⁰

The public perception of synesthesia’s abnormality, while being a great detriment to those individuals born with the condition, is precisely one of the reasons why the condition was, and still is, embraced by many creative

⁶⁰ Cytowic (2002), p. 130.

avant-gardes of the post-industrial era. Like Surrealist figurehead Andre Bréton's championing of hysterics, or the valorization of the schizoid mind by the philosophers Gilles Deleuze and Félix Guattari, the general public skepticism or fear of synesthetes has merely galvanized those artistic adventurers who see common distrust of a psychic phenomenon as a marker of its true value. Modern neuro-developmental studies on synesthesia - along with conditions such as autism - have confirmed that "similar neural architecture" does not equal "similar conscious experiences,"⁶¹ and this in itself has been a confirmation of the avant-garde belief in a psychic landscape of profound, near-infinite differentiation.

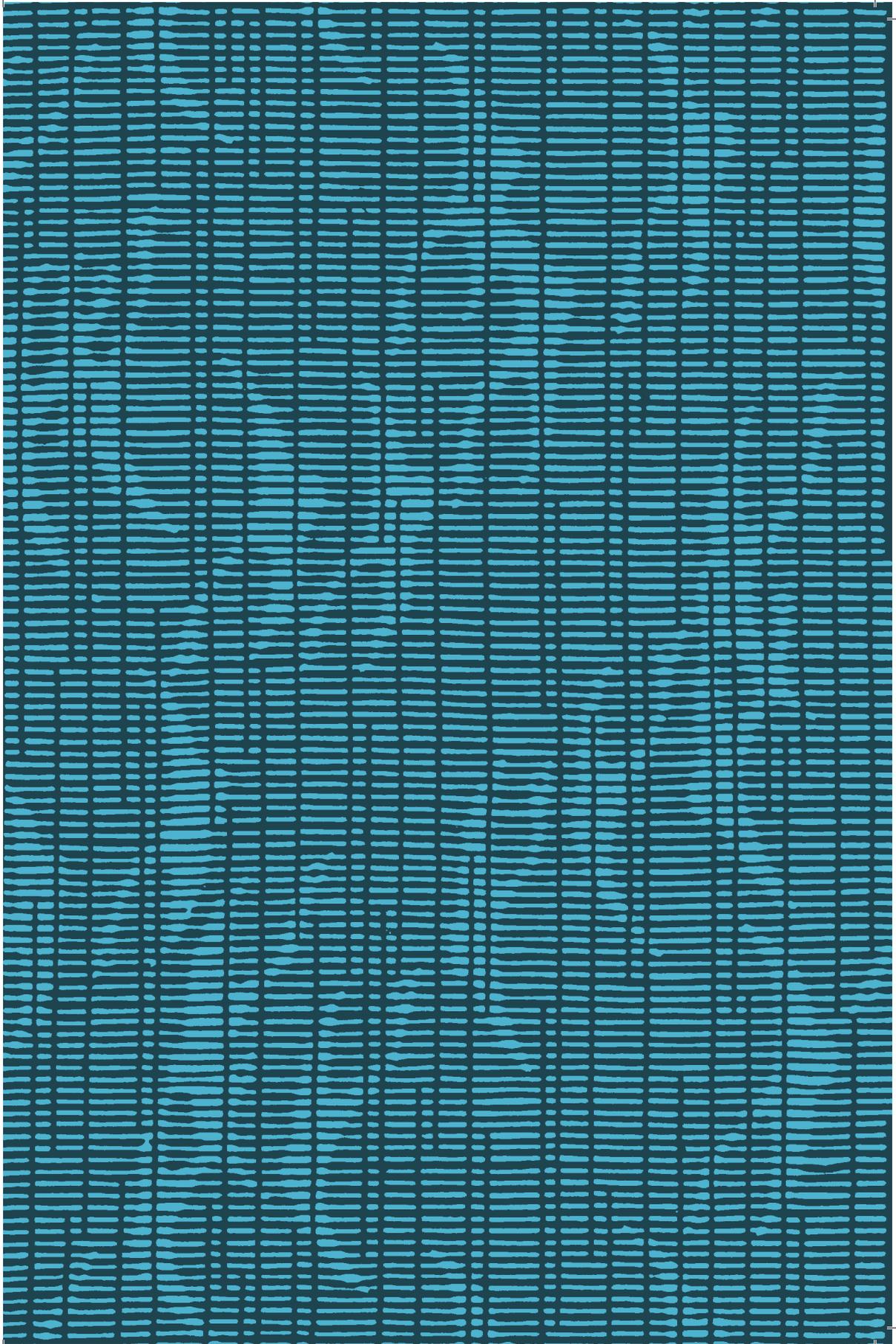
The involuntary nature of synesthesia also holds some attraction for adventurous artists, and neatly slots into avant-garde trend towards viewing artists as unconscious "conduits" for certain immutable, transcendent ideals rather than as individuals who attempt to pass off their creations as the *ex nihilo* conjuration of some novelty never before experienced on earth. As Paul Klee memorably put it, the ideal artist "neither serves nor rules - he transmits. His position is humble. And the beauty at the crown is not his own. He is merely a channel"⁶² (naturally, Klee is an artist who will soon be revealed here to have his own interests in synesthetic perception).

It is important to realize that the synesthete has not always been seen as an "outsider" in all societies, and that discreet modes of receiving sense data have not always been seen as the norm - if we argue against these propositions, then we are engaging in an act of attempting to remake history in the image of the present.

The history of how sensory asymmetry became the normative mode of perception, and how the synesthete became an affective "outsider," is a unique discussion all unto itself. This discussion will, hopefully, bring us to a better understanding of the synesthete's role in our collective future.

⁶¹ Simon Baron-Cohen *et Al.* (2007).

⁶² Paul Klee quoted in Melvin Rader, "The Artist As Outsider." *The Journal of Aesthetics and Art Criticism*, Vol. 16 No. 3 (March 1958), pp. 306-318.



CHAPTER 2

AN INVENTORY OF SENSORY ASYMMETRY

THE CHALLENGE TO DUALITY

The desire for knowledge about synesthetic phenomena has often been subordinate to another more storied quest: namely, the search for the mystical experience of undifferentiated unity / oneness with nature (and vice versa). This has not solely been the province of esoteric or hermetic researchers, and the seeming incommensurability of science and spirituality is, when dealing with this issue, not as obvious as it might be for other issues. While there is a definite polarity in the methods behind each type of research, it is clear that both share emancipatory aims stemming from an interest in self-knowledge, a fact that extends to the study of synesthesia. Nowhere does this seem to be truer than when defining “vibration” - a word so heavily used in spiritual circles as to become an easy object of ridicule for outsiders - and explaining how this fundamental force affects perception. Jakob von Uexküll, the noted zoologist and founder of the Center for Environmental Research in Hamburg, states that

Just as the colors are the specific energies (self-tones) of those cerebral cells which are under the influence of the eye, which sorts the ether waves and, transformed into nerve excitations, sends them to the cerebrum, the tones are the specific energies of those brain cells that are under the influence of the ear, which takes in certain air vibrations.⁶³

Indeed, one of the great goals of human spiritual systems has always been the unification or reconciliation of opposites; to return to an antediluvian state of totality that existed before some great cosmic schism turned the

⁶³ Jakob von Uexküll, *A Foray into the Worlds of Animals and Humans / A Theory of Meaning*, p. 164. Trans. Joseph D. O’Neil. University of Minnesota Press, Minneapolis, 2010.

world into a hopelessly fragmented and fractious living environment. The reduction of all sensory phenomena to 'vibration' has been one of the challenges that science and mysticism have both faced in an attempt to forestall the ineluctable divisiveness of the world.

In both polytheistic and monotheistic traditions, this divided condition was generally attributed to the intervention of an adversarial deity, or seen as punishment for some unforgivable hubris on the part of mortals. Dogon folklore, for example, speaks of the former when describing how the single-sexed Jackal was an evil anomaly that forced the end of hermaphroditic humanity. In Plato's *Symposium*, the latter variation on the theme appears, as the division of humans into separate biological genders occurs upon Zeus' displeasure at mortals' ambitiousness: Aristophanes' speech in the *Symposium* suggested that humans' attempting to storm the heavens was an offense for which he originally planned to destroy them with thunderbolts, but he eventually relented upon realizing that these beings were a good source of devotional offerings. The Bible features another challenge to divine authority - and the divine retribution that results in planetary disunity - in the legend of the Tower of Babel, in which a wrathful god "confounds the tongues" of the previously mono-lingual remnant of humanity which survived the Great Flood.

Whatever one's attitude towards these myths, it is clear that the various connections of disunity and disconnectedness have been persistently seen as tragic conditions throughout history - conditions of such a pervasive nature that myths of this type have been historically necessary to make their existence more understandable and, perhaps, more palatable. So, for believers in a divinely ordained disunity, synesthesia could represent something like a glimpse at an antediluvian state of complete integration and relative lack of conflict. Or, for those artists who saw themselves as spiritual rebels against a cruel and unjust cosmic order, attempting to inculcate synesthesia in their audiences was nothing less than an act of storming the heavens. It is not a coincidence that more than one synesthetically inclined artist invoked the name of Prometheus in their

work - he being the legendary Titan who essentially sparked human civilization by stealing fire from the gods.

For the more agnostically or atheistically minded, study into this condition still holds out the promise of erasing a historical trend towards a harmful or counter-productive dualism: namely, the famous Cartesian split between "mind" and "body." As Gregory Bateson suggests, this theory has been a kind of *ur*-dualism parenting a number of other conflicts, i.e. "if we continue to operate in terms of a Cartesian dualism of mind vs. matter, we shall probably also see the world in terms of God versus man, elite vs. people, chosen race vs. others, nation vs. nation, and man vs. environment" (and Bateson is especially critical of the Cartesian worldview as it relates to human technological advancement).⁶⁴

With the exception of the dualistic *yin/yang* principle of Chinese antiquity, this worldview again seems rooted in the monotheistic religious tradition, with its emphasis on opposing dualistic forces, than the preceding tradition of philosophical inquiry: many of the most respected philosophers of the ancient world viewed the sensory apparatus as a single functional unit, a belief that seemed a logical derivative of other concepts relating to a unified world. Thales of Miletus, largely regarded as the first philosopher in the classical Greek tradition, remains known today for his proposition that all physical matter was "really water": earth was water solidified, air was rarified water, and fire was air having gone through a second process of rarefaction. Such a worldview was notable for its implication that all types of diversification represented a false appearance of reality, and perception of the earth as a unified whole was the correct way to see things: more notable still was how this concept of both a "true" reality, and one of false appearances, would be echoed in subsequent millenia worth of both philosophical and scientific investigation. In the German Idealist conception of the world, for example, it is that scientific investigation which provides the false version of reality, given that

⁶⁴ Gregory Bateson, *Steps To An Ecology of Mind*, p. 337. University of Chicago Press, Chicago, 1972.

...science itself, in particular the physiology of perception, holds that our consciousness of, for instance, colour, is not consciousness of something 'out there' in the world but is merely the brain's subjective response to light waves impinging on the retina. Science itself holds that the noisy, colourful, tasty entities of human experience are simply our own invention. But if that is so then, equally, the entities of science, the human brain, retinas, light waves and the like, must be human inventions too. Science thus demonstrates its own ignorance of ultimate reality.⁶⁵

This ongoing epistemological thread is indebted to the Hindu concept of *māyā*, appearing throughout the Indian classical literature of Vedānta, which refers to that infinitesimally small portion of universal truth that the human mind (and sensory apparatus) can comprehend. The "real" reality only becomes perceptible once the veil of *māyā*, or the "lesser reality lens" superimposed on the indivisible reality of Brahman, is lifted.

THE BEGINNING OF "THE WORD"

So how, then, did the modernized world come to see the sensory apparatus as being split into five discreet modalities (or more, as proposed earlier by Domnitch and Gelfand)? With some of the above examples, we see scientific understanding as coming under fire for providing us with a false world of 'appearances', though scientific research nonetheless has confirmed that synesthetic perception preceded our current fragmented means of understanding the world around us. Evidence now exists, for example, that synesthesia in humans antedates their use of language. A more radical realization, coming from Norman Geschwind, is that "the ability to acquire speech has as a *prerequisite* [*italics mine*] the ability to form cross-modal associations [...] it is only in man that associations

65 Julian Young, "Schopenhauer, Nietzsche, Death, and Salvation." *European Journal of Philosophy* Vol. 16 No. 2 (2008), pp. 311–324.

between two non-limbic stimuli are readily formed, and it is this ability that underlies the learning of names of objects."⁶⁶

These are facts that certainly would have been of interest to those critics of language who saw it almost as a *sine qua non* of social control and coercion, and who sought out some other prelapsarian state in which communication existed without it. A considerable number of avant-garde artists and thinkers have invested their energies into finding or evoking this non-verbal form of exchange between humans themselves or between humans and their environment, with one of the most eloquent being filmmaker Stan Brakhage - who invited his viewers to imagine "a world alive with incomprehensible objects and shimmering with an endless variety of movement and gradations of color... a world before the beginning was the word."⁶⁷

Meanwhile, some of the more iconoclastic 'men of letters' also took the paradoxical position that language, despite its usefulness in survival and communication, diminished the worldly education which could be gained through the senses - philosopher Michel Serres engaged in a "logophobia" that saw language as a "poisonous anaesthetic to which we have become addicted...a blazon upon the skin, inuring it to sensation." The outlaw author William Burroughs saw silence - not linguistic proficiency - as "an archetype of freedom"⁶⁸ while pointing specifically to the ancient Mayan priesthood as the archetypal antipode of this freedom, a conclusion that he attributed to their "monopoly of literacy...which leaves them as the only group able to understand and put into action the Mayan calendar which is crucial for the successful practice of agriculture."⁶⁹ Burroughs identified language - or, more accurately, the division between "word and flesh" as itself being symptomatic of the dualistic disunity that is the central

66 Norman Geschwind, "Intermodal Equivalence of Stimuli in Apes." *Science, New Series*, Vol. 168, No. 3936 (Jun. 5, 1970), p. 1249.

67 Stan Brakhage, "Metaphors on Vision," ed. P. Adams Sitney, *Film Culture* (Fall, 1963).

68 David Ayers, "The Long Last Goodbye: Control and Resistance in the Work of William Burroughs." *Journal of American Studies*, Vol. 27, No. 2 (Aug., 1993), pp. 223-236.

69 *Ibid.*

challenge terrestrial life must overcome: “possibly the most unworkable formula is the whole concept of a dualistic universe [...] Dualism is the whole basis of this planet - good and evil, communism and fascism, man and woman, etc. As soon as you have a formula like that, you’re going to have trouble.”⁷⁰

However, duality itself is just one problem when it comes to our understanding of our own senses. Duality could, after all, still imply a more or less equal level of importance being placed on the two divided portions, and a reciprocal or harmonious relationship between the two. Time and again, though, we see that once the human sensorium is understood as having distinct compartments rather than acting as a unified system, a situation of asymmetry arises: one sense modality is seen as being more useful and meaningful information processor than the others. Even those with spiritual transcendence as their goal have been prone to this way of thinking: it has been a long-running theme of Hermeticism, for example, that the purpose of each individual is to realize himself or herself as the “eyes and ears of God” - not as, say, the tongue or nose thereof.

It has already been established that synesthesia is “grown out of” neurologically as we grow out of infancy, and has generally become less prevalent over the course of human evolution. Yet this alone does not account for the social and cultural stigma that sometimes dogs adult synesthetes, nor does it explain the mistrust of those who merely express an interest in exploring the potential of cross-modal arts and communications. Of course, the asymmetry of the senses is an established physiological fact as well: if nothing else, the view of sensory asynchrony is backed up by the realization that seventy percent of our bodies’ sense receptors are found within the eyes. Yet the favoring of one particular sensory modality existed long before such facts ever came to be empirical knowledge, and plenty of those who remain unaware of such facts continue to exhibit such sensory biases.

⁷⁰ William Burroughs and Daniel Odier, *The Job: Interviews with William Burroughs*, pp. 96-97. Penguin Books, New York, 1989.

Because of the existence of this data, this asymmetrical state of affairs is not in dispute here. It is more interesting to consider, however, the various historical junctures in which, once this asymmetry was widely acknowledged, theories were put forth about which single sensory modality was the most important for humanity's further survival and development. Whether such theories of "master" and "subservient" sensory modalities were posited by artists, by scientific researchers, or by ideologues (or by some combination thereof), it is clear that the idea of a sensory hierarchy has remained a persistent one, always ready to do battle with theories of sensory unity. It seems foolhardy to sketch out a comprehensive history of the synesthetic and cross-modal arts without first considering the pervasiveness of sensory asynchrony, the phenomenological conclusions that theorists have drawn from this, and the attempts at influencing culture which have followed from those conclusions.

QUARREL OF THE SENSES: VISUOCENTRISM AND BEYOND

For the sake of convenience, let us focus for a moment on sight and sound, the two senses which currently account for the lion's share of cultural products. In any cataloging of contrasts between the two, the latter is generally given a subjective and immersive role that precludes a complete understanding of things, whereas - as per the theory of Martin Heidegger - vision aids in ratiocination and the understanding of objective reality. Theorist Jonathan Sterne makes it clear in no uncertain terms that, while he finds this state of affairs "a powerful ideological frame for the history of the senses," he nonetheless considers it inaccurate to interpret vision as a "rational, technical and spatial sense, and nothing more" while also interpreting hearing as "a temporal and non-technical sense, and nothing more."⁷¹

Sterne has drafted up a full list of the differences between these two senses, which he calls an "audio-visual litany" in a nod to the role that

⁷¹ *Ibid.*, p. 127.

Church doctrine played in shaping this visuo-centrism (and, consequently, in connecting it to an ideology). In his estimation, the absolutist conception of these two antagonistic senses - which completely sidesteps the other three established modes - is rife with "theological overtones,"⁷² and indeed it does often seem as if we can draw parallels between this sensory antagonism and the struggle of absolute good and evil. The after-effects of the "audio-visual litany" were felt well into the Enlightenment era, that period in which the first major challenges to Church orthodoxy were formulated. As such, it was not unusual to see the leading polymaths of that movement unwittingly replicate these ideals in their own very different age. As Margaret Olin recalls,

Goethe, one of the eye's most eloquent defenders in the modern period, pronounced vision the "noblest sense," as distinguished from the baser, coarser sense of touch, and Schiller projected this contrast onto history: The intellectual and imaginative senses, vision and hearing, developed later than the primitive "animal senses" that depend on contact with materials.⁷³

Olin continues to identify one of the most noticeable ways in which this view influenced artistic output of the age, namely the increased output in landscape painting championed by fellow polymath Carl Gustav Carus at the dawn of the century. From this theory of opposing visual and tactile modes, much of the opposition between representational and ornamental artworks also arose, and debates as to whether painting or sculpture was the most "progressive" of the fine arts, and the most capable of providing a direct line to objective reality. In a sense, painters can always argue that their work has the potential to be as "visuo-tactile" as that of sculptors: works ranging from hypnotic arabesques to optical art patterns have been so characterized by density of graphic elements that they give the illusion of being "touched" when only being seen.

72 Jonathan Sterne, *The Audible Past*, p. 15. Duke University Press, Durham, 2002.

73 Margaret Olin, "Validation by Touch in Kandinsky's Early Abstract Art." *Critical Inquiry*, Vol. 16, No. 1 (Autumn, 1989), pp. 144-172.

Some heft is given to Sterne's musings on "visuocentrism" by recent studies determining that when "visual information conflicts with information from other sensory modalities, vision typically 'wins.'"⁷⁴ His realization is not a radically novel one, especially where the arts are concerned - even when considering the theatrical art, we have to remember that the Greek *theatron* translated as "place of viewing" regardless of the other sensory stimuli available in the theatrical environment. The studies in question have been qualified in the 1990s and 2000s by further studies that appended an interesting qualification to that fact, namely, "when the senses deliver conflicting information, vision dominates spatial processing, and audition dominates temporal processing."⁷⁵

Nonetheless, making sense of the world in a 'visuocentric' way is the natural course of action for the majority of humans now living. While those cultures which value visual data over other forms of sensory data should not automatically be accused of being somehow less ethical or more imperious, visuocentrism can indeed pose its own set of problems - if only because the uncritical acceptance of one sensory modality as rationally superior leaves us open to constant manipulation by those who regulate the flow of imagery. The procession of radical thinkers from the mid-20th century onwards have made this a central concern of their work, with Guy Debord and the Situationists condemning the "society of the spectacle" as one where new technologies were steadily introduced to enhance the controlling and hierarchical nature of vision. Michael Foucault's cautionary writing also emphasized this controlling, particularly when discussing the omniscient panopticon (i.e. the circular prison design of Jeremy Bentham whose central observation post made all inmates feel as if they were being watched at all times, even though this was technically unfeasible). Elsewhere, critics of the pornography's distortion of the body regularly lashed out at the "the gaze" for also steering consumer

74 Sharon E. Guttman, Lee A. Gilroy and Randolph Blake, "Hearing What the Eyes See: Auditory Encoding of Visual Temporal Sequences." *Psychological Science*, Vol. 16, No. 3 (Mar., 2005), pp. 228-235.

75 *Ibid.*

technological development towards similar dominating ends (interestingly, comparatively little attention is paid to whether or not the audible content of pornographic entertainment might also share in these effects).

Many more strictly phenomenological thinkers will make overcoming this condition the cornerstone of their work. Take, for example, *Sounds* author Casey O'Callaghan, who insists that "hearing and sounds thus promise to inform philosophical thinking about perception and perceptual consciousness by extending it beyond the visual."⁷⁶ O'Callaghan's *Sounds* is prefaced with a quote by the composer John Cage, a choice that seems more apt the further one reads into the former's book. In his well-known treatise *Silence*, Cage famously argued for an appreciation of sounds that would allow them to "be themselves",⁷⁷ and, when asked what the purpose is of his "experimental" music, replies "no purposes. *Sounds*."⁷⁸

Though distinctly flavoured with the Zen view of life that Cage would come to absorb through the teachings of D.T. Suzuki, Cage's thoughts on this subject echo those already made by the 'grand old man' of physiological acoustics, Hermann Helmholtz, in the 19th century: "in music...no [...] perfect representation of nature is aimed at; tones and the sensations of tone exist for themselves alone, and produce their effects independently of anything behind them."⁷⁹ Both the leading figures of the hard sciences and the avant-garde of arts production have, for their own differing ends, forwarded the idea that sound was non-purposive: from this we can deduct that it is up to each individual to inject his or her own meaning into those many sounds that exist with no clear communicative functions beyond their indexical ones. The fact that Cage's propositions still seem radical is a testament to the state of affairs that O'Callaghan decries throughout his book: namely, that "visuocentrism" has led us to conceive of sounds

76 Casey O'Callaghan, "The World of Sounds." *The Philosopher's Magazine* (2009), pp. 1-6.

77 John Cage, *Silence: Lectures and Other Writings*, p. 11. Wesleyan University Press, Middletown Ct., 1961.

78 *Ibid.*, p. 17.

79 Hermann Helmholtz, *On The Sensations Of Tone*, p. 3. Trans. Alexander J. Ellis. Dover Publications Inc., New York, 1954.

as mysterious or, more appropriately, ethereal entities. However, whereas Sterne's "visuocentric litany" is concerned with confronting the absolutist and antagonistic duality of sight and sound (and the presumptions that we have to 'choose one or the other' in order to orient ourselves both spatially and culturally), O'Callaghan is more concerned with the complete subsumption of sound by vision. He claims that this is already reflected in the English language, particularly in philosophical discourse on perception, while "neutral or non-visual language - *recognize, discern, perceive* - has acquired a palpably visual tinge.⁸⁰

Certainly there are even more examples from the realm of argumentative or persuasive language that can be added to O'Callaghan's inventory, such as the not infrequent habit of interlocutors asking if listeners "see what [they're] saying." This seems a sad state of affairs for lovers of the sonic experience, and, despite the argument over the perceptual immediacy and endurance (both physiological and psychological) of visual vs. aural data, "sonophiles" must cede defeat to the greater variance in characteristics that can be ascribed to visible bodies in space. There seem to be a limited number of characteristics, by comparison, attributable to sounds: frequency, timbre, and loudness do not seem to hold a candle to the wealth of visible characteristics relating to color, shape, relief etc. Another battle for the audio purist is also lost in the accuracy of information received: anyone who knows of head-related transfer functions (HRTFs), for example, knows that there is a certain asynchronous character, however minute, with audio information reaching the ears, something that cannot be argued as easily for binocular vision.

FURTHER CAMPAIGNS AGAINST VISUOCENTRISM

Outside of O'Callaghan's valiant efforts, the visuocentric viewpoint has faced its vociferous counter-arguments from (unsurprisingly) the sphere

80 O'Callaghan (2007), p. 3.

of musical composition. Pierre Schaeffer, the pioneering composer of “concrete music”, made an argument for sounds’ being “much simpler to grasp than images” while simultaneously claiming that sounds enjoy a greater “vibrational tolerance”, as it were:

The difference between hearing and seeing lies not only in the difference between the seven octaves of mechanical vibrations and the one octave of perceptible electromagnetic vibrations. The eye is confronted with an infinite variety of stimuli, say in a painting, and the role of the eye is to select from them: a topography, a geometry, with colors intervening only from a qualitative point of view. The ear, on the other hand, establishes relationships between all mechanical vibrations that impinge upon it.⁸¹

Schaeffer, nevertheless, acknowledges the primacy of the visual in human culture, noting that it is “almost fifty years in advance of music” (citing the development of silent films long in advance of sound films, and also conceding that “vision is essential for survival and for the existence of science and technology.”⁸²

Schaeffer is largely credited with re-introducing the Greek concept of acousmatics into the musical realm; dealing with sounds that were heard without knowledge of their causes (the term owes its origins to the Greek *akusmatikoi*, or pupils of Pythagoras who listened to him lecturing from behind a curtain). Philosophers such as Roger Scruton have also accepted this view as aesthetically relevant (O’Callaghan, in fact, namechecks Scruton rather than Schaeffer when discussing this approach in a synopsis of his work).⁸³ The foundation of the acousmatic aesthetic seemed intimately tied up with skepticism of visuocentrism, and its ability to limit imaginative activity rather than to expand it, as Schaeffer describes:

81 Frank J. Malina and Pierre Schaeffer, “A Conversation on Concrete Music and Kinetic Art.” *Leonardo*, Vol. 5, No. 3 (Summer, 1972), pp. 255-260.

82 *Ibid.*

83 O’Callaghan, 2009.

When I listen to a violin being played, my attention is drawn to the gestures of the violinist and to the technical aspects of his instrument for producing sounds - my understanding of the music he makes is affected by what I see. But when I listen to the radio or recordings, I am forced to modify my listening, to penetrate into the sounds alone. This corresponds, in a way, to reasoning either by deduction or induction. Listening to live orchestral music is essentially deductive listening, it is strongly deduced from vision, whereas listening to the radio or a phonograph is inductive or acousmatic listening.⁸⁴

However, in his attempts to create a more listening-intensive sonic culture, Schaeffer nonetheless found himself using language that more appropriately refers to visual phenomena. In imagining a new form of composition that would make good on Friedrich Kittler's theory that frequencies had triumphed over 'notes' or 'tones' as the new (or re-discovered) fundamentals of organized sound, Schaeffer coined the term "sound object", or *objet sonore* (see his 1966 treatise *Traité des Objets Musicaux*). The *objet sonore* was "synthesised together from a continuum of auditory perceptions"⁸⁵, and was somewhat paradoxical in that it was a transcendent essence being labeled as a physical *object*. The goal of the *objet sonore* was to shift attention "away from the physical object that causes [...] auditory perception, back towards the content of this perception"⁸⁶ - and, in this process, to allow listeners to personally interrogate their own certainty about sonic phenomena. This concept would itself be refined or spun off into subsequent discoveries like Luc Ferrari's more aleatory *objet trouve* ['found object'], referring to a 'sonic object' "found by chance... an idea that did not exist beforehand."⁸⁷

84 Malina and Schaeffer (1972).

85 Brian Kane, "L'Objet Sonore Maintenant: Pierre Schaeffer, Sound Objects and the Phenomenological Reduction." *Organised Sound*, Vol. 12 No. 1 (April 2007), pp. 15-24.

86 *Ibid.*

87 Brigitte Robindoré and Luc Ferrari, "Luc Ferrari: Interview with an Intimate Iconoclast."

IN TOUCH WITH REALITY

The “audiovisual litany,” as incisive as it may be in its criticism of visuocentrism and the possible authoritarian worldviews that can result from it, provides only one picture of how the senses have been hierarchically arranged over time. One competing hierarchy involves the superior value that touch has in perceptually organizing the world. With this view of touch as the dominant sense comes yet another conundrum, namely that it is difficult to identify a specific “sense organ” associated with touch, unless we imagine the entire bodily covering of our skin as being just that. To do so is too much of an oversimplification, since there is no single sensory mechanism in the skin that would register tactile response, but “at least 15 functionally and morphologically different kinds,”⁸⁸ including separate mechanisms for the sensing of temperature differences.

Margaret Olin also makes a case for the value of touch based on its primacy; the deeply buried roots of its relation to technological development: “According to [Alois Riegl’s] view, primitive man learned to handle objects one by one. Only gradually did man learn the (optical) connections between things, first mechanical, then chemical.”⁸⁹ With such developments in mind, it might be tempting to see that indicator of human progress - technology - as coming “to the rescue” of our senses and allowing a holistic overview of their abilities: greater possibilities for expanding perception in one sensory mode should, ideally, be able to tell us something new about our entire sensory and neurological apparatus. Sound recording, for example, should have re-enshrined hearing as a sense not to be taken for granted in a visuocentric world, since it would allow for a highly increased level of contemplation upon, and detailed analysis of, individual sounds and more complex organizations thereof. However, as Paul DeMarinis argues, the popularization of sound recording (particularly

Computer Music Journal, Vol. 22, No. 3 (Autumn, 1998), pp. 8-16.

88 A. Iggo, “Cutaneous Sensory Mechanisms” in *The Senses*, ed. H. B. Barlow and J. D. Mollon. Cambridge University Press, Cambridge, 1982.

89 Olin (1989).

in the early days when it was “initially incapable of reproducing low and palpable frequencies”)⁹⁰ simply

...exacerbated a rupture between touching and hearing that had been building through several centuries of notated music. By the last decades of the nineteenth century, audible and feelable vibration had become so dissociated that inventors were having a difficult time understanding the relations between waves, vibrations and electrical undulations.⁹¹

Meanwhile, a very different “rupture” between touch and other senses was caused by the modern perception of art objects as something to be at once preserved and admired without direct human contact. The value of art seemed to have an inversely proportional relationship to its “touchability,” as greater renown for an artwork necessitated greater safeguards against touching and handling it.

Some art movements of the late 20th century decided that this “rupture” was untenable, and - whether visuocentrism was the culprit or not - it had to be addressed before further alienation from self and society occurred. Though some of its membership often balked at being called ‘art,’ the practice known as mail art or correspondence art disdained the deadening “do not touch” effect that modern art musea had on art objects, instead crafting “living” objects that were not only intended to be touched by their recipients, but were also occasionally meant to be revised or added to by those participants (a practice that lent itself well to new forms of audio art when the multi-track cassette tape became a preferred object of postal exchange among these artists).

Many other facets of underground or alternative culture shared this concern with re-discovering the tactile sense. Certain strains of high-volume electronic and psycho-acoustic music (much of it inspired by

90 Paul DeMarinis, “Gray Area.” *Leonardo*, Vol. 29, No. 4 (1996), pp. 270-272.

91 *Ibid.*

Pierre Schaeffer's work) set out to prove that sound was the stuff of tactile vibrations, and thus a force that had other transformative potentials besides its effect on the ears. Art installations, live "aktionen" and "happenings" of the late 20th century all featured increased degrees of tactility: these performance genres' particular emphasis upon reorientation within the world was a compelling form of experimentation not because, *pace* Matthew Nudds, "it tells one about one's actual perception or about one's actual experience," but because "one comes to know something about what further experiences one could have in certain circumstances."⁹²

Many of the artists or 'psychic researchers' working in this vein have been referred to on occasion as representatives of "extreme" culture - such as John Duncan, who engaged in audio experiments like those mentioned above, and also in performance events where naked and anonymous bodies would come into physical contact while temporarily inhabiting unlit spaces. Though the artists who earn this appellation are not prone to using this term themselves - since it implies boastfulness in a culture that tends not to reward braggadocio - it is understandable why critics have settled upon this rather vague, catch-all descriptor of their activities. After all, the tactility that features heavily in so many so-called "extreme" artworks refers back to an ancient view that touch occupied both extremes on a kind of sensory hierarchy. As Robert Jütte explains,

[the sense of touch] has been frequently ranked both at the top and at the bottom of the scale of esteem. This apparent contradiction goes back to its variable status in Aristotle, for, while ranking it fifth in order of merit...the treatise on the soul [*De Anima*] also describes it as a sense that reaches the highest form of development in man.⁹³

92 Matthew Nudds, "The Significance of the Senses." *Proceedings of the Aristotelian Society*, New Series, Vol. 104 (2004), pp. 31-51.

93 Robert Jütte, *A History of the Senses - From Antiquity to Cyberspace*, p. 69. Polity Press, Cambridge / London, 2005.

In the art performance context (and, in fact, within all other areas of lived experience) the sense of touch is recognized as the only sense, besides taste, which cannot convey information from a distance. This also accounts for its perceived „extremity,“ being that a cultural event involving haptic connections requires its participants to react immediately to the circumstances in which they are being touched - there is little if any time for analysis and reflection as there may be with the acts of viewing or listening. For Duncan, an artist who claims to be motivated by twin forces of „eroticism and horror,“ recurrent use of such interactions is a valuable asset in bypassing and conveying these two intense - and often interchangeable - impressions.

THE “LESSER” SENSES RE-CONSIDERED

As our built environments and architectural wonders attest to, it is certainly possible to create artwork that - if not necessarily ‘synesthetic’ - can stimulate at least three of the senses simultaneously, and maybe more if these built environments are aromatically enhanced and also feature facilities for enjoying food and drink. This does not guarantee that the inhabitants of these environments will appreciate all of the sensations that can be received within, though, nor that they will permit age-old prejudices against certain types of sensory information to be cast off overnight.

If we see the history of smell and taste only from the perspective of biological evolution, then of course the sense of sight has already won the battle for supremacy. As anthropological records have shown, the size of the nose steadily diminished as the eyes gradually moved to the middle of the facial area in order to enhance stereoscopic visual depth (a process that also accompanied humans’ development into erect-standing forest dwellers with a decreasing need for their noses to be near to the ground). However, the story of sensory influence upon culture has been a far more complex affair, not involving the same types of unbroken advances or retreats mentioned above. Stimuli received by taste, for example, have on

occasion been extremely effective in spreading cultural influence where the more commonly acknowledged audio-visual arts could not. Upon the 18th century popularization of *haute cuisine*, for example, the French nation was able to claim a decisive victory over a British culture that felt superior to its historical rival in nearly every other aspect, and having knowledge of the French culinary art became a mark of a sophisticated Briton.

The sense of smell, though so crucial to humans' evolution and their mobility as a species, is seemingly always another of the contenders for the rank of the "lowest" sense, and it is accorded a very minimal degree of cultural respect when considering all it has accomplished. It was our ability to smell that provided us, in much earlier stages of our evolutionary development than those just listed, with an advanced ability to avoid oceanic predators and to seek food from a distance rather than waiting for tactile sensation to alert us to its presence. Smell is, in fact, responsible for the formation of the human brain itself, given that its cerebral hemispheres developed from the olfactory tissue that rested atop the nerve cord. It is not a stretch, then, to say that our complex thought processes had their origins in olfaction. Smell also continues to confer benefits that we regularly take for granted, including the fact that it comes far closer to a synesthetic pairing with another sense (taste) than do other sensory pairings: smell influences taste to the degree that certain pleasures of the aesthete, like fine wine, are perceived as being flavorless substances whose taste is really an illusion granted by abundant fragrance.

So, the sense of smell, more so than any of the individual sense modalities, seems to be very paradoxical in the way it is interpreted. Diane Ackerman, in her *A Natural History of the Senses*, reminds us that "when we give perfume to someone, we give them liquid memory...[Rudyard] Kipling was right: smells are surer than sounds to make the heart-strings crack."⁹⁴ Even when functioning abnormally, smell can wield an affective power that is not matched by the other senses, as in the case of phantosmia - a

94 Diane Ackerman, *A Natural History of the Senses*, p. 11. Vintage, New York, 1991.

hallucinogenic state in which the smelled impressions can last for hours or days, rather than the comparatively fleeting impressions experienced in hallucinogenic vision (there is no universal remedy for phantasmia, by the way). Yet, for all its ability to make buried memories re-surface and phantasmic weirdness to linger, we still seem to have a relatively poor awareness of the fact that we inhabit a world perceptible by smell as well as by sight and sound. The theory of primary units of smell (i.e. the "olphemes" which act like the olfactory version of linguistic phonemes), along with other likeminded proposals such as Henning's "odor prism" or even Alexander Graham Bell's interest in "osmics," seem to the visuocentric or audiocentric like mere iconoclasm with no clear purpose.

Even a cursory glance at scent-related descriptive vocabulary will reveal the communicative difficulties that exist in describing smells, while there is little guarantee that describing a smell to someone unfamiliar with it will make the listener think of the same thing as the speaker. This asymmetry in communication and culture derives, again, from biological actualities: when compared with, say, the olfactory cells of a pig, humans' are far less physiologically complex. Surprisingly, humans also have fewer than half the sense receptors of mice (350 to 1,000). Going lower on the food chain still, insects have been known to communicate largely with smell alone, with Karl von Frisch attributing the well-regulated social behavior of honeybees to their penchant for making smell into a "language." This deficiency in odor receptivity is also not the only sensory area in which humans experience some sort of lag when compared to other terrestrial life: the tetrachromatic vision of some bird species, for example, allows them to distinguish gradients in color that would be imperceptible to humans (this is by virtue of their having four different cone receptors in their eyes rather than the customary three). Elsewhere, the mantis shrimp boasts no fewer than sixteen types of cone, allowing it to visualize a spectrum of light from infrared to ultraviolet.

In an ecology where so many other lifeforms are highly sensitive to scent, humans' visuocentrism can seem like an attempt to further elevate

themselves above the animal kingdom, an act which the small but intrepid number of “olfactory artists” has challenged in their works. Some of these works, such as the Arabic gardens praised by N.E. McIndoo as sanctuaries where one “might rejoice in a cultured delight in odor,”⁹⁵ show how scents can just as easily satisfy the distinctly human need for aesthetic enrichment as visual spectacles can (while also prefiguring the modern interest in creating intense aesthetic sensations removed from “accepted” performance or exhibition spaces).

Other more contemporary works, informed by Freudian notions of “organic repression”, question how much humans really gain from further distancing themselves from the animal; culturally diminishing the value of scent and thus increasing the inventory of “disgusting” sensations. Such work, aimed at re-introducing the sense of smell into our overall perceptive and critical abilities, provides an interesting complement to the scientific studies that look skeptically upon the cultural assumptions that a keen sense of smell is more animal than human. It is true, after all, that mice may trump humans in the sheer number of odor receptors that they possess, but only humans possess the advanced olfactory brain regions for processing smells in a way that makes their meanings more nuanced: these are situated within the temporal and frontal lobes that, per Gordon Shepherd, “enable humans to bring far more cognitive power to bear on odor discrimination than is possible in the rodent and other mammals.”⁹⁶

The bad news for olfactory champions is that the so-called “functional deterioration” of human olfactory receptors is still a work in progress, suggesting that a yet wider olfactory asymmetry will differentiate humans from other animals in ages to come. Much of the knowledge pertaining to this sensory deficiency is fairly new, including the research done by Linda Buck and Richard Axel in the early 1990s (and for which they received the

95 N.E. McIndoo, “Smell and Taste and Their Applications.” *The Scientific Monthly*, Vol. 25, No. 6 (Dec., 1927), pp. 481-503.

96 Gordon M. Shepherd, “The Human Sense of Smell: Are We Better Than We Think?” *PLoS Biology*, Vol. 2. No. 5 (2004), pp. 571-575.

Nobel Prize in 2004). Yet even without subscribing to this knowledge, there are still other phenomenological reasons for the profound differences in the importance accorded to the audio-visual in comparison to smell and taste. Michael Benarie, in describing these differences, first claims that both vision and olfaction are dependent upon “channel states” described as follows:

The three attributes of light (hue, intensity and saturation), which produce visual sensations are, similarly, channel states. Chemoreception in the case of smell and taste can be looked upon as a channel. Thus, by analogy, a distinct chemical substance that stimulates the smell or taste receptor organs is a state.⁹⁷

Having defined these channels, though, he insists that the channels of smell and taste are “chemical” ones while those governing all other sense modalities are “physical” channels. Semantically speaking, this means that the chemical and physical channels will differ from each other because ‘learning from experience’ will generally not be required in order to grasp a meaning imparted by a chemical stimulus, while this will generally be the case for a physical one.

Whether one is even aware of these biological differences or not, the cultural perception of sight and sound as being the most informative senses has had a profound influence upon our definitions of artistry. Individuals who cultivate and share with us their personal world of sight and sound impressions are more likely to be appreciated as legitimate artists, while those who do the same with olfactory or oral sensations are “epicures” or perhaps “aesthetes,” terms that carry with them implications or indictments of un-constructive passivity. Put another way, a peculiar prejudice often causes us to see audio-visual creators as playing a more active role in the shaping of the world, whereas the producers of olfactory or oral impressions are merely “passing on” an inherited knowledge. This

⁹⁷ Michael M. Benarie, “Some Thoughts on the Sense of Smell in Analogy to Language.” *Leonardo*, Vol. 7, No. 1 (Winter, 1974), pp. 19-22.

holds true even for *haute cuisine* master chefs who, even while attempting to organize their creations on the plate in a visually memorable way, rarely impress us as having the same cachet and influence as “true” visual artists (although the recent spate of TV shows based on culinary celebrities does indicate one reversal of this cultural trend).

Worse still, those with an interest in crafting artistic fusions from smells and tastes are perceived as not just of lesser importance, but as *morally* wrong - hedonists of the most decadent and solipsistic kind. Jean Des Esseintes, the famed anti-hero of Joris-Karl Huysmans’ 1884 novel *À rebours* [Against Nature], is one of the most notable fictional characters bearing traits that are often assumed to be qualities of real-life aficionados of these senses. In one chapter of this dizzying tour through Des Esseintes’ singular obsessions, he uses a whimsical «mouth organ» musical contraption of his own design, featuring «stops» labeled with corresponding musical sonorities- when these are pulled in different configurations, different combinations of liqueurs are released from a series of taps into his mouth, and thus the organ «[succeeds] in procuring sensations in his throat analogous to that which music gives to the ear.» To wit: mint and anisette are compared to the flute, *kirchwasser* has the “furious ring of the trumpet,” brandy “storms with the deafening hubbub of tubas,” and so on. In using visual descriptors such as “dark,” “vibrant” and “silvery” to describe these sensations, yet another layer of sensory impression is added to the correspondence already in place.

It might be argued that much of the aversion to smell comes from its aforementioned status as the most primordial of the senses; as a vestigial flicker of a world that we would not - knowing what we currently know about it - want to exchange for modern conveniences. Aesthetics and culture can be cruel to anything that is not chronologically recent, even if such a phenomenon still has many uses or applications. It is true that smell is not essential anymore except in the case of influencing taste or alerting us to dangers such as toxic substances, and so creating art that is either stand-alone “olfactory art,” or cross-modal art with an olfactory

component, is an essentially atavistic process. Engaging in this sort of atavism, though, has never been a problem for those art movements typically called avant-garde: for all their flaws, they have understood the need for the trans-temporal survival of fundamental impulses, and the possibility of reinvesting them in new forms.

Such processes have been called counter-productive, but this is only the case if we believe in a linear history marked by an irreversible succession of changes in attitudes. If something like Des Esseintes' fictional activities were to take place in Heian-era Japan, for example, they might be recognized as the height of artistry in an age still acknowledged by cultural historians for its intellectual and sensory refinement - a time when aesthetic understanding was tantamount to moral goodness. Nothing better expresses that epoch's attitude towards the senses than its landmark literary work *Genji Monogatari* [Tale of the Genji], which features prominent characters named 'Lord Fragrance' and 'Prince Scent' (but also, in a possible nod to visuocentrism, the titular hero with a first name of *Hikaru* [light.]

Back in the West, Sally Banes locates at least one historical point at which this trend away from the 'olfactory arts' accelerated:

Historically, the cultural uses of aromas in the West diminished with the hygiene campaigns of the late 19th and early 20th centuries, since the spread of disease was linked to foul odors. Perhaps the deodorization of the theatre was in some ways connected to the scientific ambitions of naturalism, to an idea of the theatre as a sanitized laboratory.⁹⁸

Complicating the cultural situation even more is the paradoxical situation that Brian Moeran mentions: "on the one hand, academic literature asserts that the sense of smell varies in different social and cultural contexts, and

98 Sally Banes, "Olfactory Performances." *TDR* (1988-), Vol. 45, No. 1 (Spring, 2001), pp. 68-76.

that every social group has its own distinct olfactory culture. On the other hand, global advertising campaigns for perfumes suggest that fragrance is a universal form of semiotic communication."⁹⁹

The act of reviving these senses' place in the overall aesthetic experience is not without its defenders, though. John Harris, for example, argues "our aesthetic delight and interest in visual and auditory rather than in oral and olfactory experience is a crude prejudice,"¹⁰⁰ casting a wary eye upon the idea of the "accredited art forms" that exclude these senses. He laments that the "un-accredited" forms are spoken of as an art only in a metaphorical sense, using the example of a "hostess who gives 'musical evenings'" who is "artistically serious in a way in which the hostess who gives dinner parties is not."¹⁰¹ Finally, Harris insists that those who argue against the artistic value of perfumery or culinary delights do so because of the consumable nature of such items, although he also realizes that "consumption" is far too broad a term, and an act that can be carried out in many other ways besides digestion: and, on that topic in particular, Harris protests "if it is the metamorphosis of food and drink into something less savory that is the ground of the objection, this objection must apply to all art objects which are subject to decay."¹⁰² The perceived transitory nature of food and drink pits them against those theatrical and musical arts that can be recorded, though Harris again calls this a false distinction. That is to say, storage media such as vinyl records or DVDs are not the only means of guaranteeing that a specific artistic occurrence can be experienced again on future occasions, since recipes have long since existed to guarantee the repeated enjoyment of culinary masterpieces.

A.T. Winterbourne takes Harris's protests into consideration, but nonetheless argues for a pragmatic view of the situation, wryly noting how "nobody,

99 Brian Moeran, "Japanese Fragrance Descriptives and Gender Constructions: Preliminary Steps towards an Anthropology of Olfaction." *Etnofoor*, Vol. 18, No. 1 (2005), pp. 97-123.

100 John Harris, "Oral and Olfactory Art." *Journal of Aesthetic Education*, Vol. 13, No. 4 (Oct., 1979), pp. 5-15.

101 *Ibid.*

102 *Ibid.*

I think, not even minor Romantic poets, ever expired for want of art."¹⁰³ To him, the possibility of satiation is another important factor separating arts of "taste" from those of sight, sound, etc.: food and drink, given that they are "physical necessities," operate "on the organism in quite different ways from intellectual 'necessities'...once I have had my fill of food and drink, there is nothing - apart from gluttony - that could tempt me to eat still more, even if the finest cuisine were available."¹⁰⁴

The public aversion to strong smells, or the feeling that they are at the very least superfluous to any given art performance, has been very much like the sense of touch since it has been a driving force behind the types of 'experimental' works that are concerned with re-calibrating a precariously imbalanced human organism. This embrace of lost or ignored sensory capabilities has been vividly demonstrated by the work of the Symbolists in the late 19th century, and by those willfully uncategorizable artists classed as "intermedia" nearly a century later. For the latter, Sally Banes claims that the reintegration of smell into the arts is partly an oppositional or differentiating ploy designating a more 'authentic' culture, i.e. it is "yet another plot turn in the continuing narrative of the theatre's anxiety toward the mass media."¹⁰⁵ As a possible catalyzer of new social and aesthetic relations, it also has a special value for the avant-garde: in the estimation of Moeran, its "radical interiority...threatens 'the abstract and impersonal regime' that characterizes social order in contemporary societies."¹⁰⁶

THE CASE FOR INCONGRUITY?

Fighting against the concept of a sensory hierarchy, to be replaced with a full integration of the senses, seems to be an uphill battle in the final estimation. Few sensory experiences are fully synesthetic ones. Yet

103 A.T. Winterbourne, "Is Oral and Olfactory Art Possible?" *Journal of Aesthetic Education*, Vol. 15, No. 2 (Apr., 1981), pp. 95-102.

104 *Ibid.*

105 Banes (2001).

106 Moeran (2005).

there are few sensory experiences that can really be called “isolated” ones, either. As Nicholas Cook writes of music, for example, it “never is alone;”¹⁰⁷ though it may be a phenomenon to which we divert the majority of our attention while it is being experienced, it hardly ever occupies the *full* attention of our sensory apparatus. Cook is, incidentally, a skeptic of synesthetic art who realizes as well as any serious researcher that it is a very different animal when compared to the growing body of modern multi-media art. When stimuli are concerned, the latter is more often a product of non-translatable *difference* than of *correspondence*: though both may ultimately be concerned with “convergence,” multi-media’s effect is one of “*cumulative* meaning...emotional and dramatic [*italics mine*].”¹⁰⁸

So, before proceeding any further with this investigation, it might be worth asking if our long-standing sensory hierarchies - which lead to differences or incongruities between different sensory modes - can also lead to positive evolutions in perception and in the aesthetics that develop from that perception. Take, for example, what Mary Boltz, Brittany Ebendorf and Benjamin Field noted as the aesthetic “ironic contrast” running through Stanley Kubrick’s infamous film of Anthony Burgess’ *A Clockwork Orange*. The “mood incongruent” music score used for this film - particularly the “carefree beauty of Rossini’s *The Thieving Magpie*” which accompanies “acts of murder, rape, and mayhem”¹⁰⁹ - seems, within the context of that film’s narrative, to have a greater effectiveness in illustrating the apparent remorselessness of the film’s anti-heroes than would more typically ominous or “dark” musical settings.

And, while on the topic of violent and intense films, the incongruity of the senses - or, more accurately, the *impossibility* of stimulating certain senses - has been perhaps a great boon for certain types of art. One has to

107 Nicholas Cook, *Music, Imagination, and Culture*, p. 265. Oxford University Press, Oxford, 1990. p. 265.

108 Annette Davison, “Music and Multimedia: Theory and History.” *Music Analysis* Vol. 22 No. 3 (2003), pp. 341-365.

109 Marilyn G. Boltz, Brittany Ebendorf, and Benjamin Field, “Audiovisual Interactions: the Impact of Visual Information on Music Perception and Memory.” *Music Perception: An Interdisciplinary Journal*, Vol. 27, No. 1 (September 2009), pp.43-59.

wonder, for example, how entertainment genres like the action or horror film would fare if the olfactory sense - again, the third sense that can be acted on from a distance - was catered to as much as the eyes and ears currently are. It is worth speculating that such a sensory symmetry has remained unexplored purely because of the lack of a market for the smell of burning flesh or re-animated corpses, and not because sophisticated means of odor design and projection are completely unfeasible. Indeed, for all the criticism leveled at the archaic nature of olfaction, synthetic scent design is a state-of-the-art technology that is used, among other things, to provide olfactory "branding" in the manner of corporate logos (e.g. the distinct scents used in luxury cars to give them another degree of differentiation from more affordable competition).

Spectacles in which the sense of smell was targeted in such a way - for example, the macabre machine theater of Survival Research Laboratories in the 1980s and 1990s¹¹⁰ - have been acknowledged by both performers and audiences as unremittingly confrontational performances, and so those hoping to court a mass audience are maybe not ready to take this extra step towards a total sensory experience. With such "industrial culture" performance in mind, deliberately planned incongruity or contrast in received stimuli has been an effective means of interrogating audiences' received education and acculturation. When Cosey Fanni Tutti, in her 1976 *Women's Roll*, paired the scent of crushed berries with the sight of "wounds" self-inflicted with those same fruits and some stage makeup, her intent to pair "an unpleasant visual stimulus [with] a pleasant olfactory stimulus"¹¹¹ served as an incisive commentary on the complexity of feminine personality relative to the simplistic mass media portrayal thereof.

110 Banes (2001).

111 Catherine MacGregor, "Abject Speculation: Refiguring the Female Body in the Performance Work of Cosey Fanni Tutti." Paper delivered at Performance Studies International 5, Aberystwyth, April 10 1999.

Much the same effect was, again, achieved by Kubrick's *Clockwork Orange* and the director's pairing of gruesome visuals with pleasant or lively musical selections: an elementary acknowledgement that the "inner world" of certain classes of individuals (e.g. psychopathic criminals) is far more variegated than the time constraints of media and public discourse allow it to be. In this respect, it is strikingly close to the aims of much synesthetic or cross-modal art experiments: both draw attention to the way in which the introduction of novel sensory experiences can also mean the introduction of a whole new social order. Both can illuminate the role of art as a non-isolated initiator of events, and can reacquaint us with the fact that aesthetic phenomena are "events" in and of themselves - what we really hear, for example, is the striking of a stick against a drum head rather than the waves resulting from that event.

So, having realized that this type of artwork has enduring value as a reflective and catalytic tool, we should not venture much further without first conceding that "synesthetic" art is not the only game in town, and is not the most sublime or most elevated form of creativity in all cases. Both art that nurtures deliberate incongruity and art that strives towards a synesthetic reality can be well or poorly executed, and this often comes down to additional factors not exclusively concerned with the ordering of sensory information. Other intangible elements like passion, conviction and understanding of context must come into play, along with either mastery of formal skills or clever calls for the re-evaluation of those same skills.

As such, there is no point in battling for the superiority of either sensory disunity or sensory unity in the arts - each is only as powerful, ultimately, as the creative mind that manifests it. The predominant form of art and culture may be grounded in sensory asymmetry - which again unfolds from the asymmetrical quality of our senses' biological development - but we have to be careful not to see this state as a blessing or a curse. It is, rather, a 'default' mode that can yield meaningful art either by working with it or by working against it with illusions of cross-modal synchronicity.

CHAPTER 3

ARCHAIC TECHNIQUES OF SYNESTHESIA?

The ways in which we presently differ from pre-modern humanity are innumerable, and taking even a modest accounting of them would require more space than what exists in between the covers of this book. Some human traits remain unchanged since time immemorial, yet the catalog of external appearances and affectations just continues to expand at an unprecedented pace. For many, the attempts to resolve this tension between eternally recurring features of life and an over-abundance of modern novelties can be frustrating, even agonizing - especially in those nations where the mass media nurtures the ambience of anxiety with constant, panic-inducing reminders of endangered ways of life. Owing to these facts, it can be all the more rapturous when this reconciliation between the archaic and the "new" is achieved - a process that regularly involves the re-discovery of sensory essences.

Indeed, the ordering and occasional unifying of the senses was one area in which the gulf between ancient and modern thought has increased steadily. In Greek late antiquity, much speculation on the subject took place, with the Aristotleian and Stoic schools of thought quarreling with the Neoplatonism of Plotinus: the former favored a "periphery-center" conception of the senses, while Plotinus argued for an essentially unified sensory experience governed by a "sympathy" with objects. For Plotinus, this logically followed from his belief in a transcendent and indivisible "One" that encompassed both subject and object. All of this supports what Cretien van Campen has previously noted on the subject: "the division of human experience into two, five, twelve, or twenty-two senses depends on the culture one lives in, and is hardly a natural or biological fact.

The empire of the senses has been divided into provinces throughout history and in many places."¹¹²

SENSORY UNITY IN THE SHAMAN'S QUEST

To tell the story of the drive towards a synesthetic art is necessarily to - as van Campen suggests - draw from a deep well of ideas and artifacts well outside of one's own cultural background. The story of the cross-modal arts can not be told in full without surveying the culture of German Romanticism, or the decadent splendors of *fin de siècle* France, or the tensions between apocalyptic mysticism and utopian revolt that gripped Russia in the early 20th century. Even though a good deal of this story does take place on the European soil of the preceding three hundred years, this is far from the entire story, and it would be highly erroneous to claim that the cultural researchers from the European continent were the "first" to notice linkages between different types of sensory information. The transformation of synesthetic perception into meaningful cultural material has been a fact for societies spread across the globe, each with its own unique ways of materializing this inner world of the senses.

It is difficult to speak of these societies' archaic past without dissociating them from their spiritual inclinations and their unique regenerative practices, phenomena that were often embodied in the person of the shaman. The etymology of this word is Siberian in origin (meaning roughly "to know"), but applies to an archetypal figure that can be found in cultures the world over. Though often interpreted as the "priests" of pagan societies, the shamanic role is much more complex than what that term now connotes: these individuals were not, historically, mere administrators of sacraments to a congregation, but also offered themselves up to the unknown as part of the sacrificial act. Nor were their rituals been guided by persuasive or artful verbalization, as formed into sermons etc., but instead by immersive sensory experience.

¹¹² Cretien van Campen, *The Hidden Sense: Synesthesia in Art and Science*, p. 101. MIT Press, Cambridge / London, 2010.

It is difficult, having noted the central importance of this character to archaic ritual, to avoid the role that hallucinogenic or entheogenic drugs played in the process of shaping shamanic practice. Equally important, though, has been the near-universal use of music in shamanic ritual. For example, ethnomusicologist Gilbert Rouget stressed the value of this in ancient Greek society, in which spiritually or physically sick individuals "cure themselves by practicing ritual trance, which is triggered by a musical motto and takes the form of a dance...music and dance, by the effect of music, reintegrate the sick person into the general movement of the cosmos."¹¹³ This will certainly not be the last we hear in this story of Greek antiquity and its lasting influence upon subsequent generations of artists, many of which managed to be technical innovators within their own time while also calling upon this deep-rooted tradition.

The shaman himself, as the intermediary between material and spiritual planes, was by necessity an individual with some artistic skill. This most often meant having musical training - as either a vocalist, instrumentalist, or both - and could thus lead a tribe into a state of either trance (characterized by Rouget as a transcendental state achieved *during* movement) or ecstasy (a transcendental state occurring *in the absence of* movement). As cultures began to realize the potency of shamanic practices in achieving either of these states, musical instruments themselves were decorated with iconography that suggested their use as 'snares' of spirits, and were given euphemistic names like "the shaman's horse," also suggesting their purpose as the transportation that would make inner space journeys possible (in the case of the Samoyed peoples of arctic Russia, drums were furthermore seen as being copies of those that were originally fashioned from branches of the World Tree, thus making them a conduit from living nature to human culture).

As is well known to anyone who has experience with hallucinogenic drugs, music - or perhaps any variety of sound that the mind can remain focused

¹¹³ Gilbert Rouget, *Music and Trance*, p. 205. Trans. B. Biebuyck. University of Chicago Press, Chicago, 1985.

upon - is often the engine of the imagination during the voluntarily altered state, owing to its increased ability to make spectacular or alien images unfold in the mind's eye or in the field of vision itself. A modern, synthetic hallucinogen like ketamine - though intended as an anesthetic because of its disruption of "the normal stream of input from the peripheral to the central nervous system"¹¹⁴ - is as likely to induce the synesthetic experience as the plant-based hallucinogens fueling shamanic ritual, since the state of disembodiment it promises can be perceived as either a sensory nullification or a sensory fusion.

This is not always the case, since at least one esoteric hallucinogen - diisopropyltryptamine or DiPT - produces solely auditory hallucinations such as "auditory pitch [being] perceived as lower than normal" and "harmonious sounds los[ing] their resonance with one other,"¹¹⁵ yet the mutual arising of unanticipated sensory data remains one of the main selling points of modern psychedelic initiation. The typical marijuana smoker's insistence that "music sounds better when high" is perhaps an acknowledgement that music sounds better when properly synchronized with, or becomes generative of, subjectively meaningful visuals. Or, at the very least, these corresponding visuals cause a variety of different perceptual illusions by which music seems to synchronize with them (e.g. a rapid-fire succession of images giving the sense that an otherwise languid song is also proceeding "quickly.")

"THE BLOOD OF AN OLD, OLD THING"

The literature dealing with the synesthetic component of drug-induced hallucination is staggering, and because of this it is understandable that many individuals' first encounter with the idea of synesthesia is through anecdotal relays of drug revelations (or, of course, through personal

¹¹⁴ Jan-Dirk Blom & Iris E.C. Sommers (eds.), *Hallucinations: Research and Practice*, p. 310. Springer Science and Business Media, New York, 2012.

¹¹⁵ *Ibid.*

experiences themselves). Psychedelic researcher Terence McKenna, who delved deeply enough into that realm of research to be heralded by the American icon of psychedelic proselytizing (Dr. Timothy Leary) as the “1990s” version of himself, is one such fascinating source of these anecdotes. In McKenna’s *Food of The Gods*, he recounts numerous occasions in which administration of powerful hallucinations acts as a stimulus towards synesthetic perception. Upon drinking a full cup of the Amazonian *ayahuasca* brew that he portentously and memorably refers to as tasting like “the blood of an old, old thing,” he notices how “a wave of insect sound sweeping up the river seemed to splatter the darkness with shards of sharp-edged light.”¹¹⁶ During this same episode, the priestess administering him the drink sings a curative song - an *icaró* - which “seems more like a tropical reef fish or an animated scarf of many colors than a vocal performance.”¹¹⁷ Such evocative prose seems to find a parallel in the visual art inspired by *ayahuasca* administration, such as the rainbow-hued and undulating lines permeating the artwork of Peruvian “vegetalista” Pablo Amaringo.

In the Peruvian shamanic culture that McKenna surveyed, *ayahuasca* serves as a measure both “diagnostic and revelatory”¹¹⁸; a tool intended to ferret out the exact sources of psychogenic disturbance or emotional imbalance prior to the healer’s neutralization of this evil. As Mircea Eliade recounts, the “vast majority of illnesses” in the Amazonian region are seen to “have a spiritual cause [...] the concept of disease as a loss of the soul, either strayed away or abducted by a spirit or a ghost, is extremely widespread in the Amazonian and Andean regions.”¹¹⁹ This necessitates a journey by the shaman to the underworld in which these types of phenomena lurk

116 Terence McKenna, *Food of the Gods: The Search for the Original Tree of Knowledge / A Radical History of Plants, Drugs, and Human Evolution*, p. 45. Rider, London, 1992.

117 *Ibid.*

118 Fred Katz and Marlene Dobkin de Rios, “Hallucinogenic Music: An Analysis of the Role of Whistling in Peruvian Ayahuasca Healing Sessions.” *The Journal of American Folklore*, Vol. 84, No. 333 (Jul. - Sep., 1971), pp. 320-327.

119 Mircea Eliade, *Shamanism: Archaic Techniques of Ecstasy*, p. 327. Trans. Willard R. Trask. Princeton University Press, Princeton NJ, 2004.

(in some traditions, the shaman “stays put” but nonetheless magically petitions for the return of the soul or for the cessation of spiritual torment). For such travels between worlds to be initiated, a shamanic trance is required that is often brought on by plant hallucinogens.

The *ayahuasca* ceremony is accompanied by songs of the type that McKenna mentions, or, as per the fieldwork of Fred Katz and Marlene Dobkin de Rios, a specialized whistling that is meant to steady the *ayahuascero* through a turbulent period that can include unpleasantities such as heavy nausea and vomiting (which, as Katz and de Rios argue, is a side effect of “the inability of individuals to deal with anxiety generated by rapid access to un-conscious realms.”)¹²⁰ This music is often said to result in the visualization of colors, or in the apprehension of a multiple sensory arising in which mental phantasms are created by the musical tones and vice versa. Again, this practice is shared among other indigenous Amazonian people, with the Desana of Colombia in particular receiving a “range of impressions in different sensory domains” from a sensory phenomenon as deceptively simple as whistling. More specifically, Classen claims that the ritual music of the Desana is erotically charged owing to its “male” odor, “red” color and “hot” temperature.¹²¹

McKenna’s experience with synesthetic effects is not limited to his *ayahuasca* journeys; he speaks just as poetically and enthusiastically of his reality-exploding visions experienced under the influence of DMT, during which “the tryptamine entities offer the gift of new language; they sing in pearly voices that rain down as coloured petals and flow through the air like hot metal.”¹²² While the contents of McKenna’s visions may have been entirely his own, though, the practices that he mentions are far from being anomalous. The cultural practices of many Amazonian peoples are permeated with a belief in sensory inseparability, such as, again, the

120 *Ibid.*

121 C. Classen, “Sweet Colors, Fragrant Songs; Sensory Models of the Andes and the Amazon.” *American Ethnologist*, Vol. 17. No. 4, pp. 722-35.

122 Scott R. Hutson, “The Rave: Spiritual Healing in Modern Western Subcultures.” *Anthropological Quarterly*, Vol. 73, No. 1 (Jan., 2000), pp. 35-49.

Desana who refer to “color energies” by which other sensory experiences are categorized. Elsewhere, the peyote-fueled Huichol shamans of northwestern Mexico - a farming and herding culture that retains many of its salient pre-Columbian traditions - perceives color as a divine means of communication with properties that make the Huichol’s perception remarkably like that of “color-grapheme” synesthetes (even though the reported uniformity of their collective visions places them in a category different than clinical synesthetes). Going into more detail about this perception, Hope McLean’s anthropological findings are of great interest:

According to [shaman and visual artist] Eligio, color is a language used by the gods. The shaman hears and understands by means of color. These colors are not words or symbols in a linguistic sense - that is, they do not function as a symbolic language in which color ‘x’ means one thing and color ‘y’ another. Rather, the colors themselves seem to be comprehended in a multisensory way that is meaningful to the shaman. According to Eligio, colors are words, and at the same time they are songs. He also proposed that colors could speak to each other.¹²³

The shaman mentioned here, as interviewed by ethnographer Hope McLean, points to a fascinating mutability of colors: they are not merely sentient beings possessing the gift of speech, but that are also a form of sustenance able to be tasted or “eaten” (upon which point the imagined consumption of their knowledge allows them to be transformed into songs, which then go on to exude distinctive fragrances). This heightened reverence towards colors has an unmistakable influence upon the signature artwork of the Huichol - i.e., yarn paintings and beaded sculptures - which make use of bold, rippling color gradients that attempt to match those seen during shamanic voyages. The arrangement of these colors

123 Hope MacLean, “Sacred Colors and Shamanic Vision among the Huichol Indians of Mexico.” *Journal of Anthropological Research*, Vol. 57, No. 3 (Autumn, 2001), pp. 305-323.

themselves is, it would seem, intimately bound up with the perception of fluid, lattice-like forms while under the influence of peyote.

The Huichol also stand out among Meso-American tribal cultures for the way in which they perceive the four cardinal directions and their relationship with color: while many Native American peoples associate a color with each compass direction, the Huichol insist that - again, given the colors' ability to "speak" - the directions themselves dictate colors to the shaman. Such an understanding of the causality behind synesthetic perception is strikingly different from the accounts of many modern, Western synesthetes, who seem to not ascribe any supernatural origin to their perceptions. More interestingly, though, this way of perceiving forms part of a belief system in which direct communication with deities and ancestors is possible without intercession.

Yet it should not go unnoticed, if only as a side note to this story, that some representatives of modern, technological cultures also see the potential in a direct communication with such - or, more accurately, in the potential for supposedly mute life forms to act as the "spokes-objects" for superhuman forces. The sound artist Michael Prime, for example, has made bioelectrical recordings of the sacred plants used in synesthetically influenced Meso-American rituals (one piece on his 2000 album *L Fields* is entitled "Listen to Peyote," while a separate disc *One Hour as Peyote* reprises this idea in a more austere sonic setting). By recording the alterations in the plants' electromagnetic fields, and having them in turn trigger an oscillator, Prime manages to expose a curious 'inner life' or 'voice' of the botanical specimens often responsible for synesthetic effects in the human organism. In doing so, he creates some of the most purely "hylozoic" music imaginable (hylozoism being the pre-Socratic belief that all matter is sentient matter). He also invites conclusions similar to those drawn by a much earlier 1969 experiment conducted by Cleve Backster, which is described in brief by Dobkin de Rios:

When Backster connected a pair of polygraph electrodes to the leaf of a common house plant in order to measure its response, if any, while taking up water, he noticed that the plant's psychogalvanic reflex reaction pattern resembled that of a human subject undergoing emotional stimulation.¹²⁴

It is fascinating to consider that the promise of synesthetic experience has led both modern researchers and traditional societies to see hallucinogenic plants as more than just totemic or emblematic objects: their ability to induce sensory synchrony has re-cast them as being sentient life forms that "want to communicate." Put another way, societies like the Australian aborigines "gained an intuitive knowledge of plants perceiving man's intent toward them"¹²⁵ from these intense shifts in perception.

With this in mind, it is interesting to consider the evolutionary theory of Terence McKenna as it relates to the myriad varieties of 'sacred plants.' According to McKenna, these are engaged in a prehistoric, symbiotic relationship with humanity that led to the tripling of the human brain mass, and consequently to the formation of "religious ritual, natural magic and calendar-making."¹²⁶ It remains a controversial or simply contested one among evolutionary biologists (and McKenna himself was quick to note that many such specialists "do not even attempt an explanation" that might compete with his).¹²⁷ It is an interesting worldview for us to consider, though, particularly because of the aforementioned synesthetic experience of plant-induced hallucinations. If these experiences were typified by synesthetic perception, and these experiences provided the self-reflection that McKenna argues is central to the genesis of human arts and culture, then it stands to be argued that a great deal of our artistic endeavor springs from a synesthetic or cross-modal seed. Again, it has to

124 Marlene Dobkin de Rios, "Is Science Catching up with Magic? A Look at the Content of Belief Systems." *Medical Anthropology Newsletter*, Vol. 7, No. 1 (Nov., 1975), pp. 4-7.

125 *Ibid.*

126 McKenna (1992), p. 61.

127 *Ibid.*, p. 62.

be emphasized that McKenna's evolutionary chronology is seen as highly suspect by other researchers,¹²⁸ yet the influence of shamanism still remains in spite of McKenna's overreaching claims about plant hallucinogens' effect on neurological development.

It is also important to note that synesthetic perception - at least of a 'cultural' type rather than a 'clinical' one - also exists in aboriginal cultures in the relative absence rituals involving hallucinogenic plants, and at any rate it is too reductive to see understand all transcendent tribal customs as deriving from drug administration (for example, Scott Hutson notes the "trance dances of the Dobe Ju/'hoansi, which do not involve any mind-altering substances.")¹²⁹ Visitors to the "sweat lodges" of North American natives, or to similar rituals of Laplanders (which are compounded with a jarring post-sweat dip into a freezing stream), can also testify to the ecstatic effects brought about by processes of affective intensification that do not involve chemical ingestion. Meditation near a source of extreme heat has often been all the shamanic practice needed for an individual aspirant, with the control over "inner heat" or *tapas* being the source of many of the purported powers, clairvoyant and otherwise, of yogis and Indian ascetics. So essential was this process to related forms of asceticism, such as breath control, that the concept of *tapas* became understood as synonymous with asceticism in general, rather than solely with this mastery over extreme heat.

In short, though drug rituals may still have played an important role in the formation and persistence of synesthetic impressions, they are not

128 Clarke and Doel, for example, offer the following: "McKenna's chronology and argument is problematic. *H. habilis* originated c.2.5 million years ago; *H. erectus* c.1.8 million years ago. Modern populations probably evolved from *H. erectus*, via some transitional form such as *Homo antecessor* or *Homo heidelbergensis*. However, *Homo neanderthalensis* boasted the largest brain-size of the hominid family, which is inconvenient to McKenna, in that *H. neanderthalensis* is not the ancestor of anatomically modern *H. sapiens*. McKenna might intend *H. sapiens* to include *H. neanderthalensis* as a subspecies of archaic *H. sapiens* (*H. sapiens neanderthalensis*), rather than a separate species also descended from *H. erectus*, yet it is generally accepted that the Neanderthals died out, whereas *H. sapiens sapiens* did not, which poses the same difficulty." David B. Clarke and Marcus A. Doel, "Mushrooms in Post-traditional Culture: Apropos of a Book by Terence McKenna." *Journal for Cultural Research*, Vol. 15 No. 4 (October 2011), pp. 389-408.

129 Hutson (2000).

an absolute prerequisite for cultures that still perceive in such a manner. The Anangu of Western Australia, for example, feel themselves literally “becoming green” upon imbibing common, non-hallucinogenic plants, and “have created a correspondence between odour and greenness by fusing together the odour of rain and the following transformation of the country to greenness into one contemporaneous sensory ‘event.’”¹³⁰ Such phenomena require us to at least entertain the idea that different cultures have remained rooted in synesthetic perception to a greater degree than others have; that some indigenous peoples may still possess the perceptive abilities that we now attempt to repossess through a full complement of new technologies and artistic experiments.

EASTERN PERSPECTIVES

Shamanism remains only one means among many by which the ancients attained the knowledge that fed into cultural maturation. While most shamanic traditions in the world are seemingly familiar with the use of hallucinogens as diagnostic and self-empowering tools - to the point where *entheogen* [“generating the divine within”] is seen as being a more suitable synonym for the more powerful hallucinogens - not all are favorably disposed towards their use. It is particularly interesting that the same Eastern traditions of Buddhism and Yoga, so often turned to for sage advice during the drug-aided youth insurrections of the 1960s, featured many texts that, according to Eliade, “warn the aspirant against the danger of letting himself be seduced by the magical sense of boundless capability that they produce and that can make the *yogin* forget his true aim - final liberation...hence the ecstasy attained by material means cannot be compared with the ecstasy of true *samadhi*.”¹³¹ It comes as little surprise that 20th century rebels in search of a quick fix turned away from Eliade’s advice and embraced relatively more drug-friendly works by

130 Diana Young, “The Smell of Greenness: Cultural Synaesthesia in the Western Desert.” *Etnofoor*, Vol. 18, No. 1 (2005), pp. 61-77.

131 Eliade (2004), pp. 416-417.

the likes of Carlos Castaneda (which, though they were easily dismissed as being ethnographic fiction rather than genuine biographical tales, were acclaimed by much of the '60s generation as being works of great authenticity).

Castaneda's famous (and again, fictional) *yaqui* shaman, Don Juan, brought Meso-American tradition to the discontented youth of the affluent and rational Western powers, who also added the more distinctly "Eastern" teachings of Yogananda or the Zen wisdom of D.T. Suzuki to their syncretic program of spiritual reorientation. Of course, the "Eastern" philosophical thinking represented by the latter has been seen as the necessary remedy to "Western" thought since at least Western man's first stirring of discontent with the industrial era: progenitors such as Arthur Schopenhauer helped to import Vedanta and Buddhism into Continental Europe's metaphysical discourse in the early 19th century (and even Schopenhauer had to go against the grain in doing so, given the scornful view that canonical thinkers like Goethe took of Indian religion and culture). In this process were the first flourishes of the enduring counter-movement that would see non-European sources as having a healthier cosmological attitude, grounded in the cyclical nature of life, than the one based on unquestioning technical progress and constant intensification of the self. Ironically, it is scientific progress that has given this understanding of the universe more legitimacy: the concept of perpetually regenerating wave systems and the indestructibility of energy has invited parallels to the process of reincarnation or metempsychosis that has long been central to Hindu and Buddhist doctrine.

However, for all the romance that the industrialized and "enlightened" West attached to the East's purported goal of realizing undifferentiated unity, such a view was hardly monolithic when it came to cultivating synesthetic perception as the key to all spiritual attainment. Take, for example, the Tibetan Buddhist collection of funerary rites known as *Bardo Thödöl* or Tibetan Book of the Dead, which became one of the favorite texts of the 20th century alternative spirituality communities, and which

is subtitled “Liberation through *Hearing* during the Intermediate State.” This is hardly the only transcendental concept within the canon of Eastern thought to posit a single form of sensory data as superseding others: in the yogic and Tantric traditions, the very origin of the universe is traced back to *Nāda*, a single atom of sound that came to pervade all the cosmos. As the Vedic legend has it, Brahma was meditating for a millenium’s worth of god-years when he was struck by the sound of Krishna’s flute, whereupon his mimicry of this sound - the sacred syllable *Om* - caused the quiescent atoms of the ether to differentiate and to become recognizable as material reality. This primacy of sound extends to the term for the human body found in the Vedas - *karna* - which translates roughly to “hole through which the stream of hearing passes.” This conception of the body clearly influenced the Indian *ayurvedic* medicine whose origins date back seven millenia.

However, while the content of Hindu cosmological legends may speak of a sound-centered universe, the art forms designed to relay such myths have relied much more upon a synesthetic or synthetic approach. Certain of the classical Indian arts do seem to have a cross-modal appeal, as a quick sip from the waters of etymology will reveal: as Ananda Coomaraswamy notes, the essential musical mode of the *rāga* is perceived in the audial-tactile form of a “melody-mould,” and the term *rāga* itself translates alternately as “color” or as “melody” (it has yet another translation as the less ‘mode-specific’ concept, “beauty.”). From this root come similar art-descriptive terms such as *ragamala* painting [lit. “the garland of *rāgas*”]: this unique style of representative painting, perfected within the 16th and 17th centuries, combines written verse with pictorial narrative in order to be contemplated during the hearing of a specific *rāga*. In other words, the purpose of the *ragamala*, was to be a kind of running commentary on the musical modes, or an interpretive analysis for those who thought more along visual lines than along musical ones. Although this particular mode of painting based upon personification or embodiment only appeared during the 16th century, the music from which it originated was in existence since antiquity.

The myths embedded in ancient Chinese musicology are likewise informed by a sensory hierarchy that assigns sound a starring role in the design of the cosmos. In this musical system, each of the twelve basic tones or *LÜ* is bound to a certain period in the history of the universe. The account known as the *Lu Buwei* ["Master Lu's Spring and Autumn Annals"] mentions a fundamental tone known as *Huang Zhong* ["yellow bell"] corresponding with the moment in which all life began to vibrate. This is then followed by the pitch of "Greater Accumulation" known as *tai cu*, the frequency that corresponded to the organization of this newly awakened *prima materia*.

From examples like these, it is clear that there is not a historical consensus regarding the synesthetic state as a sort of primordial consciousness. Nor is its attainment always seen as being the best way to surpass the falsehoods of material reality. Key texts of Indian classical literature, such as the *Katha Upanishad* (which remains one of the more widely known of the *Upanishads* for being the first to mention *yoga* as a spiritual exercise) do not recommend an integration of the senses as an enlightening measure so much as a silencing of them. As the following excerpt suggests:

*Let the five senses
And the mind they serve become still.
Let awareness itself
Cease all activity and become watchful.
Then you will have begun your journey
On the highest path.*

*This is Yoga.
But beware: remain ever vigilant.
For even this state of Yoga can ebb and flow.*

*Remember always -
Not with my speech.
Not with my eyes.
Not even with my mind
Will that Self be reached.*

*It will declare itself to me
Only in my stillness.*¹³²

While the advice imparted by this passage seems clear enough in terms of goals, there seems to be no explicit instruction given as to the path towards "stillness." It nonetheless illustrates what Paul Hertz previously mentioned, that transcendence or enlightenment can be thought of and achieved in terms of anesthesia or synesthesia. This distinction has much to do with ancient societies' moral attitude towards "the pleasurable" as a category of experience: those societies which saw such things as illusory, and who saw the "pleasurable" and the "beneficial" as separate categories, tended towards seeing an anesthetic state as being the best way towards this aforementioned "highest path" (there are again parallels to Platonic learning here).

And, at any rate, taking a monolithic view of "Eastern" cultures in antiquity is dangerously foolish, as the historical means towards spiritual attainment were diversified even as they proceeded from common origins. The Japanese tea ceremony or *chadou* [茶道、"way of tea"], for example, aimed to "ultimately fuse diverse sense modes into an aesthetic continuum of feeling, whereby sensations 'run like liquids into each other.'"¹³³ Rather than attempting to achieve sensory stillness by minimizing the amount of information that the senses could receive (often misperceived by Western observers as the actual goal of the ceremony), the tea ceremony aimed at illustrating the interrelation of any given phenomenon to all other phenomena.

Zen Buddhist practice, with which this ceremony shared some kinship, was essentially a doctrine of oneness or indivisibility, with the variants on this theme being as seemingly limitless as those phenomena which humans

132 *Katha Upanishad* pp. 54-55. Trans. Swami Ambikananda Saraswati. Viking Studio, Middlesex, 2001.

133 Steve Odin, "Blossom Scents Take Up The Ringing: Synesthesia in Japanese and Western Aesthetics." *Soundings: An Interdisciplinary Journal*, Vol. 69, No. 3 (Fall 1986), pp. 256-281.

had falsely come to see as distinct or oppositional. Emptiness for the Zen practitioner was equivalent to fullness, while mind and body were seen as pervading one another. Time and space themselves were also seen as inseparable from one another, along with moral polarities of 'good' and 'bad.' Addressing both of these false dualities, Shunryu Suzuki famously suggested that "instead of saying bad, you should say 'not-to-do!'. [...] in the realm of pure religion there is no confusion of time or space, or good and bad...all that we should do is just do something as it comes."¹³⁴ Once such denials of distinction could be sincerely made within the mind of the Zen practitioner, enlightenment or *nirvana* could be reached in the here and now- that is to say, in a non-transcendental fashion.

Bearing in mind Zen's insistence upon mutual interdependence, it is easy to see where a practice like the *chadou* could arise as a 'synesthetic' art form. And, centuries before synesthetic arts would arise in the West as part of the Romantic tradition - along with the repeated criticism that their immersive nature denied social and political involvement - this type of practice was already being criticized as indicative of a socially resigned "aesthetic diletantism" sweeping Japan. The continuation of such rituals, and their adaptation to new cultural environments, stands as a testimony to how little this social disapproval has meant to the would-be synesthetic adventurer: if anything, the condemnation of perceived philistines has only acted as an additional motivation to these individuals.

THE 'FIVE AGENTS' IN CHINESE NATURAL PHILOSOPHY

The harmonization of the *Wu Xing* - the five elements which were also known by more evocative names such as 'five processes', 'five agents', or the more ethically tinged designation 'five virtues'- was essential to the local development of numerous disciplines from astronomy to medicine to *feng shui*. Tibetan *Bon* tradition also understood these agents as

¹³⁴ Shunryu Suzuki, *Zen Mind, Beginner's Mind*, p. 18. Weatherhill Inc., New York, 1995.

being differentiated aspects of a primordial life force; interpreting them as metaphors for another five-pointed system, that of the Buddhist *skandhas* or sensations of worldly experience. The latter was comprised of matter, sensation, perception, impulses and consciousness (which arose in that order, in accordance with one's personal advancement towards enlightenment). With such an all-permeating concept of phenomena as being split into sets of five distinct units, the conception of five senses in ancient China seemed a logical assumption to make, and attested to a profoundly holistic view that, as per Robert Jütte, «the human organism was perceived as a miniature copy of the universe.»¹³⁵

One caveat, though, is that this five-element system was only popularized around 300 B.C., courtesy of Chinese antiquity's grand old man of the sciences, Tsou Yen. Prior to his intervention, all phenomena had been organized within a dualistic system composed of positive *yang* or negative *yin*. After his new systematization, *yin* and *yang* remained, but were now seen as being invested in each of the five elements to various degrees: an ideal balance of the two was found within 'earth,' for example, while *yang* dominated in 'fire' and *yin* was dominant in 'water.' Once again, parallels to this sort of thinking - i.e., an elemental system that itself is part of a larger, more profound, and dualistic reality- can be found in ancient Greek natural philosophy, with another grand old man of the sciences (Socrates' contemporary Democritus) forwarding the idea that information received by the senses was "obscure knowledge" to be contrasted with a more refined, supra-sensory "genuine knowledge."

An obvious parallel can be drawn between the Chinese 'five agents' and those which appear in Vedic literature and Indian metaphysics: within the Vedas, each of the five senses is seen as subordinate to one of five elements: sound is synchronized to space, sight to fire, taste to water, smell to earth, and feeling / touch to wind. The more we dig, the more this five-pointed system seems universal among those ancient cultures whose

¹³⁵ Robert Jütte, *A History of the Senses - From Antiquity to Cyberspace*, p. 25. Polity Press, Cambridge / London, 2005.

written records have survived them. The basic system was occasionally augmented by other forces that, like the Chinese *yin* and *yang*, were perceived as more originary than the key five: this understanding of elemental forces differed from the one proposed in Greek antiquity by Empedocles, whose other philosophical stances included a refusal to distinguish between the activities of thought and sensing. Empedocles limited them to the four elements of air / water / earth / fire and furthermore saw the forces of "love" and "strife" as the fundamental agents which animated these earthly elements. Aristotle, meanwhile, added a fifth element - "ether" - that superseded the others by virtue of being the predominant element in the universe, i.e. the element in which the earth was suspended (it should certainly not go unsaid, by the way, that Aristotle was also the first Greek philosopher to break with Plato and suggest touch as a fifth sense, completing the standard sensory classification still in use today).

It was only natural that this acknowledgement of the necessity of elemental harmony would influence the Chinese arts of the age, with the fundamental atoms of any art being reduced to five in order to synchronize with the elements. Here we have a model for the "five senses" model that stands independently of Western cultural developments, though it is strikingly similar in some respects: Empedocles, after all, also posited that each of the senses "contained" a certain element which gave it its unique functionality. The eye, for example, contained "fire" which allowed for it to perceive brightness, and "water" which allowed for the perception of darkness. In the Chinese tradition, each of the five elements had its own signature color, its own compass direction (north, east, south and west plus "center"), its own season (again, the fifth element represented 'change of seasons' rather than a season itself) and its own esoteric associations with a 'heavenly creature.'

In the Confucian era, cross-sensory speculation occurred when the five tones of the musical scale - as posited by the mythical figure Ling Yun in the 27th century BC - were seen as harmonizing with those elements (however,

though the pentatonic or five-tone scale was widely used as the foundation for Chinese classical music, this system was not an equal-tempered one). The Chinese culinary craft, as well, used this doctrine of synthesis as the inspiration for dishes that somehow saluted each of the five elements with five corresponding flavorings: 'earth' was associated with sweetness, 'metal' with pungency, 'water' with saltiness, 'fire' with bitterness and 'wood' with sourness (moreover, five different types of seasoning elements were proposed as enhancers or balancers of the five flavors).

However, much in the same way as the *Katha Upanishad* suggested a stillness of the senses as a means towards a 'true' awakening, a rival philosophical school to Confucianism - Taoism - took an attitude towards sensory information that favored its reduction or minimization, in the hopes that individuals would see a richness in life that had always been with us. Lao Tzu's counterintuitive suggestions regarding this information were particularly evident in his musings upon the senses, as recorded in the twelfth verse of the *Tao te Ching*. Lao Tzu insists that "the five colors cause men to not see / the five tones cause them not to hear / the five flavors cause them not to taste," essentially forwarding a philosophy in which saturation of the senses leads to the erosion of their capabilities.

It was Lao Tzu's acolyte Chuang Tzu who would later affirm this as a central tenet of Taoism, suggesting that listening was an activity to be done with faculties other than the ears themselves:

Don't listen with your ears, listen with your mind. No, don't listen with your mind, but listen with your spirit. Listening stops with the ears, the mind stops with recognition, but spirit is empty and waits on all things. The Way gathers in emptiness alone. Emptiness is the fasting of the mind.¹³⁶

It is interesting to take note of which sense Chuang Tzu invokes when trying to sermonize about ignorance. Though he could just as well have instructed

¹³⁶ *Chuang Tzu: Basic Writing*, p. 54. Trans. Burton Watson. Columbia University Press, New York, 1964.

not to “look with the eyes,” the above demands remind us that sensory asymmetry has been a fact of even those belief systems which otherwise seem to favor a belief in undifferentiated unity. In this case, listening is seen as being more beneficial than looking for the Taoist pupil who is seeking a meditative understanding of “The Way” itself; it is more useful than other sensory information for the way in which it pervades all experience.

ANCIENT TO THE FUTURE

The Japanese tea ceremony, the Chinese culinary experience, and the *ragamala* all stand as models of long-standing non-Western traditions that attempted different degrees of sensory correspondence in order to reveal or underscore universal truths. However, their appeal to Western culture remains very different from that of the shamanic practices mentioned earlier. These practices, while certainly not ones that have to be enjoyed in isolation, have not lent themselves as well to the challenge described at the outset of this chapter, i.e. the re-attainment of archaic knowledge within the very epicenter of the technological maelstrom.

Gene Youngblood, ever the utopian thinker, once mused upon achieving such a state with “perpetual fog banks and krypton laser rainbow light showers”.¹³⁷ as this was voiced in the early 1970s, it was a harbinger of a “techno-shamanistic” subculture that would emerge within the next two decades, conspicuous in its attempts to forge links between the cross-modal, communal rites of antiquity and the electronic conveniences of modernity. As this story progresses and finally returns us to the age that we presently inhabit, it will become clear time and again how the newer forms of modernized ritual attempt to preserve at least something of the synesthetic experience that belonged to its proponents’ ancestors. Across many different cultures, such experience was appreciated as being the realization of a communicative mode belonging to a “higher”

¹³⁷ Gene Youngblood, “The Open Empire.” *Studio International* Vol. 179, No. 921 (April 1970) pp. 177-178.

consciousness, or the reclamation of a perceptive ability that was lost as man and nature became gradually more irreconcilable in their behavior and aims.

This technologically updated variant, most commonly manifested as raves or techno parties, comes under fire by the defenders of tradition for many reasons, especially for the way in which “techno-shamanistic” gatherings seem too casual, playful, and even consumerist when compared with the atmosphere of fearful reverence that accompanied (and, as the story goes, truly made possible) the spirit journeys of antiquity. The “election” of shamans, once carried out under arduous circumstances such as extreme sickness and involving visions of gruesome and demonic “cutting up” of the body, is now more a matter of popularity and ‘fan’ consensus. The giddiness of the rave experience, the critics might also argue, is too bound up in the escapism and / or social drama typical of other modern parties, and as such provides an insufficient stage for reflection and psychogenic healing: those who encounter fantastic synesthetic visions in such an environment will, as the story goes, only be able to understand them in a superficial way.

These are criticisms voiced simultaneously by defenders of ‘authentic’ archaism itself, and by leftist critics of post-modernity who decry the “sensory overload of throbbing music, exotic lighting, exhaustive dance, and sensation-stimulating drugs” by which “the rave becomes a mega-surface that gratifies a relentless and intense desire for pleasure.”¹³⁸ As already stated, many shamanic ecstasies were carried out in the absence of such accoutrements, and in some cases even without frenetic motion - as is the case for the Mevlevi, whose “dancers enter trance *before* beginning to spin [*italics mine*].”¹³⁹

Yet not all critics are in agreement that the multiple sensory “surfaces” of such an experience are a substitute for a true “depth” of understanding.

138 Hutson (2000).

139 Kathryn A. Becker-Blease, “Dissociative States Through New Age and Electronic Trance Music.” *Journal of Trauma & Dissociation*, Vol. 5 No. 2 (2004), pp. 89-100.

Theater critic Anthony Kubiak insists that skeptics focus more on the animating desires of techno-shamanism than upon the ways in which this questing impulse manifests itself in modernity:

The Ecstatic realities of urban shamanism, raves, and their subsequent evolutionary forms, are phenomena born not of New Age pop culture but from the deepest strata of spiritual need and desire in marginalized urban cultures. And whether the use of drugs to attain that ecstasis is legitimate or not, harmful or not, the fact of ecstatic need needs acknowledging, both by cultural theorists and ethnographers alike in a new framing of art as aesthetic act.¹⁴⁰

The social dynamic of the techno-shamanistic rave is, of course, very complex and at times very contradictory, particularly when social status is on the line (Scott Hutson notes how “despite the mantras of unity and collectivity, there is noticeable selectivity and exclusivity in the rave scene, based on a scale of hipness...unable to compete with adults for occupational status, but in many cases still supported by parents, young ravers derive self-esteem by competing for what [Sarah] Thornton calls subcultural capital.”)¹⁴¹ Clashing egos could be as much of a reality of these events as synesthetic questing, even with the regular presence of ego-dissolving chemicals like MDMA, and the distribution of such drugs often necessitated the involvement of criminal cartels whose cutthroat activities were at cross purposes with the PLUR [“peace, love, unity, and respect”] concept evangelized by young ravers. It is indeed unfortunate that some “archaic revivals” can have the unintended consequence of empowering the same violent societal forces that these activities were designed to provide an escape from.

Let us step back now from the example of the rave, though, since it is not the only means of being deeply and communally affected by a quasi-synesthetic experience, or being entertained or elucidated by the way in

¹⁴⁰ Anthony Kubiak, “Cyber-Ecstasy and the Visionary in American Politics.” *PAJ: A Journal of Performance and Art*, PAJ 91 (Volume 31, Number 1), January 2009, pp. 113-119.

¹⁴¹ Hutson (2000).

cognitive faculties can be bypassed *en route* to a realm of pure sensation. Synesthesia specialist Cytowic is again perceptive enough to realize that “no other form of abstract expression is so popular”¹⁴² as the modern fireworks show: neither the carefully studied works of Kandinsky, Klee or Mondrian, nor tumultuous music experiences ranging from Wagnerian music drama to all-day raves. Aldous Huxley, in charting the history of pyrotechny from being a ‘military art’ to a popular form of amusement during the Renaissance, recalls how “the popular subconscious was reminded by the crimson glare of strontium, by copper blue and barium green and sodium yellow, of that Other World [...] in the psychological equivalent of Australia.”¹⁴³

The example of fireworks is pertinent here because it points to a communal ritual in which people volunteer to be overwhelmed or fascinated by something that cannot be “explained” - and this ritual is not even performed as a conscious act of rebellion against modern society as participation in raves has often been. Despite the many intended metaphorical uses of fireworks, such as their use in royal or imperial coronations where they herald the inspiring “brilliance” of the recently crowned (e.g. the 1801 coronation of Czar Nicholas I, or the 1804 coronation of Napoleon), their popularity has much to do with the same archaic values that fueled shaman-led trances, in which the primary act of stimulation through frenetic dance, chant etc. being not so much the attraction as the secondary state of sensory unity that follows these actions. I would argue the same for ultra-intense genres of video game, such as the Japanese *danmaku* or “bullet hell” shooter games, in which the violent gameplay is almost an afterthought to these games’ unique graphic displays of strobing, amorphous, psychedelic color.

Cytowic attributes this commonality of ecstatic experience to “form constants,” which cleave closely in their shape and repetition to the

142 Richard E. Cytowic, M.D., *Synesthesia: A Union Of The Senses*, p. 177. MIT Press, Cambridge / London, 2002.

143 Aldous Huxley, *The Doors Of Perception / Heaven And Hell*, p. 159. Harper Perennial, New York, 1990.

geometric patterns first systematized by Heinrich Klüver in 1926, and mentioned in the opening chapter. These can be perceived in overwhelming displays of kinetic art like fireworks, in experiences of clinical synesthesia, and - interestingly, given Chuang Tzu's musings above - in states of sensory deprivation. The science fiction author Michael Moorcock even claimed to see these auratic forms during bouts of migraine, a claim that he is not alone in making. The diversity of phenomena leading to the visualization of these constants, and the fact that they seem to be so often triggered by other types of intensified sensory information, makes them a common and reliable attraction to both ritual and artistic production (and therefore blurs the lines between these two types of activity a little more). Interfacing with these constants is not so much a matter as discovering the origins of creativity in order to become the master of one's craft, but of re-visiting these ineffable origins in order to guarantee that new forms of creativity will continue to arise.





CHAPTER 4

THE SENSORIUM IN THE TRANSITION TO MODERNITY

The path from classical antiquity to modernity is generally agreed upon as passing through the three major phases of the Middle Ages, the Renaissance, and the Enlightenment. Any whirlwind tour through three such complex and eventful historical eras is bound to result in further awkward oversimplifications of an already oversimplified history, and I will make no overreaching claims here that sensory study, let alone study of sensory unity, “defined” these eras. All the same, these studies were not entirely absent from any of these periods, even if the estimation of the senses’ value - relative to other common values like religious faith - shifted wildly from one era to the next, and even many times within the same era. Where the possibility of a unitary perception was concerned, the rise of the modernized West is the story of innumerable advances and retreats, with seemingly all of these developments occurring within a larger context of shifting ideological preoccupations.

It is regrettable that such major historical transitions are still prefixed in the English language with a definite article (“the” Renaissance, “the” Enlightenment), since there are many times and places where the activities implied by these titles happened on a scale large enough to merit documentation. Yet it remains disingenuous to simply gloss over these eras entirely, whether out of fatigue or out of spite for the attention that has already been given to them. These times do, in the end, tell us plenty about the sensory hierarchies that continue to define us, as well as the counter-currents of cross-modal research that continue to challenge them.

STATUS OF THE MEDIEVAL ARTIST...

Crusades, inquisitions, Viking raids, feudalism, the manorial system, widespread plague: with these major events still standing as the defining features of the Middle Ages, anyone can be forgiven for believing that culture suffered in an epoch when conflict and privation were the facts of life for the majority of residents in the European nations that this history centers upon. Whether or not that majority of downtrodden souls truly had a chance to enjoy the works of Chaucer or Dante, though, the survival of these luminaries' work testifies to an indisputable craftsmanship that rose to the challenge of presenting "another face" of the medieval centuries, even if they did not eradicate the problems typical to that era.

The arts of the late Middle Ages involved more than those which have "fine arts" status nowadays: the latent or coded eroticism of the era spilled over into such elaborate spectacles as tournaments and jousting sessions, with these activities acting almost as a surrogate theater in terms of the ritual pomp and allegorical content that were exhibited during them. The role of the medieval artist within that period was vastly different from what we now experience, i.e. the status of the artist as an "outsider" who is occasionally turned to for a different perspective on a persistent social dilemma, but whose contributions are generally an adjunct to some other "full-time" mode of employment. Melvin Rader's explanation highlights the key differences between modernity and the medieval era, in which

...art was an organic part of the community. The artist was a responsible workman expressing the collective values and traditions of his society. His art was essentially work well done: work that needed doing because it fulfilled the needs and expressed the emotions of his fellow men. Social collaboration was emphasized more than originality and freedom.¹⁴⁴

¹⁴⁴ Melvin Rader, "The Artist As Outsider." *The Journal of Aesthetics and Art Criticism*, Vol. 16 No. 3 (March 1958), pp. 306-318.

As such, there also existed the situation in which competition among artists was practically unheard of. Jacques Barzun insists that, by the High Middle Ages, "the medieval principle of the just price and guaranteed quality meant that competition and artistic rivalry were suppressed by rule and custom."¹⁴⁵ The spirit of pragmatism governing the arts of the time also made any kind of a 'critical community' unnecessary, as new works were not meant to be judged purely on aesthetic criteria - Barzun again reminds us that "a new style of [medieval] architecture was not so much an aesthetic innovation as a new feat of engineering."¹⁴⁶ This focus upon more utilitarian artworks did not mean a total dearth of creativity, though, and in fact allowed for some pleasurable inventions like the public fountain, and the rise of social / medical institutions like the bathhouse - the latter being especially popular in the Northern European climes of the 14th century.

The enveloping social and political situation, again, made it difficult for streaks of individuality to manifest themselves as new mutations in form and style - certainly nowhere close to the rapid rate of 'turnover' that many of us have taken for granted now. This eventually held true for the musical art, though it took several centuries' worth of socio-political developments to literally domesticate a social type that was often frowned upon as immoral and irresponsible. As social critic Jacques Attali insists, musicians became, by the 14th century, "*domestics*, producers of spectacles exclusively reduced for a [court] minority," thus removing them from their previous role as "*jongleurs*, the voice of the people."¹⁴⁷ As Attali touches upon here, the social character of the musician was not consistent throughout the entirety of the Middle Ages, with the *jongleurs* in question originally being an artistic type much closer to the bohemian "wandering troubador," and something of an exception to the rule laid

145 Jacques Barzun, *The Culture We Deserve*, p. 25. Ed. Arthur Krystal. Wesleyan University Press, Middleton CT, 1989.

146 *Ibid.*

147 Jacques Attali, *Noise: The Political Economy of Music*, p. 15. Trans. Brian Massumi. University of Minnesota Press, Minneapolis, 1985.

out above by Rader. Their repertoire of ballads and melodies, given that it was not written and was merely played from memory, provided a sharp contrast with the written devotional music of the church, thus becoming for cultural historians one of the many proofs of the hypothesis that writing was a tool of standardizing control. Nonetheless, the transition from the independent, nomadic *jongleur* to the paid professional domestic was not a simple one: Attali also notes how the former were capable of being bought off for propagandizing purposes (e.g. "Richard the Lionhearted hired *jongleurs* to sing songs to his glory...in public squares on market days,")¹⁴⁸ making their transformation into a servant class a gradual one, rather than one that changed overnight by a sovereign's decree.

... AND STATUS OF THE SENSES

Given that the entities commissioning artworks were highly concerned with the moral or spiritually redemptive qualities thereof, it is well worth wondering what kind of emphasis they placed on catering to the senses, or wondering whether those senses were seen as a conduit to spiritual knowledge or as an obstacle to it. Peter Ammann, in the following quote, insists upon the latter devaluation of sensory research during this period:

In the Christian as well as Platonic *Weltanschauung* of the Middle Ages, the world of the senses was considered to be a mere shadow, something non-essential whose only function it was to point and lead to the essential world that is the world of the ideas. The revaluation of the material principle as opposed to the spiritual values of the other world increasingly led to a conflict.¹⁴⁹

148 *Ibid.*, pp. 14-15.

149 Peter J. Ammann, "The Musical Theory and Philosophy of Robert Fludd." *Journal of the Warburg and Courtauld Institutes*, Vol. 30 (1967), pp. 198-227.

Reams more have been written on the shortcomings of the Middle Ages where artistic development was concerned, with much of this commentary elaborating on the above sentiments. As Johan Huizinga writes:

Ideas, being conceived as entities and of importance only by virtue of their relation with the Absolute, easily range themselves as so many fixed stars in the firmament of thought. Once defined, they only lend themselves to classification, subdivision and distinction according to purely deductive norms.¹⁵⁰

In other words, even the most trivial of inquiries - whether concerned with the presentation of the high arts or with more quotidian facts of life - had to be answered in moral terms; regarded as correct decisions only insofar as they were in accord with celestial laws. A tendency to look at "ultimate significance," at the clear expense of immediate realities, made most medieval trade and communication subject to practically unattainable ideals. This, of course, could lead to a disregard of individual exemplars, unless of course to castigate them as aberrant, and also to the tragicomic situation in which immoral conduct was excused away with similar appeals to generality. For example, one could confess to having torrid romantic relations if insisting that he or she was really in love with the ambiguous "essence" behind an individual, rather than the individual proper.

Interestingly, Huizinga also finds one of the shortcomings in medieval art in the fact that its major arts were so divergent in their effects; so seemingly irreconcilable and removed from any kind of synesthetic or at least unifying ideal. In claiming that "words and images [had] a totally different aesthetic function"¹⁵¹ in this era, Huizinga comes to the crux of a problem. It was a time of obstinate visuocentrism, whose "predominance" Huizinga determined as being "closely connected to the atrophy of

¹⁵⁰ Johan Huizinga, *The Waning of the Middle Ages*, p. 199. Trans. F. Hopman. Folio Society, London, 1998.

¹⁵¹ *Ibid.* p. 257.

thought"¹⁵² - and it was abstract thinking which particularly suffered as the arts of realism took command. Not only was this epoch visuocentric in its favoring of painting and plastic arts over other forms, but it was also in its favoring prose over poetry (since, as Huizinga insisted, the former "conforms more easily to the visualizing turn of mind.")¹⁵³

There was, nonetheless, considerable experimentation during this time with the concept of allegorical color systems that - while completely arbitrary and open to revision - did appear in the heraldry of the time, and did manage to survive as a concept and to reappear in later ages. And, despite the paucity of artworks meant to appeal to all of the senses, at least one notable work - which many historians rank as among the deathless highlights of medieval art - was meant to act as an allegory of the five senses. This is *La Dame à la licorne* [The Lady and the Unicorn] tapestry series, composed of five individual tapestries each representing a single sense, and a sixth emblazoned with the words *À mon seul désir* - a summarizing statement whose exact meaning has been debated, carrying with it possible interpretations from «to my sole desire» to «according to my will alone.» The presence of this sixth tapestry, which is larger than the others, seems to suggest a «sixth sense» brought about by either fusion or annulment of the other recognized five senses. Those who theorize the latter of the two might note that, in the *À mon seul désir* panel, the titular lady is seen placing a necklace - a feature that is consistent throughout the entire series - into a chest held out to her by a servant girl, which could symbolize the overcoming or renunciation of sensory pleasures, and thus an affirmation of free will. Then again, there is no decisive proof that the lady is placing the necklace *into* the chest rather than taking it out: with such ambiguous pictorial elements in place, the tapestries' status as either a moral allegory or as a spur to sensory investigation is something of a mystery.

152 *Ibid.*, p. 266.

153 *Ibid.*

With the benefit of hindsight, some thinkers have dismissed the idea that the Middle Ages were a time in which the senses were denied - they would merely argue that, though there was less conscious effort to cater to the whole sensorium in works of fine art, there was plenty of sensory rapture to be had in areas of life that did not consciously aim for this type of stimulation. Lewis Mumford, a critic of urbanism who saw the antiseptic design of the modern supermarket as more abominable than anything the medieval era had to offer, is also impassioned in his disagreement that the Middle Ages were an age of sensory atrophy. He proffers the medieval town itself as an example that the citizenry had beauty in mind, along with a democratic say in the construction of that beauty, and he believes that the concept of the artist as a 'socially responsible' profession led to something other than an endless procession of interchangeable, devotional artworks. Rhapsodizing breathlessly about medieval Florence, he states that

Carved statues, painted walls, corbels, triptyches, and screens decorated alike the church, the guild hall, and the burgher's house. Color and design were everywhere the normal accompaniment of the daily tasks. The array of goods in the open market added to the general visual excitement: velvets and brocades, copper and shining steel, tooled leather and brilliant glass, to say nothing of foods arranged in their panniers under the open sky.¹⁵⁴

Mumford also saw medieval social rituals such as the procession and pageant as being the true models of cultural richness, with the fact that these events could be "watched...from within, not just from without." A terrific opportunity was provided here for audiences and participants to "[act] in unison...not dismembered human beings, reduced to a single specialized role."¹⁵⁵ With such benefits being conferred, and with

¹⁵⁴ Lewis Mumford, *The City in History: Its Origins, Its Transformations, and Its Prospects*, p. 298. Harcourt, San Diego / New York / London, 1989.

¹⁵⁵ *Ibid.*, p. 280.

such a “multi-media” spectacle of music, visual display and dramatized movement being offered, Mumford effectively argued that the artist’s lack of independence was nothing to fret over.

EVOLUTION OF THE *SENSUS COMMUNIS*

The preservation of Greek philosophy and Eastern science in the Middle Ages owed a significant debt to Arabic safekeeping of that knowledge during times of turmoil, and Muslim influence led to such historical firsts as the establishment of the first medical school in Salerno. The 11th century Persian scholar Avicenna [a Latinization of ‘Ibn Sina’], in addition to providing one of the era’s most well-known treatises on pharmacology, also transferred Aristotelean natural philosophy to the predominant European thinkers of the time. With such cultural exchange in place, speculation about sensory linkage continued in the person of St. Thomas Aquinas, who borrowed Aristotle’s concept of the *sensus communis* [“common sense”] from nearly a millenium earlier and made his own adjustments to the theory. The *sensus communis* was essentially a central processing chamber that discerned commonalities between external phenomena, such as rythmicity or intensity in both sounds and images. Aquinas’s own contribution was to subdivide this single processing unit into three separate chambers, each of which triggered faculties of imagination, reason, and cognition. In this way, he broke with Avicenna and with much previous reflection on the senses.

Aquinas also believed that all the “higher” orders of life were endowed with five separate senses, which proceeded from a common *radix* [root.] This common origin did not mean that all of the senses behaved as one, and indeed Aquinas was very much responsible for making a “hierarchy of the senses” an enduring theory (many contemporary thinkers would develop a hierarchy similar to Aquinas’s own, but with too few significant changes in theirs to bear mentioning). His belief that the eye underwent less physical change when stimulated relative to other organs gave it a

place of pride in this hierarchy, making its workings appear more sublime than the other senses (which, to his understanding, underwent a more perceptible material change in addition to the mental changes incurred by their stimulation).

GUIDO D'AREZZO'S MUSICAL MNEMONICS

After a fashion, such cross-modal notions as “colored music” were touched upon in the Middle Ages by the father of stave notation, the 11th century Benedictine monk Guido d'Arezzo. Guido was originally in the habit, for example, of drawing lines with different colored inks in order to designate tonal values, while also being one of the first to make an attempt at systemizing “tactile” values for sounds: Guido suggested different printed letters on musical manuscripts to indicate a *durum* [“hard”] sound, or a *molle* [“soft”] sound. The association was further illustrated by the “hard” or “soft” rendering of these printed letters, which recalls the “Kiki / Bouba” associative experiments mentioned near the beginning of this book: the character corresponding to *durum* would be blocky and square, while *molle* was represented with a more delicately rounded character.

While on the subject of this tactility, another mnemonic device used to assure memorization of Gregorian chants was attributed to Guido (though not definitively so). The so-called “Guidonian Hand” in which each of the pitches as they were then named- from *gaama ut* to *e la* - corresponded with one of the finger joints of the left hand; a learning exercise which approaches synesthetes’ own mnemonic means of visualizing graphemes or phonemes as being distributed across different points in space, usually within the reach of the body. This training tool, in getting would-be singers to conceive of sound as something palpable, came to be massively popular - to the point where the chromatic scale was often dismissed for containing tonal values that were not included “in the hand.”

THE RENAISSANCE AND THE *UOMO UNIVERSALE*

The cultural transition to the Renaissance era did not involve the sudden biological death of the previous era. As with the decline and fall of the Roman Empire, institutions from the supposedly vanquished age simply adapted to the character of new social circumstances. Many of the tools that enabled the Renaissance also came into being well before its "official" set of starting dates. Johannes Gutenberg's development of movable type in 1450, for example, was one breakthrough that helped to lay the foundations for the cultural life of that period. Though such technology had already existed in China centuries earlier, and in the Goryeo Dynasty period in Korea, Gutenberg's contributions were more commonly acknowledged as being the birth of an entire intellectual or cultural era: being essentially the first mass communication devices, the printing presses presented a great challenge to monopolies on information. Latin was displaced in favor of vernacular tongues, which would have an effect on the diversity of thoughts and opinions to emerge (that is to say, other works began to appear outside of the "classical canon") - and, more importantly, knowledge had a greater chance of diffusion and therefore of surviving both the literal ills of the era (plague) and the figurative ones (war). Within thirty years of the original printer being established in Mainz, over a hundred printing locations sprang up throughout Continental Europe. The fact that one third of the emerging print shops were located in Venice does much to bolster the common perception of the Renaissance as being centered in Italy.

When we hear the term "Renaissance Man," we often construct a mental image of a singular genius who effortlessly applies his energies, and equally distributes them, among a multitude of different disciplines in the arts and sciences. This has been the case since Burckhardt's 1860 opus *The Civilization of the Renaissance in Italy*, in which these genius figures were seen as channeling similar tendencies from Classical antiquity in order to revive intellectual and spiritual inquiry in their own time. The heroic type in question was never a widespread phenomenon, and was

typically either a member of a financial or intellectual elite (or both), so it is fairly easy to dispel the myth that any of the European nations of this era were brimming with thousands of individuals of whose multitalentedness Michaelangelo or Albrecht Dürer were mere exemplars.

It is also worth pointing out that Renaissance life was not a time in which cultural campaigns initiated by the *uomo universale* took precedence over political and economic strategizing: Niccolo Machiaveli was, perhaps, as representative of the Italian Renaissance as any of the great masters of Italian painting or sculpture (and Machiavelli's "ends justifying the means" ideology outlined in *The Prince* was certainly as influential upon city planning as any purely aesthetic concern). Being a *uomo universale* in the Renaissance was also not a ticket to universal social approval, if we look to Giordano Bruno: his status as an "interdisciplinary" thinker of an extraordinary cast...as well as a poet, a playwright, a humorist, a philosopher"¹⁵⁶ did not ultimately save him from being burned at the stake for his heresies.

Some classic portraiture from the period shines light onto why the "universal man" stereotype is so persistent. In the celebrated and heavily analyzed 1533 portrait *The Ambassadors* by Hans Holbein the Younger, two French dignitaries are shown almost casually presiding over a wealth of signifiers of intelligence (e.g. a sundial, books on mathematics, and musical instruments like a prominently placed lute). The painting is thus a visual marriage of elements having to do with religion, scientific inquiry, and culture, suggesting simultaneous striving for excellence in all of these areas. However, a closer inspection shows imperfections in many of these elements - for example, a broken string on the lute, or similar allegorical clues that point to a confusion or discord of interests rather than a harmonizing of them. Even among upper class individuals as the ones portrayed in *The Ambassadors*, a multitude of interests did not necessarily mean a perfect synthesis of them or mastery over even

¹⁵⁶ Sonya Bahar, "Review of Giordano Bruno: *Philosopher / Heretic*." *Journal of Biological Physics*, Vol. 36 (2010) pp. 329-338.

one of them. Critics such as Mumford did not see this as necessarily a bad thing; saluting the Renaissance's development of the "audacious all-around amateur" as being a model for intellectual freedom that "[broke] through a cramping and obsolescent craft isolationism."¹⁵⁷ It would not be too much of a stretch that this enthusiastic amateurism sowed the seeds for the later collusions of arts and sciences that came in the electronic age, which themselves began to explore the possibilities of cross-modal art.

Many historians, Burckhardt included, believed that the Renaissance in Italy brought with it a sense of pride in individualism that many historians feel was absent from the Middle Ages: whereas the latter "knew honour and glory only in collective forms...the honour of rank, or class, or profession"¹⁵⁸ the "quest of personal glory was the attribute characteristic to men of the Renaissance."¹⁵⁹ However, Huizinga, in his own respectable work on the Middle Ages, repeatedly argues that the proposed transition from intolerant medievalism into the many-splendored Renaissance (and, by proxy, into the subsequent Age of Reason) is not so simple as it seems, and at the very least did not begin at the precise moment when Giorgio Vasari - perhaps the first individual who we could capably call an 'art historian' - endowed the word *rinascita* with an art-historical meaning. The Renaissance was a period during which, perhaps for the first time in history, thinkers began to see their own epoch as being characteristically different from preceding ones - yet this was not always based in truth.

For one, much of the outright suspicion of sensory pleasure that had defined art in the Late Middle Ages was still present, particularly in Counter-Reformation painting. One key instance of such - Juan Antonio Escalante's 1667 painting *The Triumph of Faith over the Senses* - is perfectly indicative of the attitude then endorsed by the Roman Catholic Church. This work's central figure is a tranquil-faced woman bearing a

157 Lewis Mumford, *Myth of the Machine*, p. 138. -Harcourt / Brace / Jovanovich, New York, 1970.

158 *Ibid.*, pp. 59-60.

159 *Ibid.*, p. 60.

wooden cross and chalice in the midst of five additional female characters (who are seen helpfully pointing to the sense that they are supposed to portray), while a pair of cherubs approvingly hover over her and wave a banner with the Latin inscription *Praestet fides supplementum sensuum defectui* ["may faith compensate for the shortcomings of the senses."]

Many of the philosophical attitudes pertaining to the senses were also a holdover from Medieval times, as the concept of the *sensus communis* still held sway over figures as prominent in Renaissance intellectual life as Leonardo da Vinci. Da Vinci merely suggested a different location for the *sensus communis* but otherwise did not make dramatic alterations to this theory. This is not to belittle da Vinci's significant accomplishments, though, and it is still worth speculating what kind of world we would live in if - as per Mumford - "Leonardo's example of diversification had been more widely followed" and "naturalization, mechanization, organization, and humanization might have proceeded together."¹⁶⁰

ORIGINS OF OPERA

As to new forms meant to appeal to multiple senses, the birth of opera cannot be overlooked. The Camerata, a Florentine cultural think tank organized around Giovanni de Bardi, was one of the principal developmental laboratories, beginning in the 1570s with Caccini's development of monody and the singing style known as *stile recitativo* [recited style.] This fusion of music with dramatic elements, and with costumery and choreographed movement, was not a Renaissance novelty but - like so many other innovations of the era - a refinement and expansion upon the techniques of antiquity. Though 16th and 17th century opera would be unrecognizable to viewers of plays by Aeschylus and Sophocles (whose musical accompaniment was typically limited to a male "citizens' chorus"), its roots lay therein, as admitted by operatic innovators Peri

¹⁶⁰ Mumford (1970), p. 160.

and Caccini. It differed primarily in the importance now accorded to the virtuoso soloist, and in the heightened tonal complexity that embodied a “raw erotic energy.”¹⁶¹ The danger that such an energy presented for Renaissance authorities did not go unnoticed, and though the form flourished in Italy, a combination of “subversive” allegorical plots and the romanticizing of individuality in the person of the charismatic soloist was too much for the France that *Le Roi Soleil* Louis XIV presided over for over seven decades. Among other effects of his absolute monarchist rule, the grand “Protector” of the classical French arts declared it and other forms of Italian music illegal.

Curiously, in spite of its ambitions towards a new multi-sensory experience, the new operatic singing did away with the technique known as “word painting” - a means of vocalization that seems very synesthetic in name alone, and which required singers to emphasize the meaning of sung words with changes in qualities like pitch or emotiveness (one famous example given is from Handel’s *Messiah*, in which the concept of a “plain” is illustrated by drawing that word out over several measures, while adjectival terms like “exalted” and “low” are sung with a corresponding rise or lowering in pitch). The *stile recitavo* that took over from this method was one reconsideration of past successes that also accompanied a shift towards Roman theatrical and poetic influences, rather than the more popular Greek ones (Roman poet Ovid, along with such personified concepts as “Time” and “Tragedy,” was used as one of the many characters who sang the prologues to the early operas).

PERSPECTIVAL AND OPTICAL ADVANCES

Renaissance painting was notable for its introduction of linear or mathematical perspective, which aimed at providing viewers with the most accurate sense of realism in painting to date, making it possible - as

¹⁶¹ Susan McClary quoted in Attali (1985), p. 155.

Hans Belting proposes - "to *look through* pictures into the world that they depicted."¹⁶² Linear perspective, which was originally an all-encompassing theory of optics deriving from the work of 11th century Arabic scholar Alhazen [Abu Ali al-Hasan Ibn al-Haytham] and translated into Latin as *Perspectiva*, was gradually applied as a method for producing aesthetic images, a process that required at least a couple of centuries to ferment. The embrace of this technique by Renaissance artists became stronger shortly after the 1413 experiment of Florentine artist Filippo Brunelleschi, who painted the outlines of several local buildings onto a mirror, in order to demonstrate that the painted and 'real' images were indistinguishable. The transformation of an Arabic scientific treatise into a European art technique was significant and revealing of each culture's dominant philosophies: the theory in question came from a largely aniconic Muslim culture, and was thus focused on intuiting the non-pictorial nature of light, while its application to Renaissance arts belied a desire for reproducing the whole perceptible world through image. The legendary status of the perspectival shift was such a boast worthy point for Florentine culture, that Brunelleschi became the first artist of his time to become the subject of a biography.

While Brunelleschi made it clear that what he was doing should be considered a science as well as an art, the increasing reverence accorded to vision was also owed to scientific breakthroughs that were not meant (initially, anyway) to contribute to aesthetics. In the years that comprised the Renaissance - particularly those of the early 17th century that have since been recast as the beginnings of the Scientific Revolution - much was done outside the sphere of the arts to solidify the reputation of vision as the most revelatory and perhaps 'progressive' sense. The nascent field of astronomy, which was entirely dependent upon visualizations of the previously unseen, was central to this revolution - despite plenty of censure from both the Catholic and Protestant churches, this time brought

¹⁶² Hans Belting, *Florence & Baghdad: Renaissance Art and Arab Science*, p. 13. Trans. Deborah Lucas Schneider. Belknap Press, Cambridge / London, 2011.

us the confirmation of Copernicus's heliocentric view, Johannes Kepler's magnetic theory of planetary motion, and also the latter's understanding of planets' elliptical orbits. Following on the work of German-Dutch lens maker Hans Lippershey, Galileo's pairing of a convergent and divergent lens in 1609 allowed for the first visual exploration of the solar system. Johannes Kepler's subsequent design - invented two years later - used two convergent lenses and allowed for a wider field of view (though also providing the viewer with an inverted image of the object(s) under examination).

"A GREEN THOUGHT" - NATURALIST UNDERCURRENTS

From the efforts of Florentine artists to those of this multi-national body of optical researchers, it was clear that post-Medieval inquiry was accelerating towards an irrevocable appraisal of vision as the most world-altering sense, and as such refined the visual theories of Aquinas rather than doing away with them. This sequence of events has not set well with many cultural critics, for the reason that the "visuocentrism" in question leads over time to the intensification of anthropocentrism - of artificial divisions placed between humanity and the natural world. It was a process that was aptly symbolized by Leon Battista Alberti's use of a "winged eye" emblem that detached from the body and, by extension, from the natural world and the remainder of sensory impressions that could be taken from it (Alberti was, incidentally, another great popularizer of linear perspective with his 1435 treatise on painting, *De Pictura*). Mumford chided the visual artists of the Renaissance period for diminishing the natural in favor of the human (i.e. "first the Holy Trinity takes on purely human form, then the saints and pagan gods begin to disappear too"),¹⁶³ a process which he sees as prefiguring the birth of Enlightenment humanism as advanced by "natural philosophers or scientists."¹⁶⁴

¹⁶³ Mumford (1970), p. 27.

¹⁶⁴ *Ibid.*

This drive towards a visuocentric man / nature divide received a little less assistance from the poets of the age (who, then as now, had one or more "day jobs" to support their more metaphysical inquiries). Andrew Marvell, though he probably attained greater notoriety for helping John Milton to avoid execution at the order of Charles II, wrote at least one famed poem that hinted at an undercurrent of synesthetic thought surviving in this era. The poem in question - *The Garden* - is laden with colored (particularly verdant) imagery, and contains a memorable climactic stanza:

*Meanwhile the Mind, from pleasure less,
Withdraws into its happiness:
The Mind, that Ocean where each kind
Does streight its own resemblance find;
Yet it creates, transcending these,
Far other Worlds, and other Seas;
Annihilating all that's made
To a green Thought in a green Shade.*

The mention of a "green thought" should immediately confirm for us that this era of the arts was, like so many others, infused with at least some type of synesthetic experimentation (or at least contemplation). But to what degree did that experimentation play a leading role? It is difficult to say with any certainty that this was a foremost concern among the adventurous minds of the Renaissance and later Reformation. There was a very definite preoccupation among those thinkers with unity, but of different kinds. For example, the French theologian and mathematician Marin Mersenne described in a 1629 letter to Rene Descartes "a scheme which someone had communicated to him for a universal language"¹⁶⁵ - it was a proposal that Descartes responded to with skepticism, but one that nonetheless highlighted the contemporaneous intellectual community's enthusiasm for reclamations of "lost" faculties (i.e. the universally comprehensible speech that existed before the Biblical legend of the Tower of Babel). Mersenne

¹⁶⁵ Dean T. Mace, "Marin Mersenne on Language and Music." *Journal of Music Theory*, Vol. 14, No. 1 (Spring, 1970), pp. 2-34.

personally spent much of his career agonizing over whether music could become this universal language, a task that forced him to attempt tortured reconciliations between ungovernable passion and scientific reason.

Marvell's *The Garden*, not merely a footnote in the annals of metaphysical poetry or in 17th century poetry, was understood by some critics as being deceptive on its surface: it was, they might contend, an "anti-genre to the libertine celebration of sensuous pleasure;"¹⁶⁶ an inventory of less-than-perfect earthly sensations that would never match those experienced prior to the banishment from Paradise. Marvell's Puritanism always made the depiction of sensual delights a topic for some debate, although the truth was that these beliefs were often reconciled by the metaphysical poets with a Neoplatonic respect for the *anima mundi* or "world soul" - the cognition of external sensations was not an antithesis to spirituality, but the driving engine of it. The gardens depicted in Marvell's poetry represented a "state of blessedness that the soul enjoys when it shares with the object of its love a perfect unity of being."¹⁶⁷

THE AFFINITIES OF ISAAC NEWTON

One of the most striking developments in cross-modal thought of the Renaissance came not from poets or musicians, but from Isaac Newton, who - like so many of his era - split his loyalties between empirical study and more esoteric concerns, particularly alchemy and eschatology. Whatever the case, many of Newton's labors conferred benefits upon artists: his discovery of the dispersive prism, which bent white light into seven distinct colors, was a landmark discovery unveiling color as an intrinsic property of light, and an accomplishment that, on its own, would have secured his fame for ages to come. His color mixture circle, meanwhile, provided the prototype for similar designs still in use by artists to determine values of

¹⁶⁶ Ruth Nevo, "Marvell's 'Songs of Innocence and Experience'" in *John Donne and the Seventeenth Century Metaphysical Poets*, ed. Harold Bloom, p. 168. Chelsea House, New York / Philadelphia, 1986.

¹⁶⁷ *Ibid.*, p. 172.

color contrast. And despite his interest in esoterica, it was physiological or mechanical study that initiated his inquiries into vibrations in the fluid ether of the optical nerves.

Newton's quest for such "analogies" or "consonances" came on the heels of several other notable scientific and speculative works, and was not exactly anomalous for the pre-Enlightenment era of cosmological inquiry: polymaths like John Dee and Robert Fludd had a head start on this sort of thinking, though concentrating more on an ethos of "sacred mathematics" as holding the key to mankind's eventual possession of ultimate knowledge. Essentially seeing the universe as being designed along musical principles, it prefigured the 19th century enthusiasm for music as the highest and most sublime of human sensory experiences (a paradigm that would eventually blossom into a more far-reaching ethos of artistic unity). Much like the concept of the "music of the spheres" from classical antiquity, the universe - both the visible and undiscovered portions thereof - were arranged by Fludd as a series of "cosmic octaves" that would make clearer humanity's place in the cosmos. This was illustrated in his *Monochordum Mundi*, illustrated as a world-spanning monochord with several series of pitches each inhabiting one of three different spheres ("elemental," "planetary," and "angelic.")

Fludd's work here hinted at how both the universe and the musical scale were arranged exponentially: the frequencies increase exponentially from one musical octave to the next, given that the highest note of each successive octave has a frequency twice that of the previous one. The same exponential progression has been noted in the scale of observable phenomena from a single quantum to the universe itself. Elsewhere, Fludd's complex allegorical "Temple of Music" was another proposal that sought to relate musical pitches to more fundamental essences. This was part of concerted effort to show how the "orthodox arts and sciences, among them the science of music, deal only with the surface or shadow of things, whereas true philosophy should concern itself with their inner, invisible, secret, and miraculous essence."¹⁶⁸

168 Amman (1967).

Newton's contribution to cross-modal lore came, initially, in the form of a 1672 essay breathlessly titled "An Hypothesis Explaining the Properties of Light Discoursed of in My Severall Papers," which was notable for arguing that ether, rather than air, was the driving engine of much terrestrial activity. This work, originally written as a response to Royal Society curator of experiments Robert Hooke, marked his earliest musing upon the analogous nature of the visible light spectrum and the Pythagorean musical scale. In his lectures of the same year, he also held forth on how "everything [appears] just as if the parts of the image occupied by the colors were proportional to a string divided so it would cause the individual degrees of the octave to sound."¹⁶⁹ Newton spoke with conviction of "affinities" between the opposing ends of the color spectrum and the ends of the musical octave. All of this was later taken up in his far better known *Opticks* (1704) - before the publication of that volume, it was again returned to in a 1694 text in his *Classica Scholia*.

Though heavily influenced by Pythagoras, Newton was different in that he did not seek out analogies between music and natural phenomena, but between audible and visible phenomena - a momentous shift in thinking which presaged much of today's synesthetic research. To this end, Newton noted a correspondence between the width of the seven prismatic rays and the string lengths (specifically those of a monochord) needed to produce the D,E,F,G,A,B,C musical scale. These correspondences were decided upon after some earlier experimentation, circa 1670, with a system that only included five colors (orange and indigo would be the missing pair that were later added to solidify his correspondence theory). Though this was indeed criticized by contemporaries as an over-simplified analogy, it was influential upon the continued discussion revolving around the similar physical properties of light and sound (for what it's worth, Newton contemporaries such as John Locke also stirred up much debate

¹⁶⁹ Isaac Newton, *The Optical Papers of Isaac Newton, vol. 1, The Optical Lectures, 1670-1672*, p. 543. Ed. Alan E. Shapiro. Cambridge University Press, Cambridge, 1984.

when observing how a blind man heard the sound of a trumpet as having a “scarlet” tone).

It is possible that Newton’s desire to reveal “affinities” has some not insignificant number of connections to English alchemists, or his involvement with hermeticism in general, making him something of a predecessor to those 19th-century thinkers who simultaneously engaged in empirical and “magical” research. Newton had no small number of local influences to draw upon from the previous two centuries, such as fellow interdisciplinary thinkers Cornelius Agrippa and John Dee (the latter being Queen Elizabeth’s personal advisor). The hermetic tradition - particularly the alchemical tradition, with its focus on the ‘Great Work’ to discover the endlessly permutative Philosopher’s Stone - had often been involved with the attempt to confirm the existence of an all-permeating primordial substance or ‘first principle’ that bonded all living things, and Newton made his own attempts at theorizing such an *ur*-element. When praising the work of J.B. van Helmont in the late 1660s, Newton echoed Thales’ argument that all earthly phenomena could be reduced to water, but instead suggested “magnesia” as a seminal fluid that - depending on whether it was working on metals or flesh - would either generate pure gold, or new human life.

The concept of luminiferous ether (discredited after the 1887 Michelson-Morley experiment, which also paved the way for Einstein’s theory of special relativity) also proposed that light and sound were the result of vibrations in a common medium: it was only the rate of vibration that determined whether light or sound would be perceived. Newton’s color theory was also not immediately accepted by artists familiar with Renaissance painting techniques, particularly that of chiaroscuro (which “inhibited the acceptance of the notion that colors are inherent in light alone.”)¹⁷⁰

170 John Gage, “Signs of Disharmony: Newton’s *Opticks* and the Artists.” *Perspectives on Science* Vol. 16 No. 4 (2008), pp. 360-377.

Yet Newton was not without his influence upon the arts, nor did he have nothing to say about aesthetics in general (one famous musing from his *Opticks* reads “Whence is it that Nature doth nothing in vain; and whence arises all that Order and Beauty which we see in the World?”) His influence could be clearly seen in the person of French inventor Louis-Bertrand Castel, who designed his *clavelin oculaire* [“ocular clavicord”] based upon the color-music analogies discussed in *Opticks* (Castel’s mathematician collaborator Rondet also noted the influence conferred by a spinning RGB color wheel presented to the French Academy). The instrument in question was a labor Castel took upon himself in addition to building automata for replicating the human voice (his contemporary Jacques de Vaucanson was more successful at the latter, having built a flute-playing automaton with a repertoire of 12 songs, and, more amusingly, a “digesting duck.”)

The design of the *clavelin oculaire* dissented somewhat from the theories laid out by Newton: Castel believed the color blue corresponded to a ‘C’, while Newton believed this note to be red in tone (because the fundamental order of the spectrum, from red through violet, was in agreement with the note range from C to B). Castel’s dissent from Newton’s color theory, regardless of its applications to music, was eventually taken up by Goethe for his own theory of colors, which was more physiologically oriented than Newton’s. The composer Telemann was also so taken with Castel’s invention that he agreed to score some pieces for it. In the end there is, however, no evidence that a workable copy of Castel’s design was ever made: Albert Wellek has concluded after his research that “...there can be no doubt that Castel’s construction was begun, but by no means did this lead to a fortunate termination.”¹⁷¹

171 Albert Wellek quoted in “Famous Color Organs” by Kenneth Peacock. *Experimental Music Instruments* Vol 7, No. 2 (September 1991), p. 17.

CHLADNI'S *KLANGFIGUREN*: FROM ENLIGHTENMENT TO ACOUSTIC REVELATION

For our purposes, it is not insignificant that the long struggle towards modernity culminates in an era known as the "Enlightenment." This is a term which, when stripped of any of its metaphorical meaning, refers purely to visual phenomena, and thus gives us an idea of the uphill battle that is faced by creative spirits who work in something other than a visual mode.

Accomplishments such as Goethe's 1810 publication of *Zur Farbenlehre* ['Theory of Colors'], a challenge to concepts laid down in Newton's *Opticks* from the previous century, continued the centuries-long enthusiasm for raising the understanding of vision to its highest potential.

The battle is harder still for those who hope to usurp vision's privileged hierarchical position by insisting, through cross-modal experiments, that the information received by other sensory modes can be "equivalent" to that of sight. Consider, for a moment, that there is no alternative term for "enlightenment" that attributes the attainment of a great understanding to any other sense: similar concepts from Christian theology, such as epiphany, are also concerned with the *appearance* of ultimate truth, whereas we can also look to the *kenshou* of Zen Buddhism (literally "seeing into one's true nature.") The "motto" that Immanuel Kant suggested as the rallying cry of the entire period - *sapere aude* or "dare to know" - was less sense-specific, though the feeling has remained that intellectual advancement was inextricable from better means of visualization.

Having noted this, Kant's contribution to the persistent theory of the *sensus communis* - which he rendered in German as *Gemeinsinn* - had some definite bearing on later understanding of synesthesia as a neurological condition. For Kant, the *sensus communis* was something that all mentally healthy individuals were in possession of (an assumption borne out by his assessment of mentally unhealthy individuals, i.e. "the only feature common to all mental disorders is the loss of common sense...and the

compensatory development of a unique, private sense [*sensus privatus*] of reasoning.”)¹⁷² However, a smaller number of individuals were in possession of a *sensus communis aestheticus*, which would allow one to perceive, for example visible color in musical tones.

It was one of Kant’s countrymen and contemporaries who would provide one of the most lasting realizations of common factors underpinning our sensory impressions. Ernst Florens Friedrich Chladni, the inventor of the euphonium and a meteorite enthusiast, is often referred to as the “father of acoustics” - an appellation that is occasionally contested by those who feel Hermann Helmholtz is a more deserving candidate. Chladni’s personal claim to this title came from an experiment that he detailed in his 1787 text *Entdeckungen über die Theorie des Klanges* [Discoveries about the Theory of Sound], which has been praised in recent years as a “graphic transcription of sound that, unlike all previous notational practices, was not strictly arbitrary.”¹⁷³ The experiment in question involved Chladni’s spreading quartz dust across glass plates of varying sizes. As he ran a violin bow along the edges of these plates, differing patterns in the sand would form depending on the placement of the bow or the shape of the plate. A consistent enough bowing would cause the “nodal points” within the patterns - which Chladni referred to as *Klangfiguren* [sound figures] - to become clearer. As Thomas Levin recalls, “[the sound figures] seemed to arise from the sounds themselves, requiring for their intelligibility not the hermeneutics appropriate to all other forms of musical notation but instead something more akin to an acoustic physics.”¹⁷⁴

One result of this experiment into the emergent field of acoustics was that it saw sound “...as a species of vibration,”¹⁷⁵ leading in turn to a

172 Immanuel Kant, *The Classification of Mental Disorders*, p. 19. Trans. & ed. C.T. Sullivan. Doylestown Foundation, Doylestown PA., 1964.

173 Thomas Y. Levin, “Tones from Out of Nowhere”: Rudolph Pfenninger and the Archaeology of Synthetic Sound.” *Grey Room*, No. 12 (Summer, 2003), pp. 32-79.

174 Levin (2003).

175 Jonathan Sterne, *The Audible Past: Cultural Origins Of Sound Production*, p. 44. Duke University Press, Durham / London, 2003.

condition where studying sound waves meant studying the way in which all organic matter was shaped. A fellow of Chladni's referred approvingly to these patterns as "ur-images," essentially implying that they revealed the fundamental forms of creation. Chladni's patterns also made a case for musical harmony as being founded upon a more universal harmony, when noting that how "disharmonic tones produced a chaotic mess."¹⁷⁶ The phenomenological implications of Chladni's work excited numerous artists who built instruments - such as the 'tritare' built in 2003 by Samuel Gaudet and Claude Gauthier - to both perform music and generate Chladni patterns.

Other experiments conducted a little closer to Chladni's time, such as those of Jules Lissajous in 1857, confirmed the realization of "sound-as-shape" as an emergent discipline. The famous curved figures bearing the Lissajous's last name were initially discovered by placing a small mirror at the end of a tuning fork, while aiming a light beam in its direction and projecting the resulting imagery onto a dark screen. A vertical line would appear on the screen once the fork was struck, and this would become a sine wave if a second mirror was turned sideways. Modifying this experiment, Lissajous then arranged two different forks at differing angles from one another, which created a number of figures that - like Chladni's - progressed in the complexity of their elliptical forms. Regardless of what implications these figures had for aesthetic life, the cathode-ray oscilloscope developed in the 20th century - which used Lissajous curves as an electronic measurement signal - would make these curves truly iconic.

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176 Anthony Ashton, *Harmonograph: A Visual Guide to the Mathematics of Music*, p. 46. Wooden Books, New York, 2003.

Once the Age of Enlightenment arrived in earnest, there was plenty of discontent among artists with efforts to “light the world,” and there were certainly many who felt that as much could be learned from the fog of mystery as from the probing light of the sciences. Though this new breed of artists helped to sever the final cord from the aforementioned medieval conception of the artist, re-making the artist as a character that stood outside of or above society, they also attempted to rekindle an archaic communal spirit that affirmed the value of the transcendental and ineffable. It was this ‘counter-Enlightenment’ that brought the valorization of synesthesia to new heights, and whose representatives realized that a triumph over the senses - whether by “faith,” as in Escalante’s painting, or by reason and empirical research - was ultimately a hollow victory. In a sense, they attempted to state with their artworks what Maurice Merleau-Ponty would through his research, namely that “synaesthetic perception is the rule, and we are unaware of it only because scientific knowledge shifts the center of gravity of experience, so that we unlearn how to see, hear, and generally speaking, feel.”¹⁷⁷

This critique, in spite of the occasional tragicomic excesses of the individuals who voiced it, proved to be an enduring one that would echo down through the centuries. The critics in question would come to be known as the Romantic movement, and their lust for a unified realm of the senses - to be contrasted with the over-specialization that they perceived in the Enlightenment - was significant and influential.

¹⁷⁷ Maurice Merleau-Ponty, *Phenomenology of Perception*, p. 229. Trans. Colin Smith. The Humanities Press, New Jersey, 1962.

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be documented to ensure transparency and accountability. This includes recording the date, amount, and purpose of each transaction.

The second part of the document provides a detailed breakdown of the company's financial performance over the past year. It includes a comparison of actual results against budgeted figures, highlighting areas of both success and concern. The analysis shows that while revenue has increased, operating expenses have also risen, leading to a narrower profit margin than anticipated.

The third part of the document outlines the company's strategic goals for the upcoming year. It focuses on improving operational efficiency, reducing costs, and expanding market reach. Key initiatives include investing in new technology, streamlining processes, and exploring new sales channels.

The fourth part of the document discusses the company's commitment to social responsibility and environmental sustainability. It details the various programs and initiatives in place to reduce the company's carbon footprint, support local communities, and promote ethical business practices.

The fifth and final part of the document provides a summary of the company's overall performance and outlook. It reiterates the company's commitment to excellence and its confidence in achieving its long-term goals. The document concludes with a call to action, encouraging all employees to continue their dedication to the company's success.

CHAPTER 5

THE FLOWERS OF ROMANCE: OR, THE RISE OF THE *GESAMTKUNSTWERK*

It is telling that, when we hear the noun “Romantic” being used these days, it is often weighed down with additional adjectival baggage like “naïve” or “hopeless.” In many sectors of modern public life, the Romanticist tendency has been successfully portrayed as a gateway towards futility and decadence, or towards a willfully irresponsible disconnection from reality: a preference for individual sensory indulgence instead of any concerted attempt to alter that reality for the common benefit. This situation is not abetted by the pop-cultural life of recent decades: the waning years of the 20th century alone were filled with such critically panned approximations of Romanticism - see for example the more excessive representatives of the “New Romantic” synth-pop trend - it is hardly surprising that the name of their parent movement became a kind of pejorative term, and that purveyors of various stark, existential realities gained the upper hand on them in cultural affairs.

Romanticism is often imagined to be a culture founded wholly upon the justification of irrational experience: a negation of Enlightenment knowledge that developed an erotic, proto-Goth fascination with night and darkness as the adversary of the Enlightenment’s “drive to clarify or demystify...literally to shed light upon the rational aspects of human nature.”¹⁷⁸ For the card-carrying Romantic, imagination was a force that was at least on equal footing with reason, and subjective experience was often more meaningful than the laws of nature. These assumptions, too, are only partially true, as the early Romantic philosopher Novalis made concerted attempts to combine his scientific studies at Freiberg with more

178 Jill Scott, “Night and Light in Wagner’s *Tristan und Isolde* and Novalis’s *Hymnen an die Nacht*: Inversion and Transfiguration.” *University of Toronto Quarterly*, Vol 67 No. 4 (Fall 1998), pp. 774-781.

“artistically” creative acts: this combination of activities inspired him to borrow the “*know thyself!*” of the Delphic oracle as the title of one of his more enduring poems, and also to make the proclamation that “every science will be poesy - after it has become philosophy.” Well before the popularity of “interdisciplinary” studies, Novalis suggested a course of action for the aspiring Romantic in which

...the diversity of the methods increases - in the end, the thinker knows how to make everything, out of each thing - the philosopher becomes a poet. The poet is but the highest degree of the thinker, or senser etc.¹⁷⁹

As Novalis’ hoped-for synthesis of disciplines might attest to, there is also some truth to the claims that Romanticism sought an occasionally reckless freedom from externally imposed limitations on individual thought and action - though the claim that it did this fully at the expense of social involvement is erroneous. It is also a mistake to claim that the stereotypical rococo form of Romanticism, and subsequent forays by artists working with its aesthetic polar opposites, did not share some common ground where spiritual questing was concerned. For example, the minimal canvases of a painter like Mark Rothko were just as informed by the longing for the spiritual in an ‘enlightened’ world as were those works that belonged to the ‘proper’ Romantic period.

The early epicenter of the Romantic movement was, for all intents and purposes, Germany. Curiously, this has come as a surprise to many Germans themselves, despite this being the land from which Novalis’ *Hymnen an die Nacht* sprung, among much else. As the critic Richard Evans recalls,

...when the famous Centenary Exhibition of German Art, covering the years from 1775 to 1875, was held in Berlin in 1906, the work of artists such as Caspar David Friedrich

179 Novalis, *Novalis Schriften*, Vol. 3. p. 406. Ed. Richard Samuel, Hans-Joachim Mähl, and Gerhard Schultz. Trans. by David Wood. W. Kohlhammer Verlag, Stuttgart, 1965.

and Phillip Otto Runge, which had been largely forgotten over the past few decades, came to many Germans as a revelation.¹⁸⁰

In their defense, the term 'romantic' itself derives not from Teutonic origins, but from the "low" Latin tongue - *lingua roman* - which became the vernacular language of choice for writing epic-length narrative poems composed in the 14th century. After a layover of several centuries, *Romantik* entered the German language via early 19th-century essays on music, and was used especially in connection with Beethoven's works of the period, as well as by the writer and composer E.T.A. Hoffmann. Related musicological terms such as *Sturm und Drang* ["storm and stress"] perhaps better emphasized the passion inherent in this culture than the *Romantik* appellation itself, though the latter term has retained its power to couple both that "storm and stress" with intensified eroticism.

It would seem that, judging on the almost universal appreciation of Friedrich's painting *Wanderer Above the Sea of Fog* - which has become an iconic image of the individualist Romantic immersed in contemplation - Evans' proposal above has much truth to it. The implications of this concentration of Romantic artists within Germany are manifold: their presence did lead to a specifically German resurgence in national identity (particularly during the Napoleonic wars), but also to dramatic shifts in aesthetic theory that were internationally embraced. Out of this Germanic tradition came many of the attitudes and artistic works that would influence later generations of cross-modal experimenters. For example, the aforementioned poet Runge, when not trying his hand at idealistic color theories such as the *Farbenkugel* ['color sphere'], also spoke of *gleichsam sichtbar gewordene Musik* ['music that has become simultaneously visible'].

Even in the latter days of Romanticism - and in areas far removed from Germany in terms of cultural history - there was something of a conviction

180 Richard J. Evans, "An Autumn of German Romanticism." *History Today*. Vol. 44 No. 10 (Oct. 1994), pp. 9-12.

about the translatability of aesthetic materials across different forms, as well as claims to possess synesthetic capabilities outright. The Finnish composer Jean Sibelius, whose symphonic works led to a 'national revival' in his country much in the same way as the German Romantics did in their own nation, was one individual who mixed Romanticist pantheism with claims of such, as Alexander Coleman recalls:

Gifted with perfect pitch, he associated certain colors with certain notes and at times key signatures, and did so from earliest childhood. When his secretary Santeri Levas asked him what his favorite color was, Sibelius responded by saying that "it is a clear green, somewhere between D and E-flat." According to Levas, "Then he sang that note to me and went to the piano to check it. He had got it exactly. For the D (on the piano) was a shade lower than the note he had sung, and the E-flat noticeably higher."¹⁸¹

It is worth noting that the individuals claiming such synesthetic abilities were, more often than not, musical composers - a profession that had earned its position atop the hierarchy of the arts for most Romantics. The "newfound" emphasis upon music as the highest form of human expression was heir to a legacy of thought expounded by, among others, Boethius and St. Augustine. So, like so much else within The Romantic canon, this inclination did not appear as a result of a sudden *fiat* decree, and was rather the culmination of a few centuries' worth of like-minded thought. However, unlike the theories of Augustine - which claimed that a sense of good proportion was innate to the human mind, and that all 'good' music springs from this sense of proportionality - the Romantic worldview returned to pagan antiquity for its high estimation of ungovernable passion. From this same "dark" past, it also took the idea that - even if music may have been the most dazzling jewel in the crown of the arts - a synthesis of the arts was both achievable and desirable.

¹⁸¹ Alexander Coleman, "The Sibelius Question." *New Criterion* Vol. 16 No. 6 (February 1998).

ASPIRING TO THE CONDITION OF MUSIC: SCHOPENHAUER'S LASTING CONTRIBUTIONS

Oh blessed art, in how many grey hours, when life's fierce
orbit encompasses me, hast thou kindled my heart to
warm love - transported me to a better world. -

Franz Schubert, *An die Musik*

E.T.A. Hoffmann seemed to speak for most of the Romantic movement when he chose music as the most "romantic" of the arts, owing to its chronic use of "the infinite" as its dominant theme. His attitude persisted until at least 1877 - sometime after the original waves of Romanticism had crested - when the essayist Walter Pater famously provided the source for the often repeated (and just as often misattributed) claim "all art constantly aspires to the condition of music." He then elaborated upon this bold claim by also saying that, for other types of art, "it is possible to distinguish the matter from the form, and the understanding can always make this distinction, yet it is the constant effort of art to obliterate it."¹⁸² Pater referred to the tendency for all arts to sample from one another's techniques and effects as *Anders-streben* ['striving to otherness'], a condition which supposedly came about because of a restlessness or "partial alienation" from the original arts' limitations. Pater's recognition of this aesthetic trend resulted from surveying the vast landscape of Romantic art that had existed for roughly eighty years before, and is not shocking given that movement's cultivation of the restlessness of the soul. Pater's claim is also a concise summation of an attitude that philosophers from that era had spent a great deal of time explicating.

Two centuries prior to the codification of the Romantic movement, the Abbé du Bos (born Jean-Baptiste Dubos in 1670) was among those who felt that "musical sound was no less than the voice of nature itself."¹⁸³

¹⁸² Walter Pater, *The Renaissance: Studies in Art and Poetry*, p. 111. Dover, Mineola NY, 2005.

¹⁸³ Dean T. Mace, "Marin Mersenne on Language and Music." *Journal of Music Theory*, Vol. 14, No. 1 (Spring, 1970), pp. 2-34.

The Abbé had a storied writing career that, among other things, saw him predicting the revolution in the American colonies. His *oeuvre* was met with alternating highs and lows in terms of its reception by the elite French thinkers of the Enlightenment (e.g. Voltaire, Montesquieu), and featured at least one intriguing manual on aesthetics, his *Réflexions critiques sur la poésie et sur la peinture*. Originally published in 1719, it would be almost thirty full years before an English translation arrived courtesy of Thomas Nugent. It was from this volume that du Bos's thoughts on the primacy of music arose, and was one of the key texts to mark the decisive shift towards this kind of aesthetic thinking. As Dean Mace recalls:

Since the Italians had flooded Europe with commentaries on Aristotle's *Poetics*, the word - not music - was generally held to be the true voice of nature, the proper instrument for the perfect imitation of nature. Poetry reigned supreme in the hierarchy of the arts, because the word was assumed to be synonymous with reason, and the most significant human experience was thought to be in some sense rational.¹⁸⁴

Goethe, the titan of German literary culture, had certainly guaranteed that such an Aristotelean (and visuocentric) worldview would remain relevant in his own time. Yet even his influence would not disqualify the possibility of challenges. According to Mace, the Abbé's treatise heralded a dramatic change in this state of affairs, signifying "the declining prestige of poetry and the growing prestige of music."¹⁸⁵ This was a necessary component for Romanticism to become a feasible alternative to Renaissance or Neo-classical or thought, with the latter being firm in its belief that mathematical rigor and rightness of proportion represented both truth and beauty. Though Schlegel insisted that "poetic thought" was essential to any truly transcendent undertaking, it seemed that he - and the other members of the 'Jena Romantics' literary circle whose commentary

¹⁸⁴ *Ibid.*

¹⁸⁵ *Ibid.*

highly influenced the artwork of that period - had something other in mind than *verbal* poetry: the 'poetic' was merely a set of creative powers that unfolded irrespective of Reason, rather than being subservient to it.

THE AESTHETIC INFLUENCE OF SCHOPENHAUER

It can be difficult to understand how things went from this music-centrism to the valorization of cross-modal art, but this transition can be much more easily understood if we look in the right places. One of the primal seeds of the Romantic interest in synesthetic art came, interestingly enough, from Arthur Schopenhauer, one of the earliest and most enduring philosophical advocates of pessimism - a stance that, on face value, we might not expect to be conducive to enthusiastic or impassioned dissemination of aesthetic theories. Yet it was its very unapologetic starkness that led to its being embraced as a life-affirming ethos by creative minds such as Thomas Mann, and particularly to a young Friedrich Nietzsche. The latter wrote feverishly of Schopenhauer's signature work "in this book, in which every line cried out renunciation, denial and resignation, I saw a mirror in which I espied the whole world, life, and my own mind depicted in frightful grandeur."¹⁸⁶

Pessimism alone was not all that distinguished Schopenhauer from his kin among German thinkers of the mid-19th century. Among his many positions that were controversial and radical for their time was Schopenhauer's atheism - he once acidly compared religions to "glow-worms" since they needed "darkness in order to shine," and elaborated on this by explaining that this metaphorical darkness was in fact "a certain degree of general ignorance...the element in which it alone is able to live."¹⁸⁷ And yet, he maintained a strong interest in metaphysical concepts such as palingenesis;

¹⁸⁶ Friedrich Nietzsche, *Werke, Historisch-kritische Gesamtausgabe*, Vol. 3 pp. 297-298. Ed. Hans-Joachim Mette. Trans. Julian Young. Beck, Munich, 1933.

¹⁸⁷ Arthur Schopenhauer, *Essays and Aphorisms*, p. 109. Trans. R.J. Hollingdale. Penguin Classics, London / New York, 2004.

doubting that death was tantamount to annihilation and insisting that even though consciousness would be destroyed in death, “that which has been producing it is by no means destroyed.”¹⁸⁸ Additionally, many have credited Schopenhauer with the introduction of Buddhist ideals to otherwise unknowing minds, with at least one commentator going as far as to posit that the four books of Schopenhauer’s magnum opus *World as Will and Representation* are comparable to the Buddhist “four noble truths.”¹⁸⁹

Some would also find in Schopenhauer’s philosophy the apotheosis of arrogance. This was not merely because he seemed to relish tearing down his fellow thinkers in German philosophy and metaphysics - most notably his contemporary Hegel, who Schopenhauer was in direct competition with for lecture attendance - but also because he famously opens his signature work with the blunt insistence that “the world is my idea.” It was an eyebrow-raising proclamation, even if this statement was eventually followed by a lengthy treatise on why that world is so worthy of being viewed pessimistically. While it is tempting to dismiss this work - *The World as Will and Idea* - as the product of a typically angst-ridden twenty-something, virtually all of Schopenhauer’s successive writings echoed or commented upon the philosophy outlined in this book. It is a work permeated with contradictions, not unlike other philosophical treatises of its length and complexity, yet it is one whose conviction in the possibility of attaining the sublime makes it as much of a foundation text for practicing artists as for professional thinkers.

For the book’s central concept of Will, Schopenhauer took as his cue the immutable “Ideas” of Plato, which he saw as being distinct from mere “concepts”: they were (pace Alex Neill) “the universal forms which particular kinds of individual phenomena instantiate.”¹⁹⁰ Schopenhauer’s

188 *Ibid.*, p. 70.

189 Julian Young, “Schopenhauer, Nietzsche, Death and Salvation.” *European Journal of Philosophy* Vol. 16 No. 2 (2008), pp. 311–324.

190 Alex Neill, “Aesthetic Experience in Schopenhauer’s Metaphysics of Will.” *European Journal of Philosophy* Vol. 16 No. 2 (2008), pp. 179–193.

own explanation of this distinction is ambiguous, although it has much to do with ambiguity itself - or resistance to clear definition - as a positive aesthetic value, i.e. "we are entirely satisfied by the impression of a work of art only when it leaves behind something that, in spite of all our reflection on it, we cannot bring down to the distinctness of a concept."¹⁹¹

Schopenhauer is often valued more for his views on aesthetics than for his thoughts on any other human affairs, and some critics contend that his philosophy is practically inseparable from those aesthetic views. The two are fused together through the realization that "contemplating the Ideas in and through beautiful objects does not so much offer ultimate satisfaction for our restless desire as freedom from the thrall of endless blind willing."¹⁹² Put another way, the Will for Schopenhauer was an insatiable, undifferentiated force that would never be permanently nullified through the intervention of any single artistic object (and these views certainly tempted some of Schopenhauer's detractors to see this force as merely a synonym for 'God' or some other cosmic consciousness). The observable phenomena [*Vortsellungen*] that Schopenhauer sees as being distinct from the Will are, in essence, a false reality that he likened to the Buddhist "veil of Maya" blanketing the earth: that falsehood resulted from confusing these objectifications of the Will with that undifferentiated essence itself. The "principle of individuation," as opposed to a view of the world as a unified totality, remains for Schopenhauer a fundamental error of human perception, and without realizing this as the primal source of suffering, that suffering cannot be apprehended and overcome. As such, Schopenhauer's aesthetic theory insisted that recognizing beauty was essential to the apprehension of truth.

Music, then, was the highest of the arts precisely because it most directly allowed for direct contemplation of the transcendent Ideas that would

191 Arthur Schopenhauer, *The World as Will and Representation*, Vol. II p. 409. Trans. E. F. J. Payne. Dover, New York, 1969.

192 Bert Vandenabeele, "Schopenhauer on Aesthetic Understanding and the Values of Art." *European Journal of Philosophy* Vol. 16 No. 2 (2008), pp. 194-210.

allow for one to see “the universal in the particular” rather than being led astray by false assumptions of individuation: as Schopenhauer wrote in one of his several essays on the subject,

*Music is the true universal language which is understood everywhere, so that it is ceaselessly spoken in all countries and throughout all the centuries with great zeal and earnestness [...]. Yet music speaks not of things but of pure weal and woe, which are the only realities for the will: that is why it speaks so much to the heart, while it has nothing directly to say to the head and it is a misuse of it to demand that it should do so [...] expression of passions is one thing, depiction of things another.*¹⁹³

Schopenhauer’s aesthetic views on music are perhaps those that bring him closest to a kind of cross-modal or synesthetic awareness. Without a doubt, he viewed music as the most elevated of the arts (having invested a good deal of time into becoming a competent flute player), and goes as far as to claim “life would be an error”¹⁹⁴ without it. And, given that this was the case, it might seem like a leap of logic to say that Schopenhauer’s thought made any lasting contribution to the study and pursuit of a synesthetic art. To be sure, Schopenhauer scorned the synthetic art of opera as providing too many needless distractions from the immersive purity of music (i.e. “the mind is invaded through the eye, while listening to a highly complex piece of operatic music, by the most colorful pageantry, the most fanciful pictures and the liveliest impressions of light and colour; and at the same time it is occupied with the plot of the action.”)¹⁹⁵ Yet, if we look at it more closely, we can find aspects of his aesthetic orientation that lent themselves to exactly that. For one, there was the roughly sketched “ethics of frequency” that Schopenhauer

193 Schopenhauer (2004), p.162.

194 Friedrich Nietzsche, *Twilight of the Idols and The Anti-Christ*, Vol. I p. 33. Trans. R. Hollingdale. Penguin, Harmondsworth, 1987.

195 Schopenhauer (2004), p. 163.

outlined once he had declared music to be the most sublime of the arts, in which higher frequencies corresponded to the quest for superhuman greatness and the lowest frequencies embodied will-less, consciousness-deprived matter.

This was a theory that would take some time to germinate, but when it did, it was transposed to the visible portion of the electromagnetic spectrum by the esoteric Russian composer Aleksandr Scriabin: in his conception, the colors deemed the 'highest' on this spectrum (e.g. violet) corresponded to those same elevated states of man that Schopenhauer had imagined as corresponding to the higher audible frequencies. For Scriabin, violet not only embodied the mutation of matter into spirit, but also had a corresponding value among these same audible frequencies about which Schopenhauer had theorized.

Schopenhauer's aesthetic influence would eventually find its way into forms far removed from Romantic musical composition, and particularly in some forms that owe themselves as much to unimpeded intensification as to thoughtful contemplation (and which perhaps aim at showing how these two are not always mutually exclusive concepts). The *World as Will* series of electronic recordings by Zbigniew Karkowski and Tetsuo Furudate, for example, seem to make heavy use of the philosopher's thoughts on the Will and its proposed relation to the spectrum of audible frequencies - if, for no other reason, because the recordings themselves make full use of those available frequencies to shape an electronic storm that one must navigate to the center of in order to use it as a meditative device. In fact, a good deal of the more challenging electronic music composed in the late 20th and early 21st centuries, with its emphasis upon fundamental units of sonic frequency rather than written notation, is something of an unwitting heir to Schopenhauer's attempts to map points on the audible frequency spectrum to corresponding points on the "spectrum of sublimity."

Chung-Sun Kwon, in his study on the composer Richard Wagner, has drawn attention to Schopenhauer's suggestion that the will can once again

forge a unity between the world of appearances, and the human ability to interface with them. This is seen by the author as a step away from the emphasis on synesthesia within Romantic art. And yet, for all that, the artist who represents the turn away from “synesthesia” and towards “synthesis” - a distinction that will be made soon enough - commands more fame (if not outright infamy) today than many of those who experimented more scientifically with sensory correspondences. Upon reading Schopenhauer’s *Die Welt als Wille und Vorstellung* in 1854, Wagner gained much of the philosophical inspiration and dramatic temperament necessary to create one of his landmark works, *Tristan und Isolde*.¹⁹⁶

“ARTWORK CAN ONLY GATHER THE COMMUNITY IF IT ALSO GATHERS THE ARTS”

Wagner is a composer who hardly requires an introduction to serious musical students. Like his contemporary Giuseppe Verdi, it is widely (and sometimes begrudgingly) remarked that he carried his specialist musical genre of opera to a previously unknown plateau of artistry. Meanwhile, through his assorted polemical writings, Wagner featured as a prominent figure in the shaping of his nation’s social or revolutionary activity, and opened himself up to no small amount of risk by doing so. He was among the many characters in cultural history whose fame was as much an effect of contingencies as it was consciously striven for: the idea for his first breakthrough opera, *Der fliegende Holländer*, came about when he snuck out of Germany by schooner to evade creditors, and many of his most notable compositions and essays on aesthetics were drafted after he had later fled to Zurich (in order to avoid imprisonment for his role in the May 1849 uprising in Dresden).

196 Jill Scott is careful to note, however, that in *Tristan und Isolde* “Wagner embarks upon a major departure from Schopenhauer in making erotic love a condition for the full realization of Will-negation.” Scott (1998).

The subsequent writing of the *libretti* for his *Nibelungenlied* music drama cycle - based upon the uncredited 13th century epic poem of the same name, as well as the mythological themes of the Icelandic Eddas - would consume twenty-six years of the composer's creative life. However, the fruit of this labor would be his lasting reputation as an archetype of Romantic art, and as a key modern proponent of de-specialization in the arts (in addition to Wagner's compositional duties and critical writing, he was behind the design for the 'Wagner horn' or 'Bayreuth tuba,' which had a timbral quality compromising the characteristics of horn and trombone). While he was already a decade into this career-defining undertaking, Wagner also took the bold leap of creating an opera without any component of spectacle to it - *Tristan und Isolde* - which he referred to not as an opera but as an "aktion" (in the process, inadvertently coining a performance term that would later be associated with the totally unrelated form of 20th century 'intermedia' art going by the name *Aktionismus*). The final "Liebestod" or "love death" aria of *Tristan und Isolde* acknowledged Schopenhauer's belief in the rejection of life's suffering as the definitive act of individuality, or in willful death being "a supreme culmination of love [...] a death whose beauty derives from its resemblance to life."¹⁹⁷

Once these accrued innovations had been revealed to the public, a whole class of enthusiastic epigones known as the 'Wagnerites' also became (for better or worse) the composer's legacy, along with the verbal expressions that these enthusiasts invented against the wishes of the composer himself. For example, "music drama" is still used to describe Wagner's deviations from operatic orthodoxy (Wagner himself winced at the term and did not personally employ it), and Wagner also preferred terms such as *Grundthema* ['fundamental idea'] to the term *leitmotif*, which is still in current use thanks to the unsolicited efforts of the intellectual Hans von Wolzogen.

197 R.J.A. Kilbourn, "Redemption Revalued in *Tristan und Isolde*: Schopenhauer, Wagner, Nietzsche." *University of Toronto Quarterly*, Vol. 67 No. 4 (Fall 1998), pp. 781-788.

Since he was certainly inspired by Schopenhauer (making particular use of that philosopher's works in his *Beethoven* essay written in that composer's centenary year), Wagner must have been cognizant of that thinker's well-known dislike of the operatic genre, and this may have fueled his ambition to create a form that - while retaining all of the more fundamental features of opera - was decisively different in its objectives and its impact on listening audiences. To this end, Wagner refused to cede much control to outside interference: unlike many composers of his era, he preferred to be involved at all stages of a work from its inception to its rehearsal. And despite the criticisms that the visual and textual elements of his synthetic art distracted from the purity of the music, Wagner was also radical for channeling audiences' focus in a way that concert-goers today might take for granted: namely, he insisted on lowering the house lights prior to performances of his work, with the intended effect of "sweeping away mundane reality and enveloping the audience in the music and the drama."¹⁹⁸

The real extent of Wagner's understanding of Schopenhauer is a hotly contested point among those in the theoretical or critical communities (e.g. Theodore Adorno) who may respect the latter, yet see the former as a stereotypically bombastic representative of a now-irrelevant culture. It is more realistic, given the evidence available, not to take the view that Wagner is a "Schopenhauer for Dummies." Kevin Karnes defends the composer as neither "a parrot nor a simplifier, but an *interpreter* of his philosophical idol," as well as being "an insightful and highly original [interpreter], as evinced in what the composer described as his 'amendment' to Schopenhauer's metaphysics of sexual love played out in *Tristan und Isolde*."¹⁹⁹ Schopenhauer's focus upon the aesthetic value of tragedy was considerably influential upon Wagner, particularly the

198 Rachel Sloan, "The Condition of Music: Wagnerism and Printmaking in France and Britain." *Art History* Vol. 32 No. 3 (June 2009), pp. 545-577.

199 Kevin C. Karnes, "Wagner, Klimt, and the Metaphysics of Creativity in *fin-de-siècle* Vienna." *Journal of the American Musicological Society*, Vol. 62, No. 3 (Fall 2009), pp. 647-697.

fact that tragedy evoked the superior state of sublimity more than it did 'mere' beauty (given that the attainment of the sublime required active engagement on the part of the audience, whereas recognition of beauty required little more than a passive admiration). Given his Schopenhauerian sympathies, Wagner's own synthesis of life roles was not something that he felt should be limited to himself - in fact he felt that the duty of poets was to make their words bypass rational thought and (predating Pater's comments) to 'aspire to the condition of music':

The poet's handling of words subordinates their abstract conventional meaning to their elemental sensuous quality: through the organization of metre and quasi-musical embellishment of rhyme, his phraseology acquires a magical power of evoking and determining feeling. In this tendency, inherent in his very nature, we see the poet being drawn to the frontiers of his art and brought into direct contact with music; from which it follows that we must say of his poetry that at its best it would in its final consummation become completely music.²⁰⁰

In so many words, Wagner wanted this artistic process to result in art that would not 'mean' or 'represent,' but simply 'be,' as Schopenhauer might have suggested. It is somewhat ironic, though, that Wagner, who agreed with Schopenhauer's theory that music revealed the essence of the Will and thus stood above the other arts, would not only be an operatic innovator, but would be responsible for one of the most ambitious and controversial artistic fusions known at that point in history. Wagner, despite his quoting what is perhaps Schopenhauer's most widely cited work in his essay on Beethoven, was also the man responsible for introducing the word *Gesamtkunstwerk* or "total artwork" into the vocabulary of Western culture. This Wagnerian concept was not the first time that the *Romantik* aesthetic would become infused with cross-modal strivings: E.T.A.

²⁰⁰ Richard Wagner, *Three Wagner Essays*, p. 26. Trans. Robert L. Jacobs. Eulenberg Books, London, 1979.

Hoffmann's operatically-inspired tale *The Golden Pot* (1813-1814) was just one artefact of a culture that sought, in one way or another, to transfer the narrative structure of one art to another. However, Wagner's efforts would be among the most vivid and uncompromising ones in this category.

At first, it seems contradictory that the inventor of a "total artwork" would come to value one constituent part of that whole more than others, yet Wagner navigated around this issue by claiming that all meaningful art was born from "the *spirit* of music" rather than music itself: that is to say, the classics of Greek antiquity and the Italian Renaissance all produced a rapturous effect on the senses that could rightly be called "musical." The "total artwork" also represented an esoteric theory of Wagner's that referred to the dream world as the "sound world" and to waking consciousness as the "light world," an idea he elaborated upon by saying that "just as the vivid world of dreams can present itself to us only through a special function of the brain, so too can music enter our consciousness only through a similar brain function."²⁰¹ This, too, was Schopenhauerian in spirit whether or not it was derived from the philosopher's work: Schopenhauer believed as well in a dream world that provided one with direct access to the Will and thus allowed for clairvoyance [*"Hellsehn"*] to be a possibility, while the Will also revealed itself to the conscious mind through the residual information recalled from dreams.

The *Gesamtkunstwerk* was born not merely from an admiration of the Greek performance culture (particularly the dithyrambic, hymnal chanting of Dionysian festivals), but also from a pronounced disdain for the new industrial society and the way in which it engendered a spiritual exhaustion. It stood in particularly stark relief when compared to light, consumerist entertainments that had little or no capacity to offer anything more meaningful than a temporary distraction from the drudgery of mechanized labor. Wagner was disgusted with the "egoistic" disunity and atomization of industrialized society, in which individuals were increasingly relegated

²⁰¹ Richard Wagner, *Sämtliche Schriften* Vol. 9 p. 69. E. W. Fritzsche, Leipzig, 1870. Trans. Kevin C. Carnes.

to single, limited roles in both their professional and artistic lives. He was incensed at what he saw as the sham artistic unity of contemporaneous art forms like Italian opera, which merely tacked on other artistic elements to what was primarily a showcase for sung arias: much like the punk rockers of later years came to detest their peers in the 'progressive rock' community, Wagner was suspicious of such forms that existed merely as framing devices for brief displays of extreme virtuosity, which came about at the expense of seamless presentation. He also yearned for a time in which public performance was commensurate with meaningful, regenerative ritual, and in which everyone in a given community - up to and including the heads of state - participated as performers in the communal drama. This yearning was reflected in Wagner's interest in a "continuous melody" that, as opposed to the episodic nature of then-popular operas, would have "no clear demarcation between peaks and valleys."²⁰²

In short, Wagner's solution to the malady of modernity was one that is seen time and again throughout the history of cross-modal art: as Julian Young notes, Wagner's *Gesamtkunstwerk* rested on the proposition that "artwork can only gather the community if it also gathers the arts."²⁰³ The fusion of the senses was, in essence, the key to the re-uniting of the disparate, atomized members of the community, who - practitioners and consumers alike - had become stuck at one single point along the artistic spectrum. The artistic material that Wagner used as the blueprint for his 1849 essay *Kunstwerk der Zukunft* ["artwork of the future"] was archaic, but this, too, would come to exemplify another feature of synesthetically-oriented art throughout the ages: it has regularly looked to the distant past, either in the evolution of human societies or the human organism itself, for the keys to a world significantly different from any hitherto experienced.

202 Jed Rasula, "'Listening to Incense': Melomania & The Pathos of Emancipation." *Journal of Modern Literature*, Vol. 31, No. 1 (Fall, 2007), pp. 1-20.

203 Julian Young, "The Birth of the Birth of Tragedy." *International Journal of Philosophical Studies* Vol. 16 No. 2 (2008), 217-245.

Wagner's politics, as outlined in the very text whose title heralded his "music of the future," therefore relished a more archaic form of communal organization. While reaching back to the Eleusynian Mysteries of antiquity for the roots of the *Gesamtkunstwerk* (roots which inform much of modern theater) Wagner relied also upon the socialistic readings of thinkers from Saint-Simon to Feuerbach, and made frequent references to the *gemeinschaftliche Not* - or "common need" - that was the true, irreducible essence of any community. The recognition of this *Not* provided, much as the revelation of the Will's workings did for Schopenhauer, an opportunity for group transcendence. Given that the clear understanding of this *Not* demanded a rejection of most prevailing institutions of the day (e.g. church, state, and market) as being inculcators of false values, it is easy to see where Wagner created for himself the reputation that necessitated his 1849 exile from Germany.

Among the demands issued in *Kunstwerk der Zukunft* was a call for the community to base itself upon values that were "unconscious" and "involuntary," and thus placed the artist atop the social hierarchy that had otherwise been reserved for nobles and statesmen. Wagner's assuming such authority for himself caused him no end of problems among the foes that he named as such - but also among individuals who were once some of his staunchest allies.

NIETZSCHE (AND OTHERS) CONTRA WAGNER

Not merely content to be a student of Schopenhauer, Wagner did fancy himself a revolutionary philosopher of sorts. Despite the very real political risk that this once entailed for the composer, such risk-taking did not immunize him against ridicule, with even one of his most steadfast converts referring to his writings as "sham-intellectual maunderings."²⁰⁴ However unfair the critical panning may be, it was clear that Wagner's ideas needed

204 Ernest Newman, *The Life of Richard Wagner*, Vol. IV, p. 525. Knopf, New York, 1946.

the endorsement of a “legitimate” public intellectual in order to gain greater currency in their time. He found this support in none other than the philosopher of the *Übermensch* himself, Friedrich Nietzsche.

At the peak of their collaborative relationship, the closeness between Nietzsche and Wagner can hardly be overstated: the philosopher had a guest bedroom reserved for him at the Wagner household in Tribschen, and “an open invitation to use it whenever he wished.”²⁰⁵ Wagner served as a surrogate parent to replace Nietzsche’s own long-departed father, and the former’s offspring and household servants were referred to by Nietzsche using the familial term “we Tribscheners.” This idyll of encouragement led, ultimately, to the first of Nietzsche’s published books, *Die Geburt der Tragödie aus dem Geiste der Musik* [“The Birth of Tragedy out of the Spirit of Music”] (1872), which - though not written in a ‘dialogue’ format - was essentially intended as a conversation between the composer and the 27-year old philosopher. Though, as Young reports, “Nietzsche’s admirers and scholars have typically gone out of their way to minimize the debt [to Wagner],”²⁰⁶ period documentation shows that Nietzsche himself went out of his way to defer credit to his partner, a fact confirmed by Nietzsche’s career re-assessment shortly after the book’s publication (he volunteered his assistance to Wagner’s Bayreuth project, though this was politely declined).

Nietzsche’s book-length ode to the Wagnerian art also suggested another fusion that it was meant to bring about, that of the Apollonian and Dionysian mind states (which were rational and ecstatic, respectively). Nietzsche’s invocation of these oppositional deities, as well as his enthusiasm for mythology in general, was inspired by a typically Romantic disappointment in the uncritical blindness he saw in the subjects of modernity. Such figures embodied for Nietzsche something like the transcendent ‘Ideas’ that Schopenhauer had embraced from antiquity, and served as a warning against the short-term palliative of apparent scientific

²⁰⁵ Young (2008, 2).

²⁰⁶ *Ibid.*

and political progress that was then sweeping the nation. Wagner had already made similar treatises on the subject during the 1850s (e.g. 1851's *Opera and Drama*), effectively setting the stage for his later work with the 'Ring' cycle.

At the outset, Nietzsche's fusion of Apollo and Dionysus seems like quite a challenging reconciliation to achieve, much as it is still challenging to reconcile Wagner's Schopenhauer-derived world-weariness with his commitments to social action. However, if we see an all-consuming desire for synthesis or fusion as Wagner's driving engine of creativity, the commonality between all of his myriad activities is easier to ascertain. The fascination with a state of noumenal oneness, taken from Schopenhauer and Kant's metaphysics, seems to provide a convenient background for both Wagner's fixations upon artistic synthesis and the Dionysian dissolution of individual identities in the service of a greater national or spiritual cause.

Sadly, the familial atmosphere of Tribschen was not a lifelong reality for Nietzsche, and his eventual 'falling out' with the composer is well documented. Much of that documentation comes, in fact, from Nietzsche's own pen, with a lengthy essay and a machine-gun barrage of aphorisms in the inimitable Nietzsche style being directed at his former source of inspiration. These range from comically bitter to genuinely insightful, and their summed effect is to diagnose Wagner as a failed composer whose ambitions greatly outstripped his abilities. He is alternately unmasked as an extremist whose immodesty was meant as a cover for personal flaws, as a simple hypocrite who unconsciously adopted the strategies of his moral and aesthetic foes,²⁰⁷ or as a poor ambassador for a quintessentially German character (Nietzsche sets the aforementioned Wagnerian failures in opposition to "Frederick the Great's justice, Goethe's nobility

207 See Nietzsche's claim that "Wagner has the mind of the ordinary man who prefers to trace things to one cause [...] In this way he simplifies German and culture; wrongly but strongly." Friedrich Nietzsche, *The Case of Wagner / Nietzsche Contra Wagner / Selected Aphorisms*, p. 86. Trans. Anthony M. Ludovici. T.N. Foulis, Edinburgh / London, 1911.

and freedom from envy, Beethoven's sublime resignation, [and] Bach's delicately transfigured spiritual life.")²⁰⁸

Among the charges that Nietzsche levels against Wagner, the accusation of his dilettantism stands out as a particularly strong one, and this accusation derives in no small part from Wagner's obsession with the "total artwork." The artistic synthesis was not only suspect for being a cloying attempt at making art accessible "to everybody," but as never really rising to the level of a seamless artistic integration (and, at the very least, his work did provide another example of an art which did not properly make the distinction between *synthesis* and *synesthesia*). In Nietzsche's reckoning, Wagner's experimental fusion was never more than music complemented by other elements rather than something that would be noticeably distinct from its constituent parts. As to those constituent parts, Nietzsche was seemingly of the opinion that the "total artwork" was meaningless if its components could not be enjoyed in isolation from one another:

Just listen to the second act of the "Götterdämmerung," without the drama. It is chaotic music, as wild as a bad dream, and it is as frightfully distinct as if it desired to make itself clear even to deaf people. This volubility *with nothing to say* is alarming.²⁰⁹

Given the very contrarian opinions that Nietzsche had voiced on other matters, it might not come as much of a surprise that he winced at the *musical* presentation of Wagner's *Gesamtkunstwerk* rather than the integration of theatrical elements that had chafed the skin of other critics:

I utterly disagree with those who were dissatisfied with the decorations, the scenery and the mechanical contrivances at Bayreuth. Far too much industry and ingenuity was applied to the task of chaining the imagination to

²⁰⁸ *Ibid.*, p. 87.

²⁰⁹ *Ibid.*, p. 91.

matters which did not belie their *epic* origin. But as to the naturalism of the attitudes, of the singing, compared with the orchestra!! What affected, artificial and depraved tones, what a distortion of nature, were we made to hear!²¹⁰

Nietzsche's final comment on the "distortion of nature" is a pertinent one, since it shows the potential for Wagner's synthetic Romanticism not just to be criticized from the perspective of the humanities, but also from that of the natural sciences.

WAGNER *CONTRA* THE SCIENCES?

If we remain situated in Germany, and retreat on our timeline back to the midpoint of the 19th century, we encounter a monumental intellectual figure that gives us a narrative of "correspondences" far removed from that of Romanticism. The man in question, the professor Hermann von Helmholtz, was as much a universalist in scientific study as Wagner was in aesthetics. By today's technocratic standards, where individuals are defined by their employment status and "specialized skill sets" are the key to stability of that employment, there is an almost otherworldly quality to Helmholtz' mastery over fields of human knowledge that many would still perceive as being unrelated: his staggering bibliography from 1845 onwards features work on subjects as diverse as optics, electrodynamics, anatomy, geometry, meteorology, and - of course - acoustics and musical theory.

So, if anyone were qualified to propose a scientifically sound theory of sensory correspondences, it would have been Helmholtz. Though his interest in acoustics came about from earlier study done on hydrodynamics, rather than from any stand-alone "eureka" moment, his work in acoustics remains essential for students in that field: one result of his legacy here is

210 *Ibid.*, p. 79.

the Helmholtz resonator, and its subsequent influence on the inventions of Alexander Graham Bell. As for his concurrent work in physiological optics, The RGB color model owes itself to Helmholtz' refinement of Thomas Young's earlier theory on trichromatic vision, positing three different types of cone photoreceptors in the eye, each preferring different wavelengths of light as they struck the retina (blue receptors were 'short-preferring,' green were 'middle-preferring,' and red 'long-preferring.')

Helmholtz' influential acoustic investigations took place in the same German culture that was also bearing witness to the giddy apex of the Wagnerian "music drama" aesthetic. As Helmholtz toiled away in earnest on physiological acoustics, Wagner was - depending on which side you took - either cementing his reputation as the Master Artist of Bayreuth or willfully leaping into an irredeemable state of self-parody. Taking Nietzsche's objections as a cue, should we assume that the intellectual community of the period also regarded the "correspondence" art as, per the acerbic philosopher, a "bag of tricks?"

Judging from Helmholtz' contemporaneous opinions, it is hard to tell - his definitive study *On The Sensations Of Tone* (In the original German: *Die Lehre von den Tonempfindungen als physiologische Grundlage für die Theorie der Musik*) makes only the most ephemeral mention of Weber, Wagner etc., and then only as items on a chart outlining "the history of musical pitch in Europe." Helmholtz' study is more concerned with comparing the mechanics of the eye and ear than it is with holding forth on the aesthetic implications of his findings: a certain mechanical sensory asymmetry exists because of the ear's limited analytical ability relative to the eye: the ear "does not distinguish the different forms of waves in themselves, as the eye distinguishes the different vibrational curves," and "the ear must be said to decompose every wave form into simpler elements according to a definite law."²¹¹ The eye is also "capable of distinguishing every possible form of vibration from each other, such

211 Hermann Helmholtz, *On The Sensations Of Tone*, P. 128. Trans. Alexander J. Ellis. Dover Publications Inc., New York, 1954.

as the ear cannot distinguish," yet Helmholtz believes the ear gains the upper hand by its ability to analyze 'compound' vibrations and convert them into 'simple, pendular vibrations.'²¹² If this seems somewhat unclear, Helmholtz again acknowledges the ear's supremacy in the same study:

The ear is greatly superior [...] to any other nervous apparatus. It is eminently the organ for small intervals of time, and has been long used as such by astronomers...it is well known that, when two pendulums are ticking near one another, the ear can distinguish whether the ticks are not coincident, within one hundredth of a second. The eye would certainly fail to determine whether two flashes of light coincided within 1/24th of a second; and probably within a much larger fraction of a second.²¹³

Readers of this research would likely have developed some doubts about the power of the new Wagnerian art to induce a synesthetic effect in its audiences: if the analytical powers of the eyes and ears were unequal (to say nothing of the additional sense organs), could something like a true 1:1 sensory synchronization exist? For the time being, such powers would have to be taken on faith, and synesthesia would remain largely in the realm of the inexplicable (or, at least, the metaphorical and associative) until studies in 20th century neurology shifted the focus from the physiological functioning of the sense organs, and made a case for synesthesia's localization within specific areas of the brain.

Within *On The Sensations Of Tone*, Helmholtz pondered over Aristotlean thought, particularly his '29th Problem' that asks why sonic phenomena 'resemble the feelings' and other sensory impressions do not (Aristotle concludes that it is perhaps because rhythmic and melodic structures are 'active,' and that action is the sign of feeling). Helmholtz then goes on to wax fairly romantic about the motion of ocean waves ("how long and how

²¹² *Ibid.*

²¹³ *Ibid.*, p. 173.

often we can sit and look at the waves rolling to shore!")²¹⁴ Considering how much later synesthetic experimentation dealt with finding sonic frequencies analogous to visible capillary waves, his words seem like a harbinger of things to come.

Now, even if we see Helmholtz as a man of "seriousness" and Wagner as one of frivolity, it has to also be remembered that the inspiration for Helmholtz' studies was none other than his relationship with music - an art that he was always involved with by taking frequent trips to the concert halls, and which he became more enthused about by playing musical pieces himself. To those who continue to insist on an unbridgeable gulf between the arts and sciences, A.E. Hui protests that "just as the performers and composers that followed Helmholtz's work so closely did not initially approach the piano as a scientific device, neither did Helmholtz...it was for him first an instrument of expression and enjoyment."²¹⁵

Wagner and Helmholtz had a common musical inspiration in Beethoven, and both seemed to believe strongly in music as an art with powers not duplicated by other arts. However, when Helmholtz states in *On The Sensations Of Tone* that "in music, the sensations of tone are the material of the art" and "no [...] perfect representation of nature is aimed at, tones and the sensations of tone exist for themselves alone"²¹⁶ he is strikingly close to the view of "absolute music" reiterated by Viennese critic Eduard Hanslick (i.e. "Beauty had no object or aim beyond itself, thus music had no goal of giving the listener pleasure, nor was it in need of a subject to be introduced from without [say, with the use of words.]"²¹⁷ This approach to music and to aesthetics in general is not exactly complementary to Wagner's synthetic approach, and the idea that aesthetically good music need not represent anything would be the attraction of "absolute music" for years to come.

214 Helmholtz (1954), p. 251.

215 A.E. Hui, "Instruments of Music, Instruments of Science: Hermann von Helmholtz's Musical Practices, his Classicism, and his Beethoven Sonata." *Annals of Science*, Vol. 68, No. 2 (April 2011), pp. 149-177.

216 Helmholtz (1954), p. 3.

217 Hui (2011).

A WORD ON THE 'WAGNERITES,' AND THE LEGACY OF ROMANTICISM

And what can be said for Wagner's epigones, the 'Wagnerites?' Perhaps less scorn would have been heaped upon this group of devotees if they counted fewer prominent artists and critics among them. Outside of Germany's boundaries, prominent 'Wagnerites' included innovative visual artists such as Odilon Redon and Henri Fantin-Latour - the latter was so inspired by the small sampling of Wagner that he had enjoyed, that he chose the second scene of that composer's *Tänhauser* as the subject for his first foray into lithography. He was also so taken by certain aspects of Wagnerian *Gesamtkunstwerk* theory that he attempted his own cross-modal experiments, such as "attempting to give visual form to the quivering vibrato of the string sections"²¹⁸ in Wagner's work, or attempting to make a visual equivalent to the *leitmotif* marked by a "feathery, oscillating touch"²¹⁹ that again strove for the vibratory quality of Wagner's music.

Homeland tributes did continue to be paid well after Wagner's death, and by numerous artists who worked outside of the musical realm. Max Klinger, for example, inaugurated his *Raumkunst* or "spatial art" in the late 1890s using cues from the *Gesamtkunstwerk*, while using the Wagnerian musical concept of "cycles" in particular to give a narrative quality to his pictures that would otherwise have been mainly associated with music drama. Klinger became perhaps more famous for his *Paraphrases about the Finding of a Glove* series of etchings (1881): the artists' legendary obsessiveness related to the discovery of a mystery woman's lost glove at an ice rink would later be cited as a precursor to analytical theories of fetishism.

As Wagner's posthumous fame grew, the personification of the Wagnerite was no longer a continental European like Fantin, but the controversy-

²¹⁸ Sloan (2009).

²¹⁹ *Ibid.*

stoking, 'decadent' English graphic artist, Aubrey Beardsley, who attempted his own miniature *Gesamtkunstwerk* in which art did not "aspire to the condition of music," but to that of literature: a significant number of his illustrations were bound to printed books. Beardsley, perhaps most noted today for his friendship with Oscar Wilde, was also a manic collector of Wagner memorabilia, an avid attendee of Wagner concerts (which did not actually take place in his native England until the 1870s), and an appropriator of Wagnerian legends and subject matter since the earliest phases of his short career. He even demanded that Wagner's works be some of the only books not to be sold from his library upon his death. Though neither Wagner nor his erstwhile right-hand man Nietzsche would live to pass judgement on Beardsley themselves, plenty of others did see him as the very image of the willfully provocative dilettante who embraced concepts like the *Gesamtkunstwerk* merely to take pleasure in being contrary or divisive.

Whether one sees Wagner's influence as central to Romanticism or not, the impassioned debate over its ultimate usefulness continues, with the contradictions embedded in the movement proving too irresistible as fodder for future arguments. And these contradictions were not at all limited to Wagner's would-be synesthetic experiments: it was a culture in which urban-based composers showed great reverence for untamed nature (as in Beethoven's *Pastoral* symphony), or in which sacred texts provided the basis for secular works (Liszt's *Dante* symphony). Nevertheless, the distinctly Wagnerian contradictions provide some of the most enticing sustenance for modern critics to sink their teeth into, as does that composer's mystical drive to become an all-purpose synthesizing agent. If the *Gesamtkunstwerk* itself is not being dismissed as an elaborate sham, then Wagner's attempts at "unifying the community" are singled out for attention, with Colin Benert suggesting that his "project contrasts starkly with what can be called the participatory notion of musical community that was propagated through the rapid growth of amateur musical organizations in the nineteenth century, especially the many bourgeois

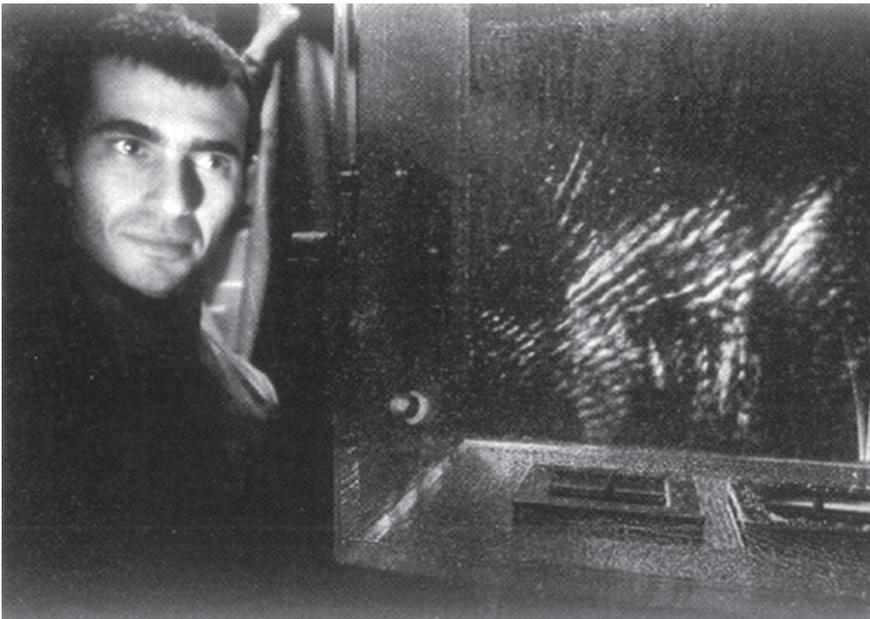
concert and choral societies."²²⁰ By contrast, Wagner's 'community' was itself limited to the mystical concept of the *Volk*, and his Bayreuth gatherings disallowed the type of real, active audience participation in the proceedings that would make for an authentic sense of artist-audience communion.

Using Wagner as a metonym for Romanticism is not always entirely accurate, but the negative association between the two has stuck, and has certainly intensified since the Germanic spirit of both Wagner and the Romantic movement was exploited by Adolf Hitler for use in furthering his *Blut und Boden* [blood and soil] mysticism, and attempting to silence the new developments in artistic Modernism. Just a cursory amount of investigation will show that the attempts to shoehorn all of the German Romantics into the Nazi ideology was awkward, and an equally quick survey of contemporary literature reveals a diversified selection of prominent thinkers seeking to claim key aspects of this tradition as their own (see, for example, the philosopher Slavoj Žižek's concerted efforts to highlight those aspects of Wagner's political thinking that would be considered 'revolutionary' in an acceptably leftist sense). Nevertheless, the misconceptions of a direct lineage connecting Romanticism to Nazism unfortunately persist, with a dossier of single incidents - e.g. Jean Sibelius' acceptance of a Goethe prize awarded by Hitler - always ready to be brought to the arguing table.

Yet if, Romanticism by way of Wagner' did actually represent something uniquely and inalterably nationalistic and conservative, this message was not relayed - or was simply ignored - by the new school of Symbolist artists, who would take the idea of cross-modal art to new vistas and, some might say, to new extremes as well. In the person of these artists, the 'Wagnerites' would have their revenge: ironically, in a nation that had accorded their hero a very poor reception during his own lifetime. More interesting still would be the resuscitation of Wagnerism in Russia, and the

220 Colin Benert, "'Notlagen': Kafka's Intervention in Wagner's Musical Politics." *The Germanic Review*, 2009, pp. 122-150.

endurance of the *Gesamtkunstwerk* ideal into the Germany of the mid-20th century, where pan-artistic institutions like the Bauhaus made the act of unifying the arts into an art all of its own (it is especially worth noting Bauhaus founder Walter Gropius' knowing resuscitation of the Wagnerian term "artwork of the future" in his own lectures, and even the appreciation that the Weimar Bauhaus school showed for Romantic Nietzsche-ism). Taken altogether, these events would prove the resilience of both the synesthetic and synthetic arts, which seemed - in the 19th century - to have a strong hold on the most restless artistic imaginations.





CHAPTER 6

THIEVES OF FIRE - SYMBOLISM'S ART OF CORRESPONDENCES

*La Nature est un temple ou de vivants piliers
Laisser parfois sortir de confuses paroles;
L'homme y passe a travers des forets de symboles
Qui l'observent avec des regards familiers.
Comme de longs echos qui de loin se confondent
Dans une tenebreuse et profonde unite
Vaste comme la nuit et comme la clarte,
Les parfums, les couleurs et les sons se repondent.*²²¹
- Charles Baudelaire, "Correspondances" (1857)

The writer of the above lines once remarked that "it is one of the characteristic symptoms of the spiritual condition of our age that the arts aspire if not to take one another's place, at least reciprocally to lend one another new powers."²²² With these words, the enigmatic poet reinforced what the poem "Correspondances" had alluded to - a sensory fusion that serves as a preliminary step to a more profound expansion of creative forces. Many might have accused the eccentric 'dandy' Baudelaire of constantly invoking this fusion to further distance himself from less apparently refined people, though he argued that this kind of synesthetic perception, if it was seen as a feature unique to genius poets, should not be:

...what would be really surprising would be that sound
would not suggest color, that colors would not convey

221 "(Nature is a temple where living pillars/Sometimes let confused words come forth;/Man passes here through a forest of symbols/Which observe him with familiar looks.//Like long echoes which are mixed in the distance/ With a shadowy and deep unity/Vast as the night and the light,/Perfumes, colors and sounds respond to each other)."

222 Charles Baudelaire quoted in Alfred Werner, "Baudelaire: Art Critic." *The Kenyon Review*, Vol. 28, No. 5 (Nov., 1966), pp. 650-652+654-661.

a melody, and that sound and color were unsuited to translating ideas, things always having been expressed by a reciprocal analogy since the day God created the world as a complex and indivisible whole.²²³

With this in mind, Baudelaire had always been a proponent of a certain *état mixte* in which the intoxicated poet (entranced either by chemical stimulation or by a general enthusiasm alone) would become a vehicle for a world-transforming type of simultaneity: becoming both cause and effect, or subject and object. This extended as well to his theory of the *flâneur*, the urban drifter that was at once away from his fixed place of residence and yet “at home” everywhere (the poet contended that, despite the term’s translation as “idler”, there was in fact nothing passive about being a “passionate spectator” who “enters into the crowd as if it were an immense reservoir of electrical energy.”)²²⁴ Armed with a confidence in the possibility that even such quotidian activities could serve as life-altering ones, Baudelaire came to epitomize a movement that saw creative imagination as not just the most important of the human faculties (or the “queen of the faculties” in Baudelaire’s own reckoning) but as the very essence of human life. This creative movement, which was unusual for its time since it was built upon a foundation of ethics rather than common aesthetics, came to be known as Symbolism.

The private or internal revolution of Symbolism was, of course, just one face of a turbulent time that was witness to other public revolutions with more sociopolitical consequences. The maturation of French Symbolism took place concurrently with the great social unrest that followed the unraveling of the Second Empire, upon the decisive defeat of Napoleon III’s troops in the Franco-Prussian War (with Napoleon himself being taken prisoner after the Battle of Sedan), and the subsequent establishment

223 Quoted in František Deák, “Symbolist Staging at the Théâtre d’Art.” *The Drama Review: TDR*, Vol. 20, No. 3 (Sep., 1976), pp. 117-122.

224 Eric Hazan, *The Invention of Paris: A History in Footsteps*, p. 333. Trans. David Fernbach. Verso, London / New York, 2011.

of the Paris Commune. Paul Valéry's description of the movement's "common principle" as being "the renunciation of any appeal to public preference"²²⁵ has made it fairly easy for modern critics to see Symbolism as a distraction from more pressing social struggles, a position that will not be debated at length here, save to say that the forces of internal and external revolt went hand in hand more often than the defenders of realism may have noticed. If anything, Symbolism seemed to argue for a coordinated "external" and "internal" revolt rather than the subordination of either art or politics to the other. This would not be the only way in which it acted as the successor to Richard Wagner's own coordinated revolution.

Charles Baudelaire's *Fleurs du Mal* [Flowers of Evil], originally published in 1857, provided one case in which this did happen. Though Valéry's own estimation of Symbolism's lifespan was from the years 1860-1890, the events of 1857 marked an early moment in which an uninhibited manifestation of the Symbolist aesthetic glowed too brightly and luridly for the authorities to ignore. Perhaps the book's thinly veiled *flâneuriste* critique of Baron Haussmann's newly renovated Paris - which many later came to see as being designed more for the ends of military mobilization than for the convenience of the citizenry - was one cause for its almost immediate infamy, although this infamy also owed itself to then uncommon depictions of erotic disobedience and all forms of intoxication. Once the volume had circulated widely enough, it did not go unnoticed long by the Second Empire government, who denounced it as an affront to public decency. A subsequent trial would raise many moral questions - e.g. whether Baudelaire's frank depictions of "evil" could actually serve as a caution against abandoning oneself to it - and would irrevocably cause the Symbolist movement to be associated with a program of willful iconoclasm.

The August 1857 trial of *Fleurs du Mal*, far from being the grand spectacle that many expected it to be (and not exactly an uncommon occurrence

²²⁵ Paul Valéry, «The Existence of Symbolism.» Trans. Malcolm Cowley. *The Kenyon Review*, Vol. 19, No. 3 (Summer, 1957), pp. 425-447.

under a regime that preferred morally instructive trials to outright censorship) required only a single day in court for a final verdict. Though innocent of 'religious immorality,' the author was nonetheless found guilty of the broader charges of obscenity and offense against public morality. Fines were meted out to both the author and the publisher, and six of the offending poems were to be struck from any future volumes. This result was admittedly a disappointment for an artist who had expected to be acquitted - as had his countryman Gustave Flaubert in a similar, much more heavily publicized trial - and even expected a formal apology from those pressing charges against him.

WHAT WAS SYMBOLISM?

Not all "-isms," particularly those which spring from critical investigation of the arts, are marked by a uniformity of their followers. Symbolism was no exception to this rule, being accurately assessed by Valéry as "an event in aesthetic history that cannot be defined in aesthetic terms."²²⁶ This non-aesthetic criterion for their formation of a separate aesthetic school was, essentially, their agreement upon "a common determination to reject the appeal to a majority: they disdained to conquer the public at large."²²⁷ Since this same motivation could easily be applied to later European avant-garde movements, such as Dada - and is thus not enough to really distinguish the Symbolist disposition - it is important to also include Valéry's elaboration upon this concept, i.e. "[instead of] the notion of works that solicit the public, approaching it by way of its habits or inclinations, little by little they substituted the notion of works that create their public."²²⁸ It may seem hard to understand just how radical a stance this was in its time, long before disillusionment with constant Internet promotion gave birth to a variety of non-promoting or non-soliciting subcultures.

²²⁶ *Ibid.*

²²⁷ *Ibid.*

²²⁸ *Ibid.*

Despite its refusal to promote itself to the widest audience possible, the trial of Baudelaire kept the name of Symbolism alive for decades afterwards, though this very longevity also caused nausea to set in among some of its critics. Few are more acute in expressing this than B.W. Wells, who lamented how

...from the putrescent hot-bed of the "*Fleurs du mal*" there has sprung a rank and pestiferous growth of poison plants that have shed the winged seeds of literary disorganization and morbid psychology over our strange *fin de siècle* generation. These noxious germs have been powerfully aided in their development by some foreign results of similar causes. The Russian novelists, the English painters, the German composers have combined to undermine the power of the clear scientific spirit of [Hippolyte] Taine, and to cultivate in enervated minds the diathesis of indefinite mysticism that finds its present expression in the Symbolists.²²⁹

In praising the naturalism and / or positivism of Taine, Wells makes it clear how the battle lines are drawn between the "anti-rational" activity of the Symbolists and the more socially responsible, critical work of both the natural and social sciences. Again, this judgement is an oversimplification, though it is a highly illustrative one. More illustrative still is how one of the main symptoms of the Symbolists' literary and poetic decadence - along with the embrace of "Absinthe, Nevrose, and Morphine" - was identified by Wells as a single-mindedness towards sensory pleasure, particularly of a synesthetic kind (i.e. "[Théodore de Banville] shows no faith save in his senses and the joy they bring, the delight of eye and ear, the harmony of color and sound").²³⁰

229 B.W. Wells, "Contemporary French Poets: II. Decadents and Symbolists." *The Sewanee Review*, Vol. 4, No. 1 (Nov., 1895), pp. 15-37.

230 *Ibid.*

Though its roots could indeed be traced back to Baudelaire, The French Symbolist movement was formally named as such only in 1886: this was a retroactive titling, done after a few decades of activity, when poet Jean Moréas penned a manifesto of sorts that was itself a defensive retort against a denunciation of the “decadent” poets in the journal *Temps*. The title of the Symbolist journal *La décadent* notwithstanding, he rejected the term *décadent* as being a pejorative one, and proposed “symbolist” as an alternative (in an amusing moment of profound egoism, Moréas would later proclaim the death of the Symbolist ethic upon his own disillusionment with it). In Moréas’ view, the artists who assembled under the Symbolist banner did so as a reaction to naturalism and to emotionally uninvolved Parnassianism, itself a reaction to perceived Romanticist tendencies towards pointless hyperbole. Gaston Bachelard’s defense of “*la victoire de l’imagination creatrice sur le réalisme*” underscored this divide between Symbolists and naturalists / realists - while the latter believed in the ethical superiority of accepting reality for what it was, the former felt it was their duty to elevate imagination above perception and to then construct their own realities. This emphasis on the creative imagination “*sur le réalisme*” provided, unsurprisingly, many of the ‘foundation texts’ for the later Surrealist movement, from Baudelaire’s visceral verse to Odilon Redon’s oneiric black-and-white lithographs (Redon was, of course, one of the principal French ‘Wagnerites,’ an affiliation that arguably influenced many of his stylistic idiosyncrasies).

Unsurprisingly, some of the more nuanced latter-day defenders of this movement (again including Valéry, in his “The Existence of Symbolism”)²³¹

231 “I must go back to astronomy for the image of a nebula that, when seen through a telescope, can be distinguished from other celestial objects; it has been situated and even christened. But looking through a large telescope that brings us a little nearer to this remote system, we find it to be composed of separate stars that differ greatly in color, size, and brilliance. So it is that the closer one looks at our future symbolists, the more they seem to be marked by total differences, by incompatibilities in their styles, methods, preconceptions, and aesthetic ideals. We are forced to this double conclusion, that almost no unity of theories, convictions, or techniques is to be found among these authors, but that they are none the less related to one another, held together by something not yet visible, or at least not revealed by mere inspection of their works; on the contrary, the inspection shows that these are mutually incomparable.” Valéry (1957).

chafed at the application of the "Symbolist" epithet to what they saw as an irreconcilably diverse group of artistic personae. The activities of these aggregated individuals ranged from genteel salons to inflammatory public exchanges and fistfights, with educational backgrounds also running the gamut from academic to more "informal" education, and with expressive forms being sometimes wildly different from one another. The very well documented activities of this scene were profiled in over a *hundred* journals to be published in the latter stages of the 19th century, which testified (not unlike the "zine" explosion of more recent years) to a special skill for public relations work that may have overstated the importance of the Symbolist movement, yet did effectively show what it was capable of as well.

RESURGENT ROMANTICISM?

There is some truth to the fact that Symbolism was an aftershock of Romanticism, especially in that it returned to the German metaphysics of Schopenhauer and Fichte for philosophical cues and, particularly during the productive 1880s, to a Wagnerian view of music *avant toutes les choses*. The transposition of this worldview onto French cultural life did not begin very gracefully, by any means. The 1861 premiere of Wagner's *Tannhäuser* in Paris was famously disrupted by the upper-crust rabble-rousers of the 'Jockey Club' - those top-hatted socialites who are now immortalized by Edgar Degas' period paintings - and otherwise had disastrous implications for Wagner's reception in the French operatic world. None other than the martyr of the *Fleurs du Mal* trial would come to the composer's aid when a pamphlet from Baudelaire titled *Richard Wagner et Tannhäuser à Paris* appeared, and helped to keep his name a topic of discussion among at least the radical poets of France (incidentally, Baudelaire quoted two verses of his own «Correspondances» in this pamphlet while arguing for the transcendent value of the Wagnerian aesthetic). Amazingly enough, the re-awakened enthusiasm for Wagner continued even in spite of his

vengeful 1870 essay - «A Capitulation» - written to commemorate the French defeat in the Franco-Prussian War.

Once Stephane Mallarmé was effectively given the reins of the Symbolist movement, the connection to Romanticism and the Wagnerian ethic of artistic synthesis would become clearer, as he was «tempted by the ideal aesthetic phenomenon of the fusion of the arts as the most powerful expression of the Idea, in the ultimate work, *l'OEuvre*.”²³² Symbolism aspired to a blurring of the disciplinary boundaries not only between different art forms, but also between poet and critic, as exemplified by Baudelaire’s contemporaneous reviews: his glowing appraisal of his hero Delacroix’ visual artworks (i.e. “a volcanic crater artistically concealed beneath bouquets of flowers”) provides one noteworthy example of such, and he contended that “the best account of a picture may well be a sonnet or an elegy.”²³³ Baudelaire’s reviews, which were clearly done on his own terms - since they were deliberately limited to pieces that delighted or disgusted him - embodied as well as anything Symbolism’s rejection of the naturalist claim that one could paint a ‘complete,’ yet simultaneously disaffected, picture of any given phenomenon.

PROMETHEUS RISING

The mission of Symbolism seems to have been the materialization and public dissemination of spiritual qualities that, in previous eras, would have been reserved for a ruling elite. So, it is no arbitrary thing that the character of Prometheus, the mythological hero who thieved fire from the Olympian gods to bestow it upon humanity, is a recurrent figure in the works of Symbolism. If the movement was not always successful in these aims, and tended to court the type of criticism that is exemplified

232 Pamela A. Genova, “Word, Image, Chord: Stéphane Mallarmé and the Interrelationship of the Arts in LateNineteenth-Century Symbolist Literary Reviews.” *Dalhousie French Studies*, Vol. 36 (Fall 1996), pp. 79-102.

233 Werner (1966).

by Wells' quotation above, it is partially due to the fact that this revelation of spiritual qualities required the triggering symbols to be clearly and objectively comprehensible, a requirement that would have meant a dilution of the artistry that went into conjuring those symbols. Whatever their shortcomings may have been in this area, though, the 19th century Symbolist impulse - geographically distributed from France to Russia - made definite strides towards instilling a synesthetic or cross-sensory awareness in all who were willing to pay attention.

Here it may be important to consider the differences between synesthetic awareness as a primary condition - which, again, is the triggering of two or more simultaneous impressions from one sensory input - and synesthetic illusion as just one of the possible secondary effects of hyperaesthesia, or abnormally heightened sensitivity to stimuli. Baudelaire's approach was, after all, neatly summarized as being "the poetic expression of a state of weary yet restless reaction from the confidence of scientific determinism...a sort of literary hyper-aesthesia, rising at times to a real emotional hysteria."²³⁴ Where the poetic community was concerned, this intense affectivity was a thing to be envied, rather than a neurological disorder to be prevented: Baudelaire's consistent supporter Théophile Gautier lauded this propensity for "taking colours from all the palettes, notes from all the keyboards, striving to render one's thought in what is most ineffable, and form in its most vague and evasive contours."²³⁵

The poet's immersion into a hyper-aesthetic state may not have been the same thing as a clinically diagnosed synesthesia, especially considering the artificial heightening of his senses that came about during his immersion in the trance-inducing smoke of the "Club des Haschishins." Whatever its origins may have been, though, other critics have lauded Baudelaire's advanced sensitivity for the progressive attitude it kindled: "[it] enabled him to be always, as it were, at the centre of a sensation,

234 Wells (1895).

235 Quoted in Arthur Symons, "Charles Baudelaire." *The Lotus Magazine*, Vol. 9, No. 7 (April 1918), pp. 346-347, 349-352.

never to experience anything externally [...] never to be content with a mere verbalism."²³⁶

Among those who were in agreement, and who ensured that the Baudelairean influence would continue to resonate with young rebels of the 20th and 21st centuries, was Arthur Rimbaud, the eternal *enfant terrible* of French letters. Rimbaud was explicit enough about his poetic parentage, calling Baudelaire the "king of the poets...a true god," and carrying on that luminary's Promethean work with his own program of *dérèglement de tous les sens* [derangement of the senses], a deliberate disordering of perceived phenomena from which a new and more universal communicative form could arise. His famed prose-poems *Un Saison en Enfer* and *Illuminations* both provide fertile ground from which his delirious imagery can grow, with the latter featuring a particularly interesting episode entitled "Alchemie du Verbe [Alchemy of the Word]." Among the series of fantastical claims made by the poet in this section (e.g. "I found the still point of the turning Earth" or "I recorded the unnamable"), he confesses that

I invented colors for vowels! Black A, white E, red I,
blue O, green U - I regulated the shape and movement
of every consonant, and, based on an inner scansion, I
flattered myself with the belief I had invented a poetic
language that, one day or another, would be understood
by everyone, and that I alone would translate.²³⁷

Rimbaud further demonstrated this inventive ability by penning "Voyelles", the "...famous (or infamous) sonnet in which Rimbaud assigned a different chromatic value to each of the vowels, bringing things to the point in which the three letters e, i and o - as François Coppeé's mocking epigram

236 James Laver quoted in Charles Baudelaire, *The Flowers Of Evil*, p. xxix. Ed. James Laver / Trans. 'by various hands.' The Easton Press, Norwalk CT, 1991.

237 Arthur Rimbaud, "A Season in Hell." Reproduced in *Rimbaud Complete*, p. 208. Ed. And trans. Wyatt Mason. The Modern Library, New York / Toronto, 2003.

put it - '*form le drapeau tricolore* [form the tricolor flag.]'²³⁸ Coppeé, on the editorial board of the magazine *Le Parnasse contemporain*, seemed to have an ax to grind with Symbolists in general - to the point of refusing the publication of Mallarmé's *L'après-midi d'un faune*, now considered one of the benchmarks of Francophone poetry. Rimbaud, meanwhile, is also criticized as one of the many *faux-synesthetes* who merely "played with colored building blocks as a child," and has a lingering memory of such associations: in this case, the correspondences laid out in "Voyelles" were rumored to have been derived from Rimbaud's favorite childhood spelling primer.

Another variation upon the synesthetic ambition of Baudelaire and Rimbaud would be provided by Mallarmé's student René Ghil (who, upon having some heated arguments with his superior in 1888, would be expelled from the former's circle). Ghil, taking some cues from a study of Marin Mersenne's *Harmonie Universelle*, modified Arthur Rimbaud's synesthetic "vowel spectrum" to create his own system - to be known as *l'instrumentation verbale* - whereby each consonant or vowel sound also 'called up' the tones or timbres of diverse musical instruments. The 'timbre-centric' nature of Ghil's system meant that any note played on a given instrument had a corresponding color that remained unaltered regardless of the pitch of the played note(s) - a theory that would put him out of step with Symbolist composers to come (e.g. Aleksandr Scriabin) and with 20th century composers (Olivier Messiaen, Arnold Schoenberg) who intuited that musical pitch was the factor determining the corresponding colors. The downplaying of the importance of pitch also meant that melody itself was not carefully considered, a fact that hampered any of Ghil's ambitions towards the musicality of his poetry.

Perhaps owing to these factors, Ghil's system was no more widely accepted by the public at large than that of its predecessors, and the so-called *École Instrumentiste* [instrumentalist school] meant to proselytize

238 Renato Poggioli, *Theory Of The Avant-Garde*, p. 133. Trans. Gerald Fitzgerald. Belknap / Harvard, Cambridge / London, 1997.

this method was seen as “ more of an exercise in debate than it was a fact.”²³⁹ More tragically for Ghil, neither his poetic nor his theoretical labors have become canonical, whereas we can at least concede that the poetic style of the more prominent Symbolists lives on - even if their synesthetic aspirations are downplayed or ignored.

THE SCENT OF FAILURE? THE CASE OF ROINARD’S SONG OF SONGS

The over-reaching ambitions of French Symbolism arguably reached their zenith in an 1891 Paris evening at the Théâtre d’Art, which featured a performance of *The Blind* by Maurice Maeterlinck, but gave star billing to the *Song of Songs* by the lesser-known Paul-Napoléon Roinard. A promotional announcement issued before the event in *L’écho de Paris* enticed future attendees with the promise of “a *mise-en-scène* of a painting unknown to the public or with a project of a painter of the new school. The curtain will remain up on the tableau for three minutes ...scenic music and combined scents suited to the subject of the represented picture will prepare for it and then will perfect the impression.”²⁴⁰ For good measure, and to fully lend the imprimatur of Symbolism to the event, Baudelaire’s “Correspondances” was also quoted in this same space.

The staging of the ‘main event’ at one o’clock in the morning makes it tempting to view the event as the *fin de siècle* precursor to the raves of a century later: however, where disruptions of those events typically came at the hands of police authorities, Roinard’s synesthetic exhibition would fall prey to one of the legendary audience revolts that pepper the history of French performance culture (though rumors of such revolts are perhaps more common than actual documentation of such). At strategic points throughout the performance, fellow Symbolist poets volunteered to navigate the audience and spray perfumes on cue with changes in sound

239 Edward Kearns, “The Idealisms of 1886: René Ghil, Mallarmé, and a ‘Présence de Baudelaire.’” *The Modern Language Review*, Vol. 89, No. 2 (Apr., 1994), pp. 318-327.

240 Quoted in Deák (1976).

and color, though their presence only underscored the divide between the Symbolist faithful and the 'unconverted,' who responded to this artistic synthesis either with puzzlement or with incredulous laughter. Vaporized scent was simply too difficult to direct in such an environment, and was quite unlike musical or visual stimuli in that it was difficult to prevent involuntary interference: whereas an audience could remain silent during musical performance, and a theater could be darkened to allow the greater impact of artificial stage lighting, the smells of the audience members themselves - many of whom presumably wore their own perfumes for this night out - could not be as easily neutralized.

Roinard blamed this event's embarrassment upon a number of factors: the late starting time, the inability of the chorus to sing in tune, and the weaker than expected effects of the color projections and dispersed scents. However, despite owning up to *Song of Songs'* failure, Roinard remained confident that stagings of synesthesia-influenced works could have a profound impact on their audiences. His next play, *The Mirrors*, was to retain the idea of sensory correspondences, but this time to simply include sensory cues on a program that accompanied the play: by merely *seeing* the name of a color listed alongside that of a scent, he believed that the association would be made in the minds of those assembled.

Yet the reception to Roinard's work, which might justly be understood as a resolute failure, nonetheless shows a characteristic attendant to Symbolism, in which certain types of failures can be successes in their own right. Where poets are concerned, Louis Marvick claims "there is a certain *cachet* in the reputation for having gone too far in [the] direction [of synesthetic study]"²⁴¹ Yet the oft-maligned poets would not be the only of artists wishing to shatter the limiting of their own aesthetic forms, nor would the French nation remain the sole bearer of the Promethean synesthetic flame once the innovative period of Symbolist poetry had run its course.

241 Louis W. Marvick, "René Ghil and the Contradictions of Synesthesia." *Comparative Literature*, Vol. 51, No. 4 (Autumn, 1999), pp. 289-308.

THE LAST PROMETHEAN:
ALEKSANDR SCRIBIN AND RUSSIAN SYMBOLISM

Arise, terrors,
 Try to destroy me
 Gaping dragons' jaws,
 Snakes, entwine, stifle, and bite!
 When everything arises
 Against me
 Then will I begin
 My
 Play.
 O waiting world,
 Exhausted world!
 You thirst to be created,
 You seek your creator.
 Softly there flew to me
 The sweet moaning Of the call.
 I am coming.
 Already I abide in you, O world of mine!
 With the secret charm
 Of unknown feelings,
 With a host of dreams and fancies,
 With the fire of inspiration,
 With the search for Truth,
 With the forbidden longing
 For divine freedom.
 O my beloved world, I am coming.
 Your dream of me--
 This is I who is born.

- Aleksandr Scriabin, "The Poem of Ecstasy"

While the poetry of Mallarmé, Baudelaire and others provided the essence of Symbolist art for many, the tightly knit French *cenacles* provided only one national interpretation of this unapologetically ecstatic, often pantheistic form of expression. The poets Hugo von Hoffmanstahl and Stefan George (Austrian and German, respectively) stole back some of the fire that the French poets had appropriated from the native tongue of all things *Wagnerienne*. This is not to imply competition, though: these two individuals often worked in concert with their French counterparts rather than getting involved in any sort of a rivalry, providing German-language translations of key works and, in Hoffmanstahl's case, offering Rimbaud-esque prose poems alternating between hallucinatory beauty and the horror of the void (Hoffmanstahl, for the record, did not identify completely as a Symbolist, but classified it as one of many visionary currents of contemporaneous art).²⁴²

It is the Russian Symbolists, however, who seem to make the greatest case for themselves as the rightful torchbearers of the ideals propagated by their French counterparts. Within the Russian Symbolist movement we can also find some of the most compelling continuations of the *correspondance* aesthetic initiated by Baudelaire and Rimbaud. Whereas the Parisian ecstasies centered their efforts on poetry that aspired to the condition of music, the most intriguing representative of Russian Symbolism was a musical composer proper. Aleksandr Nikolai Scriabin, though he was born nearly twenty years after the publication of *Les Fleurs du Mal*, came to encapsulate the whole variegated history of Symbolism in his intense and dramatic corpus of piano sonatas, symphonies, and occasional poetic texts.

Surviving photographs of Aleksandr Nikolaievitch Scriabin reveal a handsome, inquisitively gazing character, with a somewhat Nietzsche-an mustache obscuring his facial expressions. Born already in Wagner's waning years (1872, to be precise), Scriabin spent much of his life in the European

242 "I hear some books called naturalistic, some psychological, and others symbolist. For a person who has experienced what it is to read there is just one sign of a poetic creation: that it is born of vision." Quoted in Herbert Steiner, "A Note on 'Symbolism'". *Yale French Studies*, No. 9, Symbol and Symbolism (1952), pp. 36-38.

capitals of Paris, Brussels and Amsterdam, eventually returning home in 1898 to teach at the same Moscow Conservatory at which he studied. In his biographical thumbnail sketch included in the *New Encyclopedia of Music and Musicians*, his drift into “impressionistic paths...and even into the most radical revolt against conventional forms and methods”²⁴³ is noted as beginning in 1905, two years after he completed his tenure at the Conservatory (and, maybe not so coincidentally, during the Russian Revolution of the same year). This brief profile also charitably notes how the results of his aesthetic approach were “often impressive and even beautiful” because of the “thorough conviction and great ingenuity”²⁴⁴ that allowed them to rise above an otherwise troublesome set of mystical inclinations that - following on Valery’s estimation of the French Symbolists - was more concerned with creating new audiences rather than with soliciting existing ones.

For better or worse, these inclinations led him to become the poster child for all of the excesses and otherwise implausible features of synesthetically inspired art - Scriabin did claim to have some talent in the area of synesthetic perception. It has to be said that Scriabin was no more a clinical synesthete than any of the other Symbolists, and this is borne out by surviving notebooks which show that he modified his synesthetic inclinations over time (compare this with the irrevocably fixed cross-sensory stimuli that true synesthetes experience throughout the course of their lives). It is possible that he did adventitiously acquire some such abilities throughout his life - to what degree, though, it is difficult to tell.

Whether or not his contemporaries were aware of his claims to synesthesia, he still proved to be a divisive individual on the merits of his compositional style. One posthumous reassessment of the composer’s work views him in a much harsher light than his *New Encyclopedia* profile, insisting that “the hectic erethisms of this latter composer, his morbid striving after stronger and ever stronger sensations and his frequent wallowing in what one

243 *The New Encyclopedia of Music and Musicians*, ed. Waldo Selden Pratt, p.746. MacMillan, New York, 1929.

244 *Ibid.*

might term the very mire of hysterical emotions, if they are comparable with anything remotely connected with religion, can only be likened to the most extravagant and unbalanced excesses of a Salvationist prayer-meeting."²⁴⁵ Another critic writing in the 1920s, Alexander Brent-Smith, begrudgingly acknowledging the continuing support that Scriabin's work was then receiving, noted how

...those frequent shakes (*puissant, radieux*) and ejaculatory snippets of sound, so beloved of Scriabin, are but the vertically rising sparks which belch forth from the chimney of a traction-engine, proving that the engine is certainly going, but at such a slow rate and upon such cumbersome wheels that progress is scarcely perceptible.²⁴⁶

Nonetheless, such criticisms only came about in the first place because of the wild enthusiasm that Scriabin's music was generating among his audiences - such critics seemingly saw it as their duty to defend the corpus of sublime music from what they perceived as philistines who judged works' merits upon their intensity levels alone.

If Nietzsche had found Wagner's *Gesamtkunstwerk* unbearable, we can only imagine what kind of words he might have had for Scriabin's treatment of the same concept (and despite a fondness for Nietzschean thought and a limited knowledge of Wagnerian theory, Scriabin would eventually side with Wagner after Nietzsche began his campaign of anti-Wagner polemics).²⁴⁷ The Russian composer's flights of romanticism led him to downright cataclysmic aims for his own version of the total artwork, an "eschatological Mystery" that would "transfigure the universe in a glorious Act of Celebration, freeing man's creative spirit and resolving life's dissonances in perfect harmony."²⁴⁸

245 Herbert Antcliffe, "The Significance of Scriabin." *The Musical Quarterly*, Vol. 10, No. 3 (Jul., 1924), pp. 333-345.

246 Alexander Brent-Smith, "Some Reflections on the Work of Scriabin (Concluded)". *The Musical Times*, Vol. 67, No. 1002 (Aug. 1, 1926), pp. 692-694.

247 Malcolm Brown, "Scriabin and Russian 'Mystic' Symbolism." *19th-Century Music*, Vol. 3, No. 1 (Jul., 1979), pp. 42-51.

248 *Ibid.*

Like Wagner, Scriabin's estimation of the arts could be confusing. On one hand, his own proclamations seem to place him squarely within the familiar Schopenhauer / Nietzsche school of thought that music is "in the hierarchy of the arts...more spiritual, more mystic, and less tied to the mental plane."²⁴⁹ Yet, again like Wagner, Scriabin placed great importance upon the transformative power of achieving a synthesis of, or correspondence between, the arts. Ultimately, Scriabin's ambitions in this area went beyond the presentation of 'music drama' and represented some of the earliest efforts to develop actual tools for synesthetic simulation. Scriabin's *Prometheus: The Poem of Fire* (Op. 60, 1910) was the first composition written with a score for "light organ," a device built by the engineer Aleksandr Mozer and offering up projections of colored light that would be assigned to different sound tonalities. Though only loosely based upon the myth of Prometheus, the piece's "hectic erethisms" - largely the result of employing a special six-note "mystic chord" or "Prometheus chord" - do provide something of a meditation upon that character as an archetype of spiritual transformation and the sacrifices that must be undergone to attain it.

Though, in Scriabin, Newton's *Opticks* again provided some of the basis for a theory of correspondences between audible and visible tones, the former's theories went beyond the attempt at proving scientific equivalencies, adding a new element: namely, that certain color-sound correspondences also spoke to distinct spiritual qualities. So, in Scriabin we see a composer whose mania for synthesis also drove him to fuse Newton's postulations with the metaphysical theories of Schopenhauer regarding the way in which different tones embodied different degrees of Will. Unlike Schopenhauer, however, Scriabin's system was not a perfectly linear one matching the "lowest" audible tones with the "basest" manifestations of Will, or with similar pairings at the opposite end of the spectrum. Though there was some overlap with this theory where the colors were concerned, the treatment of musical notes was altogether different and seemingly

²⁴⁹ *Ibid.*

more arbitrary, with a note like F-sharp corresponding to blue, and the lower-pitched D-flat being assigned to violet.

BLUE ROSES IN BLOOM

Appreciation of such theories would ideally provide the means through which audiences could comprehend a sort of substrate of reality, and would also provide one crucial break from the Schopenhauer-Nietzsche *Weltanschauung*: unlike the two German philosophers, who felt that music provided a 'direct line' to universal essences and to the Will itself, Scriabin employed music (synesthetically 'colored' or otherwise) as a hallucinogenic engine meant to shuttle the listener towards a transcendental reality presumably more rapturous than what German metaphysics had posited.

Although there was no Russian branch of the Theosophical Society organized until 1908 (its establishment followed on the heels of other social reforms enacted after the Russian Constitution of 1906 ceded power to the first State Duma) Scriabin was already a member of the Belgian section of the Society, being welcomed into the fold by the painter Jean Delville. Delville's foundation of the Belgian *Salon d'Art Idealiste*, concurrent with his Theosophic affiliations, gave him a kind of spiritual kinship with the English Pre-Raphaelites and thus made him another key cultural flashpoint of the esoteric and decadent 1890s. Shortly after his initiation into Theosophy, and during the tour of European capitals that he undertook before returning to teach at the Moscow Conservatory, Scriabin collaborated with other Belgian Theosophists on an essay about the aesthetics of language.

Scriabin was also closely associated with the synthesis-minded, Muscovite 'Blue Rose' group of Symbolists who were named after Novalis' similarly named masterwork, and who were organized with help from the finances of one Nikolai Rabushinsky. It was this fraternity that would, more so than

the Theosophical connection, really provide the composer the atmosphere he needed for his fiery flowers to bloom. As Malcolm Brown recalls,

Neither Wagner nor Nietzsche nor Solovyov nor Blavatsky would provide the essential substance for Scriabin's final vision of an eschatological Mystery. Nor would his passing absorption with the psychological theories of Wilhelm Wundt, nor his somewhat longer excursion into the indulgent solipsism of Johann Fichte. Straining to coordinate the several strands of aesthetic, mystic, religious, and philosophical thought that had increasingly preoccupied him since the turn of the century, Scriabin discovered in Russian Symbolism the compatible doctrine he craved.²⁵⁰

Russian Symbolism as a whole was in operation since the early 1890s (which would have still qualified as the "early" phase of Scriabin's compositional career), and largely developed around the philosophical and mystical of Valery Bryusov and the Solovyov-allied contingent spearheaded by the poet Vyacheslav Ivanov. It is tempting to interpret the goals of the Russian Symbolism of Valery Bryusov, namely its determination to "free art from utilitarian goals and to fuse art with life,"²⁵¹ as a mission that would lead inevitably to experimentation with other types of fusion, including that of the senses. The "symbols" from which the movement took its name were poetic motifs meant to aid in this reintegration, containing an atavistic power that would re-familiarize their recipients with the transformative power of initiatory rituals or pre-verbal modes of being. While the original circle of Symbolists organized around Bryusov were more of a literary think tank, the Ivanov-centered clique developed from his demand that Symbolism be more than "mere" art, and that it incorporate theurgic study as well - this was the heady fraternity that Scriabin would find himself

²⁵⁰ *Ibid.*

²⁵¹ Simon Morrison, "Scriabin and the Impossible." *Journal of the American Musicological Society*, Vol. 51, No. 2 (Summer, 1998), pp.283-330.

simultaneously influencing and being influenced by. Like other groups of their ilk, the Blue Rose Symbolists were often caricatured as bohemian slackers whose chief cultural contribution were their heated arguments at gathering places like Moscow's 'Greek Café,' yet their omnipresent imprint upon cultural events of the era - from releasing the Symbolist journal *Vesy* ['Scales'] to designing home interiors - suggests otherwise.

In the winter of 1909, Scriabin visited St. Petersburg for the local premiere of his *Poem of Ecstasy*. During this visit, he seized on an opportunity to make his entry into the aesthetically demanding world of the St. Petersburg Symbolists, affirming his bonds to this group with a musical recital given at the publication center of the Symbolist *Apollo* journal. Among those impressed with Scriabin's performance was Ivanov, who would influence Scriabin in turn (the latter wrote excitedly in his correspondence that "he's so close to me and my thought - like no one else.")²⁵² The fraternal relationship between Ivanov and Scriabin would be a significant and productive one for both parties, as evinced by the loving elegies that Ivanov would later compose in Scriabin's memory.

Ivanov's Nietzschean fervor may have caused him to follow that philosopher's lead in becoming disillusioned with the Wagnerian program: as Simon Morrison recalls, "the basis for [Ivanov's] vision of communal art was not the Bayreuth *Festspielhaus* but the theater of ancient Athens, where Ivanov believed poets had communed with the populace, their integration of poetry and music facilitating spiritual catharsis and rebirth."²⁵³ Indeed, Ivanov felt that Wagner had provided a poor approximation of the Dionysian mysteries by making audience participation impossible. A 'total artwork' in which the crowd did not contribute with song and dance was meaningless in Ivanov's estimation; the involvement of the *sobornyi* [an alternative to *kolektivnyi* that retains a meaning of "spiritual brotherhood" rather than the more ambiguous "collective"] was essential to the efficacy of the work presented. The *sobornost* that Ivanov theorized together with

²⁵² *Ibid.*

²⁵³ *Ibid.*

Georgii Chulkov was a type of “mystical anarchism” that synthesized the communal spirit of the Dionysian rites with extreme individualism. The main bonding point between Scriabin and Ivanov, then, was not Wagner’s *Gesamtkunstwerk*, but a common appreciation for Solovyov’s prophecies of a transcendent creative revolution.

It is important to note that the Ivanov school’s skepticism towards both the aims of Wagner and the French Symbolists, along with their more localized or indigenous approach to the arts, did not equate to a wholesale rejection of the Romantic ‘sensory correspondences’ ethos by any means, and in fact Ivanov’s essay *Two Elements in Contemporary Symbolism* praised none other than Baudelaire’s “Correspondances” as “the fundamental doctrine and [...] a confessional statement of faith for the new poetic school.”²⁵⁴ Even here, though, Ivanov’s relationship with the synesthetic aspirations of Symbolism is a complicated one: “Correspondances” was not among the Baudelaire poems that he personally translated. Despite Baudelaire’s escaping the type of condemnation that Ivanov might have reserved for lesser lights of the same poetic school, Ivanov may have disliked the poem for its focus on eroticization of the natural / sensual world rather than for its communication of mystical essences leading to another world entirely. Complicating matters still further is Adrian Wanner’s theory that Ivanov actually attempted to resuscitate the poem’s popularity by deliberately ignoring it; i.e. stripping it of its status as a “classic” of the genre.²⁵⁵

Ivanov, along with Scriabin-enabling poets like Konstantin Bal’mont, also had little reason to act as the Slavic spokesman for Baudelaire’s work once Scriabin began his synesthetic studies in earnest. Fascinated with the seeming omnipotence and mystical importance of solar energy, Scriabin concluded that a programmatic manipulation of light was a necessary component in performances that strove to have a revelatory impact. Though

254 Gerald Janacek, “Viacheslav Ivanov’s ‘Alpine Horn’ as a Manifesto of Russian Symbolism.” *The Slavic and East European Journal*, Vol. 45, No. 1 (Spring, 2001), pp. 30-44.

255 Adrian Wanner, *Baudelaire in Russia*, pp 174-175. University of Florida Press, Gainesville, 1996.

it has to be reiterated that Scriabin's revision of his synesthetic theories makes it unlikely he was a clinical synesthete, he nonetheless claimed to "[feel] it so strongly that he was disturbed by Wagner's insensitivity to it, by his inconsistency in changing keys: "Dawn" in *Götterdämmerung* is in C-major (red) then in B-major (blue); the *Firemusic* in *Die Walküre* should be in G (orange), but that key is not used and the others are changed."²⁵⁶

Scriabin's score for *Prometheus* called for the full power of the symphony orchestra as it existed in that time, which meant a minimum of forty-two musicians in addition to the light organist - who would trigger a color on this device in accordance with the root note of a given harmony - and solo pianist. Again, bear in mind that the number of musicians listed above was a *conservative* estimate of what might be needed: Herbert Ancliffe warned that, because of the demands this piece placed upon the string section, it was "impossible to produce...with an orchestra of less than 100 or 200 players."²⁵⁷ Provided this orchestral force could be marshalled, performing *Prometheus* then called for very specific treatment of the colored lights: blue and green predominate in the opening movements, and again close to the end. Ideally, the entire event was to culminate in the entire concert hall being flooded with blinding white light, clearly signifying a kind of dissolution into pure, elemental energy.

Seemingly not contented with attempts to synthesize light and sound, Scriabin would later work with others in his orbit to up to synesthetically combine three arts at a time. Having attended some of the theatrical productions of Aleksandr Tairov - particularly the telling of the Puranic legend of Shakuntala, which featured such 'ahead-of-their-time' elements as multi-tiered stages and body painting - Scriabin struck up a partnership with his wife Alisa Koonen, and supplemented the 'light organ' music with dance. He was also apparently unfazed by the ridicule heaped upon

256 Ralph E. Matlaw, "Scriabin and Symbolism." *Comparative Literature*, Vol. 31, No. 1 (Winter, 1979), pp. 1-23.

257 Herbert Antcliffe, "The Significance of Scriabin." *The Musical Quarterly*, Vol. 10, No. 3 (Jul., 1924), pp. 333-345.

Roinard for his olfactory experiments, being convinced that the addition of fragrances to the already potent sight-sound correspondences would permit the human soul to transcend physical sensations altogether.

THE MYSTERIUM

The annals of music performance are packed with fantastic sketches for projects too demanding to be realized, and Scriabin's Theosophically influenced *Mysterium* deserves a special place among them. It was conceived as a piece for which there would be only participants, and thus no 'spectators' to speak of. It would also be the ultimate stage of the revival in the Dionysian mystery rites - in which the psychic energies of the participants combined to invoke a force that was greater than the sum of these individual energies - centered upon a huge, specially constructed temple in India. Scriabin's plans for the work again called for whatever sensory fusions were possible, as he recalls:

I thought a long time about how to achieve fluidity and creativeness in the very structure of the temple.... And suddenly it came to me it was possible to have columns of incense. ...they will be illuminated by the lights of the light-orchestra, and they will disperse and come back together again! They will be enormous fiery pillars. And the entire temple will consist of them. And the building will be fluid and changing, fluid like the music. And its forms will express the mood of the music and words.²⁵⁸

As Scriabin focused gradually more of his attention upon the realization of this project, even his reliable Symbolist comrade Ivanov began to complain, in correspondence to others, that the composer was "unstable" and had

²⁵⁸ Leonid Leonidovich Sabaneev, *Vospominaniia o Skriabine* [*Memoirs of Scriabin*], p. 149. Trans. Malcolm Brown. Moscow, 1925.

“something wrong with him, a serious spiritual ailment”²⁵⁹ (all this while he assisted Scriabin in writing the text for the piece!) Ivanov’s concerns stem partially from the fact that the *Mysterium* may be unique among orchestral works in that it was only meant to be played once: the reason for this was that the performance of the piece would, as its composer imagined, usher in the end of human life it was then known. A higher type of being would then be born from the humanity that had been extinguished in the ecstatic dance inspired by this work of works. The hoped-for outcome of the piece seemed wildly implausible for all but the most esoterically inclined associates of Scriabin, and certain aspects of its staging were hardly within the realm of possibility either: for example, massive airborne bells in the Himalayas - themselves obscured by clouds - were meant to sound the opening of the piece and to invite all of humanity to listen in.

So, not all of Scriabin’s ideas continue to command universal respect in our times: eschatological heavy metal bands have become a regular brunt of jokes for pretensions that pale in comparison to Scriabin’s world-transforming plans for the *Mysterium*. Elsewhere, his work that aimed at creating a synesthetic effect is not inoculated from the same kind of criticisms still aimed at the whole of Symbolist artwork (and in fact most synesthesia-inflected artwork, period). It is often seen as ignoring the needs of the larger human community in favor of willfully isolated, purely sensualist decadence. Yet, as Scriabin and Ivanov’s championing of the *sobornyi* indicates, this has never been wholly true. The composer Rodion Shchedrin has claimed that Scriabin’s work became a favorite of workers and soldiers alike in the wake of the 1905 revolution, and that it also accompanied radio and television documentary footage of these events. As to Scriabin’s being fully aware of the political realities that modulated his life, it has been noted elsewhere that he once “thought of an epigraph for the *Poem of Ecstasy*: ‘Arise, ye wretched of the earth!’”²⁶⁰

259 Nikolai Ul’yanov, unpublished memoirs, quoted by I. A. Myl’nikova, “Stat’i Vyach[eslava] Ivanova o Skryabine,” i n Pamyatnik ul’tury. N orye otkrytiya. Ezhegodnik 1983, ed. T. V. Nikolaeva (Leningrad: Nauka, 1985), 92.

260 Matlaw (1979).

A LEGACY OF ECSTASY

Scriabin died with the tragic realization that neither the *Mysterium* nor its *Preparatory Act* would come to fruition in his lifetime, and the knowledge that a great cataclysm might sweep over the earth without necessarily leading to a worldwide enlightenment, as was then happening with the first World War: the great conflagration that then consumed the Western world would not be one between materialism and spiritualism, as the Theosophists had predicted, but would simply an inconclusive intensification of the territorial struggles that had been consuming mankind for centuries. Yet Scriabin was luckier than most who have made the creative arts their life's work, in that his influence would continue to be felt well into the twentieth century and beyond. This influence would be manifested in similarly adventurous composers, including those - e.g. Stravinsky - who would become much more identified in the West with the Russian avant-garde than Scriabin himself. As noted by Orlando Figes, upon Stravinsky's first return trip to Russia since the revolution of 1917, he found that the Scriabin Museum in Moscow had "become a sort of underground meeting place for avant-garde electronic composers."²⁶¹ As another Scriabin-related event suggests - namely, the Russian broadcast of *Poem of Ecstasy* to accompany both Yuri Gagarin's manned space flight, and his return to earth, in 1961 - the Promethean, futuristic trajectory of his work was seen as being eminently suited to moments of great historical rupture.

Another salient 'post-Scriabin' figure is the Italian composer Giacinto Scelsi, who also developed much of his characteristically austere style upon concepts introduced by Rudolf Steiner (although Scelsi's music, as pointed out by Robin Freeman, depended much more upon a bracing "balancing of tensions" than upon a Steiner-ian "negation of conflict.")²⁶² We could

²⁶¹ Orlando Figes, *Natasha's Dance: A Cultural History of Russia*, p. 213. Picador, New York, 2002.

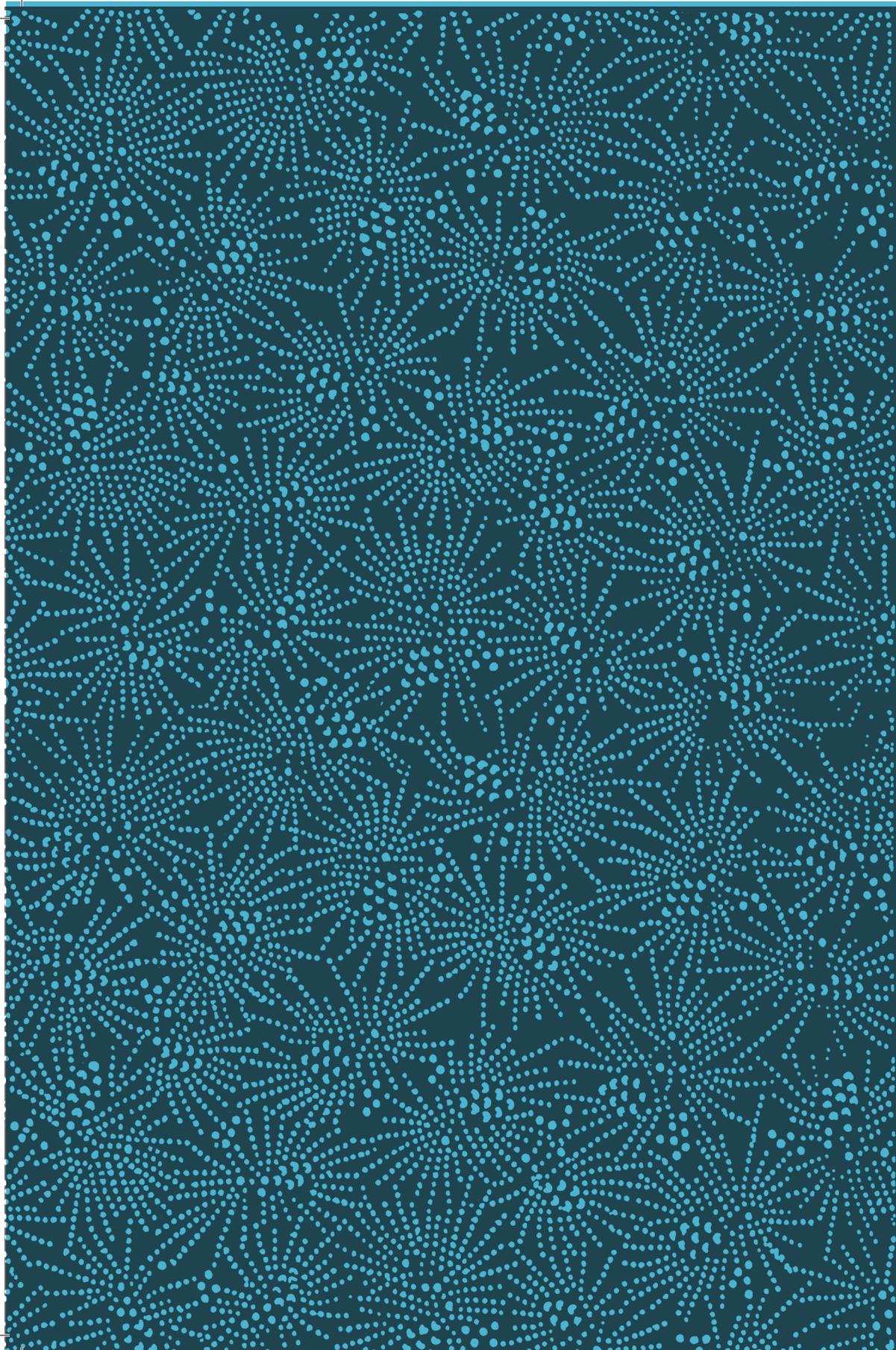
²⁶² Robin Freeman and Giacinto Scelsi, "The Life and Work of Giacinto Scelsi." *Tempo*, New Series, No. 176 (Mar., 1991), pp. 8-18.

also speculate that the latter's travels to India and Tibet, though not well documented, might stem from a Scriabin-esque kind of spiritual questing. It is not as evident, though, that Scelsi had any interest whatsoever in the idea of the *Gesamtkunstwerk* or in the notion of binding sound to visual data. His disdain for imposing upon the listener's imagination with imagery was famously (and humorously) stated when he demanded that composers should avoid "the stupid habit of having photographs made of themselves...showing themselves with their blunt noses."²⁶³ Scelsi's faith in the superiority of sound as a creative force was clear, relying upon the cosmology that tasked the Devas with bringing a "new kind of vibration" to the world.

Whatever impact Scriabin ultimately had upon the arts, it was increasingly evident that, upon his death in 1915, "the mass mobilization of bodies and decor was being bankrolled in Hollywood, not the Himalayas, and it was spectatorial, not participatory."²⁶⁴ The synthesis of the arts would soon become not just the business of composers but of filmmakers, many of whom would be active in Scriabin's Russia. The 'total artwork' may have become absorbed into cinematic culture, though a completely separate visual culture - one founded upon many of the same speculations that guided Scriabin's work - would precede this as well. While still staying rooted in the same historical era, we now turn to the efforts of that culture.

263 Giacinto Scelsi and Michela Mollia, "Ohne Titel." *Perspectives of New Music*, Vol. 22, No. 1/2 (Autumn, 1983 - Summer, 1984), pp. 265-272.

264 Jed Rasula, "'Listening to Incense': Melomania & the Pathos of Emancipation." *Journal of Modern Literature*, Vol. 31, No. 1 (Fall, 2007), pp. 1-20.



CHAPTER 7

"COLOR IS THE KEYBOARD OF THE SOUL": SYNESTHESIA IN THE FORMATION OF ABSTRACT ART

The Modernist era of artistic development is most remembered for being the time in which the truly non-representative work, particularly within pictorial art, came into its own. Painted subjects, -being imperfect and ambiguous suggestions of forms, or perhaps depictions of transitions between forms - were not only more radical than before, but the painters of such subjects were less encumbered by allegiances to societal authorities, and less likely than ever to deliberately appease the public. As Romanticism and Symbolism gradually became supplanted by Modernism as the reigning paradigm of the avant-garde, it became evident that - as Anne Hollander suggests -

...spiritual expression required some transmutation through paint itself, not just by means of the old lexicon of religious terms. Artists of the past with a claim to greatness, whatever their announced themes and known patrons, must appear to have fundamentally detached their artistic selves from the requirements of the church, the duke, or the academy, from everything but their personal responses to the demands of painting when they actually took up the brush.²⁶⁵

Though it is overly simplistic to say that abstract art stood only for a rejection of discreet forms in favor of "pure" color, much of the early work in this area did seek different uses for color beyond the adding of believable realism to recognizable pictorial objects. Many early practitioners of this art knew fully well that they walking on artistic *terra incognita*, and - rather

265 Anne Hollander: "Caspar David Friedrich: The Landscape of Longing." *The New Republic*, April 1 1991, pp. 30-36.

than attempting to justify their work simply as a more 'advanced' level of pictorial creativity - instead forwarded it as an art that was more in tune with the nuances of other non-pictorial art forms. Following again upon the experiments of Ernst Chladni, the artists in the American synchronism movement saw all observable aesthetic phenomena as different subsets of waves, and boldly suggested that doing so would cause a curious effect whereby paintings contents' actually had an ability to transform over time. According to the synchronist artist Morgan Russell,

...we have considered light as intimately related chromatic waves, and have submitted the harmonic connections between colors to a closer study. These "color rhythms" somehow infuse a painting with the notion of time: they create the illusion that the picture develops, like a piece of music, within a span of time, while the old painting existed strictly in space, its every expression grasped by the spectator simultaneously and at a glance.²⁶⁶

Synchronism, of course, meant "with color" in the same manner as the word "symphony" meant "with sound," and so the process of matching wavelengths of light with their appropriate emotional resonances was implied as the guiding aim of the synchronist movement. As critics like John Bowlt have suggested, the transition into such a realm of 'pure' abstraction from the Symbolist school, whose painterly works depended upon vivid and highly articulate representations of discreet forms, was logical enough:

Both in painting and in graphics, outline of form came to be superseded by purely painterly elements as the intrinsically expressive characteristics of mass and line came to dominate the basic formal requirements of a given subject. Hence the stage was reached where the

²⁶⁶ Morgan Russell quoted in Gail Levin, *Synchronism and American Color Abstraction, 1910-1925*, p. 130. New York, 1978.

subject itself was almost dismissed in favour of the values *per se* of volume and space: it was only one step from this kind of product to the conception of the picture as a complex of extrinsically meaningless shapes and colours, to abstract art.²⁶⁷

The transition was not simply a matter of technical elements, however: many of the esoteric or magical inclinations that drove Symbolism would be shuttled into the radical new realm of abstract painting as well, and it was these spiritual inclinations which bore much of the interest in synesthesia on their shoulders. The essentiality of this esoteric theorizing to certain major artists' output was, even at the early stages, something that acted as a magnet for substantial criticism. Art critic Willard Huntington Wright, for example, believed that abstractionists' "[attempting] to define form by transcendental terms, or even to credit form with esoteric significance, reveals an ignorance of the principles of aesthetic emotion."²⁶⁸ Turning his ire towards the Russian-born abstractionist Wassily Kandinsky in particular (a process that required several pages of Wright's lengthy discourse on Modernist painting), he also scoffed that "there is nothing mysterious about aesthetic rhythm, and any attempt to 'spiritualise' the harmonies of art carries art so much further from the truth."²⁶⁹

Who, then, were some of the culprits responsible for bestowing this legacy of "ignorance" upon Modernism? One answer can be found in the 2008 Spanish art exhibition *The Great Transformation: Art and Tactical Magic*, organised by Chus Martinez at the Frankfurter Kunstverein and the Museo de Arte Contemporaneo de Vigo. A highly amusing sculptural piece in this exhibition stands out for its poignancy with regards to spiritual matters and their influence on the art world: Goshka Macuga's sculpture *Madame Blavatsky* shows the titular spiritual ideologue "levitating" by means of

267 John E. Bowlt, "Russian Symbolism and the 'Blue Rose' Movement." *The Slavonic and East European Review*, Vol. 51, No. 123 (Apr., 1973), pp. 161-181.

268 Willard Huntington Wright, *Modern Painting: Its Tendency and Meaning*, p. 309. Dodd, Mead & Company, New York, 1915.

269 *Ibid.*, p. 309.

resting atop two strategically placed chairs. This could be interpreted as a wry poke at how spiritual movements like Blavatsky's are commonly viewed within enlightened society, but is also a tacit acknowledgement of the hold that her ideas once had upon radical art.

HIGHER THAN THE TRUTH?

Synesthesia specialist Richard Cytowic writes, in the foreword to his seminal work on the subject, how his colleagues warned him against getting his hands dirty with a topic that was considered "too weird...too New Age." Certainly, there is much less hesitance nowadays to scientifically treat the subject (thanks in part to Cytowic's own efforts). However, the connection of synesthesia studies with the New Age, i.e. a type of syncretic belief system now seen as problematic for the incompatibility of its constituent beliefs, does have some definite historical precedent: whatever one thinks of the New Age movement, it is not irresponsible to claim that they assisted in directing artists towards synesthesia-oriented creativity. The monism proposed by late 19th century Theosophical Society - identified as a primary influence on the New Age syncretism of the late 20th century - seemed to encourage a quest for 'unity' in any given area of inquiry, which naturally extended to a unity of the senses. Once different wavelengths of visible light were determined to have "spiritual" values, the impetus was there for finding corresponding values in wavelengths of sound.

The Theosophical Society was a millenarian or apocalyptic order, in that it strove towards a specific historical endpoint - the inauguration of a "world teacher" that would conflate the roles of Christ and Buddha. This would occur only after a mystical brotherhood had been formed and had sufficiently primed the world for this event. Skepticism of Theosophical claims - if not outright ridicule of them - is not unique to our era; a time in which the founder of the Theosophical society can be called a

vendor of “crackpot pseudo-science”²⁷⁰ with little or no fear of serious rebuttal. From the very outset, Blavatsky’s work was met with much of the same derision that continues to greet self-proclaimed prophets and clairvoyants, particularly those who dare to borrow the terminology of the rational disciplines for use in promoting ideas that transcend human comprehension. A contemporaneous *Science* review of *The Secret Doctrine* opened with an unequivocal condemnation; “it is a pure fiction from beginning to end - a work of imagination, pretending to give an account of the creation and evolution of the world, but without even an attempt at proof.”²⁷¹ More embarrassingly for the group, it was not unusual for them to be rejected by representatives of the established world faiths that Theosophy drew upon - this was the case when Swami Vivekananda used the opportunity of the 1893 Parliament of the World’s Religions to distance mainstream Hinduism from Theosophy.

Cautions such as Vivekananda’s came far too late for some prominent aspirants to the Society. Most were probably unaware of Blavatsky’s colorful history of employment, which invited suspicion as to her spiritual sincerity (she was a former equestrienne, Tsarist police informer, nightclub singer, and proprietor of two separate businesses that eventually folded), while the Society’s backing of the teenaged Jiddu Krishnamurti as a messianic “world teacher” did irreparable damage once Krishnamurti repudiated the role in 1929 (such an admission of deception was a massive blow to an organization with a motto of “no religion higher than the truth.”) Yet Theosophy would not be figuring into this story at all if it hadn’t attained some degree of legitimacy in its time, and so a few words need to be said on the mid-19th century conditions that allowed for mysticism and esotericism to play a starring role in the continuation of synesthesia research. Temporarily putting aside the revolutions in political thought that characterized this time, let us focus for a moment on the Darwinian

270 Dieter Roelstraete, “On The Spiritual in Art, Again.” *Afterall: A Journal of Art, Context, and Enquiry*, Issue 20 (Spring 2009), pp. 5-15.

271 Author uncredited, “The Secret Doctrine: The Synthesis of Science, Religion, and Philosophy by H. P. Blavatsky.” *Science*, Vol. 13, No. 313 (Feb. 1, 1889), pp. 89-90.

turn of the 1860s and its unintended consequences on aesthetic life. Though not entirely the fault of the author, Darwin's *Origin Of The Species* became a watershed event, *pace* Jacques Barzun, "as much because of what it brought seething out of the European mind, as because of what it put into it."²⁷²

Though theorizing on natural selection began well before Darwin, and the conflict it generated would be better stated as 'purposiveness vs. randomness' than 'religion vs. science,' its impact on spiritual life was profound and seemingly irreversible. In a despairing scenario that philosopher John Gray suggests, "The result of scientific inquiry seemed to be that humankind was alone. Evolution would bring about the death of the species and eventually, as the sun cooled and the planet ceased to be habitable, life itself would die out."²⁷³ Such realizations did not cause a capitulation to scientism within Europe and elsewhere, but instead birthed a number of spiritual and mystical societies - Egyptian, Masonic, Kabbalistic and so on. Moreover, organized esoteric activity from the 1870s-1890s was embraced by, if not outright initiated by, the leading artists of disparate European nations: William Butler Yeats, for example, helped to establish the Dublin Hermetic Society in 1885, attending his first séance in the same year and blazing an occult trail that would lead towards his initiation into the Hermetic Order of the Golden Dawn a few years later. This is to say nothing of a marginally influential artistic figure like Aleister Crowley - a painter and composer of verse - whose comparatively infamous reputation as an occultist won him a retrospective appreciation of his artworks.

The post-Darwinian boom in spiritual and hermetic activity was exemplified by the 1875 founding of the Theosophical Society, and the contemporaneous Parisian revival of the Rosicrucian Brotherhood by Joséphin Péladan and Stanislas de Guaita. The former group, launched in the U.S. by

²⁷² Jacques Barzun, *Darwin / Marx / Wagner: Critique Of A Heritage*, p. 30-31. University of Chicago Press, Chicago / London, 1981.

²⁷³ John Gray, *The Immortalization Commission*, p. 24. Farrar / Straus / Giroux, New York, 2011.

Helena Petrova Blavatsky and Col. Henry Steel Olcott, was one esoteric organization that lent its mystical convictions to aesthetic practice, and - as already mentioned in this book's discussion of the Russian Symbolists - contemporary musical composition. In spite of this, the movement did enjoy some success in its day. Blavatsky's arrival at Cambridge even, in the early going, earned her a hearty welcome from the utilitarian philosopher Henry Sidgwick, himself busy with a group called the Society for Psychical Research. Though eventually Sidgwick "...recognized that Blavatsky was a charlatan and an imposter,"²⁷⁴ he was initially "unfazed by her claim to be receiving letters of esoteric wisdom from mysterious Tibetan masters."²⁷⁵ Elsewhere, the grandfather of eccentric modernist architect Claude Bragdon joined the Society nearly at its inception, initiating a multi-generational interest in Theosophist practice that would inspire the younger Bragdon's interest in séances and telepathy. More notable is the fact that Bragdon would essay some "color music" composition of his own; also showing interests in "a new kind of civic celebration" based on this art that echoed Scriabin's interest in the same.

The promulgation of Theosophy was cleverly done, using pseudo-Darwinian terminology to legitimize itself. Evolution was re-considered as a spiritual, rather than biological, process, wherein the *mahatmas* or adepts that came to possess psychic powers were not visitors from some celestial realm, but were instead more "highly evolved" humans. This attitude clinched for the organization a far-ranging appeal: as suggested by Sidgwick's early endorsement, Theosophy was not a creed that lent itself only to the febrile imaginations of artist-activists. Various advocates of social justice saw it as a meaningful way of harmonizing gains made in the political arena with advancements in spiritual life - the early 20th century environment of upstate New York saw "abolitionists and suffragettes easily and naturally evol[ing] into naturalists and theosophists."²⁷⁶ The

274 *Ibid.*, p. 53.

275 *Ibid.*

276 Michael J. Lewis, review of *Claude Bragdon and the Beautiful Necessity*, ed. Victoria Ellis and Andrea G. Reithmayr. *Journal of Architectural Education*. Sept. 2010, Vol. 64 Issue 1,

noted women's rights activist Annie Besant (known for her role in the 1888 London Matchgirls' Strike, and her then-controversial membership in the pro-contraception Malthusian League), met with Blavatsky in 1890 after penning a review of her *Secret Doctrine*. Upon Blavatsky's death in 1891, Besant became one of the main public faces of the movement, representing it at Chicago's World Fair of 1893 and eventually becoming its 'Most Puissant Grand Commander' in 1906. Whether one was a political firebrand or an impassioned artist, there was an idealistic attraction to the Society's claim that all religions had a common "esoteric" grounding in spite of their vastly differing "exoteric" appearances.

ASTRAL BODIES AND THOUGHT FORMS

In spite of its tarnished legacy, Theosophy did at least assist in introducing Western thinkers to synesthetic aspects of Eastern philosophy (among other things, the Indian term for 'alphabet' - *varnamala* - loosely translates as 'color garland.'). Along these lines, one spark for Scriabin's synesthetic forays (as well as Kandinsky's) was the small book *Thought-Forms* (1901) by key Society members Annie Besant and C.W. Leadbetter. Including charts or tables with titles such as "*notes pour la signification des couleurs*," it was essentially a manual for determining corresponding values of sound, color, and emotion, also re-envisioning geometric shapes and glyphs as tools for psychic illumination. Certain of the claims made in *Thought-Forms* are embarrassingly quaint relics of the Theosophist heyday- the author's preface boasts that telepathy and clairvoyance were entering the "Cinderella stage" of acceptance by non-esoteric researchers, or notes that a "Dr. Baraduc of Paris [...] is well on his way to photographing astro-mental images"²⁷⁷ (the "thoughtography" of the latter has become more widely associated with the disproven 20th century attempts of Ted Serios and Uri Geller).

p151-154.

²⁷⁷ Annie Besant and C.W. Leadbetter, *Thought-Forms*, p. 12. Theosophical Publishing Society, London / Benares, 1905.

The imperious attitude of the authors, pronouncing certain colors as irrevocable evidence of a certain personality trait (e.g. "green seems to always indicate adaptability", "hard dull brown-grey is a sign of selfishness") also grates on the nerves, though it again remains notable for its continuity with similar studies. For example, a further attempt by the authors to scientifically legitimize the "thought forms" links them tangentially to Chladni's synesthetic experiments, while the closeness of these auratic forms to the body proper shares some similarity with synesthetes' own perception of "spatial extension" (e.g. the feeling that their percepts are "experienced close to the body within reach of the limb axis, never farther away.")²⁷⁸ And whatever else one thinks of the parentage of *Thought-Forms*, browsing its pages makes clear that it was a precursor of much abstract art and music to come - we can see echoes of these strangely kinetic glyphs in the hand-painted films of Harry Smith (one of many who attempted to 'paint music') and in the hypnotic, repetitive flux of 'Op' artworks.

C.W. Leadbetter, at least, thought strongly enough about the synesthetic studies in *Thought Forms* to reprise them a year later in his 'solo' outing *Man Visible and Invisible* (where perceptible manifestations of inner reality are again referred to as "thought-forms," and where the audio-visual term "octaves of colour" is used in reference to "hues belonging to the lower and the higher levels of the mental plane."²⁷⁹) A section entitled "Colours and their Meaning" was intended to interpret, for aspiring Theosophists, what different colors communicated when they were present in an ovoid-shaped "astral body," that ethereal or elemental essence which supplemented the physical body and was only properly visible to clairvoyants. Simply put, these luminous bodies - illustrated in the book with the help of Gertrude Spink's airbrush - were the visible manifestations of human patterns of thought and emotion. Unlike the expressive features of the physical body, they were incapable of hiding or misrepresenting such characteristics.

278 Richard E. Cytowic, M.D., *Synesthesia: A Union Of The Senses*, p. 68. MIT Press, Cambridge / London, 2002.

279 C.W. Leadbeater, *Man Visible and Invisible*, p. 23. John Lane, New York, 1902.

Given the high level of individuation from one “astral body” to the next, these speculative are shown as having a nearly infinite number of color gradients within them to designate the unique character of their owners, and many are also illustrated in the book as containing colorful whorls and meridians. In the event of certain extreme emotions like “intense anger,” the bodies are cut through by elements such as menacingly pointed red bolts (this particular design being a carry-over from *Thought Forms*).

In *Man Visible and Invisible*, as in other key Theosophist texts, Leadbeater was all too happy to return any criticism that reached Theosophy’s doorstep from what he called the “ignorant majority,” claiming that trying to explain clairvoyance to the masses was like trying to explain “ordinary physical sight” to “a blind man [who] came up to us and assured us there was no such thing.”²⁸⁰ He vehemently denied that the unverifiable abilities of clairvoyants actually existed, and when most leading Theosophists were pressed on the issue of the limited number of clairvoyants, they typically answered that these powers had remained occluded from the majority whose shortsightedness and avarice disqualified it from receiving divine powers that they would only treat as trifling things. Of course, this weariness of most humanity was seemingly at odds with the current of emancipatory universalism - i.e. the desire to form a global Great White Brotherhood - that also ran through Theosophy. The irreconcilable habits of cursing the ‘ignorant’ and desiring the uplift of all sentient life became one of Theosophy’s most unpalatable features, and spokespeople like Leadbeater seemed to delight in attacking any individual who doubted those clairvoyant powers “which [the clairvoyant] is at the very moment using to read the thoughts of the wiseacres who deny it to him!”²⁸¹

So, like most works that made up the Theosophist canon, it can be a tough pill to swallow. Yet the book remains of great interest for the entire culture that its peculiar, egg-shaped “astral body” illustrations would inspire.

280 *Ibid.*, p. 5.

281 *Ibid.*

The relevance of these esoteric illustrations to abstract art, and all those forms which followed it, was aptly intuited by Sixten Ringbom as follows:

Apart from being interesting documents for the history of expression, these color illustrations can be regarded as the first non-objective representations, executed about a decade before Kandinsky's famous water-colour of 1910. They are not ornaments, nor are they works of art in the normal sense of the word. But they do comply with Kandinsky's basic requirement that the artist should disregard the physical appearance of matter in favor of the psychic reality of the spiritual.²⁸²

So, although these images were intended to be a kind of "representational" artwork, in that they showed how clairvoyants perceived the world, few viewers that saw the images out of context would associate them with any type of objective, external reality. As such, they became some of the key documents in the development of abstract art. It would not be the first nor last time that esoteric knowledge fed into the innovations of abstract art (for example, a 1925 translation of the Tibetan Buddhist classic *The Life of Milarepa* had some sway over Constantin Brancusi), but it would prove to be one of the most enduring.

UNNATURAL HISTORY

Though the nurturing of sensory correspondences - as already shown through the work of writers like Huysmans - was often viewed as a decadent activity, Wassily Kandinsky made no secret of his contempt for the decadent formula of social detachment and hedonistic cultivation of aesthetic sensibility. A revolutionary of the spirit, Kandinsky would have been incensed at the suggestion that his style was the effect of his merely

²⁸² Sixten Ringbom, "Art in the Epoch of the 'Great Spiritual': Occult Elements in the Early Theory of Abstract Art." *Journal of the Warburg and Courtauld Institutes*, Vol. XXIX (1966), pp. 386-418.

becoming bored with representational painting. His 1912 manifesto *Über das Geistige in der Kunst* [‘Concerning The Spiritual In Art’] does its utmost to convince readers that the author and his fellow artistic travelers „...are not born into a life of pleasure... [the artist] has a hard work to perform, and one which often proves a cross to be borne...he is free in art, but not in life.”²⁸³

While the following comments of Kandinsky’s were not directed solely at decadents like Joris-Karl Huysmans, who wrote in *À rebours* about preferring the design of locomotives to the «monotonous storehouse» of nature, they may as well be:

If we begin at once to break the bonds which bind us to nature, and devote ourselves purely to combination of pure colour and abstract form, we shall produce works which are mere decoration, which are suited to neckties or carpets. Beauty of Form and Colour is no sufficient aim by itself, despite the assertions of pure aesthetes or even of naturalists, who are obsessed with the idea of «beauty.»²⁸⁴

Kandinsky’s suspicion of “pure aesthetes” almost certainly implicates his contemporaries and successors in *fin de siècle* decadence- the swipe at the Naturalist movement is also an indirect condemnation of Huysmans, who befriended one of that school’s most noted exponents (Émile Zola) and was very active in the writing of Naturalist fiction prior to the ‘sharp break’ that *À rebours* represented. The thought of using artistic materials as a lifestyle affectation was abhorrent to Kandinsky, and was tantamount to social irresponsibility: Kandinsky therefore carried on the Wagnerian program of replacing “art for art’s sake” with the more sacrificial undertaking of “*life for art’s sake*,” an undertaking that saw self-generated *innere Notwendigkeit* [“inner necessity”] as being essential to authentic art production. In Kandinsky’s view, Naturalists were another aspect

²⁸³ Wassily Kandinsky, *Concerning The Spiritual In Art*, p. 54. Trans. by M.T.H. Sadler. Dover Publications, New York, 1977.

²⁸⁴ *Ibid.*, p. 47.

of an atheistic menace that also included logical positivists, socialists, parliamentary republicans, and even the followers of Abrahamic faiths- in short, any segment of society that he believed to be sustained on inherited ideals, and to be "full of dread of the unknown."²⁸⁵ Virtually anyone who accepted the world as it was, whether they claimed themselves to have a spiritual life or not, was placed in opposition to those who risked all in order to go out into the world and bear witness to the redemptive power of Art. It comes as no surprise, then, that the mythological Prometheus was again chosen as a tutelary figure for the spiritual-aesthetic circles that Kandinsky frequented.

The audacity of certain pronouncements in *Über das Geistige in der Kunst* should not cause its place in overall art history to be underestimated - it was one of the first theoretical works ever published regarding abstraction in art, and its potential to be used as a kind of rulebook for that area of production was quickly realized. Affirmations of its value came from numerous corners of the nascent 20th century avant-garde, including the Vorticists in England (in a 1914 issue of the Vorticist journal *Blast*, portions of the book were printed along with a positive appraisal of Kandinsky as „an artist to whom form and colour are as much the vital and integral parts of the cosmic organisation as they are his means of expression.“²⁸⁶) Whatever its reception by the public at large, its composition was no mere diversion for Kandinsky; by his own admission it required a ten year period (roughly 1899-1909) to complete, and even then did not see wide public distribution until three years later, with an early draft being made available at a 1911 exhibit of works by Kandinsky's *Blaue Reiter* circle, and disappearing shortly thereafter. Moreover, it marked a culmination, up until that point, of his interests in sensory totality. Later efforts in this area would not be insignificant, including the 1913 collection of illustrated prose poems - *Klänge* - which the author believed could evoke a musical unity through the simple combination of text and illustrative woodcuts.

²⁸⁵ *Ibid.*, p. 11.

²⁸⁶ Edward Wadsworth, *Blast* No. 1 (June 20 1914), p.119.

Last, but not least, Kandinsky's 1916 series of painted *Improvisations* is believed to be a realization of the theories imparted in both *Über das Geistige...* and *Thought-Forms*.

Portions of Kandinsky's manifesto are given over to attacks on the aforementioned languid aesthetes. The treatise's true value is not in what it attacks, though, but rather what it proposes. Central to Kandinsky's spiritual program, as outlined in this text, is a suggestion that color be utilized as a language. Once this is achieved, he claims that „the actual expression of color can be achieved simultaneously by several forms of art, each art playing its separate part, and producing a whole which exceeds in richness and force any expression attainable by one art alone.”²⁸⁷ The curious thing about this is that, while acknowledging that the arts are more powerful as a synergistic whole, Kandinsky also claims that “music is the best teacher” *en route* to this goal: “with few exceptions, music has been, for some centuries, the art which has devoted itself not to the reproduction of natural phenomena, but rather to the expression of the artist's soul...”²⁸⁸ Much has also been made of Kandinsky's emphasis upon rhythm, and the applicability of this musical concept - that of the interplay between ‘positive’ and ‘negative’ areas of perception - to all other art forms. It was this interest in this rhythmicity that, among other things, likely caused the artist to embrace the serialist music of Arnold Schönberg as a “spiritual” alternative to merely “acoustic” music.

In acknowledging the primacy of music - and, by extension, the sensations received by active listening - Kandinsky's thought is not that far from Schopenhauer's philosophy, despite the latter's loathing for any enterprise that did not allow music to act on its own agency: «...[music] speaks so much to the heart, while it has nothing *directly* to say to the head and it is a misuse of it to demand it should do so, as happens in all *pictorial* music, which is consequently once and for all objectionable.”²⁸⁹ Though

287 Kandinsky (1977), p. 42.

288 *Ibid.*, p. 19.

289 Arthur Schopenhauer, *Essays And Aphorisms*, p. 162. Trans. By R.J. Hollingdale. Penguin

it is perfectly understandable why composers and musicians would have a special fondness for Schopenhauer's theories, it is also interesting to note the number of *fin de siècle* and early 20th century visual artists who accepted music or sound as a 'starting point' for ventures in sensory correspondence: another example among many is provided in the person of seminal pointillist painter Paul Signac, who was already fond of giving his canvases "opus numbers" and also titling them after the distinct moods and tempos within musical pieces (scherzo, allegro maestoso, adagio, etc). Yet popularity alone does not account for the evangelical fervor of artists like Kandinsky- what was the wellspring for the truly missionary among the "correspondence" artists?

For Kandinsky, at least, one possible source is the native rituals and folk customs that he observed while attempting a "pre-artist" career as an anthropologist. His encounters in the late 1880s with the pagan people of the Komi region, in particular, provided him with a link between an idealized past, in which 'magic' and quotidian life were inseparable, and the idealistic future that he hoped to design. By his own accounts, his fieldwork here was influential enough that it taught him not only how to "look at art" but even "how to turn oneself around in a painting and how to live in it."²⁹⁰ His findings, which were eventually received enthusiastically by the intellectual community in St. Petersburg, spoke to a hunger for spiritual renewal -particularly one originating from the occluded Asiatic roots of Russian culture - that extended well beyond Kandinsky himself.

Though the Komi people that Kandinsky encountered claimed to be Orthodox Christians in public life, he found their private lives to be intertwined with the type of shamanic beliefs that Mircea Eliade would later sketch in respected field studies of his own. Specifically, they were seen as communing with the elements as if with fellow human beings, or (interestingly, given the Theosophists' emphasis on the 'astral body' concept) the belief in the existence of the soul as a living entity existing

Books, London / New York, 2004.

290 Wassily Kandinsky, *Tekst Khudoznika*, p. 27. Trans. Orlando Figes. Moscow, 1918.

concurrently with, but separate from, the physical body. While part of Kandinsky's fascination perhaps came from the fact that he perceived common genetic roots with the Komi people, it also had much to do with their artistic practices themselves. The colorful forms and focus on visual essentials in this primitive artwork presented an alternative to the Western European artistic norms that many Russians were hoping to slough off, and a certain neo-primitivist movement gained traction with the assistance of Mikhail Larionov and Natalia Goncharova. It is a slightly ironic twist, then, that Kandinsky's ideas gained their greatest traction once he moved to Germany and joined forces with kindred spirits there.

THE BLUE RIDER MOVEMENT

During his residence in Munich prior to the First World War, Kandinsky struck up friendships with several like-minded artists and formed the now-legendary *Blaue Reiter* [Blue Rider] Expressionist group. Its desire to approach a synesthetic painting style was not an exclusive one - indeed, several contemporaneous Futurists, such as Carlo Carras, busied themselves at the time with intriguing manifestoes with titles like *The Painting of Sounds, Noises, and Smells*. Other major figures within the group, particularly Franz Marc and August Macke, took cues from Kandinsky's theories of light and color, producing chromatic-symbolic systems of their own. Marc's well-known portraits of animals with distinctly unnatural colorings (yellow cows, blue horses, etc). testified to his symbolic use of color composition to correspond with emotional tones - interestingly, Marc insisted on applying this same system to "musical tones as well as colors":

All lines (e.g. melodies) determine the series of the colors (e.g. tones). Rising, falling melodies which, in their realization, are like sisters sinking onto their arms, and the falling note can be therefore contained in the rising note, and deflected. The color-complex is guided by the lines

(melodies), being the question put to the answer of the counter-complex. ...Therefore, most often brightness and darkness play the role of the leaders of the melody, as do yellow and violet, orange, blue, green and red - similar is the yearning for pure tones without gray and a mishmash [of muddy tones].²⁹¹

With this adoption of Kandinsky's theories came an embrace of similar spiritual concerns, and Marc was just as prone to turning East for inspiration as were the artists' common influences within the Theosophical movement: Marc attributed the rise of abstract painting to the adoption of an "Indian-temporal" worldview or "second sight", which he opposed to the "diseased" European system of visual interpretation. As such, the Kandinsky-Marc-Macke alliance viewed artistic creation as a much more solemn, if not outright isolated, undertaking than previous avant-garde theorists of sensory correspondence, particularly Baudelaire: Macke decried the tendency of the moderns to "[sink] into the subways and bars" rather than "into solitude"²⁹² as a committed painter might, a point of view which easily coincided with the Theosophical call for renunciation of the Self and counter-productive intoxication. The revelations to be gained by urban *flâneurisme* or by sinking anonymously into the "electricity" of the crowd were not for him.

Meanwhile, Franz Marc was very reluctant to systematize his theory of color-emotion correspondences in a manner similar to that of Scriabin's color-tone system, or to the charts found in *Thought-Forms*, or even the *Farbscheibe* [color wheel] of his colleague Macke. Not limiting his skepticism to the fine arts, Marc also showed a good deal of indifference towards the color theories appearing in Germany physiological studies toward the close of the 19th century: these included the 1874 *Farbenlehre* [color study] of Wilhelm von Bezold, the identically titled 1891 treatise by

291 August Macke quoted in *August Macke - Franz Marc: Briefwechsel*, pp. 25-7. Trans. John F. Moffitt. DuMont Schauberg, Cologne, 1964.

292 *Ibid.*

Wauvermann, and Ernst Brücke's 1887 *Physiologie der Farben*. He felt this type of systemization denied colors their individual meanings rather than clarifying them, and claimed that the various color charts "[instill] in me a feeling of boredom, something like games with musical-scales" (he did admit, however, that "the construction of another such chart I have certainly not yet attempted.")²⁹³

Nonetheless, Marc was not above developing his own idiosyncratic theory of colors, even though he was averse to charting them - this was a task that he set to within months of first meeting Kandinsky. The two had some definite moments of agreement where their respective color theories were concerned. Both Kandinsky and Macke found blue-ish hues to denote a 'supernatural' tranquility. Yet this did not prevent some splitting of hairs over the true spiritual meaning of other colors. For example, Marc's interpretation of red was that it was indicative of struggle and oppressiveness, whereas Kandinsky found it to be intense yet essentially harmonious.

DER GELBE KLANGE

The camaraderie between Kandinsky and his fellow *Blaue Reiter* artists, while resulting in plenty of daring new pictorial work, also provided the fertile ground from which Kandinsky's theatrical efforts would spring, even though the collapse of 1914 would keep these efforts from being enjoyed by the artist within his own lifetime. It is appropriate that Kandinsky would, at least once in his career, attempt a somewhat Wagnerian *Gesamtkunstwerk* with his 1909 "stage composition" known as *Der Gelbe Klange* [The Yellow Sound.] Kandinsky was not at all unfamiliar with Scriabin's *Poem of Fire*, and his library of books on the theater included works by Symbolist Nikolai Evreinov (whose insistence upon making life imitate art seemed to mesh well with the ideas forwarded in Kandinsky's own manifestoes). From

²⁹³ Franz Marc quoted in *Ibid.*, p 28.

these influences, and certainly from his own convictions in the spiritual life of colors, came the only of his stage plays to become widely known, although similar efforts (e.g. *The Violet Curtain* or *Black and White*) were produced during the heyday of the *Blaue Reiter*.

In keeping with the pure abstraction that so sharply distinguished his artwork from that of previous eras, *Der Gelbe Klange* had a "non-narrative" libretto (published in the 1912 version of the *Blaue Reiter* almanac) and therefore no real storyline to follow. Singing would be a featured element of the presentation, but would no more 'drive' it than would the pantomime, orchestral music or colored lighting emanating from projectors. The play's episodic action was broken down, instead, into a series of six "pictures" featuring characters in monochromatic costumes that embodied Kandinsky's personal system of color meanings. As a synesthetic spectacle, it is interesting to note that Kandinsky aimed not to perfectly synchronize all the theatrical elements of sound, vision and movement, but rather to show contrasts between unison and discordance: for example, in portions where physical movement was particularly frenetic, music might melt into the background instead of attempting to match this movement step for step.

PAUL KLEE - "ONENESS" WITH COLOR

Another *Blaue Reiter* affiliate following the lead of Kandinsky and Macke was Paul Klee, the mind-bogglingly prolific and versatile painter of some 9,000 works who - despite not being a "full-time" member of this circle - understood and embraced the communicative power of pure color. At one point, after a visit to Tunisia, Klee triumphantly proclaimed that "colour has taken possession of me; no longer do I have to chase after it, I know that it has hold of me forever... colour and I are one."²⁹⁴ When such statements are conjoined with Klee's other more famous statements of purpose - for

294 Susana Partsch, *Klee*, p. 20. Taschen, Cologne, 2007.

example, his axiom that the true task of the artist is to “render visible” rather than to “render *the* visible”; to act as a revealer of the hidden rather than a documenter of the already known - it becomes obvious why he was such an asset to the collectively woven drama of 20th century Abstract art.

Regarding Theosophy, Paul Klee was not exactly on the same page with Kandinsky and other contemporaries- and he once acidly noted of Rudolf Steiner’s Anthrosophy that he could have explained his entire worldview “in ten pages,” and he also looked skeptically upon the theories of color and composition that derived from *Thought Forms*. While such influences were less pronounced in the thinking of Klee, though, he was not above occasionally making alchemical proclamations such as “the demonic shall be melted into the celestial.”²⁹⁵

Meanwhile, his distrust of Theosophical syncretism also did not extend to all of the sources that informed it, as there were clear influences from Indian legend in his work (and the favor was apparently returned, as he became - in 1921 - one of the first European artists to have his work exhibited in Calcutta). A case can also be made for Klee’s having an interest in Indian forms of cross-modal art, specifically the *ragamala* style of painting, that preceded the synthesizing efforts of the *Blaue Reiter* group - and particularly the systemic use of color to indicate emotional states - by some three hundred years. It is not unusual, then, that Klee’s considerable studies of music caused him to alight upon one particular Indian legend - that of Shakuntala - that had also provided the inspiration for a multi-media extravaganza staged earlier by Scriabin and Alisa Koonen, and also for Schubert’s more famous (if less cleverly “cross-modal” opera).

Whatever his spiritual inclinations, Klee did maintain his fervor for sensory correspondences similar to Kandinsky’s own. This was owed in large part to Klee’s training as a musician and his coming from a long line of musical ancestors, against whom he “revolted” by taking up painting despite his

295 Paul Klee, *The Diaries of Paul Klee 1898–1918*, p. 372. Trans. by Pierre B. Schneider, R.Y. Zachary, and Max Knight. University of California Press, Berkeley, 1964.

demonstrable skill as a violinist (at the age of eleven, Klee was a member of an orchestra that offered subscription concerts to members of the Berne Music Society). It may actually come as a surprise to some followers of his work that he only became a “full-time” painter in his mid-twenties, upon abandoning musical pursuits. Notably, after making this break, he left for the Munich Academy in the autumn of 1898 and - after an extended period where he claimed “I only want to work on my personality” - began study under Franz von Stuck in 1900. The latter also had the distinction of tutoring Kandinsky at the same time, though the artistic relationship of Klee to Kandinsky would begin in earnest later (Klee’s absenteeism from von Stuck’s classes made such formative bonds difficult to maintain).

Despite maintaining a definite fondness for music, Klee felt that musical development had reached its creative apex by the time he had begun painting, and that the time was thus ripe for the pictorial arts to “catch up” with this other form while it was lying dormant. In 1929 Klee proclaimed “what has already been done for music by the end of the 18th century... has at last begun for the pictorial arts.”²⁹⁶ Such a realization may have led Klee to attempt a synthesis not of music, but of poetry, with his visuals. This was an act that began with Klee’s choosing painting titles that could be interpreted as “poetic metaphors”, and eventually led to the fusion of letter and image within the painted space itself. As early as 1918, with the composition *Einst dem Grau der Nacht enttaucht...*, Klee had begun experimenting with a technique of rhythmically placed, colored lettering that brings to mind the confessions of “grapheme-color” synesthetes. At least one exemplar from Klee’s vast back catalog, *Vocal Fabric of the Singer Rosa Silber*, conjures a synesthetic image with the “poetic metaphor” of the title, while also attempting the aforementioned merger of painting and poetry. In this work, a unique tension arises between “the potential for dialogue between the realized, carefully formed signs and the nebulous, unrealized shaped patches of unspoken thoughts.”²⁹⁷

296 Paul Klee quoted in Herbert Bayer and Walter Gropius, *Bauhaus: 1919-1928*, p. 172. The Museum of Modern Art, New York, 1938.

297 Ann C. Colley, “Paul Klee and the Fantasy of Synthesis.” *The Kenyon Review*, Vol. 9, No. 3

Like so many strong-willed artists before and after him, Klee disdained the social order that relegated artists to an “outsider” role, and apparently took no solace in being a genius that could not transform society. Ostracization and official condemnation (e.g. his star placement in the Nazis’ now-infamous exhibit of “degenerate art”) were not badges of honor for him if they also meant a diminution in the regenerative potential of his work. Klee felt that any innovations related to synthesis or unity (of the senses, or otherwise) would remain ineffectual curiosities if not appreciated by the public at large, lamenting how “We have found the parts, but not the whole! We still lack the ultimate power, for the people are not with us.”²⁹⁸ The ultimate helplessness of Klee, Kandinsky, and their compatriots in overcoming the intense subjectivity of their work was tragic, since all of them seemed to have varying degrees of conviction in their ability to make a universally intuited art. Sadly, it is this tragic incommunicability of their inner worlds, and the subsequent inability to make them applicable to the whole world, that gives them a point of common experience with what we now know as clinical synesthetes: the sensory associations of the latter have often been too irrational to outside observers to spark the creation of a whole new communication system.

(Summer 1987), pp. 1-15.

²⁹⁸ Paul Klee, *On Modern Art*, pp. 13-14, 55. Faber & Faber, London, 1966.

REVOLUTIONS, INTERNAL AND EXTERNAL

Where the above experiments were concerned, the cataclysmic events of the 20th century's second decade would be irrevocably disruptive, and not all the parties mentioned here would survive them (Franz Marc, for one, volunteered for frontline combat and was the victim of a grenade attack at Verdun in 1916). Marc, prior to his death, optimistically felt that the purifying fire of the war might have been a necessary precursor to a more enlightened age, and he may have been emboldened in this regard by Theosophy's own promises of such. What did happen, however, was that the esoteric idealism popular in the early 20th century would wane considerably once that idealism was re-invested in social and materialist movements after World War I and the Russian Revolution of 1917. The sudden unfashionability of hierarchical and gnostic systems such as Theosophy was almost immediately evident in the arts world, where currents of spirituality in the innovative Bauhaus school would become more and more subdued in favor of the newer Constructivist tendencies towards utilitarian art.²⁹⁹

Kandinsky himself would attempt to go with the flow here, first by returning to Russia at the dawn of the 1920s and organizing INKhUK [*Institut Khudozhestvennoy Kultury*, or Moscow Institute of Artistic Culture], where his emphasis on composition was criticized by a new breed of artists who opposed that composition to a more socially involved process of "construction." The post-revolutionary avant-garde's attitude towards Kandinsky seemed to oscillate between acceptance and rejection. His poem "To See" was included in the confrontational foundation document of the movement (*A Slap In The Face of Public Taste*, 1912), though he responded to his inclusion in this movement with an aggravated brief to the *Russkoy Slovo* newspaper: "I warmly condone every honest attempt

299 "[Aleksandr] Rodchenko immediately disagreed with this distinction between engineering and art, announcing that 'there is only one kind of construction, and construction is primarily a goal [tsel'.] Composition is tasteful selection, and not a goal.'" Christina Kaier, *Imagine No Possessions: The Socialist Objects of Russian Constructivism*, p. 8. MIT Press, Cambridge / London, 2005.

at artistic creativity, but under no circumstance do I consider permissible the tone in which the prospectus was written...I condemn this tone categorically, no matter whose it is."³⁰⁰

Kandinsky's condemnations were, of course, not particularly helpful in granting him "full-time" status as a member of the new alliance of Cubists, Futurists, and Constructivists. As it became more difficult for Kandinsky to defend himself against accusations that his artistic attitudes were tainted by "bourgeois" thinking, he accepted an invitation by Walter Gropius to teach at the Bauhaus schools in 1921, an institution that he would remain until 1933 (at which point the school was ordered closed by the Nazi regime). While tenured there, Kandinsky would continue to expound on his color theories, albeit in a less explicitly "Theosophical" form. The fruits of this period included Kandinsky's second written manifesto, *Point and Line to Plane*, which argued for the breakthroughs that could be achieved in visual art once the versatility of the basic pictorial elements of point and line, and the "breathing" form of the plane that resulted from their amalgamation, had been fully understood. This call for precision within abstraction would, happily for Kandinsky, become a clear influence on artists having little to do with painting: the sound artist Curtis Roads, for example, released a collection of 'granular synthesis' pieces in 2005 with the knowing title of *Point, Line, Cloud*.

Another area where Kandinsky distinguished himself was in the exploration of what could be called *intra-modal* synesthesia - the setting of irrevocably fixed relationships between two different types of data received by one sense modality. In Kandinsky's case, this referred to relationships between color and shape: triangles were yellow, squares red, and circles blue. Kandinsky's tenure at the Bauhaus, where he again attempted to stage *Der Gelbe Klang* without success, gave him plenty of opportunities to impart this intra-modal theory to a new generation of curious students

300 Wassily Kandinsky quoted in Quoted in Chris Cutler (ed.), *Baku: Symphony of Sirens. Sound Experiments in the Russian Avant-Garde*, p. 36. Trans. Deirdre MacCloskey. ReR Megacorp, London, 2008.

(although, as we will see later in the book, some of the most receptive were not Kandinsky's Bauhaus pupils, but residents of his former homeland). Kandinsky was so adamant about the correspondences between these colors and forms that he gave his students a questionnaire asking them (without prior knowledge of his theories) to match one of the three named shapes with one of the three colors, and to briefly explain why such a choice was made. Unfortunately for Kandinsky's legacy, more recent repetitions of the same experiment yielded results not favorable to the artist-theorist: in 2004, students of the University of Leipzig professor Thomas Jacobsen matched colors largely upon "world association" criteria (e.g. matching 'red' to 'square' owing to this combination's resemblance to a warning sign), with Kandinsky's Bauhaus associations being the "least preferred" among the test subjects.³⁰¹

Such failures to systematize or institutionalize Kandinsky's synesthetic thought do give one pause to think, particularly about the existence of other legitimately synesthetic painters. David Hockney, for example, has possessed these qualities yet had been far less missionary than Kandinsky - in a 1981 exchange with Richard Cytowic, he admitted that he was not even aware of synesthesia as a neurological condition, i.e. "my first reaction was that you were trying to describe academically something I'd always thought and explained away as 'poetic.'"³⁰² Hockney, in the process of painting stage sets for the Metropolitan Opera in New York, realized that the corresponding music was influencing his painterly decisions - in one instance, while designing for Stravinsky's *Oedipus Rex*, he felt that the music featured "not much color, but lines and sharp things that suggested cross hatchings" (all common visualizations among confirmed synesthetes).³⁰³ His past discussions have also revealed another synesthetic commonality - the ability to see a gradient of different colors where a non-synesthete would see a solid sheet of color - and a desire to use colored

301 Thomas Jacobsen, "Kandinsky's Color-Form Correspondences and the Bauhaus Colors: An Empirical View." *Leonardo* Vol. 37 No. 2 (2004), pp. 135-136.

302 David Hockney quoted in Cytowic (2002), p. 313.

303 *Ibid.*, p. 313.

lights in theatrical productions rather than the expected white lights, in order to make the action truly “sing.” By the early 1990s, he was already using what the *New York Times* reported as “a computerized setup that lets him punch in and program lighting cues at will, and synchronize them to a soundtrack of the music.”³⁰⁴

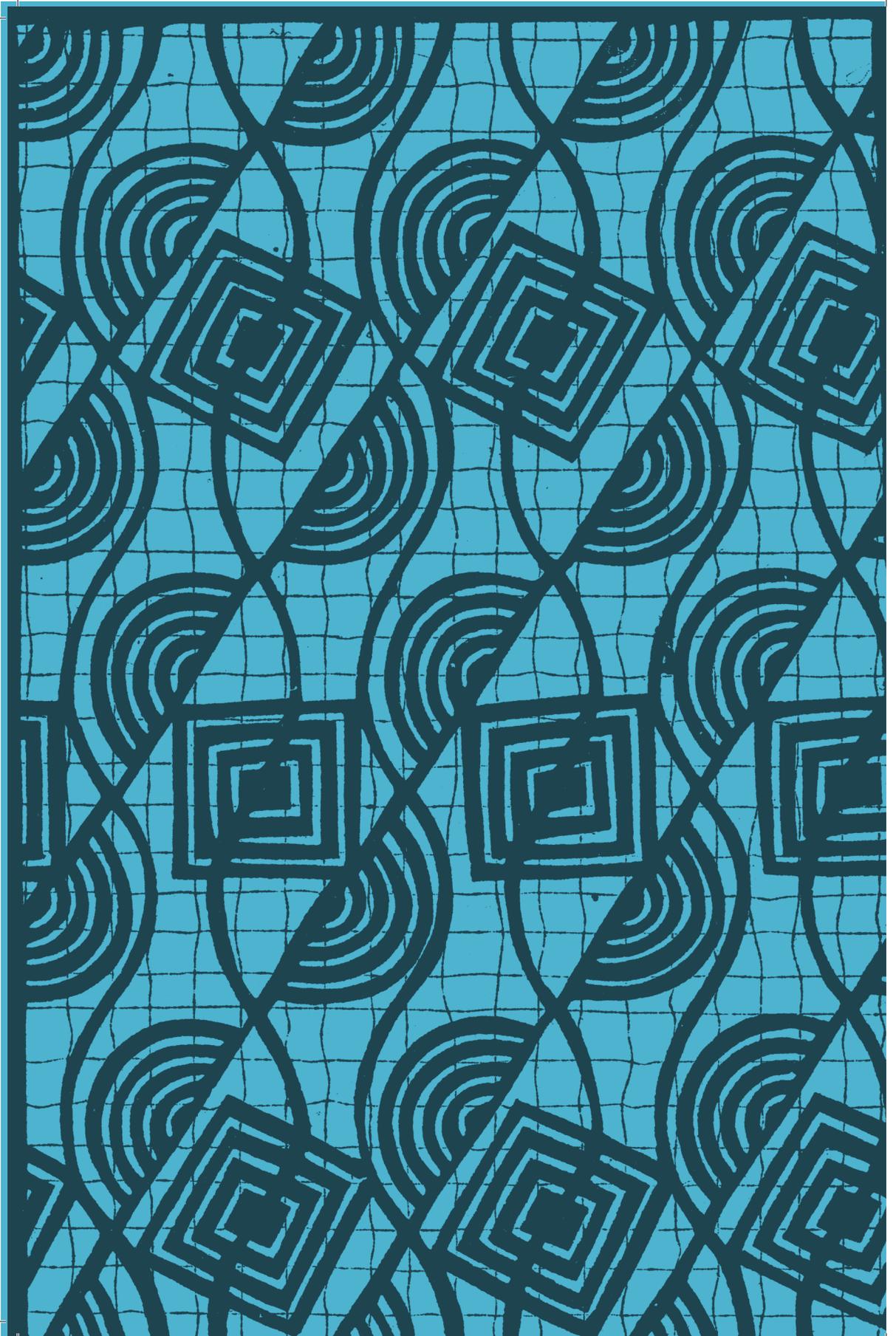
Despite some superficial similarities - such as a shared involvement in theatrical productions - it is perhaps unfair to compare Hockney to Kandinsky, since they are products of vastly different times, places, and social circumstances. Yet the two are illustrative of the tragic divide that exists between the two artistic types who often deal in cross-modal artwork: in the person of Hockney, we have the synesthete who is reluctant to share his condition or simply unaware of others’ interest in making it an object of research. In Kandinsky, we have the non-synesthete who, owing to his calling as a revolutionary of the spirit, promulgates a pseudo-synesthesia that is forceful and unique, yet revisable, and ultimately very different from the involuntary experiences of a real synesthete. If both of them have something in common, it is probably the feeling of compulsion that drives their work. These, too, are of very different types, with Hockney being compelled to work in a synesthetic manner and Kandinsky being compelled to redefine the artist’s role in society, of which the interest in synesthesia is a secondary effect.

Kandinsky’s ongoing attempts at that redefinition were, as evinced by the interest that his work still commands, somewhat successful. Within his own lifetime, though, he had to contend with dramatic shifts in the popularity of his ideals: the new avant-gardes of the early 20th century had different interests than the re-discovery of primordial shamanistic secrets, even though a certain interest in “irrational” questing did survive even within the new era with its increased emphasis on scientific exactness in the arts. This set of socio-political circumstances did not necessarily

³⁰⁴ John Rockwell, “David Hockney Is Back in Opera, With a Few Ifs, Ands and Buts.” *New York Times*, January 10, 1991.

extinguish the ongoing quest for a truly synesthetic art. In the post-Revolution Russia to which Kandinsky briefly returned, the introduction of more strictly materialist ethics merely meant the continuation of these experiments within the new forms that were being exploited to proselytize the revolutionary worldview.





CHAPTER 8

ENTHUSIASM! CROSS-MODAL EXPERIMENTS IN THE SOVIET ERA

Having already invested the cultures of Symbolism and Abstract art with a synesthetic flair, it seemed likely that Russian artists would continue to experiment with such techniques even as these movements' "heroic" periods flickered out. Though that nation was severely taxed by the bloody chaos of the Great War and the October Revolution, along with the massive privation that followed, neither of these calamitous narratives managed to fully negate artistic inquiry into unity of the senses. More surprising still, the changing of the avant-garde - from a mystically and romantically-oriented one to one fixated on social engineering and materialist dialectics - was not accompanied by a wholesale dismissal of synesthetic concerns as being trivial and counter-productive, nor by an immediate refusal to re-appropriate the ideas of progenitors who might otherwise be seen as reactionary. For what it is worth, key players in the new avant-garde did not completely repudiate esotericism, with Mikhail Matyushin championing the work of his mystical friend P.D. Ouspensky and promoting the practice of 360° vision).

Works such as *Light Monument to the Revolution*, designed by the post-Revolutionary artist Grigory Gidoni after the spiraling *Monument to the Third International* design of Tatlin, took cues from Aleksandr Scriabin's own intricate fantasies (in this case, the concept of an immense spherical theater capable of seating thousands of spectators). The poet Velimir Khlebnikov, widely noted for his participation in the Futurist circle 'Hylaea' and his co-invention of the "trans-rational language" *zaum*, had some roots in the Symbolism of Vyacheslav Ivanov. And in some cases, the agit-prop of the Soviet radicals was enacted on a scale that even Scriabin might have found enviable: Arseny Avraamov's 1922 *Simfoniya gudkov* ["Symphony

of factory sirens"] turned swathes of the city of Baku into a performance stage manned by an "orchestra" of naval ships, artillery pieces and much more besides. A tuned set of steam horns, which performed *The Internationale*, was the cherry on the cake of this overwhelming mega-performance. Other artifacts of this heady period, like Kazmir Malevich's notorious *Black Square* canvas and Vasilisk Gnedov's poetic "recitation" of a blank page, held down the opposite pole of perception - that of near-total deprivation- testifying to the Russian avant-garde's resolute experimentation with the extremes.

NOVIE BYT

Much of the post-Revolutionary avant-garde's severe break with tradition was initiated by a dissatisfaction with, if not unalloyed hatred of "byt": a Russian term that evades perfect translation, and whose imperfect direct translation as "being" does not fully capture the pejorative meaning that Russian revolutionaries bestowed upon it. While *byt* referred partially to peasant customs that were seen by their critics as being insufficiently adaptable to techno-scientific and social advancements, *byt* was closely associated another term - *meshchantsvo* - that implies an unquestioning, philistine acceptance of the new urban life and a "petty bourgeoisie" hesitancy to actively engage with it. Both conceptions of *byt*, then, were united by cultural obstinacy: Constructivist critic Sergei Tretia'kov underscored this when claiming that the "quagmire of *byt* [...] begin[s] with the neck tie and end[s] with religious fetishes."³⁰⁵ Tretia'kov's words would resonate with many of his contemporaries, who felt that the revolution in social organization and a re-evaluation of the material world would need to be followed by a revolution of the spirit (a point that the revolutionary poet laureate Mayakovsky attempted to drive home in his science fiction tale "The Bedbug") - one had to find alternatives to both the "necktie" and the "religious fetishes."

305 Sergei Tret'ia'kov, "Otkuda I Kuda?" Trans. Christina Kaier. *Lef* no. 1 (1923), pp. 192-203.

The art-historical term 'Futurist,' as it applied in early 20th century Russia, had much to do with the building of this '*novie byt*' or new way of life (and, as such, agreed with the similarly-named Italian art movement's conception of a sort of *tabula rasa*, but the two movements dramatically differed in its views on the social organization necessary to bring this about). Both the avant-garde and the more banal mass propaganda of the day had their means of agitating against this force: for the latter, it was commonly "before and after" street posters showing the comparatively clean and harmonious lifestyle that would be enjoyed once the domestic squalor of *byt* was thrown off. However, for our stated purpose of mapping synesthetic art throughout the years, we will stay primarily focused on the avant-garde.

This avant-garde was a movement that, much like the international Techno subculture that arose some seven decades after it, combined extra-institutional street smarts with an electrified and determined optimism towards the new tools that it found at its disposal: the latter was particularly evident in photomontage works such as El Lissitzky's *The Current is Switched On*, showing Moscow blanketed in light while a single hand authoritatively grasps a breaker switch (the looming face of Stalin in this otherwise benign and romantic montage work, however, makes it difficult to take seriously from a contemporary standpoint). The attraction of Soviet artists towards electricity stemmed partially from Lenin's definition of Communism - which "equal[ed] Soviet power plus the electrification of the entire country" - and which became the rallying cry for the State Electrification Commission (GOELRO) formed in 1920 and chaired by Gleb Krzhizhanovskii (this organization's activity would also a harbinger of more sweeping economic reforms like the Stalinist Five-Year Plans). This embrace of artificial light's progressive powers not only led to re-assessment of isolated arts like sculpture (again, we can look to Gidoni's light sculptures for examples of this), but to the formation of cross-modal artworks.

Not all art from this period was inextricably bound to a program of synesthetic questing, and there were scanty resources available for many of the works proposed in the period from 1917 to the mid-1930s (among some of Gidoni's unrealized projects were pieces based on "olfactory color," and scores for lighting that would accompany pieces like Beethoven's 9th Symphony or, again, the *Internationale*). A substantial amount of new art did, however, either point in this direction, or at least pooled together pre-existing media into intriguing new hybrids: Lissitzky's Constructivist works, typified by their simultaneous deployment of typography, photography, and illustrated graphics, took such an approach several decades before it would become *de rigueur* for the graphic design and advertising communities. Meanwhile, the cross-modal art of other nations was certainly not forgotten or 'lost in translation' during this epoch, either: the work of the French decadents lived on in the person of the poet David Burluk, whose 1915 poem *The Family of Vowels, Laughingly* bore a striking thematic similarity to Rimbaud's *Voyelles*:

*The a-sounds are wide and spacious;
 The i-sounds are high and adroit;
 The u-sounds are like empty pipes;
 The o-sounds are like the curve of a hunchback;
 The e-sounds are flat, like sandbanks;
 Thus I have surveyed the family of vowels, laughingly.*³⁰⁶

A SLAP IN THE FACE

Synesthetic art remained a going concern in post-Revolutionary Russia if, for no other reason, because all-encompassing unity was as much a watchword in revolutionary / proletarian ideology as it was for Theosophists and other esoteric orders (this is to say nothing of the continuing influence of Richard Wagner, and his dual project of social synthesis and artistic

³⁰⁶ Quoted in Chris Cutler (ed.), *Baku: Symphony of Sirens. Sound Experiments in the Russian Avant-Garde*, p. 32. Trans. Deirdre MacCloskey. ReR Megacorp, London, 2008.

synthesis). Of course, there was the rallying cry of “workers of the world, unite!” that encouraged the dissolution of national boundaries and of other traditional hierarchical formations. There was also the implication that - as first voiced in Marx and Engels’ *The German Ideology* - the new socialist citizen would be one who did not cling to a limited, specialized occupation, but who divided his or her time equally between a number of different interests and activities: this would be someone who could, ideally, “hunt in the morning, fish in the afternoon, breed cattle in the evening, criticize after dinner, just as I like, without ever becoming a hunter, a fisherman, or a critic.”³⁰⁷ Having achieved a society where most or all people abandoned their specialized roles in favor of this more totalized conception of life, the common interest of society would then be served. This utopian vision was not lost on the new breed of Russian Futurists and Constructivists, whose key projects aimed to synthesize the various artistic and critical disciplines.

The unity of sensory input was perhaps accomplished with greater skill than some of these other utopian syntheses. The internationalism of socialist ideology and the “universal brotherhood” which Khlebnikov hoped would spring from his “stellar poetry” ran parallel to the Russian nationalism or Slavophilia of the Hylaea group, which disrupted the Russian tour of Italian Futurist F.T. Marinetti with critical pamphlets pointedly warning Marinetti against any thoughts of cultural imperialism (i.e. “Foreigner, don’t forget where you are!”) Though the Russian avant-garde was one of the first to recognize the potential of Italian Futurism’s obsessive iconoclasm - Marinetti’s *Futurist Manifesto* was reviewed by the Russian press only a few weeks after its original 1909 publication in *Le Figaro* - things came to a point where they could not see the irony in being both a movement of universal emancipation and one which boasted “the future will be Slav.” Given the degree to which the disagreements between Russian and Italian Futurists intensified, it should not be surprising that the

307 Karl Marx and Friederich Engels, *The German Ideology* p. 169. Prometheus Books, Amherst NY, 1998.

more technically-oriented term “Constructivism” became an alternative descriptor of Futurist tendencies within Russia, and was perhaps more apt for a movement that saw themselves as active builders of the *novie byt* rather than as individuals passively waiting for such a future.

Of course, boisterous provocations were to be expected from artists whose introduction to the world at large was a brash document entitled *A Slap In The Face of Public Taste* (1912), an “all-star” declaration of intent from the likes of Burliuk, Mayakovsky, Khlebnikov and Kruchenykh. The post-Revolutionary Russian avant-garde seemed to delight in its brashness and combativeness, spawning perhaps more than a dozen assorted movements graced with an “-ism” suffix, e.g. Electroorganism, Liuminism, Rayonism, and even the parodic ‘Eggism’ that was developed by the artist Stepan Dimant when he was denied entry to any of these other artistic cliques. The formation of a group hailing as the “Nothingists” [*Nichevoki*] seemed like an inevitable conclusion to this complicated jumble of provisional allegiances (this group was essentially an offshoot of Dada, although the group amusingly felt that the syllables “da, da” - being “yes, yes” in Russian - necessitated a name change, as such apparent positivity was at odds with their anti-agenda). Not all of these groups were as determinedly set on auto-destruct as the Nothingists, whose formal decrees to “read nothing, write nothing, etc.” predictably limited influence, yet some applied a similar uncompromising audacity to projects that still provide a template for a future to come.

“THERE WILL BE NO END! WE ARE STRIKING THE UNIVERSE...”

One of the most audacious (and thus, most representative) artworks from this phase in Russian art history was the stage drama *Victory Over The Sun*, a project that still maintains a timeless ability to perplex or baffle, and which is even spoken of by one critic as “seem[ing] to predict the form of the rave”³⁰⁸ in its novel blurring of lines between spectator and actor,

308 Barrett Watten, “The Constructivist Moment: From El Lissitzky to Detroit Techno.” *Qui Parle*, Vol. 11, No. 1 (Fall/Winter 1997), pp. 57-100.

and in the role of its director as a “DJ”-like electrical engineer, whose role was further explained by El Lissitzky (i.e. “his place is in the center of the scaffolding at the high-energy control panels.... At the flick of the switch the sound system is turned on and whole place may suddenly reverberate with the din of a railroad station, or the roar of Niagara Falls, or the pounding of a steel-rolling mill.... By such means the most elementary processes are intensified to maximum effect by the director.”)³⁰⁹

The message of *Victory Over the Sun* put the Promethean challenge of previous and concurrent avant-gardes into the service of a more utilitarian worldview: as El Lissitzky claimed in his analysis of the work, *Sun* was intended to show the limitless capabilities of human technological endeavor, as the play’s protagonists develop an alternative energy source that allows them to do away with reliance on solar energy. Or, in another interpretation, the adversarial sun could be seen as the tyrannical *byt* or everyday life that presumably, until that point, had been seen as unalterable. While the belief systems involved may have changed significantly, projects like *Sun* (first staged in 1913) showed that bombast and grandiosity of intent was not limited to apocalyptic experiments like the *Mysterium*, and that such qualities carried over into the cultures of Russian Futurism and Constructivism. One character in this play sums up its emotional tenor with a vow to “ride through all centuries,” and a confession that “I was in the 35th [century] where there is power without violence, and rebels fight against the sun, and even though there is no happiness there, everybody looks happy and immortal...”³¹⁰

More notable than its perpetuation of this bombastic lineage, though, is the way in which *Victory Over The Sun* furthers the Russian avant-garde’s innovative development of multi-media presentation, effectively becoming what Robert Benedetti proclaims “the first example of what

309 *Ibid.*

310 Alexei Kruchenykh, Ewa Bartos and Victoria Nes Kirby, “Victory Over The Sun Prologue.” *The Drama Review: TDR*, Vol. 15, No. 4 (Autumn, 1971), pp. 107-125.

we now call Performance Art"³¹¹ (a realization that derives in part from the play's innovative stage setup, in which the spectators took 'center stage' and either watched the theatrical action unfold all around them, or became pulled into the development of the play themselves). At the very least, it could be called "one of the first examples of multi-disciplinary collaboration"³¹² in the arts, calling upon a composer (Matyushin), a painter (Malevich) and a poet (Kruchenykh) to simultaneously sculpt its final form. As had historically been the case for performances of this type (see the example of Roinard's *Song of Songs* already discussed), audiences took this confrontation with the violently new as an opportunity to become violently confrontational in their own right. Public reactions aside, this collaborative and "multi-modal" venture was also the predecessor to artistic developments that have since garnered far more international recognizability: Kazimir Malevich's Suprematism movement, for example, did not come about until two years after the premiere of *Victory*.

Though the work of Wassily Kandinsky was looked upon coolly by the nascent Constructivist and Futurist movements, Matyushin seems to have followed Kandinsky's lead in exploring intra-modal synesthesia (e.g. assigning fixed relationships between colors and graphic forms or shapes) and attempting to build a universal visual language from these rudiments. Early reports from *Victory Over the Sun* viewers hint at the strong emphasis Matyushin had placed on this part of his overall creative program: many spectators claimed to notice no actors at all in this performance (despite their definite presence), instead being drawn to "the game of light and color" being played out by the Constructivist objects, and the way in which this merged with "multi-textured sounds traveling over the heads of the spectators [...] creat[ing] fantastic images."³¹³ Meanwhile, evidence of the intra-modal 'universal language' approach appeared in the work of other artists working within the often-overlapping Russian avant-gardes

311 Robert Benedetti, "Reconstructing 'Victory Over The Sun'". *The Drama Review: TDR*, Vol. 28, No. 3, Reconstruction (Autumn, 1984), pp. 17-30.

312 *Ibid.*

313 *Ibid.*

of Suprematism, Constructivism and Futurism, such as El Lissitzky's spare geometrical designs (including, incidentally, the promotional poster for *Victory Over The Sun*). Matyushin's hopes for a fully integrated art form are not poorly documented, with the following statement going a long ways towards illustrating the importance he placed upon such artistic mergers:

Especially I liked, while listening, to look out of the window, or at a huge chandelier in the skylight opening. Extraordinary beautiful colors - now orange, blue, now brightly jolly green, flashing in the crystal facets of the chandelier - merged with the sounds of Schubert's "Unfinished Symphony," and I felt unsurpassed bliss. And only there, where this joy is sounding and shining, the bliss is coming upon us. It was difficult for me to leave all that; when the music came to an end and the colors faded, contours of the windows and columns assumed orphaned appearance. [...] Later on I thought of it much and made experiments. It seems to me that art will be inevitably synthetic. Only such art can make people really happy, joyfully taking and giving in their creative work.³¹⁴

TRANS-SENSE LANGUAGE

According to the art historian Charlotte Greve, "with the concept of *faktura*, the cubo-futurists [...] were able to move effortlessly between the material of sound and the material of the letter." This was not a technique that was arrived at by chance, given the unequivocally voiced desire of this movement's leaders to either fuse or dissolve the individual senses into a single, unified field of perception.

Though Khlebnikov's primary stated goal for his 'trans-rational' poetry was a sort of endlessly mutable language that would allow "the free fusion

314 M.V. Matyushin, "Memoirs of the Futurist." *Volga*, Nos. 9-10 (1994), pp. 72-123. Trans. Bulat Galejev.

of all Slavic words, his secondary goal was the discovery of a “worldwide *trans-sense language* [emphasis mine.]”³¹⁵ Such intentions led to his being designated as a kind of “epic” poet for an age in which this quality was otherwise being questioned or outright denounced - a fact that strongly contrasted him with the more pugilistic style of Mayakovsky - yet the “shining new light on an old world” approach of Khlebnikov and Alexei Kruchenyk remained equally valid as a radical art form, and would carry over into future generations of artistic experimentation in a substantial way.

While Khlebnikov’s fame was partially earned through his own audacity and uniqueness, it was also aided by the efforts of one Roman Jakobson, who, in 1919, lectured on the poet several times in Moscow, and two years later published a book on Khlebnikov after he had left Russia for good and settled in Prague. Jakobson, who had sided with the Russian Futurists in their heady endeavors, was a key player in expounding their theories, also submitting poetry to Kruchenyk under the pseudonym “Aljagrov.” He was also active in the Czech avant-garde Devětsil (or “Poetist”) group since his relocation from Russia to Prague in the summer of 1920. While this particular allegiance marked a clean break with the agit-prop of the Futurist or Constructivist artists of Russia - owing to Devětsil’s need to keep art and propaganda as two functionally distinct categories, and its «rejection of the very idea of specifically proletarian works of art»³¹⁶ - it was nevertheless a continuation of the Russian groups’ program to melt down the arbitrary divisions between art and life. The “Poetist” tendency, under the leadership of Karel Teige, provided Central Europe’s answer to earlier synesthetic research among artists. Teige was apparently an enthusiast of neurological studies, and despite his reluctance to divulge exact research sources, he believed that

...all men and women possessed a more or less active
capacity to translate spontaneously into visual images

315 Quoted in Roman Jakobson, *My Futurist Years*, p. 206. Ed. Bengt Jangfelt, Trans. Stephen Rudy. Marsilio Publishers, New York, 1998.

316 Esther Levinger, “Czech Avant-Garde Art: Poetry for the Five Senses.” *The Art Bulletin*, Vol. 81, No. 3 (Sep., 1999), pp. 513-532.

tones, voices, sounds, and other acoustic impressions; impressions of smell, taste, and touch; and impressions of well-being and pain. Visual dream images, on the other hand, could provoke auditory and tactile sensations.³¹⁷

Jakobson himself would write in greater detail still on the subject, and with an equal fervor for re-examining synesthesia as a scientifically valid phenomenon:

Owing to the neuropsychological laws of synaesthesia, phonic oppositions can themselves evoke relations with musical, chromatic, olfactory, tactile, etc. sensations. For example, the opposition between acute and grave phonemes has the capacity to suggest an image of bright and dark, of pointed and rounded, of thin and thick, of light and heavy, etc. [...] In poetic language, in which the sign as such takes on an autonomous value, this sound symbolism becomes an actual factor and creates a sort of accompaniment to the signified.³¹⁸

Jakobson, as one of the forefathers of structural linguistics, wisely noted the possibility of synesthesia to determine the phonetic value of languages in the making (a subject discussed in greater depth, and in this century, by neuroscientist V.S. Ramachandran). He also followed the lead of many of his contemporaries in evoking cross-modal experimentation as a kind of alchemical tool. Osip Brik, for example, repeatedly used the term “sound image” in his writings, a concept that he then folded into his “anti-authorial” stance arguing for the value of poetic raw material over the celebrity of poets.

317 *Ibid.*

318 Roman Jakobson, *Six Lectures on Sound and Meaning*, p. 113. Trans. John Mepham. MIT Press, Cambridge / London, 1981.

SYNESTHESIA IN 'SOCIALIST CINEMA'?

Bold as their innovations might have been, it was not the multi-media extravaganza of Futurist theater, nor the liberating impulses of *zaum* poetry, which captured the imagination of the Soviet leadership. Some of the early Soviet culture's most striking examples of synesthesia-influenced artwork came not from theater, poetry, or painting, but from a medium more decidedly cutting edge for its time. Lenin's aforementioned endorsement of electrification seemed to tacitly approve of more electrified art forms, and, to be sure, the electricity-aided medium of film eventually rose to the forefront of the arts placed in service of revolutionary ideals - Lenin had suggested as much to his culture minister Lunacharsky, cementing this film-centric approach as official policy.

The mass nature of film seemed ideal for furthering the cause of the Bolsheviks, and it provided a bridge between the innovation of the "classical" avant-garde and the more drab (yet no more "realistic") art demanded by State-directed cultural policy. To merely be dipped in the wool of socialist ideology was not enough; content had to be accessible on all levels despite the sincerity of its intentions. For example, as sincere as Avraamov's city-spanning symphony was in its propaganda, its implementation was simply too difficult and time-consuming to allow for periodical stagings, making it difficult for the work to ever take a place in the lexicon of mass culture. So, films of all kinds were encouraged to uplift the industrial proletariat, with some genres - like "eccentricity," which was a Russian variant on the "stunt film" - blatantly taking cues from American-made productions.

That said, the post-Revolutionary films that either defied genre conventions, or initiated new genres entirely, still rank among the most respected in world cinema, with Dziga Vertov's work leading the pack in this respect. Vertov's documentarian skill as a newsreel director, though certainly of value within the new Soviet regime, was supplemented by an experimentalism in which - as per Sergio Delgado - "his cinematic project

in general [went] beyond the mere screening of relationships to attempt a reconfiguration of perception that allows man to draw cinematic relations outside of the movie theater."³¹⁹ Whereas earlier strains of late 19th century and 20th century Russian avant-gardism were concerned with maximizing the already available perceptual faculties by the aid of largely poetic devices - a task that, of course, led to their fascination with synesthesia - Vertov would eventually attempt to show how new technological appendages could significantly alter and expand the breadth of human experience; the new recording and observational tools adapting to the pre-existing sense organs until these mechanical tools could be understood as "organs" in and of themselves.

Situating Vertov's project within the larger cross-modal tradition is not easy: on one hand, it owed a debt to the "trans-rationality" earlier made famous by Khlebnikov, and was very similar to the Futurist program in that it "aimed at expanding the human senses, discovering new visual and aural dimensions that would train modern eyes to perceive simultaneity and speed and modern ears to register non-tempered sounds [...] of modernity: speed, fragmentation, simultaneity, pulverization."³²⁰ One of Vertov's landmark works - *Enthusiasm!*, or *The Donbass Symphony* - also followed the now-familiar cross-modal pattern of arts aspiring to musicality: the work was divided into four musical "movements" each subtitled with the instructional terminology for mood and tempo typically seen on sheet music. On the other hand, Vertov was unyielding in his demand that the new cinematic art should not invite comparisons to literature or theater, a demand that separated him from previous seekers after a "synthesis of the arts." Vertov's commitment to providing a wholesale transformation in human nature depended upon first providing an honest documentation of unscripted reality, which would then be shown - through the means of technological prostheses - to have components which had previously

319 Sergio Delgado, "Dziga Vertov's *Man With A Movie Camera* and the Phenomenology of Perception." *Film Criticism*, Vol. 34, No. 1 (Fall 2009), pp. 1-17.

320 Oksana Bulgakowa, "The Ear Against The Eye: Vertov's *Symphony*." *Monatshefte*, Vol. 98, No. 2 (2006), pp. 219-239.

existed outside the scope of sensory perception, and whose unveiling would lead to inexorable changes in this previously objective reality.

Even without attempting to achieve a unity of the senses, Vertov's work with films like the *Donbass Symphony* was radical enough: the painfully loud mechanical noises used in the film's 'production' sequence presaged the latter-day industrial music of subculture icons like Throbbing Gristle and Merzbow, and earned the flabbergasted response of critics like Victor Shklovsky in their own time. The latter was a testament to just how bracing the film's contents were for their time, considering that Shklovsky was a champion of transformative estrangement - a.k.a. *ostranenie* - and should have not been surprised by the film's unique asynchrony between sound and image (for what it is worth, Charlie Chaplin sent Vertov a congratulatory telegram after seeing the film).³²¹ Taken on its own, the suggested sonic narrative for the film shares some DNA with the anarchistic tape-editing experiments proposed by William Burroughs in *The Job* and *The Electronic Revolution*. Within the film world itself, Vertov had worthy successors: one of these was the Lettrist artist Isidore Isou, who demanded a style of film in which, according to Andrew Uroskie, he "seemed to evoke the Wagnerian *Gesamtkunstwerk* in his condemnation...arguing that individual elements in the film, such as the soundtrack, were inevitably subordinated and thus invisible in the course of their synthesis."³²²

Vertov was notable not just for his approach toward synthesis of different sensory materials, but also for his contributions to art forms that had yet to even be named. He took advantage of the nascent sound film technology to craft what might be called early 'sound installations', or cinema evenings in which, in the darkened theater, the following scenario - as recalled by the art critic Rafailovich - played out:

321 A disclaimer is in order here: portions of the *Enthusiasm* soundtrack have been lost over time, and some 'restored' versions of the film (such as Peter Kubelka's) favor a synchrony of sound and image. A competing version from the Russian film library Gosfilmofond takes a completely different approach.

322 Andrew V. Uroskie, "Beyond The Black Box: The Lettrist Cinema of Disjunction." *October* No. 135 (Winter 2011), pp. 21-48.

...the rectangle of the screen was shining in its white virginity. But nobody was interested in the screen. The bells sounded, a choir sang a religious choral, a glass was broken, somebody was beaten, and when, in this symphony of a drunken scandal, a traditional Russian word of insult was heard clearly, nobody doubted the documentary nature of the filmed material. We saw a recording of authentic sound.³²³

When considering film as a cross-modal art, the work of Sergei Eisenstein cannot go unmentioned, either. That director's watershed 1925 productions - *Strike* and *Battleship Potemkin* - feature some of the most iconic images in film history (such as the latter's "Odessa Steps" massacre sequence), and are all the more striking for their combining original materials with re-appropriated footage such as German newsreels. Eisenstein's value as a propagandist was immediately noted in the wake of these films, and while his relationship with the Soviet bureaucracy had its dramatic highs and lows, the 1938 release of the patriotic battle epic *Alexander Nevsky* earned him the Order of Lenin (and, we can speculate, a subsequent immunity from the zealous purges of the late 1930s).

To this day, the aforementioned "steps" sequence in *Battleship Potemkin* seems like an actual event that took place during the quashed 1905 Russian Revolution rather than the fiction it really was. The effectiveness of that, and similar sequences, owed itself largely to Eisenstein's skillful development of montage as both a technique and an ideology. Because of that work with montage, Eisenstein remains one of the foremost names associated with the arts of synthesis in the 20th century, justifying his involvement with cinema on the grounds that the motion picture was both the spatial counterpoint of graphic art, and the temporal counterpoint of music. Further expanding on this idea, Eisenstein posited five different types of montage - metric, rhythmic, tonal, overtone, and intellectual -

323 Quoted Vertov, "Tvorcheskaia kartochka." *Kinovedcheskie zapiski* 30 (1996), p. 178. Trans. Oksana Bulgakowa.

each with a distinct set of psychologically transformative effects. The first of these methods involved something akin to musical time signatures, in which the “pulse” of the filmic action would ideally be attuned to the pulse of the viewing audience. Tonal montage extended the musical metaphor, being for Eisenstein a “melodic-emotive” means of playing with the temporal values of different film sequences as if they were musical phrases. The forms of overtone and intellectual montage stretched what might now be called the classical definition of the montage form, with the latter being (unsurprisingly, given Eisenstein’s Marxist background) a dialectical discourse that would eventually resolve itself and lead to future developments in the medium.

Along these notes, Eisenstein’s montage technique is, it would seem, almost universally known by serious students of film as being from impossible to dislodge from its ideological moorings: having realized that “[Marx and Engels’] dialectic system is only the conscious reproduction of the dialectic course (substance) of the external events of the world,” Eisenstein determined that “the projection of the same system of things / while creating concretely / while giving form / yields / ART.”³²⁴ Eisenstein felt that the montage style was armored against re-appropriation by conflicting ideologies, perhaps engaging in a bit of a logical ‘genetic fallacy’ that assumed the form’s future would also be closely bound to its origins. The wholehearted embrace of the montage technique by commercial advertising seems to provide all the contradiction that is necessary.

However, somewhat lesser known is the inspiration imparted to Eisenstein’s montage forms by another synesthetic form, Japanese *kabuki* drama. Since at least the twelfth century, when that nation’s art of scroll painting visually represented movement in temporal flux, Japanese art had been rife with possible predecessors for the filmic representation, and in *kabuki* the Japanese influence upon world avant-garde was solidified.

³²⁴ Sergei Eisenstein, *The Film Sense*, p.45. Trans. Jay Leyda. Harvest / HBJ, New York, 1975.

Eisenstein's explicit interest in this art form was fairly unique for creators of his time and place: the appearance of a visiting *kabuki* troupe in 1929 was notoriously frowned upon by editors of *Pravda*. Nonetheless, he explained his fascination with this form by differentiating between fully integrated sensory data, and that which he saw as being merely complementary:

To the Japanese, sound, action, space, and voice do not accompany each other, nor do they parallel each other; they combine and co-operate as elements of equal significance... It reminds one of football, which is the most collectivistic of sports. The grandeur of Kabuki comes from its art of subsumption, which is different from accompaniment [...] in the Kabuki, we 'hear the action,' 'see the sound.' As the voice does not sing with the notes, the hand has to present them! This is presented with the accompaniment of sounds from behind the stage and we are mesmerized by the sublime perfection.³²⁵

Among the elements of *kabuki* that Eisenstein found particularly useful, there was "the importance of the *samisen*, flute or drum, which neither accompanied nor precluded the human actor or player, but rather was in equal balance with the human involvement."³²⁶ In realizing this, Eisenstein had a considerable head start on another familiar feature of cinematic craftsmanship: the sound effects industry that would focus, among other things, on making synthesized soundbites seem like the eminently plausible audio emanations of alien races, manned space flight, etc. Eisenstein's observation of the action occurring along the *hanamichi* [花道、lit. "flower path"], the runway-like passage through the audience on which actors made their stage entrances, also influenced certain of his film techniques: much as actors deliberately slowed down their movements

325 Quoted in Hamamura, Sugawara, Kinoshita and Minami, *Kabuki* p. 146. Tokyo, Kenkyusha, 1956.

326 William F. van Wert, "Eisenstein and Kabuki." *Criticism*, Vol. 20, No. 4 (Fall 1978), pp. 403-420.

along the *hanamichi* to heighten the tension and emotive quality of an act, Eisenstein slowed the tempo of filmed sequences in *Battleship Potemkin* in order to greater relay the extremity of certain emotions. Certain elements of the *kabuki* presentation which seemed to most effectively create an illusion of sensory equality - such as the "spatial proximity of the musicians in Kabuki to the action of the play"³²⁷ - would have been difficult for Eisenstein to replicate in films, but might have possibly been inspiring to Futurist or Constructivist artists had they been more aware of them, given the already radical attitude towards spatial relations that was initiated with *Victory Over the Sun*.

Eisenstein's innovations understandably found supporters among those who had already helped to pave the way for such techniques - those who had busied themselves with the Futurist and Constructivist impulses. Roman Jakobson, once again a staunch ally of these new tendencies, argued for the montage film as a communicative form distinct from what other types of motion picture offered:

The theoretician who disclaims cinema as an art perceives the film as a mere moving photograph; he does not notice the montage, nor does he want to acknowledge the fact that here a specific sign system is involved- this is the attitude of a reader of poetry for whom the words of the poem make no sense.³²⁸

Still, Eisenstein's montage theory is not without its critics, particularly Gene Youngblood, who identified both Eisenstein and Pudovkin as unable to "follow their own observations to their logical conclusions" and as "restricted by the consciousness of their times."³²⁹ Youngblood felt instead that a truly synesthetic film work would, instead, "transcend the reality

³²⁷ *Ibid.*

³²⁸ Roman Jakobson, *Language in Literature*, p. 460. Harvard University / Belknap Press, 1987.

³²⁹ Gene Youngblood, *Expanded Cinema*, p. 85. Clarke, Irwin & Company, Vancouver / Toronto, 1970.

of its times,"³³⁰ and would rely on a concept of "mosaic simultaneity," conceived of as "one continuous perceptual experience" rather than one in which any conflicting opposites could even be recognized as such. In the place of Soviet-era 'dialectical' montage, though noting how the film he enjoys aspires to a condition similar to Eisenstein's "intellectual montage," Youngblood recommended the work of Stan Brakhage as an alternative to Soviet-era 'dialectical' montage, noting its transcendent values as follows:

We are not asked to interpret or find "meaning" in [Brakhage's] combinations, though vastly rich experiences are possible. When the images emerge from a hazy blur, for example, we are not asked to interpret this as the creation of life or some similar dramatic notion, but rather as a perceptual experience for its own sake, in addition to the contextual relationship of this image to the rest of the film...³³¹

Though being careful not to name names, Youngblood's contrasting of this ethos with that of commercial filmmakers ends up indicting the work of Eisenstein as well, given that attempts to "manipulate us emotionally" are the territory of such less-than-transcendent creators; an "arrogant degradation of cinema...using film as a tool for cheap sensationalism."³³² While Youngblood perhaps has enough respect for Eisenstein's technical innovations not to single him out as a particularly egregious emotional manipulator, he still draws a solid line between film that has "exposition" as its main characteristic and that which aims instead at "evocation." The latter, he believes, is the key to synesthetic cinema, a concept that he poetically defines (through Carolee Schneeman) as "the place between desire and experience," but which we can also take to mean as "the interpenetrations and displacements which occur between various sense

³³⁰ *Ibid.*, p. 86.

³³¹ *Ibid.*, p. 88.

³³² *Ibid.*

stimuli."³³³ Films that succeed in this, as Youngblood suggests, allow for there to be a true sense of co-creation between the film and its viewers, rather than the one-way information transmission that he suggests is the product of "expository" film.

DECLINE OF THE AVANT-GARDE

It is worth noting that scientific inquiry into synesthesia, rather than the artistic speculation and theory outlined above, was alive and well even in the Soviet Union's darker years for such inquiries. In the late 1940s - roughly the same time in which critics finally began to raise their voices against T.D. Lysenko's eminently discreditable research on genetics and agriculture - some fascinating synesthetic studies were conducted at the Leningrad Institute of the Brain. A couple of surviving papers from this period, titled "The Influence of Colored Lighting on the Perceiving of Sound Duration" and "The Discerning of Sound Pitches Under Colored Lighting Conditions," were submitted by S.E. Drapkina and V.I. Kaufman, respectively. Bulat Gulayev proposes that the eventual resurgence of Soviet scientific interest in these areas could not have come about without the influence of the previous generations of avant-garde artists (specifically Matyushin),³³⁴ with Matyushin's musings lighting a fire in the mind of the researcher S.V. Kravkov and stimulating his study into the interaction of the sense organs.

By that point in Soviet history, it would largely be up to the scientific community to keep this kind of research going, since the cultural scene was undergoing a deep freeze during the final years of Secretary Andrei Zhdanov. Zhdanov's intolerant views on cultural life not only dissuaded Russian citizens from producing and consuming vaguely defined "cosmopolitanism," but also did the same for the USSR satellite countries,

333 Quoted in Youngblood (1970), p. 92.

334 Bulat Galejev, "Matyushin's Contribution to Synthetic Art." *Leonardo*, Vol. 38, No. 2 (2005), pp. 151-154.

where the newly created Cominform sought to impose uniform standards of discipline upon those nations. The corrupting influence of Western forms like jazz was continually railed against, to say nothing of more confrontational forms.

Most critics will concede that the ingenuity and brashness of the Russian avant-garde had already come to a screeching halt in the early 1930s, when - after publishing the decree "On the Reconstruction of Literary and Art Organizations" - the Stalinist regime instituted Socialist Realism as the officially acceptable mode of artistic expression, and even enthusiastically Communist artists were not immune from having their forms condemned as "decadent" or "bourgeois." For the more skeptical writers within the new Soviet power, the writing was already on the wall in the 1920s (Evgeny Zamyatin's poem "I'm Afraid," for example, voiced concerns over State direction of the arts very early in that decade). Plenty of the avant-garde art proceeding this formal decree was bluntly propagandistic in intent, yet still had ambiguous characteristics that would have to be excised under the new arts policy. Ironically, given the distaste with which the regime must have viewed the poetic idealism of the Symbolist movement, the revolutionary art of the 1930s was to portray only highly idealized visions of reality. As bodies like the AkhRR [Association of Artists of Revolutionary Russia] gained more say in what was exhibited throughout the Soviet empire, they even "tore Van Gogh and Cézanne from gallery walls in impotent spite."³³⁵

The aesthetic results of this policy were shameful, leading not only to the executions of notable poets like Nikolai Gumilev (originally a member of Vyacheslav Ivanov's Symbolist circle), but also to the liquidation of much of the former avant-garde: the theater director Meyerhold, for one, was tortured into confessing his non-existent connections to British intelligence agencies, and eventually sentenced to death by firing squad. Mayakovsky, meanwhile, committed suicide in 1930 - before the Stalinist castigation

335 Mariia Chegodaeva, "Mass Culture and Socialist Realism." *Russian Studies in History*, Vol. 42, No. 2 (Fall 2003), pp. 49-65.

of the avant-garde could take full effect - with his death being seen by many critics as a crucible point in the artistic and spiritual life of the Soviet Union. Ultimately, many of the avant-garde could rightly feel betrayed by an ideological system that transformed Marx's theory of history as class struggle into a dogmatic pseudo-religion; a Lenin cult maintained through the practice of so-called *bogostroitel'stvo* or "god-building." Yet many of the avant-garde's membership were either complicit in the construction of this scenario, or at the very least heralded it (as in the *Donbass Sinfonia* sequence where a Lenin statue replaces a sculpted likeness of Christ).

However, we should be careful of making claims that the Russian avant-garde had a built-in mass audience that was torn from it by Stalinism. Though it is interesting to ponder what this culture would have morphed into had it not been neutralized by State policy, such speculations should at least allow for the possibility that this art would have never been embraced by the masses. As early as 1918, the seeds of doubt were already planted, with artists as prominent as Marc Chagall confessing how "it pains me to admit that even the vanguard worker-revolutionaries, foaming at the mouth, have been bombarding us with puzzled questions: 'But what on earth is this? Explain, explain - do you call this proletarian art?'"³³⁶ Those works which were supposedly more accessible than the bewildering set pieces of the Futurists, such as Eisenstein's films, also did not succeed in courting mass popularity as well as they could have: among other indignities that he faced when dealing with competition from abroad, his *Battleship Potemkin* was pulled from many period cinemas to make way for the Douglas Fairbanks vehicle *The Thief of Baghdad*. Come the 1930s, his legacy was further stymied by the changes taking place in Soviet cinema itself, with Soyuzkino chairman Boris Shumiatsky demanding more entertainment-oriented films in the vein of *Chapaev* and *Happy-Go-Lucky Fellows*. Even some of those personally responsible for the advancement of this art, during its heroic phases, later became highly skeptical of the long-term value that it might have, as well as of the "enthusiasm" that

336 Quoted in *Iskusstvo kommuny*, 1918, no. 3. Trans. Mariia Chegodaeva.

originally spurred it on. One such self-effacement comes from none other than Roman Jakobson, writing in *My Futurist Years* that

...the future [...] doesn't belong to us either. In a few decades we shall be cruelly labeled as products of the past millenium. All we had were compelling songs of the future; and suddenly these songs are no longer part of the dynamic of history, but have been transformed into historico-literary facts. When singers have been killed and their song has been dragged into a museum and pinned to the wall of the past, the generation they represent is even more desolate, orphaned, and lost - impoverished in the real sense of the word.³³⁷

Thinkers like Gene Youngblood might use this collapse of the Soviet avant-garde as an instructive fable that social movements must be inspired by deeper, trans-historical currents; a position that he extended to the underground cultural explosion of the 1960s (disagreeing with Jean-Luc Godard's temporally limited belief that "the only true underground" of the twentieth century was "in Hanoi", Youngblood believed that "human sexuality" was the ultimate underground phenomenon).³³⁸ In saying so, though, Youngblood is essentially valuing the same process of "shining new light on an old world" that was forwarded by revolutionary artists like Khlebnikov, or perhaps the re-orienting exercises carried out by Vertov in *Man with a Movie Camera*. The idea that "old" or outright primordial data can be tapped into in order to build a more desirable future is one that has kept the flame of cross-modal research steadily burning. Moreover, this epistemological exercise shows us perhaps one of the few points of reconciliation between the goals of mystical and social movements. We should no longer be surprised by the fact that both a Scriabin and an Eisenstein can call upon these energies in order to create new realities.

337 Jakobson (1998), p. 245.

338 Youngblood (1970), p. 112.



CHAPTER 9

OTHER CINEMA: FROM KINETIC PAINTING TO CONCRETE FILM

Sunlight makes the world sing - why shouldn't light help the song sing?

- Mary Hallock-Greenewalt³³⁹

At the dawn of the 1920s, the concept of 'kinetic art' was beginning to come into its own. Though this term may cause readers to think reflexively of the etymologically similar *cinematic* art, motion pictures were not in fact the type of artwork that kinetic artists had in mind. These artists' collective endeavors were guided by different motivations than those working in the similarly new genre of film, and their own artwork relied upon a completely different and novel class of devices meant for colored light projection (rather than image projection).

Many of these color projection machines were meant to have their imagery synchronize, with varying degrees of persuasiveness, to musical performances. As such, they can seem like 'forgotten' precursors of similar tools packaged as entertainment software in the era of digital communications. It is a little foolhardy, though, to view early developments in this field as just being pre-digital versions of image/sound synchronization software like the iTunes Visualizer - major distinctions have to be made in the operability of early 'colored music' devices and the near-omnipresent software that now exists for visual interpretations of audio. As Michael Betancourt describes,

What these machines all have in common is that the decisions about the relationship between sound and image must be made by the artist *a priori* to the construction

³³⁹ Mary Hallock-Greenewalt, "Light: Fine Art the Sixth, A Running Nomenclature to Underlie the Use of Music as a Fine Art.", p. 1. Address delivered before the Illuminating Engineers' Society April 19, 1918, at the Engineers' Club, Philadelphia.

of the device: the visualizer cannot exist without these conventions. The determining factor separating one music visualizer from another is what it does – i.e. what conventions it establishes in how it visualizes music.³⁴⁰

THE CHALLENGE OF SYNCHROMY

The development of kinetic art is, like any art form, difficult to ascribe to a single cause or a unique originator, though the synesthetic impulse certainly played a starring role in that development, and was a common factor in a culture that could be divided on other key issues. Stanton MacDonald-Wright and Morgan Russell, the American-born artists who presided over the “Synchromist” painters’ circle in Paris, were at least two of the key figures tilling this fertile soil in the 1920s. The work of the Synchromists was, like much avant-garde work of the twentieth century’s first few decades, partially inspired by disillusionment with academicism and formalism, but also with other “competing” types of cultural novelty: Cubism, in particular, was disliked by the Synchromists for a perceived timidity in its approach to color, and Neo-Impressionism was seen as insubstantial for ignoring the ‘physicality’ of color and centering instead on “the emotional and associative side of the colors.”³⁴¹ However, Synchromism was also inspired by realizations that had more to do with affirmation than rejection: MacDonald-Wright justified his creations with the acknowledgement that all observable phenomena are “vibratory,” and that this fact allowed for definite correspondences between the emotional impact of sight and sound.

Such convictions gradually led the Synchromists to a disinterest in easel painting alone, though this was not for lack of public recognition: Russell

340 Michael Betancourt, “Intellectual Process, Visceral Result: Human Agency and the Production of Artworks Via Automated Technology.” *Journal of Visual Arts Practice* Vol. 7 No. 8 (2008), pp. 11-18.

341 Willard Huntington Wright, *Modern Painting: Its Tendency and Meaning*, p. 293. Dodd, Mead & Company, New York, 1915.

had greater implications for contemporary creative life than its under-documented nature may let on.

BEHIND THE FLICKER

For many of its participants, the development of color music, kinetic art and motion graphics has been a kind of separate chapter within the larger story of 'technological atavism,' a phenomenon that is again responsible for many of the tools designed to simulate or 'induce' synesthesia. We see time and again instances in which the psychedelic sensation of being entranced by a flickering fire was merely refined for film capture, or in which the raw material of flickering light is experimentally manipulated so as to induce a host of consciousness-expanding neurological effects and self-analytical visions in the viewer. In some particular cases, this type of atavism was the stated intent of the artists: the "dreamachine" kinetic sculpture of Brion Gysin and Ian Sommerville, proposed as "the first artwork to be viewed with the eyes closed," used a bombardment of strobing colors to alpha waves and to bring about the type of continuity between ancient and modern that was otherwise accessible only in the ephemeral world of dreams.

A similarly inspired project, Tony Conrad's 1965 film *The Flicker*, was designed to allow "...the audience themselves [to] provide [the] basis for imagery or composition,"³⁴⁵ and it was widely reported that viewing the film would result in varied hallucinations of secondary imagery (interestingly, afterimages produced from viewing were reported as being seen in *color* rather than monochrome).³⁴⁶ Other critics saw the relation of stroboscopic experimentation to psychic autonomy as being somewhat more complex: as Branden Joseph suggests, *The Flicker* "would seem to

345 Tony Conrad quoted in Branden W. Joseph, *Beyond The Dream Syndicate: Tony Conrad and the Arts After Cage*, p. 301. Zone Books, New York, 2008.

346 Regina Cornwell, "Structural Film: Ten Years Later." *The Drama Review: TDR*, Vol. 23, No. 3, Structuralist Performance Issue (Sep., 1979), pp. 77-92.

question one's sense of autonomy as much as it confirms it."³⁴⁷ That is to say, it had the apperceptive effect of 'unveiling' how such technologies could manipulate or even standardize their behavior, yet nonetheless induced nervous responses that were involuntary and either pre-conscious or subconscious.

With such multivalent works in mind, the motivations behind mobile graphic art were as diversified as the creators themselves, though much of the work done in this field points back to filmmaker Len Lye's observation that "in terms of light, colour, sound, atoms...nothing physical exists in a static state."³⁴⁸ The early astonishment that derived from viewing mobile graphic works was, in large part, due to the re-discovery of such inexorable qualities of life.

MUSIC OR NOT? THE DAWN OF LUMIA

Given the number of experiments already discussed in this book, which have sought to replicate the intoxicating effects of music, it may come as a surprise that "color music" would have looked *beyond* the musical realm for inspiration. Yet this was the case when one of the champions of the Symbolist movement - the painter James McNeill Whistler - suggested poetry as the *ur-form* from which other artistic forms derived (i.e. "as music is the poetry of sound, so is painting the poetry of sight.")³⁴⁹ Some laborers within the field of color music actively distanced themselves from the notion that they were merely trying to create music "by other means", yet were unable to fully escape the use of musical analogy in their work (and when they did, a decline in critical and public recognition could be an undesirable knock-on effect). Thomas Wilfred, the designer of the Clavilux organ and the propagator of Lumia or "light art," was one of the most notable of these intrepid - if misunderstood - souls.

347 Joseph (2008), p. 299.

348 Quoted in Carnow Wytan and Roger Horrocks (eds.), *Figures of Motion: Len Lye, Selected Writings*, p. 41. Auckland University Press, Auckland, 1984.

349 Quoted in Judith Zilczer, "'Color Music': Synaesthesia and Nineteenth-Century Sources for Abstract Art." *Artibus et Historiae*, Vol. 8, No. 16 (1987), pp. 101-126.

It was not unusual for the development of the new image machines to be directly linked to other broader developments in the European avant-garde. Ludwig Hirschfeld-Mack, for example, was a student at the Weimar Bauhaus School, where he developed a color organ after a kind of happy accident occurred during the rehearsal of one of the shadow plays that the school had become notable for. However, though the spirit of composers like Scriabin may have loomed large over them, the creative communities of the United States were not without their own pathfinders in the realm of synesthetic or cross-modal art - MacDonald-Wright and Russell being only some of the artists with their roots in American soil. The Danish-born Wilfred, who migrated to the U.S. in 1916, had talent in both the areas of mechanical invention and arts production, and was able to unite them in the production of a unique art form known as Lumia - projections of shifting light that were animated in real-time and, when the variables of intensity and color mixing were manipulated just right, bore a remarkable resemblance to the luminous hovering forms of the aurora borealis. Wilfred's tool for realizing these exhibitions was known as the Clavilux: like many of the innovations in the canon of synesthetic (or at least synthetic) artwork, it was the result of labors that spanned decades - in this case, a functioning Clavilux only appeared in 1922 after 17 years of work. Understandably, Wilfred was a passionate defender of the experiments conducted with the invention he had poured so much of his energy into.

Throughout the 1920s, Wilfred would tour throughout the U.S. giving performances with the Clavilux. Coming as they did at a time when the cinematic art was still in its infancy, Wilfred's performances had every opportunity to astonish viewers unfamiliar with the poetry of the moving projected image. Wilfred was certainly well aware of the advances that cinema was making, and already eager to point out its limitations relative to his own art. Of one particular work, he claims alluringly that, at its climax, "slender curved tendrils of light travel from the bottom of the screen to its top in less than one second...the result is a graceful and spirited sweep, as of a soaring bird, easily followed by the eye, sharp and distinct through-

out."³⁵⁰ He states that this same sequence, performed using the standard 24 frames-per-second sequencing of film projection, would produce an awkward and non-continuous effect "similar to that of a flashlight beam sweeping up the rungs of a ladder."³⁵¹

Wilfred's interest in color music stemmed from a rejection of the idea that the spectra of colored light and audible frequencies could ever be analogous - as such, his work seemed to be staunchly opposed to the concept of artistic synthesis that had informed the work of Romantics and Symbolists before him, though perhaps acknowledging (as his peer in "colour music" A. Wallace Rimington did) that "a psychological affinity is *felt* by artists and musicians between sound and colour, hence the use of common terms of expression between them."³⁵²

Despite Wilfred's misgivings about exact analogies, his Lumia compositions were nevertheless loaned out for use as accompaniment to dance and theatrical ensembles. He was also no stranger to proposing inexact analogies with other art forms, encouraging artists to look upon light as if they were "sculptor[s] gazing upon a block of marble." He even fantasized about a kind of 'scent organ', similar to the one employed in Huysmans' *A Rebours*, that would be operated by a "Fragranist": an "air keyboard of a thousand valves from which any known odor may be wafted through the recital hall."³⁵³ This on-again, off-again relationship to artistic synthesis was made more complex still by his association with the architect Claude Bragdon, who clearly did have an interest in this field of inquiry (together the two would form part of a group whose name - "The Prometheans" - invoked the spirit of Scriabin and, by extension, the idea of artistic synthesis as a time-transcending act of emancipatory rebellion).

350 Edwin M. Blake and Thomas Wilfred, "Letters Pro and Con." *The Journal of Aesthetics and Art Criticism*, Vol. 6, No. 3 (Mar., 1948), pp. 265-276.

351 *Ibid.*

352 Sir Hubert von Herkomer quoted in Alexander Wallace Rimington, *Colour Music: The Art of Mobile Colour*, p. xi. Hutchinson & Co., London, 1912.

353 Edwin M. Blake and Thomas Wilfred (1948).

The development of colored light shows has progressed over time to the point where they have become an almost omnipresent feature of live music concerts and chic get-togethers, yet this trend towards greater accessibility should be a vindication of Wilfred's ground-breaking work rather than an indictment of it. It is easy to forget now how radical it was a century ago to experiment with "moving paintings," which were generated by mechanically rotating objects such as mirrors and polished metal projecting light forms onto a translucent surface (differently colored translucent materials would first capture projected light before it was reflected onto the spinning reflective elements, making for a variety of different light hues).

Wilfred's Clavilux organs were specifically built to play his Lumia compositions, which were not to be considered a form of "music" (despite both the misleading nature of the inherited term "colour music", and Wilfred's acknowledged musical background as a lute player). This was also done in spite of Wilfred using the lexicon of the pipe organ to discuss the functionality of his own instrument, using the musical descriptors of melody and harmony to explain the minutiae of his composition, and even taking a cue from painter Paul Signac by using 'opus numbers' to designate the order of his works' completion. Much like pipe organs themselves, Lumia instruments were required to be permanently housed in spaces large enough to accommodate them, somewhat limiting their accessibility in a way that would not be the case for other forms of graphic playback equipment (i.e. film projectors). The concert-like public exhibition of Lumia works, then very novel for its time, invited further musical associations among audiences who were perhaps unused to sitting for a lengthy duration to focus their attention on pictorial artworks. However Wilfred might have protested, criticisms and reviews of the Lumia performances did often center on their similarity to music recitals.

Ultimately, Wilfred's ambition was to move beyond the perceived restrictions of not just music, but of all the fine arts recognized to date: Lumia was regularly proposed as an "eighth fine art" with its own unique

criteria for judgement. It would, ideally, command a special place above these other arts by virtue of its dealing most specifically with light, which Wilfred named as “the greatest power in the world.” Though his work never achieved the popular appeal that would allow him to truly see himself as the innovator of this proposed eighth fine art, Wilfred’s tightrope walk between media did give him a kind of status as a forefather of “installation” art (indeed, he uses the term himself as early as the mid-1940s).

There is some public debate still surviving, in the pages of the *American Journal of Aesthetics and Art Criticism*, that both confirms Wilfred’s zeal for his work and the partial skepticism with which the public greeted its aims (even while they seemingly enjoyed its color projections themselves). Wilfred’s sparring partner in this journal’s letters section, Edwin Blake, argues for an incorporation of music proper into programs of “colour music,” stating the following:

I am quite in agreement with Mr. Wilfred that there is no correlation between specific musical tones and specific colors. Nevertheless, it does not seem valid to draw the conclusion that neither color music nor mobile graphics should be accompanied by music. I am not aware that when a certain musical note is sounded, the dancer should raise her right, at another tone her left foot, nor at a third tone be on both toes, and so on [...] The dance and its musical accompaniment agree in tempo, rhythm and dynamics. Music not alone serves to keep dancers in step, but vivifies both performers and audience. So it would seem, a musical accompaniment should add much to a composition of either color music or mobile graphics. The auditory and visual components of the composition should be related - not sound to color - but by harmony of tempo, rhythm, and dynamics.³⁵⁴

354 *Ibid.*

Another suggestion of Blake's - that "it would be interesting to have a simple melody or dance tune played with color music"³⁵⁵ - prefigures the 21st century approach to color / music synthesis, in which often austere tones and minimalist sonic content correspond to fluctuations in color and visual patterning. Throughout his criticism, Blake is reasonably fair to Wilfred; tempering his complaint about the slow burn of Lumia works with the suggestion that Wilfred must have done this not out of technological contingency, but because "...Mr. Wilfred prefers the dignity and solemnity effected by quiet and slow majestic tread."³⁵⁶ In saying so, he also lends some credence to modern multi-media artists that work with pared down materials for similar reasons (and in spite of the fact that they have the technological and intellectual capability for much greater complexity).

Wilfred's rebuttal was mostly amicable - and included a suggestion that Lumia works more in line with Blake's need for a "sped-up" experience were a definite possibility - but it did question what he perceived as Blake's creating an unnecessary division between "Art and Science" as it applied to Lumia. Wilfred took issue with Blake's need for a "serious rational study of geometrical structure and form" in the arts, passionately insisting that this was anathema to originality, and taking this occasion to wonder why technical innovation in the arts must produce works that deal with themes other than the perpetuation of that same technical innovation (e.g. "has the advent of the pneumatic chisel...made sculpture more scientific than it was when Praxiteles created his *Hermes* in the 4th century B.C.?"³⁵⁷)

LUMIA VS. NOURATHAR

Wilfred's work, despite the awkwardness with which he attempted to situate it outside of "music" while using the descriptive language thereof, was intriguing enough to be one of the first cornerstones in a tradition all of

³⁵⁵ *Ibid.*

³⁵⁶ *Ibid.*

³⁵⁷ *Ibid.*

its own. It was preceded in the late 19th century by Alexander Rimington's soundless colour organ, the name of which became the generic appellation for all similar devices constructed in the future (Wilfred's included). In 1877, Bainbridge Bishop also introduced an organ design that combined sound with visuals projected onto a hemispherical screen placed atop the organ (one prominent owner of this device was the circus founder P.T. Barnum).

Another very notable contribution within Wilfred's own era came from Mary Hallock-Greenewalt, whose special tool for performing 'light music' was named *Sarabet* as a tribute to her mother, Sarah Beth. The actual form that she created was known as *Nourathar* after a loose Arabic translation for "essence of light." Interestingly, given the number of 'color music' instruments surveyed thus far that had their designs based on keyboard instruments - with even Wilfred describing the controls of his Clavilux as "keys" despite their being visually dissimilar to the keys of music keyboards - Hallock-Greenewalt's own lighting system was a tabletop interface lined with slider controls, toggle switches and thumb dials (the inventive rheostat-like controls adjusted the intensity of the illumination).

Like Wilfred, Hallock-Greenewalt did not attempt to convince audiences that there was any kind of perfect correspondence between values of light and sound, and did not organize colors to be played on her devices as "octaves" as Scriabin had done earlier - she recognized on occasion that the "harmonic mixing of sound does not have a parallel with light, which additively combines to produce new, independent colors."³⁵⁸ She was also careful to note how her *Nourathar* could have ideally been synchronized with any of the other fine arts, i.e. "had I been a reader of epic poetry or a pantomimic artist, this fine use of light would have been launched in conjunction with these arts, since the categorical connection between light and music is no more than between light and any other art."³⁵⁹

358 Michael Betancourt, *The History of Motion Graphics: From Avant-Garde to Industry in the United States*, p. 25. Wildside Press, 2013.

359 Hallock-Greenewalt (1918).

Nonetheless, she was not completely free from aspiring towards the freedom suggested by musical play; hoping for “the devising of a mechanism through which one could deal out quantities of light at will as subtly as a violinist feels out timbre or a singer gives forth overtones.”³⁶⁰ The literature that survives her, particularly the script for her public speaking appearances, also shows that she was keenly aware of synesthesia as a neurological condition rather than a spiritual state, and she was eager to use the existence of this sensory linking as a justification for her own experiments. In doing so, she invoked the underlying categories that Kant outlined in *Critique of Pure Reason* - quality, quantity, extension, weight, space - as the foundations from which all sensations could spring, and as those qualities that could bond through association otherwise dissimilar things (e.g. mental dispositions and physical objects). It seems, in fact, that Hallock-Greenewalt ultimately gave these issues more serious consideration than Wilfred did.

Despite also sharing with Wilfred the impassioned proclamation that light play was the “sixth fine art” (not the “eighth,” as Wilfred had suggested), Hallock-Greenewalt would come into direct conflict with him through a lawsuit that accused him of infringing upon her patents for a “device connecting light and music.” This suit was not successful, primarily because Wilfred’s Lumia never claimed to proceed from a “musical” aesthetic. Michael Betancourt also suggests that the lawsuit was born out of a power struggle between rivaling styles of mobile graphic performance - after all, “Wilfred was directly competing with Hallock-Greenewalt for concert venues.”³⁶¹ Hallock-Greenewalt’s animosity towards Wilfred was furthermore fueled by a mysticism that, at this point in our story, should not be too surprising a feature of the artists working with the stuff of synesthesia and cross-modal synthesis. Her confidence in the curative or restorative properties of her Nourathar led to proclamations of such grandiosity that would certainly equal those of Scriabin or Wagner, and led to the penning of a towering treatise on the subject.

³⁶⁰ Hallock-Greenewalt (1918).

³⁶¹ *Ibid.*, p. 28.

Other participants in the colour music tradition were less adversarial to Wilfred, such as the filmmaker Mary Helen Bute. A particularly interesting torchbearer of this tradition - who was also carrying on a separate tradition of legitimate polymaths working with cross-modal artworks - was another American-born artist, Frank Malina. Malina had his hands in the very different, but not irreconcilable, fields of aeronautic engineering and artistic production, making him kin to other eccentric geniuses like Jack Parsons. It was Malina who would provide an all-encompassing definition for the various experiments that followed on the heels of Wilfred's Lumia - the form now known as "kinetic art" would be typified by "visual artifacts of three-dimensional or constructional type with mechanical motion of solid bodies, such as animated clockwork systems [...] and Calder mobiles driven by air currents," and would also involve the use of "cinema equipment to create pictures of changing composition and color projected onto a framed area (the screen)."³⁶²

By his own admission, Malina was not even aware of Wilfred's work when he began exhibiting kinetic paintings done with his Lumidyne system in the mid-1950s: as ever, similar conclusions in the arts seem to be arrived at with no direct knowledge of others' like-minded research. Yet it is disingenuous to say that the similar conclusions reached were tantamount to similar aesthetic results. Malina's Lumidyne paintings, unlike Wilfred's, had less of a performance aspect to them: whereas Wilfred's work "create[d] a picture the composition and colors of which change over time,"³⁶³ the Lumidyne pieces relied upon a fixed compositional space like a standing column (e.g. his 1961 *Kinetic Column*). While Malina did not proselytize much on the necessity for a synthesis of the arts, he did identify one of the main areas of *asymmetry* between them, which was that some were capable of incorporating dramatic movement into their compositional spaces while others were not.

³⁶² Frank J. Malina, "Kinetic Painting: The Lumidyne System." *Leonardo* Vol. 1 (1968), pp. 25-33.

³⁶³ *Ibid.*

He identified several key moments throughout history in which the creators of static artworks attempted to defy their medium's limitations on the depiction and enactment of mobility:

An animal has been painted in a pose that could not be maintained in repose; symbols such as arrows have been used to indicate direction of movement; the Futurists made use of blurring effects and of a multiple reproduction of objects of the kind produced by the stroboscopic effect; the moiré effect has been applied which requires the viewer to move in order to see changes in the picture; and optical effects have been introduced which give an illusion of motion.³⁶⁴

Malina suggests that the determination of these artists to include elements of motion in their work is, as hinted at earlier, informed by an atavistic impulse again dating back to the wonderment humans achieved by viewing undulating flames; this is the "oceanic consciousness" that film critic Gene Youngblood rhapsodized elsewhere.³⁶⁵ For Malina, the desire to create such artworks is a response to nature's challenge to man, i.e. a challenge to replicate its minutiae as faithfully as possible. This rationale for art making was similar to Aldous Huxley's proposition that "recognizing the autonomous otherness of nature" was essential to the furthering of all mankind's labors; the attempt at "a direct experience of the animal otherness underlying personal and social Identity"³⁶⁶ was the common force that united many of the forms beloved of and created by cross-modal experimenters, including the Japanese haiku and the

³⁶⁴ *Ibid.*

³⁶⁵ "...we stare in mindless wonder at the ocean or a lake or river. We are drawn almost hypnotically to fire, gazing as though spellbound. We see cathedrals in clouds, not thinking anything in particular but feeling somehow secure and content. It is similar to the concept of *no-mindedness* in Zen, which also is the state of mantra and mandala consciousness, the widest range of consciousness." Gene Youngblood, *Expanded Cinema*, p. 92. Clarke, Irwin & Company, Vancouver / Toronto, 1970.

³⁶⁶ Aldous Huxley, *The Doors of Perception and Heaven and Hell*, p. 125. Harper / Perennial, New York, 1990.

Dionysian rites. Malina did, however, always keep practical considerations in mind even while noting the potential for art to realize its most grandiose ambitions: he admitted that work of his type had plenty of potential to make viewers uneasy, simultaneously noting the hypnotic effect that was leading a French manufacturer to build an anti-insomnia device (the *Somnidyne*) based on similar technical principles, and the nausea or “unbalanced feeling” that this work could produce.

The automatism or partial relinquishment of artistic control associated with colored music instruments also point at another larger trend in the arts, namely the growing interest in aleatory or chance composition. It seems logical that the work of Thomas Wilfred was included in the seminal MoMA exhibit *15 Americans* alongside masters of Abstract Expressionism like Jackson Pollock, since the works of both artists pointed towards an increased inclination towards letting artistic materials behave according to their own dictates.

It is no accident that contemporary electronic music composed using generative processes - such as the music of Oval, particularly the material from *Ovalprocess* [2000] and beyond - often has accompanying video clips that either look strikingly similar to earlier color music pieces, or at the very least are dominated by non-narrative visual abstractions whose ephemeral and ambiguous flickers behave in a similar manner. Though this musical method involves viewing “the programming code and computer operating systems as more important, at least in terms of affecting the musical result, than experimental or aesthetic/musical concepts,”³⁶⁷ the technological sheen of the final product does not preclude it from being a “direct experience of the animal otherness underlying personal and social Identity” as the earlier color music innovations have been.

³⁶⁷ John Latartara, “Laptop Composition at the Turn of the Millennium: Repetition and Noise in the Music of Oval, Merzbow, and Kid 606.” *Twentieth Century Music*, Vol. 7 No. 1 (March 2010), pp. 91-115.

ABSTRACTION AND ABSOLUTISM

The artistic turn towards abstraction, which fueled the near-simultaneous arising of kinetic art / 'motion graphics' and film mentioned above, should be touched upon here if this chapter of our story is to eventually reach a satisfactory conclusion (and a sense of connectedness to the remainder of this work). It could be argued that the non-narrative quality of both kinetic art and of the later developments in so-called concrete cinema both sprang from the same inspirational source: that is to say, from what the pugilistic painter Clyfford Still identified as the need for the artist to "escape [the] demands that hold up a mirror to himself," and therefore to deny merely perpetuating an ongoing cycle of "frustration, sadism, superstition and the will to power."³⁶⁸ To be sure, nominating someone like Still as the primary spokesperson for this movement is fraught with risks, given his legendary combativeness. However, his essential anti-historicist bent was contemporaneously reinforced by luminaries like Willem de Kooning (with his somewhat Taoist proclamation "it is exactly in its uselessness that [abstract art] is free")³⁶⁹, and by the way in which of painters like Jackson Pollock suggested a history driven by accidents rather than by conscious planning.

The filmic counterpart to the work undergone by these painters would eventually become known as concrete film (this owed itself partially to German filmmaker Oskar Fischinger's insistence that the terms "concrete" or "absolute" were preferable to "abstract," as abstraction still suggested some sort of basis in representational art). A subdivision of this practice would come to be known as "graphic sound" - also known somewhat confusingly as "synthetic sound"³⁷⁰ - which opened up another set of possibilities for using motion images to convey something other than a narrative, and also carried forward the desired goal of sensory synchrony

368 Quoted in *Die neue Amerikanische Malerei*. Council at the Museum for Modern Art / Senator für Volksbildung (Berlin), 1958.

369 Quoted in *Ibid.*

370 The term can, after all, refer not only to sound that results from manipulation of film, but sound that is synthesized by electronic tone generators with no relation to film equipment.

into new technical territory. Indeed, if there was any doubt as to the intentions of this art, Fischinger's musings were brimful of synesthetic neologisms like "musograph," "optical poetry," "eye-music," "sound ornaments," and finally "sounding handwriting." Carrying on in the liberating tradition that so often accompanied an interest in developing cross-modal art, Fischinger was also convinced that his "hand-drawn sound restored an artistic 'sovereignty' to the filmmaker, by once again giving him control over elements that the studio system had delegated to specialists."³⁷¹

As was often the case, the reliable Bauhaus schools provided a convenient stage for the transition between one synesthetically inspired art - the output of Kandinsky, Marc, and company - to the new forms of concrete film or "optical poetry." Some striking examples preceding Fischinger's work could be found in the *Symphony Diagonale* (1924) of Viking Eggeling and the work of Eggeling's then-collaborator Hans Richter, both of whom attempted to use animation to build upon Kandinsky's theories of communicative, universally comprehensible geometrical shapes (indeed, a systemization of such forms was outlined in an essay of Eggeling's entitled *Universelle Sprache* [Universal Language]). The *Symphony Diagonale*, easily the most successful of Eggeling's experiments in this territory, followed the arcing movement of a classical sonata, while Richter and Walther Ruttmann focused more on the rhythmic nature of film, or on the temporal quality of film as its distinct aesthetic content.

If the efforts of Richter and Eggeling never became fully representative of a "universal language," they did at least testify to how many aspirations the different 20th century avant-garde cliques (Dadaists, Suprematists, Constructivists, Vorticists, etc.) held in common, particularly regarding the value of identifying and investigating the fundamental atoms of human perception (if not the fundamental units of human life itself). Hilla Rebay's eulogy for stalwart Bauhaus professor Laszlo Moholy-Nagy takes a good inventory of these commonalities, noting his efforts to determine

³⁷¹ Levin (2003).

...how the aesthetic sense receives most satisfaction, and by which ultimate elimination of the unessential can be achieved, the balance between space and form, between lightness and heaviness, between the strong and the weak, or the cold and warm.³⁷²

Incidentally, much of the proselytizing of this new art came from Moholy-Nagy, who did make his own landmark efforts in this area along with writing several polemics in its favor (his 1932 film *Tönendes ABC* [often translated as «Talking ABC»] was the first film to project the visual score that accompanied an audio soundtrack). He was also an avid supporter of «Lumia»-style light shows and «colour pianos,» and of the more potentially dazzling concept of «the light frescoe, that will activate vast architectural units, such as buildings, parts of buildings or single walls, by means of artificial light arranged and manipulated according to a definite plan.»³⁷³ For someone who had distributed his talents across the full spectrum of artistic media including stage / lighting design, murals and typography, this was a natural extension or complement to his existing work. It was also clear that, for someone as demanding as Moholy-Nagy, deeper inquiry would necessitate something more than mere filmic animation of geometric objects, as had already been done with Eggeling and Richter's films.

NOTES IN THE MARGINS: SYNTHETIC SOUND

In the early 1930s, Moholy-Nagy was disappointed by the degree to which the potential of the still-novel sound film was being ignored by practicing artists, insisting that „the sound film ought to enrich the sphere of our aural experience by giving us entirely unknown sound values, just as the silent film has already begun to enrich our vision.”³⁷⁴ The German animator Rudolf Pfenninger was among the first to pick up Moholy-Nagy's

372 Hilla Rebay quoted in *Laszlo Moholy-Nagy Memorial*, p. 21.

373 Quoted in *Laszlo Moholy-Nagy Memorial*, p. 33.

374 Quoted in Levin (2003).

gauntlet - a fact for which Moholy-Nagy did give him effusive praise - devising a method of "sound-script" or "hand-drawn sound" that was eventually transcribed to film. Pfenninger's innovation was to realize that sounds' waveforms or 'acoustic signatures', as made visible by an oscilloscope, could be hand-drawn onto strips of paper, which could then be photographed and placed onto a film's optical sound track. This process - which, like much period animation, was intensely time-consuming - was not merely a breakthrough in unlocking relationships between audio and visual data, but also in the transmission of sound that did not require recording equipment to capture it. Put simply, Pfenninger's work put him at the vanguard of later developments in sonic synthesis and development of timbral novelty: since the hand-drawn acoustic signatures were not exact approximations of the waveforms produced by their sources, they carried with them a sense of unreality that was seemed either intriguing or repellent to period listeners.

Though his father Emil was a painter, Pfenninger was not strictly an artist, and approached the task of making a non-arbitrary connection between sight and sound from more of an engineer's standpoint. That is to say, unlike some other advances in concrete or absolute film, Pfenninger's works were motivated by something other than a desire to expand the vocabulary of cross-modal art: unlike Oskar Fischinger's clear intent to give rise to "optical poetry", Pfenninger's work originally preceded from the fact that he wanted a soundtrack for his animated films, yet had scant financial resources to pay for time in a proper music studio - thus leading him to his painstaking work with discovering the visual signatures for the audio tones. By the same token, the agendas behind the experimentation differed greatly, with Pfenninger far less interested in the aesthetic content of his work than Moholy-Nagy and many of the other innovators associated with absolute film. Pfenninger did not place a high value on the ornamental value of his hand-drawn curves, instead banking on their potential to be a functional means of providing audio notation. Indeed, one of his hopes was to build a practical invention - similar to a typewriter

- in which sine waves would be the fundamental units of input rather than alphanumeric characters.

A few decades later, Pfenninger's work was re-united with aesthetic sensibilities, courtesy of the film work by his acolyte Norman McLaren. McLaren's most well known works were made for the National Film Board of Canada, but his technical breakthroughs occurred earlier and in the area of animated film. Lauded by a cultural figure no less than John Cage as an "adventurous worker in the field of synthetic music,"³⁷⁵ McLaren's labors involved then-radical work with expanding "cameraless" film techniques and with 3D animation (or, more accurately, the use of filmed two-dimensional drawings that had an illusory "3D" quality when they were filmed using double exposures).

More notably for our discussion, though, the animation techniques McLaren used for certain of his short films were a direct descendant of the earlier experiments with hand-drawn sound conducted by Fischinger and Pfenninger. A brief description of McLaren's animation style may suffice to show his place in this lineage:

...the drawings are not of scenes from the visible world around us but are of sound waves, and they are not done on cards of motion-picture screen proportions but on long, narrow cards. These cards are photographed not on the area of the film occupied by the picture but to the left of it, on the narrow vertical strip normally reserved for the sound track.³⁷⁶

This library of cards, each of them bearing an acoustic signature on a visual area one inch wide by twelve inches long, was used to generate the soundtrack for a number of different films: *Love Your Neighbour*, *Now*

375 John Cage, *Silence: Lectures and Writings*, p. 65. Wesleyan University Press, Middleton CT, 1961.

376 Norman McLaren and William Jordan, "Animated Sound." *The Quarterly of Film Radio and Television*, Vol. 7, No. 3 (Spring, 1953), pp. 223-229.

is the Time, Phantasy, Two Bagatelles, and Twirligigs. Each of the cards in question would be labeled to indicate its musical pitch (in total, they comprised a five-octave range) and would be arranged in a box next to the camera during the 'shooting' of the soundtrack, so that the composer of the film could select the appropriately pitched card. The tonal range could be further expanded by altering the speed of filming (the sound would be recorded at a higher speed than that intended for playback), and sustained note lengths could also be afforded by making duplicates of a single card. Plain black cards were photographed to allow for pauses in the sonic program, and volume dynamics were altered with the shutter of the camera, which affected the exposure level of each individual card.

For McLaren, this represented the culmination of earlier efforts in synthetic sound, such as randomly scratching on the film soundtrack in 1937's *Book Bargain*, or daubing small dots onto the same area for the 1939 film simply titled *Dots*. With the film *Synchromy*, McLaren reached perhaps the apex of his concrete film style, given that this film allowed the viewer to see the projected audio data as it was being heard (many of his other experiments had been non-visual in nature). Though it features a minimum of alterations in color and visual effects, and the visuals themselves are limited to flickering blocks organized along vertical color bands, this seven-minute piece provides a whimsical entry into the world of sight-sound translation, and it is difficult not to appreciate the workmanship put into realizing this piece.

With that in mind, both the 'motion graphics' or 'absolute film' forms have evolved dramatically from examples like *Synchromy*, or Javier Aguirre's spartan study for monochromatic stills that alter in accordance with single musical notes (*Espectro Siete*, 1970). The DVDs released on the Line record label in recent years (such as the *Colorfield Variations* collection assembled by sound artist Richard Chartier) compile some of the best 21st century efforts and show where these forms may be heading next: the uncannily organic CGI 'blossoms' of Ryoichi Kurokawa's piece ("Scorch," 2005) emerge in lockstep with a pastiche of discrete bio-mechanical

sounds, while video artist Tina Frank and computer musicians General Magic collaborate on a dizzying race through a forest of light columns ("Chronomops," 2006). These particular specimens are easy for citizens of the computerized technopolis to identify with (especially since similar clips are composed using various software algorithms that directly convert digital audio into video).

Yet it is Aguirre who provides one key to the intentions of this modern art, and attempts to make the case for its uniqueness. Aguirre was the author of the "AntiCine" manifesto laying the ground rules for an anti-narrative form of audio-visual art, and scorned the lack of rigour in previous synesthetic efforts. Scriabin's work, for example, is too "conventional" for Aguirre, while he castigates McLaren's *Synchromy* as "whimsical": "despite having been made a year later than [our film], it affects the somewhat banal and subjectivist correspondence between color and sound, without any kind of rigorous approach other than the purely technical."³⁷⁷ Aguirre argues that the non-ornamental nature of his own film (with a musical score by Ramon Barce) also pushes the synesthetic artwork into "virgin territory," stating that inspiration for the film comes from observation of the Doppler Effect rather than any kind of capricious attitude of the 19th century (Vladimir Baranov-Rossine, inventor of the optophonic piano, also does not escape criticism here). If nothing else, Aguirre's approach is a key precedent for the work of hybridizing multi-media artists like Ryoji Ikeda, who seek points of reconciliation between mathematics and music in addition to - or maybe as a prerequisite to - their pursuit of a 1:1 audio-visual correspondence.

Interestingly, Aguirre's impassioned defense of *Espectro Siete* also points to a future where musicians have as much control of the creative process (if not more) than a traditional film director, since they play an increased role in generating the raw material for such films. With his manifesto, Aguirre hoped to make a clean break with supernatural reference points and to - in

³⁷⁷ Javier Aguirre quoted in *La Mosca Tras La Oreja: de la música experimental al arte sonore en España*, ed. Llorenç Barber and Montserrat Palacois, p. 32-33. Translation from the Spanish by the author. Ediciones Autor, Madrid, 2009.

his words - generate aesthetic quality from “an almost scientific severity” itself. Lest we forget, though, René Ghil once referred to his own subjective system of *l'instrumentation verbale* by another name: *scientific poetry*. The authority of science has, in the past, been claimed by artists who did not manage to unveil the secrets of a universally applicable method of sensory translation.

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The above inventory of different techniques speaks to possibilities for projecting light that, given the significant technological advancements made since the times of Thomas Wilfred or Rudolf Pfenninger, are very easy to take for granted. Software-based versions of the mechanical “colour organs” offer an astounding number of variables when it comes to manipulating colored light and harmonizing it with audio materials in real time. The ongoing legacy of that software - the emergence of the “video jockey” as a new category of cross-modal composer and performer - points to a continued interest in the potential of motion graphics as a form that has expressive nuances of its very own (even if this enthusiasm is not always accompanied by a precise knowledge of historical precedents).

While knowledge of those precedents is not the *sine qua non* of outstanding work in the VJ field, it is clear that this owes itself to an interweaving of several different synesthetic threads: not only the myriad attempts to make colored light equivalent to musical tones, but also the montage technique of Eisenstein and his contemporaries. The aspiring VJ now has, at his or her disposal, mobile visual elements ranging from the geometrical motion graphics in the Constructivist tradition, to sound visualization experiments like Norman McLaren’s, to a vast back catalog of sampled montage imagery. Video jockeys also have another advantage that the original experimenters with colour music and motion graphics

did not have, namely, a more fluid or loosely structured environment in which to showcase their works: in the modern dance club, with its lack of emphasis on a central stage or place of projection to which the audience must gravitate, all kinds of new possibilities have opened up. The placement of multiple screens throughout these spaces allows for clever dialogues to be formed between different types of visual material, while the omnipresent soundtrack helps to involve participants in the type of immersive atmosphere that earlier 'colour musicians' would have envied.





CHAPTER 10

TOWARDS REALITY ITSELF: ON OLIVIER MESSIAEN AND IANNIS XENAKIS

By now, it is more or less common knowledge that unprecedented changes in artistic technique took place during the awkwardly named “post-War” period of the 20th century. Everywhere one turned, in every medium, there seemed to be some dissolution of one long-standing barrier or another. Easel painting gave way to other forms of “canvas” including, but not limited to, the human body. The theater gradually lost its exclusive status as the only type of performance space for acting out plays and dramas, with informal venues from artists’ lofts to Eastern European private apartments being reconfigured as theatrical spaces (this is to say nothing of more public urban spaces). Stylistic developments in dance, such as Tatsumi Hijikata’s *ankoku butoh*, played upon audiences’ perceptions of time and featured such extremity of action that it seemed impossible to categorize them under a single genre of art (a state of affairs that would be echoed with the arrival of the performance art and intermedia cultures). The increasing plasticity of form and content seemed to traditionalist observers like a sign of aimlessness and despair, although the truth lies decidedly elsewhere.

Music, of course, easily kept pace with these other developments, expanding the repertoire of accepted techniques and the manner in which they were presented. “Aleatory” or chance composition represented one new set of possibilities, while greater use of electronics and sound synthesis provided another one (of course, there was plenty of overlap between the two emergent sound galaxies). In both its popular and experimental forms, music from beyond the midpoint of the 20th century presented sharp breaks with customary sensory experience that were easily commensurate with the other changes - in scientific inquiry, warfare,

communications technology, etc. - to have occurred during the same time period. New conceptions of musical tonality and scale coincided with, or sometimes initiated, new social definitions of "the musician."

Iannis Xenakis (1922-2001), one of the century's most unique composers, was one who proposed an upgrade to the musician's character by suggesting a new role as "artist-conceiver": a creator who would not only work within prescribed forms, but would create new forms in the process of testing the limitations of those already existing. The ideal "musician" for this time, then, had to be something more than just that - he or she had to call upon resources that might, initially, have nothing to do with the discipline they had been trained in, and which might require "artist-conceivers" to have a highly developed capacity for abstraction both within themselves and within their audiences.

A number of different musical composers from the 20th century could be named as valid contributors to cross-modal aesthetics after the fashion suggested above. Xenakis and his tutelary sonic adventurer, Olivier Messiaen, are two of the most continually relevant, though it should be said that there is no shortage of dramatic contrasts to be found between the two of them. One composed music largely out of an awe and respect for nature, while the other planned enormous theatrical spectacles that showcased the awesome and frightening power of technology. One heard musical pieces as arrangements of "colors"; the other perceived them as masses of "grains" or *tresses rythmiques* [rhythmic strands] with fluctuating densities. Last, but certainly not least, one appeared to be a genuine synesthete - and thus one of the few who could legitimately make claims to the creation of synesthetic art - while the other was not, yet still maintained an uncanny ability to project a single message through the prism of multiple artistic forms.

Yet, for all of their differences, these two had some striking similarities. Both regularly called upon the vastness of celestial space to illuminate their sound works. Both possessed a mathematical skill that considerably

supplemented their “right brain” endeavors, and both were very prolific with their primary works, as well as with the explanatory or secondary works that were occasioned by them.

“ALL IMPRESSIONS ARE TRANSFORMED INTO MUSIC WITHIN ME”: THE CASE OF OLIVIER MESSIAEN

No catalog of synesthetic arts can be complete without some mention of the composer Olivier Messiaen (1902-1998). Noted as one of the most idiosyncratic musical composers of the 20th century, his personality did not allow for a great deal of compromise in matters of aesthetic expression. The latter, in particular, put him out of step with a largely atheistic or skeptical post-World War II avant-garde, though it was not the only point of contention that arose from his work (former Messiaen student André Hodeir, for example, scathingly criticized Messiaen’s understanding of musical structure, claiming that the composer had “turned to *disorder* for his salvation.”)³⁷⁸ Close friends and students seemed to approach the subject of his work with a mixture of bewilderment and awe, given that his compositional output spanned from what Tristan Murail called “radically slow”, nearly static organ pieces to orchestral works that bristled with strange nuances. The latter could be brought about by any number of novel instrumental means, from string parts meant to approximate the rush of desert winds to new instrumentation itself (e.g. the theremin-like *ondes Martenot* that cut through the mix of Messiaen’s 1949 *Turangalila* symphony).

Given that the individuality of Messiaen’s music caused some bafflement in a milieu often controlled by formalism, he had no shortage of opportunities to explain his motivations. Again, spirituality was never far from the composer’s mind - he confessed to interlocutor Claude Samuel that “the Catholic faith” was “the first aspect of my work, the noblest and,

³⁷⁸ Andre Hodeir, *La Musique depuis Debussy*, p. 110. Trans. Noel Burch. Presses Universitaires de France, Paris, 1961.

doubtless, the most useful and valuable; perhaps the only one which I won't regret at the hour of my death."³⁷⁹ Throughout his lifetime, Messiaen made good on this promise to musically profess his faith, yet this was the bedrock from which his other thematic interests sprung, rather than the only theme he ever attempted to treat musically. When asked for a simple self-identification by a music critic at *Le Figaro*, the composer responded that he was a musician, a rhythmologist and an ornithologist, and that these list items were, respectively, his profession, specialty, and passion.³⁸⁰ Born in Avignon in 1908 to a poetess mother, the young Messiaen spent his formative years staging his own private productions of Shakespearean plays and began to attend the Lycée in Grenoble at the age of eight. Two years after this, a teacher's gift of Debussy's score for *Pelléas et Mélisande* cemented the young Messiaen's interest in music as a vocation (and also offered a kind of bridge between the Symbolist legacy and the arts to come).

Listening back to Messiaen's entire *oeuvre*, it is hard to hear much in common with his style and that of a composer like Debussy - if anything, its emotional range and orchestral strategy, which borders on the apocalyptic in works like *Quator pour le fin du temps* ['Quartet for the End of Time'] and *Éclairs sur l'au-delà* [Lightning Flashes of the Beyond], is closer to that of composers like Wagner or Bruckner despite his obvious national kinship with Debussy. Like Wagner, Messiaen excelled at the creation of 'program' pieces animated by concepts that were sonically illustrated for the duration of each piece, and which were generally made clear to listening audiences beforehand. As the critic Paul Griffiths notes,

It is difficult to think of another major composer (perhaps Richard Strauss would qualify) who has produced so little absolute music. Messiaen's few non-illustrative, non-functional works, such as the *Mode de valeurs et*

379 Olivier Messiaen, *Music and Color: Conversations with Claude Samuel*, pp. 2-3. Trans. E. Thomas Glasow. Amadeus Press, Portland OR, 1994. 2-3).

380 Olivier Messiaen and Bernard Gavoty, "Who Are You, Olivier Messiaen?" *Tempo*, New Series, No. 58 (Summer, 1961), pp. 33-36.

d'intensities, are usually speculative studies in technique; the vast bulk of his output is linked by many straight or subtle connections to the universe of thought and fact outside.³⁸¹

This fact in itself probably does not seem very remarkable, until the roots of this approach are explained in more detail by the composer himself. As Richard Cytowic explains, synesthesia is a kind of key to Messiaen's work, i.e. "what sounds complicated in his music actually stems from a few ideas crystallized around his synesthesia and its intellectual refinement."³⁸² Messiaen's confession to his *Figaro* interlocutor goes a long way towards explaining this tendency:

All impressions are transformed into music within me. Hence a photograph of stalagmites and stalactites at once suggests a melody to me; a stained glass window inspires in me a sequence of chords and timbres. Moreover, I am extremely sensitive to colours and the sound-colour relationship. I hear and see very precisely certain of my modes in violet, lilac, and violaceous purple pigmented with red...³⁸³

This confession is definitely interesting: it simultaneously provides a 20th century update of the Romantic viewpoint that all aesthetic sensations "aspire to the condition of music," and seems to hint that the composer may be a 'genuine' synesthete in that his sensory associations are highly affective. Indeed, in the statements that follow, Messiaen admits to his condition in a more unequivocal way:

I am affected by a sort of synaesthesia, of the mind rather than of the body, which allows me, when I hear a

381 Paul Griffiths, "Catalogue de Couleurs: Notes on Messiaen's Tone Colours on His 70th Birthday." *The Musical Times*, Vol. 119, No. 1630 (Dec., 1978), pp. 1035-1037.

382 Richard Cytowic, *Synesthesia: A Union Of The Senses*, p. 311. MIT Press, Cambridge / London, 2002.

383 *Ibid.*

piece of music, and also when I read it, to see internally, through the mind's eye, colours which move with the music; and I feel these colours extremely vividly, and sometimes in my scores I have even indicated precisely the correspondences.³⁸⁴

The above is hardly an isolated aside tossed off by the composer, in fact it has been noted how “the high degree of thoroughness with which Messiaen documented his color-hearing experience, and especially the complex color effects of his sound-color materials, remains unequalled among composers bestowed with the same gift.”³⁸⁵ The seventh volume of his staggering multi-volume work *Traité de rythme, de couleur, et d'ornithologie*, in particular, goes into great depth about this facility.

Perhaps before going any further down this road, though, some further biographical exposition of Messiaen is in order. Messiaen's faith and humanity would be challenged, as they were for so many other individuals, during the second World War in general and the occupation of France in particular. In 1941, Messiaen was captured by German forces and assigned to a prisoner-of-war camp in Görlitz, Silesia. Rather than being a period of complete creative withdrawal, however, this period did result in the creation of one of his most memorable and bracing works, *Quatuor pour la fin du temps* [Quartet for the End of Time.] Along with a trio of fellow prisoners, the ‘world premiere’ of the piece took place on the bleak performance stage of Stalag VIIIA. This would not be the only piece in the composer's otherwise life-affirming body of work to be born out of tragedy: his 1945 song cycle *Harawi* was composed as a love letter to his wife Claire Delbos, who had lost her memory as the result of a botched operation, and remained institutionalized until her death over a decade later.

384 Olivier Messiaen quoted in Paul Griffiths, “Catalogue de Couleurs: Notes on Messiaen's Tone Colours on His 70th Birthday.” *The Musical Times*, Vol. 119, No. 1630 (Dec., 1978), pp. 1035-1037.

385 Cheong Wai-Ling, “Plainchants as Colored Time in Messiaen's ‘Couleurs de la Cité Céleste.’» *Tempo*, Vol. 64 No. 254 (October 2010), pp. 20-37.

Later on in 1941, Messiaen would be released from the prisoner-of-war camp and repatriated to France, and soon after was given work as a harmony professor at the Conservatoire de Paris by Claude Delvincourt. In 1942, his *Quatuor pour la fin du temps* was first published in a tiny edition that was largely the fault of chronic wartime paper shortages. Of equal importance was his appointment as the professor of composition in the Conservatoire, where he took on a number of future compositional luminaries as students: the first crop of Messiaen's students included Karlheinz Stockhausen, Yvette Grimaud, Pierre Henry and the future IRCAM founder Pierre Boulez (who distinguished himself early on by loudly disrupting the first post-Occupation French performance of Stravinsky's neo-classical music with police whistles - an act which many critics tarred Messiaen with guilt by association). An impressive roll call of composers such as Gerard Grisey and Tristan Murail would follow, all of whom would play important roles in shaping the forthcoming waves of electronic and "concrete" music. As the German occupation of Paris ground on, Messiaen and all other French composers were officially banned from composing and performing new works, though the infamous, 'invitation only' *Concerts de la Pléiade* series provided Messiaen with an outlet to premiere works like *Visions de l'Amen* (1943).

Even without considering his synesthesia, Messiaen's compositional innovations are still worth briefly noting. To this end, his 1942 book *Technique de mon langage musical* [Techniques of my Musical Language] is still illuminating, especially when it clarifies just what he means when he calls himself a "rhythmologist." Messiaen's concept of rhythm, drawn as much from Greek poetry as from Hindu devotional music, manifests itself in works where the composer moves beyond the standard definition of rhythm as 'equally divided measures': much of his written music does not feature any instruction as to the time signature to be used. His mathematical / compositional concept of 'non-retrogradable rhythms' created note durations that acted like palindromes, which were playable either forwards or backwards.

Messiaen's fervent Catholicism perhaps contributed to his color-music correspondences as much as his neurological condition, given that his belief system provided the meanings for those correspondences - in this respect, he continued in the Kandinsky-esque tradition of developing "correspondences" as a tool for reflection on the life of the spirit. Messiaen began to add the names of colors to the stave notation of his music as early as the 1962 work *Sept haikai*, a series of "esquisses japonaises" or impressions of the Japanese terrain that used Western instruments to approximate the tone colors of the instruments used in *gagaku* or traditional Japanese court music. Messiaen's love of birdsong, by now a familiar element for his listeners, is reprised in this piece, though along with it comes evidence of the composer's synesthetic mode of working. Beginning with the fifth movement of the piece - "Miyajima et le torii dans la mer" ["Miyajima and the Gate upon the Sea"] - Messiaen reveals to readers of the sheet music what colors he perceptually synchronizes to the chords (the title is inspired by the gateway to the Shinto shrine which, uncharacteristically, stands in the water rather than on solid land). The chordal progression of the violin section, for example, moves from 'orange' to 'grey and gold' and finally to 'red.' The same notes are played an octave lower by tubular bells, while a piano part shadowed by small percussive instruments progresses from 'blue' to 'pale green and silver.' At times, Messiaen must have seen multiple colors in his mind's eye upon performance of the piece, e.g. when the 'blue' piano chord is played simultaneously with the 'grey and gold' violin part. The resulting color combinations also lend more credence to Messiaen's legitimately synesthetic perception, since they are not "complementary colors" in the traditional sense, but rather those colors that he involuntarily associated with audio tones.

Messiaen's 'modes of limited transposition' - present in his works from the late 1920s and heavily featured up until the *Turangalila* symphony - are perhaps one of the composer's most lasting innovations, notable both for their challenging complexity, their expressivity, and their

instant recognizability by trained musicians. Messiaen's grapheme-color synesthesia caused him to see different colors depending on how far apart musical notes were spaced vertically on sheet music, and this practice gave rise to a unique modal logic whereby only so many transpositions of their harmonics were possible. Messiaen contends that he never even considered these modal structures as "complex sounds," but as actually visible "colors," and thus the act of musical scoring to him was like a form of painting. The 'modes of limited transposition' were also, quite deliberately, an attempt by the composer to achieve another sort of "visual" harmony: that is to say, the modes achieved vertically what his non-retrogradable rhythms achieved horizontally.

The available documentation on Messiaen shows that his synesthetic perception conjured imagery that was more complex than a simple pairing of monochrome color with a grapheme: he claimed to see three different types of colored sounds in all - monochromatic sounds were indeed one type, while another type consisted of bichromatic color combinations, and a third type that involved a "background" color against which flecked or spotted patterns would stand out. Messiaen's synesthetic perception extended also to a notion of *colored time* (his 1960 work *Chronochromie* translates to precisely that). Fascinating as all of this was, it was not always convincing to those who did not share Messiaen's perceptive peculiarities, and indeed plenty of commenters voiced frustration at the audible results of his colorized compositions:

He tried relentlessly to convey through very slow chorales the dazzling colors of the celestial city. Much to his disappointment, critics tended to hear in them a retrogressive move, in which most of the technical advances accumulated over the years were eliminated in pursuit of sound-colors, the richness of which is denied to all except those privileged with the rare gift of color-hearing.³⁸⁶

386 *Ibid.*

A NOTE ON MESSIAEN'S BI-DIRECTIONAL SYNESTHESIA

The synesthesia that Olivier Messiaen claimed was compounded in its rarity by the fact that it was supposedly bi-directional: that is to say, where a "typical" synesthete would report envisioning a specific color upon seeing a number, a bi-directional synesthete would have both this ability and the ability to envision a *number* upon seeing a specific color. This talent was put to use in at least one of Messiaen's more impressive orchestral works, 1971's *Des canyons aux étoiles*, composed after a visit to the reddish-orange Bryce Canyon in Utah (and a commission by Alice Tully) inspired him to write a work that would evoke this same color range. Calling upon and unifying a triumvirate of themes - landscape, birds, and the celestial - that was deeply personal to him, Messiaen's synesthetic condition aided him in crafting one of the more striking works in his *oeuvre*: the piece is dense with nuance and with a convincing sense of canyon-like spatiality, elements that make it impressive even if the composer's sense of musical color does not agree with the listener's own opinions on the subject.

Bi-directional synesthesia is also assumed to operate at a subconscious level, with Gevers *Et al.* noting how "some grapheme-colour synaesthetes do exhibit bidirectional synaesthesia *implicitly*, that is, colours are associated with particular numerical values, associations that influence behavioural response patterns even though the association does not breach conscious awareness."³⁸⁷ As of 2007, only one "explicit" case of this condition was reported,³⁸⁸ although such a low incidence of confirmed cases is also related to the fact that, up until that date, "only a single study investigated the underlying processes of bi-directional interactions in synesthesia using imaging techniques (Cohen Kadosh et al., 2007)."³⁸⁹ Even with its highly anomalous nature, though, some work has already gone

387 Gevers, W., Imbo, I., Cohen Kadosh, R., Fias, W., Hartsuiker, R.J., "Bidirectionality in Synesthesia: Evidence from a Multiplication Verification Task." *Experimental Psychology*, Vol. 57 (2010), pp. 178–184.

388 Titia Gebuis, Tanja C.W. Nijboer & Maarten J. van der Smagt, "Multiple Dimensions in Bi-directional Synesthesia." *European Journal of Neuroscience*, Vol. 29 (2009), pp. 1703–1710.

389 *Ibid.*

into the discovery of neurological mechanisms that make bi-directional synesthesia a possibility - and, with that, the condition has become more bewildering for those who hope to see it as a "unitary phenomenon," i.e. one with the same underlying mechanisms for each synesthete. As mentioned earlier in this book, one major division among types of synesthete is between the "higher" synesthete who can use concepts as triggers, and the "lower" synesthete who must be directly confronted with a percept in order to experience synesthetic effects - both of these modes seemed well within the abilities of Messiaen: his exceptionalism as a composer becomes more apparent with the knowledge that he is a rarity within an already rare group of perceivers.

MESSIAEN'S LEGACY

The tributes and memorials inspired by Messiaen's work are not insignificant, with his name even being lent to the *Salle Olivier Messiaen* [Olivier Messiaen Hall] situated within Radio France's broadcast headquarters. As might be expected, the hall has been used as the site of numerous concerts in the acousmatic vein; with that genre getting some of its early impetus from Messiaen's habit of making conventional instrumentation imitate other sound sources. Elsewhere, Tristan Murail's championing of 'spectral music' was an extension of Messiaen's cross-modal approach. Murail's collaboration with the computer programmers at IRCAM resulted in the Patchwork software that, as the composer proudly proclaimed, allowed composers to "finally create their own tools which are immediately perceived either graphically or as sounds."³⁹⁰

Given the special perceptive abilities of Messiaen, it should come as no surprise that one of his most radical students was deeply involved with "...experiments with novel ways of using sound and light...an attempt to develop a new form of art with light and sound."³⁹¹ Like many cross-

390 Viviana Moscovich, "Spectral Music: An Introduction." *Tempo*, New Series, No. 200 (Apr., 1997), pp. 21-27.

391 Balint Andras Varga, *Conversations with Iannis Xenakis*, p. 112. Faber and Faber, London,

modal artists before him, he also spoke of a secondary unity coming from this process: "a kind of 'hramony of the spheres' which, by means of art, becomes one with that of thought."³⁹² The student in question, Iannis Xenakis, was called "naïve" upon the first presentation of his scores to Messiaen, yet with the disclaimer that this was to be taken as a compliment rather than an insult. Within this unorthodox compliment, we can already find one of the common points linking the two composers in spirit: namely, skepticism towards academic formalism and a view of life as a process of perpetual education in which any claim to 'mastery' was also suspect. Messiaen and Xenakis also shared first-hand experience with the violence of their era, a fact to which their works bear witness: Messiaen had the *Quatuor pour le fin du temps* as a bitter memento of his camp internment, and Xenakis had a significant number of massively loud compositions that came, in part, from the damage done to his inner ear after a British shell exploded nearby in 1944 (also resulting in a facial disfigurement and loss of an eye). Both, nonetheless, exhibited a curious, determined optimism - or optimistic determinedness - in spite of the physical and psychological damage they had sustained.

Another picture of cross-modal composition came from Xenakis, who, being one among a handful of daring Greek composers including Jani Christou and Yorgo Sicilianos, broke with both the Italian classical tradition and the then-prevalent trend of Schoenbergian dodecaphony (itself a word with Greek origins!) in order to reveal a completely different face of the avant-garde. The former composer had the rare distinction of inspiring a riot during the 1963 performance of his *Patterns and Permutations*, and crafted such pieces with the intention of "express[ing] the endless formation of patterns through various levels of experience [...] while at the same time [revealing] the urge to break up this merciless process."³⁹³

1996.

392 Iannis Xenakis, Roberta Brown and John Rahn, "Xenakis on Xenakis." *Perspectives of New Music*, Vol. 25, No. 1-2 (Winter-Summer, 1987), pp. 16-63.

393 Quoted in "New Music in Greece" by Nicolas Slonimsky. *The Musical Quarterly*, Vol. 51, No. 1 (Jan., 1965), pp. 225-235.

Xenakis had studied with Messiaen at the Paris Conservatory when he began formal music studies in his thirties. There is some documentation showing that Messiaen apparently saw the future of music in his pupil; Messiaen claims in the fifth volume of his *Traité* that Xenakis represented a frame-breaking “*nouveau sursaut*” [a new beginning] (though he tempers this statement by stating that *la continuité rassurante du chant de l’oiseau* [the reassuring continuity of birdsong] will outlast this music and the styles related to it).³⁹⁴

Unlike his musical mentor, the upbringing of Xenakis was not entirely pleasant - he admitted that “I didn’t like life...I had all kinds of failures,”³⁹⁵ and his disillusionment grew during his schooling. This was specifically because his professors were ill equipped to teach him “the combinatorics which would have opened up for me a more abstract vision of harmony, of contrapuntal polyphony, of form.”³⁹⁶ Xenakis, upon reading Plato’s *Republic* as a youth, envisioned a world in which art would become seamlessly integrated into other modes of human activity, and this vision of his was gradually eroded away at by a specialized academia. It was certainly also affected by the collapse of the militant revolutionary movement in which he participated prior to the empowerment of the post-War, right-wing government in Greece, along with his subsequent exile from that nation (in this process of becoming *persona non grata*, he unwittingly joined the historical roll call of revolutionary exiles /artistic synthesis enthusiasts that included Richard Wagner).

FROZEN MUSIC / VISIBLE GLISSANDI

Of course, Xenakis is not irrevocably tied to the influence of Messiaen: he also padded his *curriculum vitae* by working in the architectural studio of Le Corbusier (a lucky occurrence that Xenakis attributes to Corbusier

³⁹⁴ Olivier Messiaen, *Traité de Rythme, de Couleur, et d’Ornithologie*, Vol. V, pp. 16-17. Translated from the French by the author. Leduc, Paris, 2002. pp. 95-190.

³⁹⁵ Xenakis, Brown & Rahn (1987).

³⁹⁶ *Ibid.*

already having a few Greek expatriates on his team). The young composer's relationship with the senior Corbusier (the latter being thirty-five years older than the former) could become quite strained, especially because of the perceived disparity in public recognition that was granted to Corbusier relative to the designers who contributed to his plans. Nonetheless, the pupil maintained a sense of respect for certain animating ideals of his teacher, and it is highly likely that Corbusier's tutelage implanted some ideas in Xenakis relating to the musicality of architecture and an architectural approach to music composition (for one, Corbusier was prone to finding "rhythmic" values in space). Although Iannis Xenakis was clearly not a remarkable synesthete like his instructor Messiaen, writing on and about Xenakis regularly refers to his own attempts at fashioning a sort of cross-modal correspondence or even a new *Gesamtkunstwerk*. For example, Ivan Hewitt remarks that, in listening to Xenakis's music, "a kind of discourse emerges, of sonic masses in motion. One hears rarefactions, densities, things converging to a point or outwards to dense clouds, lines splitting into ever smaller lines like the branches of a tree, sliding sounds suggestive of vast curved surfaces like those of a modernist building."³⁹⁷

Xenakis was not the first composer to consider the conjoining of architecture and music, as is evidenced by the musical works that Giovanni Gabrieli wrote in the 16th century for St. Mark's Basilica, where he acted as the house organist. Gabrieli wrote polyphonous music to be performed by multiple choirs and ensembles, who would be placed within multi-tiered choir lofts on opposing sides of the structure's interior (and we will soon see that this omni-directional approach, precisely tailored to the spatial characteristics of the Basilica, was echoed in works of Xenakis's own making). Xenakis's synthesis of music and architecture would also be echoed by younger composers such as the Swiss artist Beat Furrer, whose piece *FAMA* (2004-2005) employed a *Klanggebäude* in which the walls were «themselves modifiable on the fly to create a constantly changing

³⁹⁷ Ivan Hewitt, "A Music Beyond Time," in *Iannis Xenakis: Composer, Architect, Visionary*, pp. 17-33. Ed. Sharon Kanach and Carey Lovelace. The Drawing Center, New York, 2010.

acoustic environment."³⁹⁸ The whole history of sound installation and "site-specific" audio would also be considerably poorer without the pioneering efforts of Xenakis, whose work with the Philips Pavilion and other projects did much to usher in a new type of listening spaces that would be more properly called "event-environments" than performance or concert halls. These environments, though featuring both visual and sonic elements that were manipulated in real-time, de-emphasized the role of the performers or operators - for the staging of his mammoth work *Persepolis* at the Iranian Shiraz Festival, Xenakis himself was ensconced within a "*poste de commande*" far away from the central activity.

This pairing of allegiances already paints a picture of Xenakis as a multi-dimensional polymath, and a fearless striving towards the totality of knowledge was a gauntlet that he threw down for the composers that followed him. His very definition of "composer," in fact, seemed to refer to skills surpassing musical acumen itself, i.e. the composer was a thinker and "plastic artist" who "expresses himself through sound beings."³⁹⁹ In his formative stages, he claimed that he wanted to move to the U.S. in order to study "archaeology, philosophy, physics, mathematics, and music also" (with the downright humorous, would-be modest aside that he wanted to study "only" these five subjects). Lastly, as he wrote while still in France,

...Paleontologist, genetecist, biologist, physician, chemist, mathemetician, historian and expert in human sciences. These qualifications comprise the identification card of tomorrow's musician [...] who searches after the secret order that rules the universal apparent disorder. Who considers a new relation between art and science, notably between art and mathematics.⁴⁰⁰

Thanks to ambitious and hitherto unprecedented undertakings like the Philips Pavilion at the 1958 Brussels Expo, Iannis Xenakis remains very

398 Evan Johnson, "Bat Furrer: FAMA." *Tempo*, Vol. 61, No. 240 (Apr., 2007), pp. 78-79.

399 Iannis Xenakis, *Formalized Music*, p. 255. Pendragon Press, Stuyvesant NY, 1992.

400 Xenakis, Brown & Rahn (1987).

much the model of the 'trans-disciplinary' composer; the omni-competent artist-planner who can organize human experience more or less equally across the whole spectrum of communications media (he was cautious, though, not to assume that disciplinary rigor itself was a sign of artistry). A former colleague's designation of his thought processes as "restlessly inclusive... peregrinations of mind"⁴⁰¹ seems like as good a thumbnail sketch of the individual as any. His status as an unyielding polymath - who did eventually "at the same time, study music, archaeology and law"⁴⁰² during his formative educational years at the Polytechnic University in Athens - makes him an intriguing object of study when it comes to cross-modal artworks, since his own work has been irrevocably bound up with the attainment of unity wherever possible, with such mergers being seen as the *sine qua non* of continued human development.

To be sure, the demands he placed on prospective pupils and audience members were too arduous for most to meet, and his determined thrust towards a kind of perpetual originality in art may have led to his being neglected by 20th century cultural theorists who were busy proclaiming the 'death' of originality and authorship. However, even though the unfamiliarity of his built structures and musical compositions may repel new followers, it does not take a mind as restlessly active as Xenakis's own in order to discern ways in which he communicates similar information in otherwise discrete, supposedly irreconcilable forms: for one, his recurring sonic motif of overlapping glissandi (generated by string instruments, electronics, etc). is an uncanny match for his non-orthogonal architectural designs with their continuous curvilinear surfaces. The Philips Pavilion represented, for Xenakis, the translation between musical (read: audible) space, and the physical space in which other senses were stimulated. If it now seems more natural for the ephemerality and transience of music to merge with the seemingly permanent, concrete and three-dimensional of built structures, this is partially Xenakis's own legacy.

401 Roger Reynolds, "Xenakis: Tireless Renewal at Every Instant, at Every Death..." *Perspectives of New Music*, Vol. 41, No. 1 (Winter, 2003), pp. 4-64.

402 Iannis Xenakis quoted in *Ibid.*

For those who swear by the Goetheian maxim “architecture is frozen music,” the city has always been perceptible as a continually unfolding “symphony” of natural elements and materials, or an environment aspiring to the freedom and malleability of sound rather than the opposite. It is very difficult to escape “multi-modal” perception within the urban landscape, though it still requires a special talent to bring the sensory modes into complete accord in a built environment. Xenakis’s achievements in this area effectively melt the distinctions between categories of ‘experimental music’ and ‘sound art’: by designing environments optimized for cross-modal stimulation, he allowed for a sort of dialogue to be formed between perceiver and perceived. Xenakis’s part in authoring the synthetic art genre of the ‘sound installation’ is just as important as Wagner’s part in inaugurating the ‘music drama,’ and though it is merely one aspect of a career that saw him author nearly 150 musical works, it is an aspect that is most deserving of our attention here.

The design for the Philips Pavilion came about when Le Corbusier was approached by Philips to create a suitably daring structure that would embody the forward-looking nature of the electronics conglomerate, and which would, in turn, represent them at the 1958 Brussels World Exhibition. Le Corbusier was overcommitted at the time, busy with work on the Courts and Secretariat for the Punjabi city of Chandigarh. Therefore much of the building’s distinct arcs and contours - known by the more discreet mathematical term hyperbolic paraboloids - owe themselves to Xenakis taking the helm of that project. It has been noted several times how the visual design of the Pavilion is a perfect match for the same figures sketched onto the score of Xenakis’s landmark piece *Metastasis*, a correspondence that Messiaen himself noted when coming to the pavilion to give a lecture. The title of that composition offers some insight into Xenakis’s intentions for using such figures as his personal *leitmotif*: with “meta” being the Greek for “beyond / after” and “stasis” meaning “immobility,” the composer hoped to set up a dialectical contrast between mobility and immobility, or continuity and discontinuity. In describing the effect he hoped to achieve

by certain parts in the score of *Metastasis*, he offered up a couple of intriguing synesthetic metaphors, referring to a part in which forty odd string instruments would “open out like a fan, or a painter’s brush...[then] reach the extreme point...stop, and then stay there for a while.”⁴⁰³

Although Xenakis was intimately involved in the design of the Pavilion, his music was not necessarily the “main attraction” within the space. Though his strangely organic *Concret PH* was the piece to be played upon entering or exiting the building, it was another composer - Edgard Varèse - who was selected by Le Corbusier to provide the running soundtrack for the period during which visitors were already inside. This piece, the now infamous eight-minute electronic piece *Poème électronique*, was heard by upwards of two million visitors as its sheer was projected from 400 loudspeakers hanging within the structure. The piece’s unforgivingly complex, explosive combination of timbres and sound sources must have made Philips regret their wishes for a challenging sensory spectacle, as they later moved to integrate a light play by the composer Henri Tomasi (known for his “*son et lumière*” pieces) into the final presentation, seemingly in an attempt to distract a little from the extra-terrestrial shock of Varèse’s sounds.

Xenakis’s professional relationship with Le Corbusier lasted only until 1960, and afterwards Xenakis pulled no punches when speaking of his former associate: in particular, he accused the architect of simply “signing off” on projects for which others had done all the hard work. This disillusionment with Corbusier did not, however, cease Xenakis’s investigations into the relationship between audible space and other modes of perception. When not concerning himself with developing new kinds of architecture, he was concerned with fully maximizing the sonic potential of currently existing spaces, thus making space seem more “kinetic”: it was a task that he set to by re-considering the spacing between sound sources (or musicians), and by having these same sources surround listeners rather than project from a single source. However, in order to show how “we are

403 Varga & Xenakis (1996), p. 73.

capable of speaking two languages at the same time...one addressed to they eyes, and the other to the ears,"⁴⁰⁴ Xenakis would have to take things a step further with the invention of the *polytope*. From the Greek meaning "many / numerous" and "place," these experimental environments followed the lead of the Philips Pavilion in attempting a kind of enveloping feeling of multi-sensory correspondence. While tapping the full potential of dispersed sound, Xenakis also wanted for the *polytopes* feature kinetic visuals that would "sever all connections with the mimetic realism implied by flat screens that resemble the two-dimensional canvas of the traditional painting."⁴⁰⁵ Like so many cross-modal artists before him, Xenakis perhaps realized that the flowing together of congruent sensory data had the power to affect other senses as well - particularly those like proprioception, that are not listed among the five "classical" modes of perception.

In some respects, the visual component of the *polytopes* fits into the lineage of kinetic sculpture that also featured Wilfred's 'Lumia' works and the 'Sarabet' of Mary Hallock-Greenewalt, although the *polytopes* are far more expansive: the *Polytope de Montréal*, for example, was envisioned by its creator as a "transparent sculpture" of immense magnitude, and with such a complexity of operation (each of the 1,200 lights in this installation was individually controllable) that a technician controlling the lighting was just as much a performer as either Wilfred or Hallock-Greenewalt were when they kinetically sculpted for an audience. However, Xenakis's work placed much greater emphasis on the role that the spatial enclosure could play in a performance: to this end, the structure designed for his *Polytope de Montréal* was transparent, lending even more of an impression of "galaxies in movement" to the maelstrom of flashing light points and beams.

Nevertheless, Xenakis's development of the *polytope* had as much to do with cross-modal correspondences as with a concern that the evolution

404 *Ibid.*, p. 115.

405 Maria Anne Harley, "Music of Sound and Light: Xenakis's Polytopes." *Leonardo*, Vol. 31, No. 1 (1998), pp. 55-65.

of mankind had reached a “cosmic” phase, which itself would require new means of orienting oneself in an environment considerably vaster than terrestrial space. Before even taking into account the new, alien sonorities that Xenakis unleashed with his electronic compositions, this incomprehensible vastness of space was already suggested by the spatial arrangements of performance venues for Xenakis’s works, and by the formidable number of musicians who were themselves dispersed throughout the audiences’ listening space: the 1965 piece *Terretektorh*, for example, called for eighty-eight instrumentalists, while 1969’s *Nomos Gamma* required the services of ninety-eight musicians. Elsewhere, new performance spaces were constructed with multi-planar or multi-platform environments in which the spectators would feel themselves afloat on islands or cloud formations: this was the case in the “city of music” at the Parc de la Villette, one example of Xenakis’s consistent obsession with “de-localizing” action and voice in any given performance environment.

The *polytopes*, being one of the most energy-consuming and technologically advanced proofs of the composer’s imprint upon the earth, were not met with blanket praise. Though it was Xenakis’s intent to showcase them in world locales far from the more prosperous centers of commerce (e.g. the installations done in Mexico and Iran), there were still some rumblings about the ethical shortcomings of endorsing a “technological and machinistic way of life.”⁴⁰⁶ This techno-aesthetic did account, also, for one of the more tragicomic failures in the Xenakis repertoire: the staging of the piece *Taurhiphanie* at the Roman amphitheater at Arles, which was to feature a running of live bulls and horses along with the familiar whirlpools of electronic light and sound (to Xenakis’s dismay, the otherwise virile animals were timid in the face of this sensory onslaught, and not proudly galloping about the arena). Still, Xenakis did set a high bar for the “immersive environment.” Though we are in an age where techno dance parties make multi-sensory hyperstimulation a regular occurrence, Xenakis’s flair for calculated precision in artistic

406 Nouritza Matossian, *Xenakis*, p. 69. Trans. Maria Anne Harley. Fayard, Paris, 1981.

presentation - and concurrent disdain for arbitrariness - still places these "event-environments" in a class of their own.

X-ALTATION

Xenakis's place in the tradition of cross-modal or synthetic art is accompanied by a grandiosity of ambition that would not have been unusual for someone like Scriabin. In fact, one of Xenakis's unrealized plans - to use the clouds in the sky as 'mirroring surfaces' - is not too far off from Scriabin's dream of using huge cloud-covered bells as part of his *Mysterium*. Another Xenakis fantasy - the dream of covering the entire earth in a web of light - seemed to speak to a similar enthusiastic denial of the impossible. On occasion, the hopes that Xenakis pins upon creative synergy are expressed in a way that, if not exactly similar to the discredited Theosophists, certainly recalls the ecstatic striving of Scriabin. Take, for example, this excerpt from his 1966 essay "The Origins of Stochastic Music":

Art (and especially music) has a fundamental catalytic function, which is to effect sublimation by all its means of expression. It should aim to lead by constant points of reference towards that total exaltation in which, unaware of self, the individual will identify with an immediate, rare, vast and perfect truth. If a work of art achieves this even for an instant, it has fulfilled its purpose.⁴⁰⁷

With such ambitions playing such a definite role in his work, it is worth understanding the degree to which Xenakis did, or did not, fit into the "mystical" narrative of synesthesia and synesthetic art that had preceded him. Despite a shared interest in loftier transcendent goals, Xenakis makes it clear later in his career that he has little interest in esotericism or

407 Iannis Xenakis, "The Origins of Stochastic Music." *Tempo*, New Series, No. 78 (Autumn, 1966), pp. 9-12.

mysticism as a creative force, separating him from composers he otherwise found some aesthetic kinship with, e.g. John Cage and Pierre Schaeffer. Disagreements over this subject perhaps led, along with Schaeffer's alleged disinterest in mathematically driven music composition, to his eventual split with that composer. Xenakis felt Schaeffer was under the sway of esotericist G.I. Gurdjieff, "advocating introspection but in fact spreading self-destructive ideas."⁴⁰⁸ While Messiaen fares better than Schaeffer in this regard, commanding a great deal of respect from Xenakis, he too is criticized for straying too far in this direction:

Music cannot lead to mysticism. The imbeciles who listen to it that way are the mystics. Mysticism is a drug. One thinks that one is making mysticism - look at Messiaen! - but the high value of his music is elsewhere: religious sensitivity evolves so quickly that before long this mysticism takes on the appearance of superficial froth, linked to the color of the times.⁴⁰⁹

His statement above is immediately qualified by another - "art is capable of leading to those regions still occupied by certain religion"⁴¹⁰ - that seems to 'seal the deal' here. The fusion of art and science that Xenakis proposes is transcendent, to be sure, but it is religion itself which these hybrid forms seek to transcend.

Yet, for all of the perception of Xenakis as an ultra-rationalist, much of his work is apparently shot through with a strain of Romanticism as well - one of the many paradoxes that the composer himself has admitted to throughout his lifetime. Especially interesting for our discussion is the way in which, as Maria Anne Harley proposes, "Xenakis's use of the language of geometry-points, lines and surfaces to discuss aural phenomena has parallels in contemporaneous literature of the musical avant-garde, and precedents

408 Varga & Xenakis (1996), p. 42.

409 Iannis Xenakis quoted in Reynolds (2003).

410 *Ibid.*

in theoretical manifestos of abstract painting such as Kandinsky's *Point and Line to Plane*.⁴¹¹ Xenakis's work also abounds with references to old gods and hermetic wisdom (i.e. the quotations of Hermes Trismestigus used in the program notes for his 1978 installation *Le Diatope*), and his spiritual connection to his home country led him frequently to speak in mythological terms (e.g. "we always live in the shadow of Tantalus and Sisyphus.")⁴¹² One critic, Richard Barrett, counsels readers not to take this as a sentimentality for antiquity, but as a more nuanced "[view] from a distance... without the delusion that any kind of 'going back' is desirable or possible, unless the intended result is to 'entertain' a passive audience by reinforcing their conditioned preferences."⁴¹³

XENAKIS AND UPIC: AT THE DRAWING TABLE OF THE FUTURE

In addition to being an avowed non-mystic who occasionally called upon the the tutelary and poetic quality of myth, Xenakis was also a skeptic of 'electronic music' who nevertheless contributed greatly to its modern-day development. After his initial encounters with Schaeffer's studio and the ground-breaking *Groupe des Recherches Musicales*, he soured upon the concept of 'pure' electronic sonorities (read: sine waves) and, if composing music of an "electronic" bent, did it in an electro-acoustic style which combined tape manipulation and computer sonification with his customary non-electric instruments.

For all this, though, he did turn to completely computerized music for another reason, which was his increasing distrust of music being made to behave like a "language": believing that "identifications of music with message, with communication, and with language are schematizations

411 Harley (1998).

412 Xenakis, Brown & Rahn (1987).

413 Richard Barrett, "Musica Instrumentalis of the Merciless Cosmos: *La Légende de E'er*." Contemporary Music Review, Vol. 21 Nos. 2-3 (2002), pp. 69-83.

whose tendency is towards absurdities and desiccations,"⁴¹⁴ Xenakis focused more upon the connection that music had to other non-verbal mental categories such as imagery (for what it is worth, Xenakis has never been completely alone in this stance, and later electronic composers such as Trevor Wishart almost identically echo his sentiments about music and language).⁴¹⁵

Xenakis viewed sonic data not as equivalent to phonemes, but as - in an interesting audible-tactile synesthetic metaphor - "grains," which he organized into filmstrip-like successive "frames" that each contained separate axes for amplitude and frequency. This conception of music was essential to the computer compositional method known as granular synthesis, and became solidified as one of the central techniques of the nascent "microsound" music genre. Such non-linguistic turns, while representing a heartier embrace of mathematics via computer generation of sound, also contributed to the design of a computerized system that would allow abstract imagery to act as a musical score.

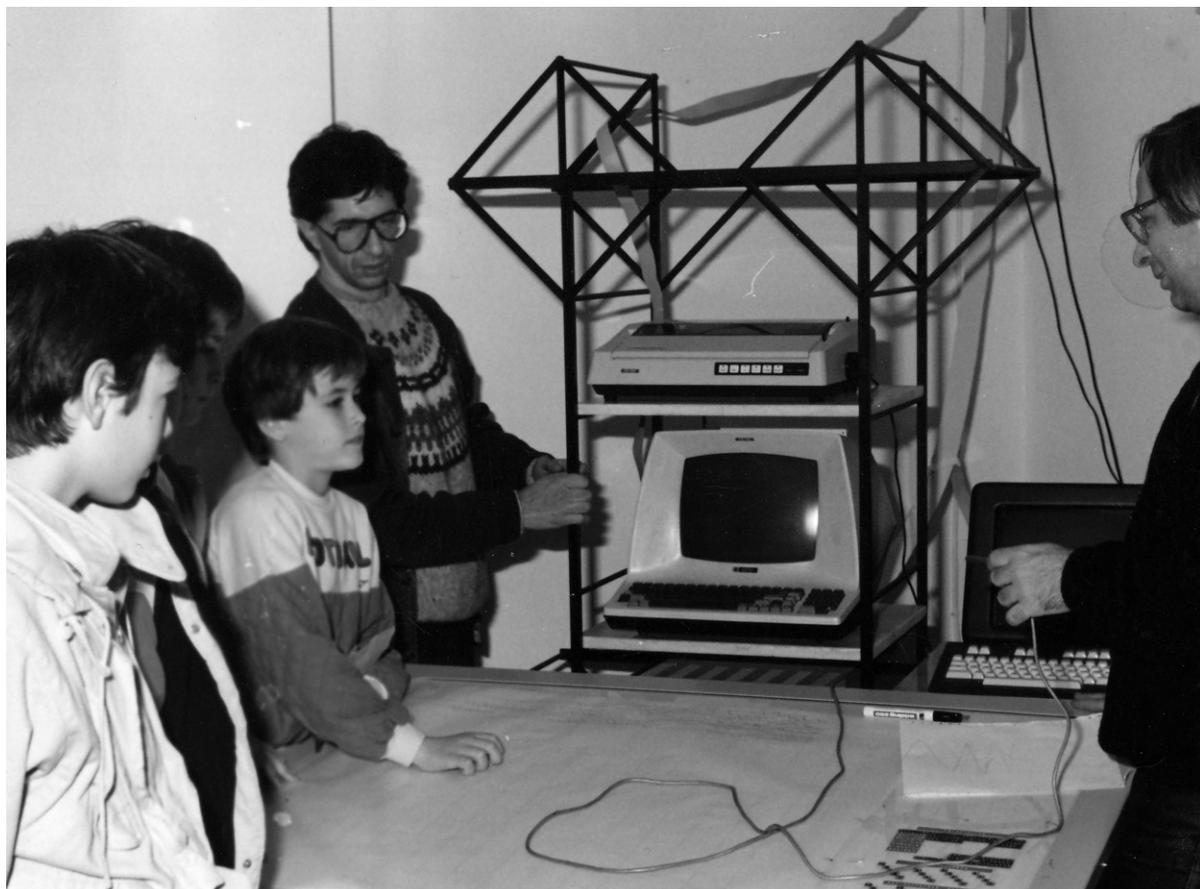
Though many will point to the Philips Pavilion as the watershed event that enshrined Xenakis as an expert cross-modal "artist-conceiver", his development of the UPIC⁴¹⁶ system is of at least equal importance here. Judging from the documentation we have available to us, the composer did not originally intend for it to encourage a deeper study of sensory correspondences so much as he intended for it to provide an accessible means of composing new music "even without knowledge of music or computer science."⁴¹⁷ In interviews relating to this new technology, Xenakis regularly mentioned and encouraged the possibility for children to make use of the apparatus, and generally aimed at providing compositional

414 Xenakis (1992), p. 180.

415 See, for example, the statement that "I feel that music (you could say this about mathematics too) is a separate universe of discourse from language." Yiorgos Vassilandonakis, "An Interview with Trevor Wishart." *Computer Music Journal*, Vol. 33, No. 2 (Summer 2009), pp. 8–23.

416 UPIC stands for *Unite Polyagogique Informatique du CEMAMu* [CEMAMu multi-disciplinary computer, with CEMAMu itself being the Centre d'Études en Mathématiques et Automatiques Musicales].

417 Quoted in Xenakis, Brown and Rahn (1987).



accessibility to untrained musicians, in the process allowing for “the social problem of art” to be “resolved by computer science” and for the “man on the street” to “be able to *think* in terms of music”⁴¹⁸ (an interesting comment in light of Messiaen’s confession about all his impressions being transformed into music).

The basic UPIC design was modified at various periods from 1968 to 2001, though the main constant has been a user interface consisting of an electromagnetic pen and a drafting table-sized graphic tablet, which could be used to control variables of pitch, amplitude, and sonic density.

418 *Ibid.*

The device since solidified its place as part of a poorly documented, but nonetheless important, tradition of such tools that also included the inventions of Percy Grainger and Evgeny Murzin: the former's Free Music Machine, co-developed with Burnett Cross in the early 1950s, also had the ability to translate drawn pitch and envelope curved into sound.

UPIC seemed like a logical extension of the work Xenakis had already been doing with graphic scores, especially those that incorporated his illustrated "arborescences": vein-like, branching formations that first appeared in the score for his 1973 solo piano work *Evryali*. These pictographic elements could be visually rotated in order to suggest alternate interpretations (e.g. their inverse and retrograde inverse) and also contracted or expanded. So, in a sense, UPIC was a continuation of this previous compositional work, though using the computer as interpreter rather than a human instrumentalist. Like so many other scores of their type, the "arborescences" meant to surpass the limitations of traditional stave notation: they were motivated not merely by the flexibility in interpretation that pictograms offered, or by the greater sense of involvement that one might feel by making a sonic equivalent to that glyph, but also for the practical reason that "arborescences" could contain a far greater amount of melodic instruction to instrumentalists than stave notation could - to achieve a similar sonic result, so many staves would have to be written that certain pieces would rapidly become too daunting to play. While Xenakis created some of the most feature-rich and complex music within his field, he was also determined to make many aspects of creative life simpler - another of the many paradoxes that defined his work.

UPIC was clearly another development along these lines. It was intended as an educational tool employed as early as childrens' kindergarten years, a point repeatedly emphasized by the photos of children in promotional literature for UPIC-related events. Xenakis was steadfast in his belief that "music and the arts in general...are the supreme way to exercise human creativity, and they must be initiated as early as possible and continue until

the end of one's life."⁴¹⁹ So, in his estimation, the system would prepare students at an early age to have the type of "identification card" Xenakis has mentioned above - essentially, the fundamental education that UPIC provided would teach lessons in disciplinary synergy that most students would typically have to wait another twenty years to receive. To help achieve this, Xenakis arranged for the UPIC to 'tour' cultural centers within and without France over the period of 1980-1985, during which time 1-2 week workshops with the device would be conducted. These tours sprung from Xenakis's correctly predicting, in 1977, how computers would change from being a specialist tool to a mass-consumed commodity - he felt that the time was ripe for the increased accessibility of technology (at that point in the 1980s, this meant the 6mHz processing power of the IBM AT) to merge with an increased creative capacity.

The UPIC invention also seemed to have personal significance for Xenakis in another way. For all of his indignance towards Messiaen's 'mysticism,' it is still clear that Xenakis felt a good deal of gratitude towards his former teacher, and it appears that Messiaen's unique perception of visible sound may have filtered down to Xenakis's own work with the UPIC system. It is telling, for example, that the French premiere of *Mykenae Alpha* (1978) occurred at an "Homage to Messiaen" concert in that year, which was itself part of a larger "Olivier Messiaen Cycle" event in Paris.

The story does not stop there, by any means. Thanks in part to the overwhelming live immersion sessions conducted in this century by Russell Haswell and Florian Hecker - which, in the spirit of Xenakis's *Polytopes*, combine UPIC sounds with coordinated light shows - this tool has gained a new lease on life. A software version of the program, UPIX, provided the basis for new workshops at the Ether Festival in London (2011), at the Université de Rouen and the *Zentrum für Kunst und Medientechnologie* in Karlsruhe (both 2012). This said, the UPIC system has certainly not

419 Iannis Xenakis quoted in Rodolphe Bourotte and Cyrille Delhayé, "Learn to Think for Yourself: Impelled by UPIC to Open New Ways of Composing." *Organised Sound*, Vol. 18, No. 2 (August 2013), pp 134-145.

without its flaws: for one, it may not have completely acclimated the public to “new” timbres and tonalities despite its being founded on a principle of increased accessibility. It is somewhat ironic that the music itself composed with this equipment, and with that greater accessibility in mind, still remains more intimidating and experientially foreign than much of what has happened musically in the intervening decades: we can imagine that the emotional reaction of curious children or the “man on the street” to, say, the awesome cataclysmic fury of a UPIC piece like *Mykenae Alpha* might not be altogether favorable. And, for what it’s worth, even this accessible project was still capable of expressing the war horrors that Xenakis had never really shaken off: it is prominently used in the 1981 anti-war radio play *Pour la Paix*, approximating the sound of an exploding grenade.

In exhibiting such characteristics, the aforementioned UPIC pieces are not ‘one-offs’ by any means: As Xenakis’s colleague Roger Reynolds recalls, the composer’s work in the final years of his life seemed to increase in its extremity rather than to follow the stereotypical pattern of increased docility that comes with age (this is especially amusing when considering that, as early as 1969, a columnist for the magazine *Tempo* was already noting a “mellowing process” taking place in Xenakis’s work).⁴²⁰ His compositions became “from a technical perspective, increasingly, and by the end (one thinks of the 1996 string sextet, *Ittidra*) almost ultimately reductive: howling, fortissimo blocks, immobilized screams...this to the consternation of many who had been his staunch supporters.”⁴²¹ We can now only speculate about the exact reasons behind this steady intensification, although it may have had something to do with the composer needing ever more forceful sensations in order to stave off the partial disconnect from reality that he had felt since sustaining his battle damage (the *polytopes*, as well, partially originated from Xenakis’s experience witnessing the Royal Air Force bombing German positions

420 Tim Souster, “Xenakis’s Nuits.” *Tempo*, New Series, No. 85 (Summer, 1968), pp. 5-18.

421 Reynolds (2003).

in Athens). Xenakis spoke occasionally of perceiving reality as if from a “well,” and of the need to invent personal methods of inferring perceptible phenomena like physical distances - his art was thus a tether to the earth as much as it was a flight of science-fictional fantasy.



“THE TRUE FESTIVAL OF THE IMAGINARY”

It is Tristan Murail, another of Messiaen’s students, who insists “we must remember that the relationships between phenomena are often more important than the phenomena themselves.”⁴²² Maybe, with this statement, we have a possible ‘key’ to the connectivity between Messiaen and Xenakis, and to their combined role as representatives of cross-modal culture. Murail’s hope for his own spectral music seems as much an acknowledgement of the potential within the music that both Messiaen and Xenakis created, i.e. “Musical form will no longer consist of frozen structures but of forces, and dynamisms. The old oppositions of container and content, of form and material will lose all meaning, since compositional process will have become an art of synthesis, born of a continuous movement from differentiation to integration.”⁴²³

422 Tristan Murail, “Target Practice.” Trans. Joshua Cody. *Contemporary Music Review*, Vol. 24, No. 2/3, April/June 2005, pp. 149 – 171.

423 Tristan Murail, “The Revolution of Complex Sounds.” Trans. Joshu Cody. *Contemporary*

Murail's thoughts on the relationships between phenomena are, it is safe to say, also representative of the hopes that many other enthusiasts of synesthesia have pinned upon it. There is admittedly something about the synthesis of hitherto uncombined phenomena into new forms that can inspire further creative action like nothing else: Guy-Marc Hinant and Michael Novy relay a story in which the composer Konrad Boehmer, upon discovering a "radically new music in radically new architecture" made up his mind then and there to become "not just a composer, but a composer of electronic music."⁴²⁴

Boehmer's revelation hints at why so many artists still feel synesthetic or cross-modal perception has the ability to affect dramatic change. Encounters with hitherto unexperienced hybrid phenomena can lead to a more all-encompassing process of cultural and / or cognitive evolution, or can reveal the discontinuities that enable further mutation. Individuals that come into contact with another's synesthetic percepts might view these multiple types of sensory data as having logical meanings that should be objectively intuited as such, yet these percepts can be equally inspiring when they seem to lack rationality. Cross-modal art, quite simply, can fulfill the promise of artistic abstraction by inspiring further developments regardless of whether audiences see the different forms of sense data as being congruent or incongruent. It has an attraction for constituencies that seek apparently pure novelty with no further explication, as well as those who seek familiarity hidden within that apparently pure novelty.

Lest it seem like this is all a case of assigning motives to Xenakis that did not exist, he touches upon a similar sentiment when speaking of the visual art of antiquity:

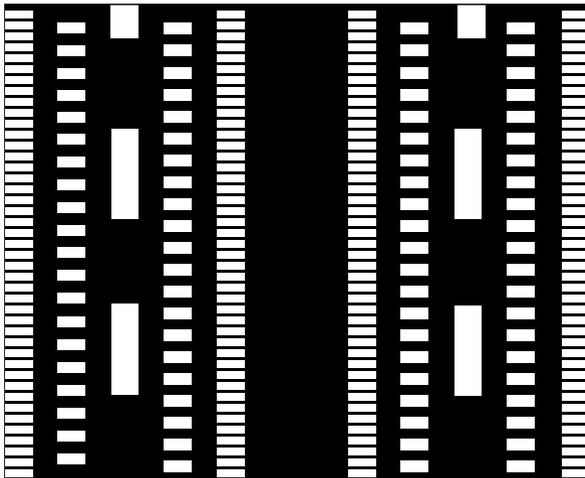
The value of Renaissance paintings depicting saints and so on lies not so much in the stories that they tell [...] as

Music Review, Vol. 24 No. 2/3 (April-June 2005), pp. 121-135.

424 Guy-Marc Hinant and Michael Novy, "Artist's Notebook: TOHU BOHU: Considerations on the Nature of Noise, in 78 Fragments." *Leonardo Music Journal*, Vol. 13 (2003), pp. 43-46.

in the relationships of the colours and the forms. It is that, quite irrespective of their semantic value, that accords them a place in the history of art.⁴²⁵

And while on the subject of times long past, perhaps one of the most striking paradoxes embodied by Xenakis was his attitude towards the passing of time, and the effect of increasing temporal distance upon creative forms: while assuring followers that his music “comprehended the forms of the past,”⁴²⁶ and demonstrating this with ambitious projects steeped in myths of every type from Greek to Zoroastrian, he remained adamant in a desire to create a form that had seemingly no referent to previously existing artifacts or styles. To do this, he felt, would ideally allow him to create something that “could include any form of expression”⁴²⁷: a wish, we can imagine, for a work that could be re-interpreted in other sensory modes while still maintaining its original message. Perceiving in such a way means, as Xenakis puts it in a deservedly popular quote, “to see reality with new eyes,” and that process *is*, in fact, reality - it “is life itself.”⁴²⁸

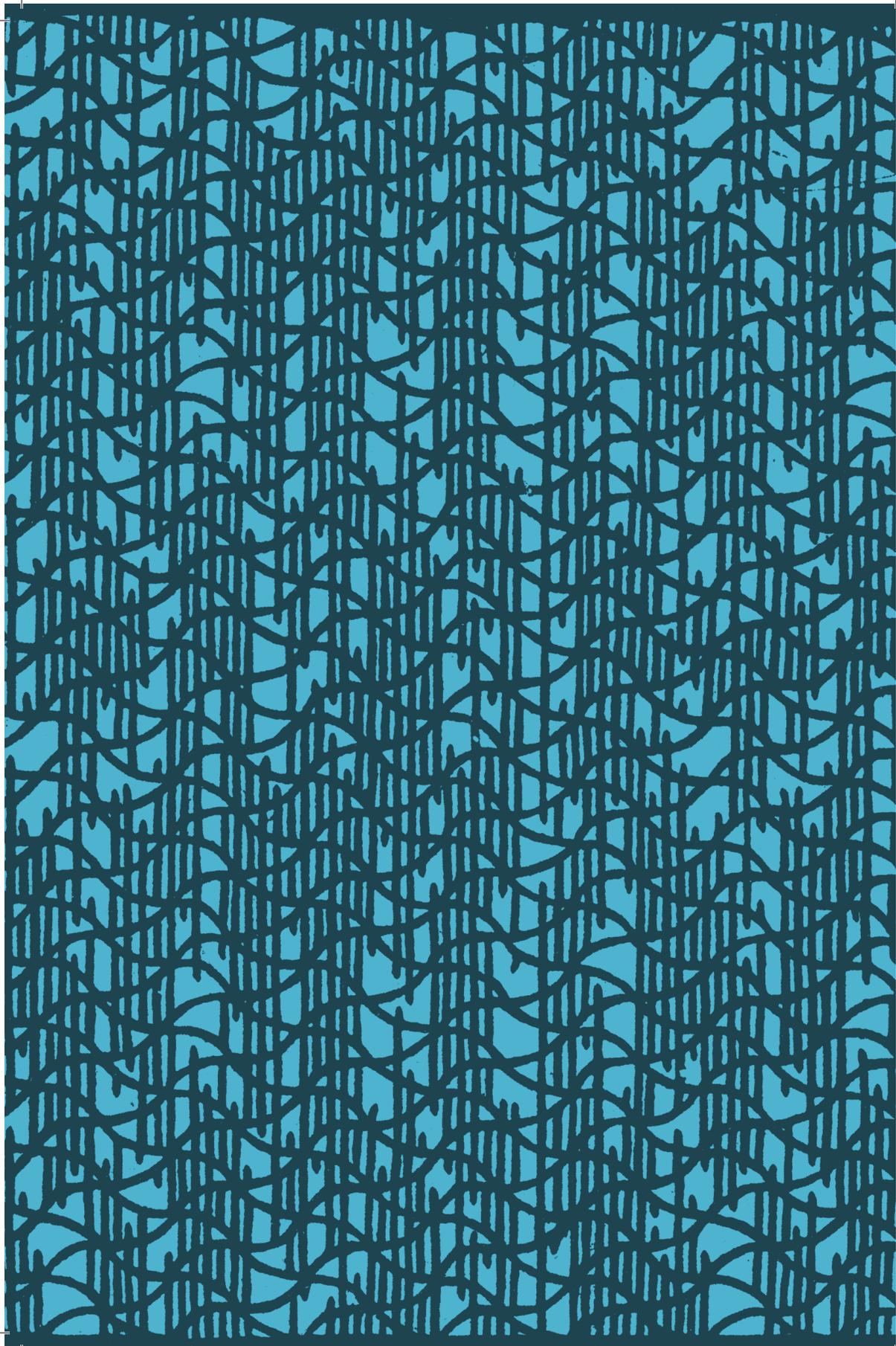


425 Varga & Xenakis (1996), p. 173.

426 *Ibid.*, p. 50.

427 *Ibid.*

428 Xenakis, Brown & Rahn (1987).



CHAPTER 11

BEYOND "MULTI-MEDIA", AGAINST DESENSITIZATION: THE NEW STATE OF THE CROSS-MODAL ARTS

The "re-education of the senses" is theorized by numerous social critics as being crucial to retaining our humanity in a world scaffolded over with technological prostheses. Though his words were written in what seems like a very different time from ours, - that is, the early 1960s - Marshall McLuhan's prognoses regarding the present are still relevant, as they exhibit the high hopes that continue to be projected onto this age:

It begins to be evident that "touch" is not skin but an interplay of the senses, and "keeping in touch" or "getting in touch" is a matter of a fruitful meeting of the senses, of sight translated into sound and sound into movement, and taste and smell [...] [The] image of a unified ratio among the senses was long held to be the mark of our *rationality*, and may in the computer age easily become so again.⁴²⁹

McLuhan's optimism, if it ever was the only game in town, is most assuredly not today. Though "desensitization" was, not so long ago on the historical timeline, a concept that would have been scoffed at by everyone from toiling fieldhands to hyper-sensitive poets, the present pervasiveness of desensitizing effects in media-saturated society has made it an almost shopworn idea. Which is to say that many of us are now indifferent to, or desensitized to, that very process of desensitization, and seemingly content to live life with a sharp reduction in intense emotional and cognitive responses to what appears to be an ever-multiplying set of possible stimuli. The negative consequences of this should already be evident to those who have understood what the use of one sensory mode means

⁴²⁹ Marshall McLuhan, *Understanding Media: The Extensions of Man*, p. 67. Signet, New York, 1964.

as a stand-in for all the others (“visuocentrism” again): a higher degree of sensory numbing means a reduced diversity in sensory impressions, followed by a reduction in independent thought and critical analysis, and ultimately the surrender of one’s freedom of action to manipulators with very little interest in others’ well-being.

Whereas television was once *the* medium seen as being responsible for the diminution in overall sensory response, the torch has long since been passed to another more versatile piece of equipment, which Paul Virilio - the Jeremiah of the information society, who perceives visuocentrism as the “optical correctness” that will finish off the job of “political correctness”⁴³⁰ - is happy to remind us of:

...the computer is making us poorer in spirit. For example, whether we want it to or not, the computer synthesises information. Now, anyone who uses a synthesiser in music - let us say as a stand-in for a violin - knows very well that a real violin has a completely different sound from that of a synthesised violin. And yet, the computer is nothing but an information synthesiser. The content of information is being semantically reduced, something cognitivists know very well, by the way, and this, it seems to me, is something we should take note of.⁴³¹

The “semantic reduction” Virilio speaks of will be very familiar to any computer operator of the past few decades. Graphic user interfaces have evolved to the point where the functionality of everything from music players to word processors to video editors is controlled in roughly the same way, and thus relies upon the same limited type of not only semantic but semiotic content (a small repertoire of trackpad or touchscreen controls, targeted at on-screen icons, are connected to a comparatively large variety

430 Paul Virilio, *Open Sky*, p. 91. Trans. Julie Rose. Verso, London / New York, 1997.

431 Paul Virilio, Friedrich Kittler, and John Armitage, “The Information Bomb: A Conversation.” *Angelaki: Journal of the Theoretical Humanities*, Vol. 4 No. 2 (1999), pp. 81-90.

of functions). In this way, we have seen the occasional triumph of the virtual (read: exclusively audio-visual) object over those that can be apprehended by the entire human sensorium, part of a marketing strategy in which computer manufacturers “sell computers, but...tell people that they are desks, or desktops, or...tell them that they are television sets, the television sets of the future.”⁴³² This ongoing virtualization process, having created a situation in which “everything now takes place in the diminutive spaces of electronic circuits,”⁴³³ has the potential to reduce spatial awareness along with the loss in sensory acuity. McLuhan may have realized that electricity itself was “primarily tactile,”⁴³⁴ but modern electronics have done much to atrophy the sense of tactility. Recent techno-cultural innovations like the *Tenori-on* - a “digital [music] instrument that is also an interface”⁴³⁵ - can be fun and fascinating, yet they also accelerate this trend whereby a limited repertoire of haptic cues leads to a disproportionately large set of (in this case, audial) results.

Virilio’s warnings, both in the run up to the century and in the 21st century proper, have largely been commensurate with a “denunciation of technology as an instrumentalisation of the human.”⁴³⁶ Desensitization is, therefore, not disparaged merely because it causes the desensitized to miss out on life in all its richness, but because it brings them that much closer to being fully exploitable automatons. As we have already seen with the example of “techno-shamanism,” though, technology is never exclusively this - it has been used as a conduit to a pre-rational past, and, indeed, to a speculative synesthetic stage of our collective development in the future.

432 Friedrich Kittler quoted in *Ibid.*

433 *Ibid.*

434 McLuhan (1964), p. 219.

435 Yvonne Spielman, *Hybrid Culture: Japanese Media Arts in Dialogue with the West*, pp. 110-111. Trans. Anja Welle and Stan Jones. MIT Press, Cambridge / London, 2013.

436 T. Hugh Crawford, “Conducting Technologies: Virilio’s and Latour’s Philosophies of the Present State.” *Angelaki: Journal of the Theoretical Humanities*, Vol. 4 No 2 (1999), pp. 171-180.

THE AUDIO-VISUAL AS "MATERIAL"

In the 21st century, this task of re-sensitization has fallen to a small but determined number of artist-researchers, who often proceed by isolating a single sensory mode to the greatest extent possible and "zooming in" on its functionality in an experimental manner, i.e. in a manner that may reveal unknown or just occluded features of that functionality.

When the video artist Bill Viola describes sound as "a material thing... a physical entity,"⁴³⁷ he succinctly states one of the possible revelations that can come from such acts of heightened sensory attention. Viola himself was a student of the sound artists Alvin Lucier and David Tudor, and, if he is not aware of similar approaches such as the "sound objects" of Pierre Schaeffer or the "sound-shapes" of Messiaen student Denis Smalley, is at least as respectful towards such concepts. Smalley's own thoughts on the subject are easily applicable to the motivations of fellow sonic researchers:

There's a sort of synaesthesia occurring here, because one does "watch" sounds; and in spite of their invisibility, sounds do have a potential visual character to them. Spectromorphologies do, even if one can't be explicit about it. They have dimensions. They're small, large. One can physically imitate the kind of textural movement, for example, in various ways. One can draw a graphic diagram of a texture, freeze it visually. So I think there is a relationship between the visual and the aural. And just think about the phenomenon of motion.⁴³⁸

437 Bill Viola quoted in Gene Youngblood, "'The Source of the Images Is Within': The Videotapes of Bill Viola." *MoMA*, No. 45 (Autumn, 1987), pp. 2-3.

438 Larry Austin and Denis Smalley, "Sound Diffusion in Composition and Performance: An Interview with Denis Smalley." *Computer Music Journal*, Vol. 24, No. 2 (Summer, 2000), pp. 10-21.

Viola's favoring of low bass frequencies, meanwhile, is understood by Gene Youngblood as a companion to "what he does with time through image manipulation": it is "an attempt to bring into consciousness that which is just beyond our level of awareness but is not inaccessible."⁴³⁹

The number of new concerts being performed in total darkness is not unrelated to this stimulation of meta-consciousness either. This strictly anti-visual performance style provides a handy solution to a separate problem (namely, that the erotically charged sensation of listening in the dark is potentially more exciting than watching a sound artist standing or sitting nearly immobile behind some small array of portable electronic devices). Whatever the motivation for this performance style, the effect it has can be truly immersive, and paradoxically "visual" in that loud audible content in such an environment can trigger the visualization of Klüver's «form constants» mentioned earlier. In fact, a variation on this theme was simply entitled *Immersion* - a 1999 series of sound concerts curated by Philip Samartzis to be held in a movie theater, in order to fully exploit its Dolby 5.1 surround sound capabilities (Samartzis proudly spoke of this as "the first 3-hr, 35-mm film without any images,"⁴⁴⁰ in the process recalling much earlier attempts by Dziga Vertov to use the cinema as a 'pure' listening space).

Looking towards other media, though, we can see that this "materialization" of the audio-visual is not a purely 21st century phenomenon. Carsten Nicolai, an artist who has busied himself with a slew of synesthetic experiments,⁴⁴¹ lists as one of his key influences the 1965 Op art exhibit "The Responsive Eye." Nicolai claims that "...92% of American households [...] had a television the year the ['Responsive Eye'] exhibition opened.

439 *Ibid.*

440 Warren Burt, "Immersion." *Computer Music Journal*, Vol. 23, No. 4 (Winter, 1999), pp. 88-92.

441 I have only excluded Nicolai from this discussion for the fact that a biographical section on him already appears in one of my previous books, *MicroBionic: Radical Electronic Music and Sound Art in the 21st Century*.

That means that each day, nearly 200 million people were accustomed to seeing or manipulating the lines and grids on test cards in order to calibrate signals for a clear picture, inherently producing *moiré* effects in the process.⁴⁴² In other words, the possible reconfiguration of one-way transmitters into personal tools for meditation, for apperceptive study, or for the production of aesthetic novelty was - if somewhat limited - never *completely* off-limits within those communications media most associated with "one-way" transmission, social control, and behavioral manipulation. This has another implication, though, if we imagine that some individuals were using their TV sets in this way: namely, that these individuals were hoping to experience something close to a "tactile" experience rather than the experience of viewing from a distance that was normally offered by television programming. In doing so, they would be participating in and furthering a trend where - to borrow Op artist Bridget Riley's remarks on color - we feel and "see" visual or audial phenomena "in the guise of a substance."⁴⁴³

Both Riley and fellow 'Op' artists, such as Tadasuke "Tadasky" Kuwayama, were part of a collective experiment that used aesthetic essentialism to confer the illusion of a cross-modal experience: the latter's artworks, for example, often used nothing more complex than rigidly rendered concentric circles to conjure an effect of three-dimensionality and, consequently, an illusion of animation or tactility (something they have in common with harmonograph etchings from the 19th century). Though perhaps not synesthetic, such effects would be very close to being "hyperesthetic," nurturing the type of advanced affectivity that inspired Baudelaire to compose his "Correspondences" and to talk of being immersed in a sea of electricity when wading through a crowd.

442 Carsten Nicolai, "The Responsive Eye: Beyond What We Call 'Art.'" *Flash Art*, March / April 2011, pp. 74-76.

443 Bridget Riley, "Color For The Painter." *Colour: Art And Science*, ed. Trevor Lamb and Janine Bourriau, p. 31. Cambridge University Press, Cambridge, 1995.

The dramatic expansion of possibilities afforded by digital processing has contributed to a newer breed of artists whose works walk the fine line between hyperesthetic and synesthetic stimulation. For example, the ability to electronically craft sounds unlike any associated with nature or human industry - enhanced by the illusion of "presence" that high-fidelity sound recordings now afford - forces us to engage other senses in an attempt to domesticate these sounds. This is especially evident in the new linguistic quirks that, once reserved for critics attempting to describe music to a lay audience, are now part of musicians' own pedagogical vocabulary: morphological terms like "spatial scattering" or "cloud density" are intuited by modern composers almost as easily as more fundamental musical concepts of pitch and tempo, making the study of computer music in particular a crash course in phenomenology.

HOW SYNESTHETIC IS "INTERACTIVE MULTI-MEDIA?"

As consistent as these efforts may be - and they are still growing in number - they are not yet the "default" mode for arts presentation. If museum installations and university arts curriculae are anything to go by, then the aesthetic orientation of our modern society has long since settled in the land of "multi-media," and has perhaps found some comfort there. Modern aesthetic life is far from being commensurate with a real synesthetic experience - especially when considering the failure of such 21st century innovations as 'virtual reality' to accurately simulate the functionality of the human sense organs. Yet, that aside, there seems to be some definite consensus that working in multiple modes of creativity - and, therefore, working upon multiple sensory modes - increases the emotional efficacy and semiotic accuracy of any given work. It also allows for an increase in interactivity or participation by the audience (and the potential increase in the number of individuals comprising that audience), given that there are multiple angles from which a work can be approached.

To be sure, not all feel that the increase in interactive multi-media is the marker of an enlightened aesthetic culture, let alone an uncontestedly positive development: leading artists associated with this interactivity, such as Paul DeMarinis, deem the term to already be a relic of the 1990s (when “every artist for a time felt obliged to pay obeisance to it.”)⁴⁴⁴ Defenders of interactive multimedia would say that the ‘new media’ landscape is one that invites cross-modal awareness as an effect of its hoped-for dissolution of genre boundaries, yet the mere existence and proliferation of these forms does not guarantee a wholesale audience acceptance of their intentions. Matthias Gmachl of the Farmers Manual ensemble says as much when stating that

We experienced that audiences are tuned to different media and that there is hardly an audience that approaches our work with the openness we are looking for ourselves. A typical music audience does not deal with visual art, and it is rare to find people in art who know about new music. The genres of digital art and media are very fashionable and short-lived and seldom go beyond technological fetishism.⁴⁴⁵

Part of the explanation for this comes from the way in which advanced technology merely illuminates the disparities between different types of sensory data, rather than providing the means of resolving these differences. Gmachl knows of these disparities all too well, and inadvertently echoes Jonathan Sterne’s previously mentioned ‘audiovisual litany’ when he notes the difficulty inherent in making audible data function like visible data. Visible data, after all, has “only one focal point...only one spot that we can really follow precisely,” while hearing’s identifiable ‘focal point’ exists “in the sense of the present moment they occur in.”⁴⁴⁶

444 Gascia Ouzounian and Paul DeMarinis, “An Interview with Paul DeMarinis.” *Computer Music Journal*, Vol. 34 No. 4 (Winter 2010), pp. 10-21.

445 Matthias Gmachl quoted in *Substantials #01*, p. 66. Ed. Akiko Miyake. CCA KitaKyushu, KitaKyushu, 2002.

446 *Ibid.*, p. 74.

In spite of these protests, the march of multi-media - principally interactive multi-media - has proceeded at a dizzying pace; and such projects are *de rigeur* for the major techno-art expositions like Transmediale (Berlin) and Ars Electronica (Linz). Some of the more considered attempts at multi-media art are not those prepared for galleries or installations - in which audiences are already predisposed towards "viewing" - but for those environments in which audiences arrive with some expectations of having their own participation and input. That participation may be a matter of simple diversion, or of loftier "techno-shamanistic" ambitions, but the common expectation seems to be that interactivity will contribute to either a new perception of the body in space, or to a re-awakening of its manifold possibilities for action and reaction.

On the cusp of the new millenium, Ryan Ulyate and David Bianciardi proposed an "interactive dance club" which would essentially transfer the type of technological feedback that had already existed in video arcades (and certainly intensified with the appearance of games like *Dance Dance Revolution*, that combined calisthenic exercise with on-screen entertainment) to environments specifically geared towards dancing to music. Not so coincidentally, Ulyate and Bianciardi were operating as "Synesthesia" at the time of their proposal, having even registered *synesthesia.com* as their organization's web domain. The duo have issued a number of 'commandments' for this energetic atmosphere (e.g. "interfaces and content should encourage and reward movement", "no thinking allowed", "responsiveness is more important than resolution.")⁴⁴⁷ All of these prescriptions, if followed correctly, would ideally lead to an environment which "amplifies the uniqueness of the individual and reveals the synergy of the group."⁴⁴⁸ To make this wish a reality, Ulyate and Bianciardi drafted plans for several self-contained stages or modules within the larger dance hall environment: a "beam breaker" in which participants would "play" musical phrases by snapping light beams with their hands, "meld orbs"

447 Ryan Ulyate and David Bianciardi, "The Interactive Dance Club: Avoiding Chaos In A Multi-Participant Environment." *Computer Music Journal*, Vol. 26, No. 3 (Fall 2002), p. 43-46.

448 *Ibid.*

containing proximity sensors that trigger computer graphics projections, and numerous other play stages that rely upon the same interplay between motion sensitivity and audio-visual projection.

Some smaller-scale projects exist, though, that seem to foster “chaos” - if that refers to principles of purposeless / open-ended play - as directed by cross-modal responses. Many of these exist in the realm of “device art,” and particularly in the forms of Ryota Kuwakubo’s Block Jam or the Reactable of Sergi Jordà and the Barcelona-based Musical Technology Group - both of which can be harnessed as pedagogical tools as well as colorful amusements (Kuwakubo, in particular, would not frown on such an assumption of his «playful» intentions - he clearly states an interest in «the «misuse» of technology and its appropriation for different purposes.»)⁴⁴⁹ His Block Jam device, a set of LED-equipped blocks that are linkable horizontally and vertically as in a game of dominoes, rewards an user’s creativity by emitting different pictographic and audio signals each time a different configuration of blocks is made.

Reactable, meanwhile, is similar in function to Block Jam, if more complex (and much more expensive). Blocks are placed atop a circular tabletop of glowing backlit azure, where their placement triggers the of a circular halo of light around them as well as interconnecting beams of light depending on what configurations the blocks are placed in. It is telling that these blocks are referred to as “tangibles” - as if to remind the user of the comparatively reduced amount of haptic involvement associated with music and design software tools. The functionality of the “tangibles” themselves is highly similar to that of music synthesizers, with each unit acting as a separate module for voltage control oscillation, low-frequency oscillation, and so on. Reactable, though earning no shortage of professional accolades (e.g. the Golden Nica prize from Ars Electronica), has also been seen by the Barcelona-based computer musician Roc Jiménez de Cisneros as emblematic of “cross-modal” art that only reinforces current sensory prejudices. Cisneros’

449 Spielmann (2013), p. 84.

skepticism comes from a place similar to that of his colleague Gmachl, although this time targeting the designers of interactivity rather than the audiences consuming it:

Jordà and his team replaced what he referred to as the “technical point of view” with that fixation with interactivity, but the “musical results” are missing. What they play at their official demos is this middle of the road dance stuff no one would pay attention to it if it wasn’t for the fancy colours. Which once again comes to show that tools are not everything, because their table involves a bunch of powerful general-purpose software tools that can be used to make great stuff.⁴⁵⁰

MTV: FALSE DAWN OF CROSS-MODAL ART

If you discuss cross-modal art to someone unfamiliar with the works of other artists in this book - particularly those operating before the 20th century - the main point of entry they are likely to have into this culture is the music video. As the form has matured, it has absorbed many of the techniques of previous avant-gardes (if only to put them in the service of pop music that itself has no avant-garde aspirations). It has now also become - in the hands of mega-selling artists like Beyoncé - a vehicle for selling entire albums; this is the case with that singer’s eponymous 2013 release in which each of the fourteen music tracks was accompanied by a short film. While it is most certainly still a promotional tool for a significant number of musicians who make use of the medium, it is also a repository of the techniques that were first utilized by, among others, Norman McLaren’s short films, the Lumia experiments of Thomas Wilfred, or the synesthetically flavored video art of Steina and Woody Vasulka (see especially the Vasulkas’ mid-1970s works *Soundsize* and *Soundgated*

450 Roc Jiménez de Cisneros, email correspondence with the author, December 14 2010.

Images). Though such elements may be reduced to ornamental flourishes within the larger narrative of videos that center on human subjects, their presence does still suggest a behind-the-scenes knowledge of this prior experimentation.

Many contemporary studies have pointed to the potential benefits of having visual accompaniment to music, and though this does not apply exclusively to music video clips, these findings do provide some consolation for those who feel that art form is too maligned already. In reviewing the available literature on the subject, several researchers point to possible defenses of this audio-visual presentation, i.e. "several individuals have noted that the visual modality provides access to body movements that may convey musical intentions more clearly than music alone,"⁴⁵¹ also noting significant evidence that "the presence of visual information influences the emotional experience of music listening."⁴⁵² Curiously, such easily anticipated results were also complemented by other findings that were less predictable (even to the test subjects themselves), namely the ability of visual content to initiate almost hallucinatory perceptions of the accompanying music's qualities:

Melodies in a positive visual context seemed louder, faster, more rhythmic, and more active than those in a negative context. The mood of the film, then, not only biased the affective interpretation of an accompanying tune, but once this interpretation was adopted, changed the way the tune was perceived in a mood consistent manner.⁴⁵³

For better or for worse, the music video has come to be seen as synonymous with the MTV [Music Television] cable network, its most well

451 Marilyn G. Boltz, Brittany Ebendorf, and Benjamin Field, "Audiovisual Interactions: the Impact of Visual Information on Music Perception and Memory." *Music Perception: An Interdisciplinary Journal*, Vol. 27, No. 1 (September 2009), pp.43-59.

452 *Ibid.*

453 *Ibid.*

known means of dissemination. Like any institution with an expansive reach and with a possibly obfuscated 'real' agenda traceable to corporate and political entities, MTV has been a lightning rod for cultural criticism since its inception. Much of the late-20th century criticism was directed at the network's peculiar habit of not featuring any content that had an informative function aside from advertising new products (Ulrich Adelt deftly describes MTV as a network exclusively showing commercials - "commercials for records, followed by commercials for other products, again followed by commercials for records.")⁴⁵⁴ Amusingly enough, many of the "proper" advertisements in rotation on the network were indistinguishable from actual music videos, save for maybe their comparative brevity. For those who were skeptical of this pure profit motive, as MTV became one of the crown jewels of the entertainment industry by the late 1990s, results like those outlined above were sinister rather than inspiring. That is to say, they affirmed a wide-ranging and highly effective manipulative power on the behalf of this new medium - or simply a triumph of materialistic superficiality - rather than a capability for advancing free thought.

If nothing else, the station's longevity has also pointed to one of the new roles of the artist in the multi-media age, demonstrating just how much public perception of the artist has transformed since the days of the Renaissance, or even since the days of Kandinsky: instead of artists creating devotional altarpieces, the procession of celebrity artists from Madonna to Beyoncé have epitomized a movement in which artists become devotional artworks themselves via the vehicle of music video. The contemporary "artist-as-brand" trend was largely enabled by the aforementioned "always in advertising mode" approach of MTV: savvy tastemakers realized that they could use video clips not merely as advertisements for audio albums, but also as advertisements for a whole host of products bearing their artistic imprimatur (e.g. fashion items, food and drink lines) and celebrating the "indispensable uniqueness" of their personalities.

454 Ulrich Adelt, "Ich bin der Rock'n'Roll-Übermensch": Globalization and Localization in German Music Television.» *Popular Music and Society*, Vol. 28 No. 3 (July 2005), pp. 279-295.

However, the politics and ethics of MTV are not the only aspect of its presentation that have been perceived as either a failure or as a detriment to real cultural advancements. In addition to the accusations that the network fosters a global monoculture of rampant, pointless consumerism, the network is occasionally criticized by synesthetes themselves as presenting a false or merely unsatisfying synchrony between sound and image. Take, for example, the admission of a clinical synesthete Floor Eikelboom:

What irritates me the most is that I cannot recognize the sounds in the images and the images are not synchronized to the music. That is why I have a feeling that something is not right. If a clip is interesting to watch, I get totally absorbed by the visuals and forget the sounds.⁴⁵⁵

Several alternatives to MTV have always been available, which viewed the narrative music video as an unnecessary distraction from a pre-existing tradition of motion graphics and film manipulation, much of it of an interactive nature. These different manifestations of video art were distinguished by, as Michael Betancourt proposes, “the transformation of limitation into meaning and [a] stylistic identifier,”⁴⁵⁶ a process that has more to do with synesthetic reality than with the fantasy story-telling and *ersatz* sensory synchronization of most commercial music videos. This tradition got under way thanks to, in no small part, the pioneering efforts of Fluxus artist Nam Jun Paik, whose involvement with “intermedia” - or those experimental activities existing *between* recognized genres of communication - melted almost effortlessly into “multi-media,” that state when multiple recognized genres of communication transmitted similar information in concert.⁴⁵⁷

455 Floor Eikelboom quoted in Cretien van Campen, *The Hidden Sense: Synesthesia in Art and Science*, p. 18. MIT Press, Cambridge / London, 2010.

456 Michael Betancourt, *The History of Motion Graphics*, p. 160. Wildside Press, 2013.

457 It is also worth noting that Nam Jun Paik, as well as the aforementioned Vasulkas, originally saw video art as an outgrowth of their previous experiments with music.

One of Nam Jun Paik's major forays into artwork that blurred the lines between multi-media or intermedia art (and his first major solo exhibition) was 1963's *Exposition of Music-Electronic Television*, which involved converting the home of collaborator Rolf Jährling into a seamless exhibition space. In one area, a variety of prepared instruments and 'sound objects' complemented a separate exhibition room that was stocked with twelve television sets, whose cathode ray-powered imagery was manipulated by powerful magnets (in a bit of perverse irony, it has been noted that «Paik's project did not attract TV coverage... unlike the [other] Fluxus actions which took place concurrently.»)⁴⁵⁸ The strange undulating distortions that resulted were meant as a complement to the equally unorthodox distortions of 'expected' sounds coming from radios placed throughout the exhibition space. This exhibition was informed by a sort of cross-modal experimentation, since Paik believed that television was "...not the mere application and expansion of electronic music in the field of optics," but rather

...represents a contrast to electronic music (at least in its starting phase), which shows a pre-defined, determined tendency both in its serial compositional method and in its ontological form (tape recordings destined for repetition). [...] I have not only expanded from 20 kHz to 4 MHz the material being treated, but have more pronouncedly used the physical property of the electron (indeterminacy, the dual character of corpuscles [particles] and waves [status]).⁴⁵⁹

A similar kind of cross-modal parallelism applied to a later invention that bore Paik's signature, as well as that of fellow artist-inventor Shuya Abe. The Video Synthesizer of Paik and Abe consisted of numerous black-and-white, closed circuit TV cameras connected to a scanning modulator and

458 <http://www.medienkunstnetz.de/works/exposition-of-music/?desc=full>. Retrieved October 28, 2013.

459 Nam June Paik, leaflet for "Exposition of Music-Electronic Television" (1963) Reproduced online at <http://www.medienkunstnetz.de/works/exposition-of-music/?desc=full>. Retrieved October 28, 2013.

colorizer, which created effects that were deliberately the opposite of what would be desirable for commercial broadcast: hypnotically jittering and undulating visual sequences dominated by swathes of oversaturated color, and with ever-shifting focal points. Such effects were the result of Paik's desire that video footage have the same ability to be manipulated, or fluidity, of artists' paints. This attitude towards recorded material as a new 'raw material,' rather than as a finalized form in and of itself, would provide the impetus for much of the 'video art' genre, as well as sharing a kind of kinship with the digital sampling techniques used in audio recordings.

MODERN GRAPHIC REPRESENTATIONS OF SOUND

If the earlier discussion on Iannis Xenakis's innovations did not completely clarify his role in developing a new kind of cross-modal aesthetic, then there should at least be some consideration given to the "offspring" born of his research. A good number of UPIC-inspired, or derivative, computer hardware and software tools have been designed over the past two decades, testifying to advancements in computer processing power but also to the enduring yearning for some meaningful and repeatable type of sensory translation. Most of these tools are based upon the common element of the spectrogram or sonogram; a graphic representation of a sound's spectrum - that is, of the different frequencies of energy distribution over time - that allows for more precise interpretation of that sound's qualities than a simple "time-domain" waveform would.

Many of these tools, as per Xenakis's own wishes for his UPIC, have made it possible for total novices to approximate some kind of cross-modal translation in their own home - a fact that is appreciated by those music lovers who, though desiring to make music, remain uncomfortable with the syntax of traditional music notation and prefer a more intuitive set of cues. Many computer applications, some available as freeware or shareware, contain some set of algorithms that will produce graphic output from sonic waveforms and vice-versa. Some of the results are disappointingly

predictable, e.g. when painting a screen area completely white in early programs of this type, e.g. *Metasynth*, leads to a blast of white noise (one review from the august *Computer Music Journal* accedes that “although [Metasynth] might produce interesting sounds, it does not offer the most comprehensive range of possibilities for resynthesis.”)⁴⁶⁰ The color / sound associations made by *Metasynth*’s interpretive engine seem to follow the common knowledge assumptions confirmed by researchers like Martino & Marks, i.e. “when compelled to choose, most people will associate a high-frequency tone with a white visual target, and a low-frequency tone with a black target.”⁴⁶¹ Yet the results, when at their best, can also provide ineffable moments of wonderment and serendipity- an open architecture program like *Max / MSP*’s “Jitter,” which is one common source of the real-time, audio-synced video manipulation being done at electronic music concerts, is one example of the sophistication that can be achieved here (and *Jitter* is just one recognizable name in a field that also includes the programs *Module8*, *Isidora* and *Nato.0+55+3d*).

Other software applications such as *AudioSculpt*, developed at the IRCAM labs, allow for multiple sound signal processes to be modified once a visual readout of a waveform has been created by the program - typically these include time compression and cross-synthesis of multiple sounds. *AudioSculpt* has become a powerful tool within sound design communities, thanks to characteristics like its relatively smooth time stretching of sounds (this itself is owed to its preservation of quickly attacking sounds, or transients). Complex filtering effects and fluctuations in dynamics can be achieved, either “live” or prior to playback, by drawing on top of existing sonograms.

The graphic user interface, as a means of computerized musical composition and real-time control, has steadily become *de rigueur* not just as a software-

460 Jean-Francois Charles, “A Tutorial on Spectral Sound Using Max/MSP and Jitter.” *Computer Music Journal*, Vol. 32, No. 3 (Fall 2008), pp. 87-102.

461 Martino, G. & Marks, L. E. “Perceptual and Linguistic Interactions in Speeded Classification: Tests of the Semantic Coding Hypothesis.” *Perception* Vol. 28 (1999), pp. 903-923.

based “control surface”, but in hardware form as well. Newer instruments such as the JazzMutant Lemur - a touch-screen controlled tablet - offer a wide array of graphic user interfaces to fit the exact mood of a particular music performance; in fact the sales pitch for the Lemur recommends that players use it to enhance the look of a performance environment (presumably through video projection of whatever is happening on the Lemur’s screen): users should “...not only use the Lemur for functionality, [but] actually [as] a part of the look and feel of their stage theme [...] The brilliant colorful interface fits in with any stage lighting and adds to the ‘cool factor’ of the audience experience.”⁴⁶²

Elsewhere, documentation continues to surface about more obscure attempts at synesthetic instrument building, showing devices like the Lemur to be the culmination of previous research. Take for example the computer-controlled DIMI-O organ (prototype completed in 1971), which was co-designed by composer Erkki Kurenniemi and electrical engineer Hannu Viitasalo. In addition to a 4-octave keyboard, the instrument also included a 32-step sequencer. While this is fairly conventional for experimental electronics of the period, the DIMI-O became truly radical when a videocamera was introduced as an input source for the attached video monitor. Once transferred to black and white, the picture could be used as a “control signal” (this is demonstrated in the documentary film *The Future Is Not What It Used To Be*, where we see an ebullient Viitasalo at the keyboard and “playing” a captured image of his own face). Setting brightness and contrast controls on the monitor would also directly impact musical output: for example, at peak brightness, the instrument emits a diatonic cluster across all 4 octaves, and fewer notes are included in the output signal as the brightness decreases. The ‘image capture’ feature of the DIMI-O also led to one proposed experimental use of the device, where it would capture images of live dancers or performers, and then use these images as the basis for musical output. Although a suitable

⁴⁶² Available online at http://www.jazzmutant.com/lemur_innovation.php. Retrieved March 18, 2014.

manufacturer was not found for the DIMI-O, it remains a highlight in a career that exceeded even beyond synesthetic experimentation: Kurenniemi is also one of the few artists to conceive of using brain waves themselves as audio controllers (using a cross between EEG and sonar technology).

For Xenakis, at least, there was no contradiction in manipulating the way that we “see” music in order for it to achieve these musical functions. The logical predecessor to his UPIC tool was his work with graphic notation: more now than ever, the graphic score is an important feature in the occasionally perplexing “multi-media” arts milieu we now inhabit, because the use of computers and electronics as compositional tools forces players to think in terms other than the ones conveyed through stave notation (e.g., thinking of musical pitch in terms of hertz or cycle-per-second values rather than as ‘notes’). Of course, epic-length graphic scores like Cornelius Cardew’s *Treatise* do exist, which have little to do with computerization, and elsewhere the graphic notation of Anthony Braxton is meant to alter the attitude of his ensembles towards the otherwise imposing, rudder-less activity of collective improvisation (Braxton notably counsels his players to “have fun” with his work).

Braxton’s encouragement is echoed by Pierre Couprie, who sees graphic representation of sounds as being essential to keeping non-musicians from being driven away from musical study: he insists that “the association of sound, graphics and text creates an analytical object accessible to both the neophyte and the specialist.”⁴⁶³ Using the semiotic theory outlined by Charles Peirce, Couprie feels that graphic representations have an advantage over musical instructions encoded in sheet music, in that the former rely on a more intuitive type of *iconic* representation when compared with the *symbolic* representation used for the latter. Put a little differently, the multiple dimensions of graphic representation (e.g. shape, color, and texture) offer a better possibility for intuiting a sensory

⁴⁶³ Pierre Couprie, “Graphical Representation: An Analytical and Publication Tool for Electroacoustic Music.” *Organised Sound*, Vol. 9 No. 1 (April 2004), pp. 109-113.

“equivalent” to a sound than the coded, culturally constructed information of musical notation systems. Incidentally, this iconic representation better approximates the world of synesthetes than symbolic representation, since synesthetic percepts do not “stand in for” or “point to” anything - they are synonymous concepts manifesting as different sensory material.

It is interesting that Couprie speaks of graphic representations’ benefits for listeners’ analysis of music pieces more than he speaks of their benefits for music performers, and he does admit that symbolic representation offers greater “analytical accuracy” even though iconic representation holds the promise of a greater “potential public.”⁴⁶⁴ Indeed, the same graphic score that liberates one performer’s expressive ability may also frustrate another’s. Christoph Cox elaborates on this, saying that “the latitude given to performers means that no two realizations of the same composition are ever likely to sound the same...moreover, these pieces are often ‘scored’ for ‘unspecified instruments’ and few give any indication of how long it should take to play them.”⁴⁶⁵ The lack of clearly discernible time axis information may be one of the main things separating these types of scores from the classical five-line stave notation developed by Guido d’Arezzo in the Middle Ages, though the latter type of score is essentially “graphic” information as well. It may be time to invent a more accurate term to designate scores that give performance cues with heterogeneous, multi-colored objects and patterns rather than with notation that, although monochromatic and “fixed,” is “graphic” all the same.

As a side note, Yasunao Tone’s work with audio interpretation of graphics shows that Nam Jun Paik was not the only Fluxus-related artist to experiment with the translation of sensory information, and also that specialized software may not even be needed to this end: Tone has previously utilized the Sound Designer software in a ‘UPIC-like’ manner,

464 *Ibid.*

465 Christoph Cox, “Visual Sounds: On Graphic Scores”. *Audio Culture: Readings In Modern Music*, ed. Christoph Cox and Daniel Warner, p. 188. Continuum Books, London / New York, 2004.

drawing the pictographic characters of traditional Japanese *man'yo* poetry on screen and letting the software interpret them as audio output (interestingly, the *man'yōshū* or "Collection of Ten Thousand Leaves" is the oldest extant compendium of Japanese poetry, a fact that adds another layer of meaning to the elusive, perpetually ahead-of-its-time resonance of Tone's compositions). The explosive, careening noisiness of Tone's results defy expectations as to what kind of sounds might be generated from the source material, situating them in an odd grey area between incongruity and simultaneity.

CHLADNI REVISITED

The use of human-exclusive high technology to re-connect or re-integrate with the biosphere has been a constant theme in the arts of the 21st century, and this is especially clear in the arts involving attempts at translating sensory information. The work of Hans Jenny (1904-1972) provides perhaps one of the key developments in this area: his body of work revives the findings of Ernst Chladni for the present generations of cross-modal artists, and has garnered a broad appeal for individuals situated on various points on the spectrum of human inquiry that stretches from spirituality to science. Jenny himself occupied a midway point along this spectrum, being inspired equally by the work of Chladni and the Theosophy-derived teaching of Rudolf Steiner (incidentally, Jenny taught science within a Zürich-based Steiner School).

Jenny reprised Chladni's experiments using the more decidedly 20th century technology of crystal oscillators, which he used to create the vibrations that re-shaped masses of different material (from calcified sand to glycerin) placed atop black drum membranes or plates. The symmetrical forms resulting from the stimulation by audio tone, like Chladni's designs, had a complexity that directly related to the sonic frequency used to shape them- higher frequencies, often in the range of 5-15 kHz, again resulted in a greater degree of elaboration and repetition

(of concentric circles, etc). within the designs, with the opposite being the case for lower tones. His experiments, whether or not they are decoupled from a background of mystical questing, are useful to those looking for meaning in the "standing wave" electronic drone aesthetic of 20th-21st century sound explorers like Eliane Radigue, Alvin Lucier, and Mika Vainio. This type of sound's "physicality" - or, more accurately, its use as an aid in proprioception - has been a talking point in audio circles for some time, with Jenny's manipulation of capillary waves finding its way into the austere post-techno of Alva Noto / Carsten Nicolai and the odd oneiric music of The Hafler Trio. Interest in this art continues to surface in new places: most recently, the Japanese artist Keichi Kanazawa has performed public exhibitions of cymatic 'sculpting' using various rubber tipped mallets to cymatically 'sculpt' differently colored piles of granules into aesthetically pleasing forms.⁴⁶⁶ More ambitiously, the developers of the *KIMA* system - an exhibition / performance built up from holographic projections of cymatic images - have added telepresence to the mix, proudly claiming this experiment's ability to unfold as "an orchestration of communication... rather than mere representation of sound."⁴⁶⁷

At least one contemporary artist, Mark Fischer, has attempted to go beyond the interpretive limitations of spectrograms, which he feels do not adequately provide information about the originating bodies responsible for the sound material he is recording. Some in this field, such as the paranormal researcher and sound artist Michael Esposito, might disagree about the degree to which spectrograms can tell a tale,⁴⁶⁸ though Fischer is firm in his conviction: "[spectrograms] work well for visualizing musical scores or mechanical sounds, but there are very few sounds in nature that they can express in detail."⁴⁶⁹

466 Examples are available at <http://laughingsquid.com/sound-shapes-sand-in-beautiful-demonstrations-of-sound-visualization/>. Retrieved December 3, 2011.

467 Oliver Gingrich, Alain Renaud & Eugenia Emets, "KIMA - A Holographic Telepresence Environment Based on Cymatic Principles." *Leonardo* Vol. 46 No. 4 (2013), pp. 332-343.

468 Esposito uses spectrograms while analyzing recordings reported to originate from, among other things, demonically possessed individuals or haunted locations.

469 Mark Fischer, "Hooked on Phonics." *Earth Island Journal*, Autumn 2013, pp. 26-29.

The circular, mandala-like nature of Fischer's artworks will immediately - for those familiar with their work - invite comparisons with the similar patterns yielded by the experimentation of Chladni and Jenny. Fischer, inspired by the mathematical concept of the wavelet (an oscillation that begins with an amplitude of zero, briefly increases, and then returns to the zero point), recorded animal sounds that matched this behavior, and then fed them into a self-designed computer program that translated these sound patterns into vibrant, seemingly breathing images. Though there is a practical usage for Fischer's images - he hopes that "some day scientists will be able to use wavelet-generated images to identify and track individual marine mammals"⁴⁷⁰ - he recognizes the purely aesthetic value of his work as well, seeing it as a celebration of life's regenerative or recombinant abilities.

The same expansion of "scientific creativity" - the dual apprehension of new aesthetic possibilities, and of hitherto unrealized natural phenomena - is a running theme in the work of Evelina Domnitch and Dmitry Gelfand. Consider some of the visuals produced for the *Camera Lucida* DVD released by the Line label (a series of short videos featuring various sonic artists working in collaboration with these synesthetic researchers). While a seamless progression of crystal-clean, high-register glissandi forms the soundtrack, something equally interesting happens on the video screen: fluid ripples of a phosphorescent blue-ish hue appear in almost perfect lockstep with the sounds, to the point where it is immediately clear what is happening- the sounds themselves are exciting and shaping the visual materials on hand. The shivering blue cloud-forms rise and fall again from a pool of enveloping darkness in patterns that, while never entirely predictable, always seem to be in absolute harmony with the audio streams. The coloration of both the audio and visuals change slowly and surely, as do personal reactions to the presentation, but the feeling of dealing with a unitary sensory phenomenon persists.

470 *Ibid.*

Domnitch and Gelfand are certainly aware of their work's synesthetic impressions, and their aspirations make them fit neatly into the still-growing canon of artists who see liberatory potential in synesthetic perception (in one manifesto, they gladly admit that "it is a form of anarchy to leap beyond the settled and well sieved sensory streams commonly accepted as discrete senses.")⁴⁷¹ Their work with sonoluminescence also places them into the company of those artists, such as Hallock-Greenewalt and Thomas Wilfred, who saw the manipulation of light as a fine art far more verstaile than painting and more true to the artistic goals of than the cinematic image (such possibilities are hinted at by the Duchamp quote opening Domnitch and Gelfand's introductory article on their sonoluminescence works).⁴⁷² The unfamiliarity of the resulting stimuli, and its inability to act as representative of any single phenomenon, is an aspect of the work that its creators take pride in, i.e. "we always try to suspend ourselves and our audience in the most ephemeral and measureless environs that we can 'tame.'"⁴⁷³

The technique behind this varies from one project to another - often involving instruments such as white lasers and cryogenics rather than any form of computer software or hardware - yet the *modus operandi* remains one of mutual arising between the experimenter and the materials being used in the final artwork. In their own words:

Our first step towards this transformation of awareness was the abandonment of playback and simulation ("signalling") media: the ever-transforming interchange between the observer and a non-virtual mesoscopic phenomenon can never be reproduced or simulated - reduced to a signal. The observer and the observed must emerge simultaneously, in as intimate contact with one another as possible.⁴⁷⁴

471 Evelina Domnitch & Dmitry Gelfand, "Hyperspectral Percipience." Unpublished manuscript, 2012.

472 "Other techniques have already appeared recently and we can foresee that just as the invention of new musical instruments changes the whole sensibility of an era, the phenomenon of light can, due to current scientific progress, among other things, become the new tool for the new artist."

473 *Ibid.*

474 *Ibid.*

This is an intention that goes well beyond the attainment of synesthetic awareness. It has more to do with continuing the Jenny-esque project of animating and vitalizing the supposedly inert than it does with 'merely' heightening the sensory faculties - yet projects such as this show the ways in which that refining of sensory perception can initiate previously impossible methods of communication, and can radically expand the definition of what a communicative entity is.

TOWARDS THE END OF DESENSITIZATION

The good news is that the crisis of the senses mentioned at the beginning of this chapter can only proceed up until a certain point. That is because there is only so much that can truly be de-materialized and still maintain its original function. While it is easy to imagine a mortal struggle pitting artist-scientists against the commercial enterprises who favor the utility and convenience that an "optically correct" environment offers, the fact remains that - whatever else one thinks of them - commercial entities also have an interest in ongoing cross-sensory research. Advertisers and product designers are becoming increasingly aware of the way in which synesthetes perceive the world, and how simulating this condition might lead to a greater distinction of their own wares in a crowded marketplace - we can refer especially to Cytowic's declaration that "the strength of affect present in synesthesia compared to the relatively neutral valence we non-synesthetes experience."⁴⁷⁵ They are also doubtlessly knowledgeable of consumer research showing that, for example, "haptic or touch-related characteristics of product containers may indeed be transferred to the products contained therein through consumer inferences and evaluations."⁴⁷⁶

⁴⁷⁵ Richard Cytowic, *Synesthesia: A Union Of The Senses*, p. 49. MIT Press, Cambridge / London, 2002.

⁴⁷⁶ Aradhna Krishna and Maureen Morrin, "Does Touch Affect Taste? The Perceptual Transfer of Product Container Haptic Cues." *Journal of Consumer Research*, Vol. 34, No. 6 (April 2008), pp. 807-818.

Much of the work done by these entities involves the conversion of "autotelics" - i.e. persons who tend to find existence as rewarding in and of itself - into individuals who can become motivated more by external needs. This is a process that involves such persuasive acts as overriding autotelics' high self-awareness, and their concurrent realization that certain sensory linkages may be influencing their final assessment of a product. That is to say, it is a process that requires product designers to convince consumers they are thinking "synesthetically" when they believe a firm cup makes a drink taste better than a flimsy cup. From that point, it is then the designers' job to convince them that this is a beneficial way of understanding things.

This is, of course, a game that can be played by those promoting art and cultural products as well as by those who promote carbonated soft drinks and the like. Packaging schemes for art objects such as record albums are also re-evaluating the usefulness of haptic information or non-"audiovisual" cues: their designers surely realize that, in the age of dematerialized and downloadable music, physical objects must differentiate themselves by making multiple and lasting sensory connections with the music consumer. The distinction between "packaging" and content itself also has to be erased in a quasi-synesthetic manner, via stimulation of as many other senses as possible: the packaging must be interpreted not as a prelude or introductory phase of the "proper" content, but as an essential and integral part of the content.

It is worth wondering when something like a "tastable" audio release may be marketed again, and if it will be able to transcend the quirkiness or novelty value of the German "chocolate records" issued in the early years of the 20th century.

To fully assess our current scenario, though, we have to consider the totality of our lived environment rather than focusing on the more limited domain of personal, consumable objects. Sensory asymmetry is certainly alive and well in the urban environments that more and more of the total populace

is residing in: more than ever, it is easy for us to fall prey to the falsehood that the eye “tells us all we need to know” about our surroundings. The second-hand experience encoded in countless AJAX maps and Google Earth™ streetscapes devalues first-hand ‘immersive’ experience in the metropolis (or at least creates a situation where the authenticity of the latter must be judged on its resemblance to the former), and the confusion of ‘map’ with ‘territory’ is then complete. The urban environment, in those parts of the world permeated by network access, will become an environment of ‘tiered’ visuality wherein digitally captured landmarks and locations become shrouded in informational windows of varying opacity (both ‘opacity’ as a measurable value of visual light and of information disclosure). Everything from video animations to user reviews will be available to disclose various aspects of an urban location’s history, present, and imagined future, yet this will be a timeline that relies predominantly on optical information. Accepting such a limited, false reality will surely become more costly over time than it initially seems.

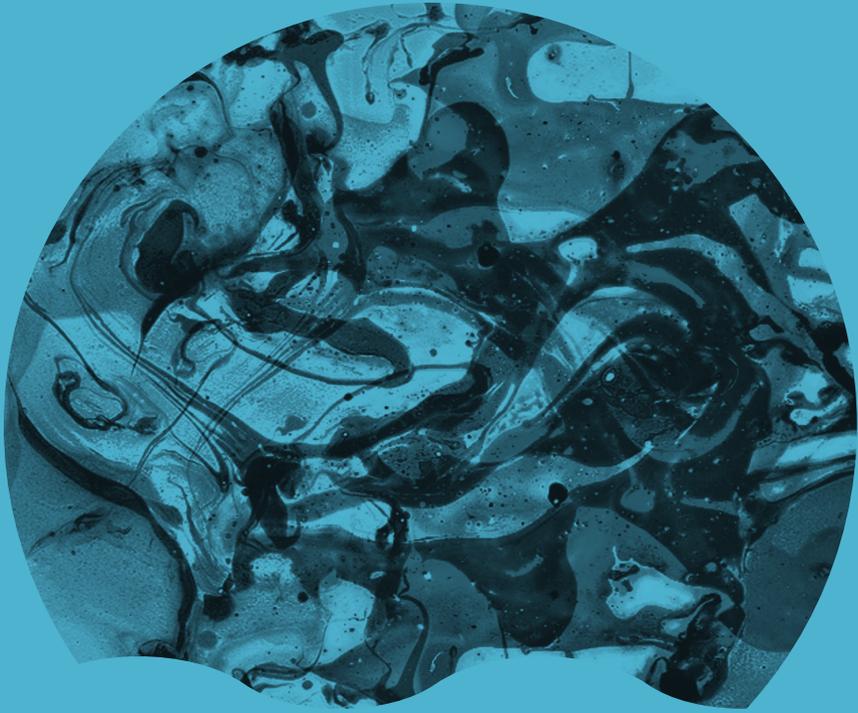
At this final stage in the game, Xenakis’s dictum about “seeing life with new eyes” - which was “life itself” - continues to remain relevant for this course of study (even though we should, given all that has been said so far, not limit this life-expanding exercise to the eyes). I submit that the attraction to synesthesia still exists because enthusiasts of synesthetic research find something in it that unlocks whole new areas of life experience, and value this chaotic growth as the apotheosis of being alive. Having realized this, another effect of synesthetic research is an appreciation of essentials that does not dissolve or devalue particularities, returning us to an experiential state that Charles Hartshorne felt was a “universal rule” whether we acknowledge it or not. His theory is elaborated upon as follows by Steve Odin:

...in synaesthesia the multivariate sensations of color, sound, scent, and flavor interpenetrate in profound unity while simultaneously retaining their unique qualitative natures, thereby manifesting the fundamental

Whiteheadian aesthetic principle that maximum depth of beauty is achieved through “harmony-in-contrast” or “unity in diversity.”⁴⁷⁷

This is an increasingly meaningful type of understanding in technologically advanced societies that, either inadvertently or by design, reduce the vast number of sensory impressions impressions for the sake of convenience and utility. After a fashion, this trade-off really is the result of the attitude that survival is still possible even if wholeness is ignored in favor of particularization or atomization. Yet life, even for those who are besieged with all types of internal and external pressure, will always be more than mere survival. If it was not, the flourishes of determined aestheticism coming from the protagonists of this book -Romantics, Symbolists, “techno-shamans” etc. - would have died on the vine rather than resonating for years after the fact. Each of their efforts may provide a different type of comprehension - of primordial perception, of extra-human life processes, etc. - but all of them are united in that they celebrate a type of experience in which a single data input is ideally felt by the entire being. It is an ideal whose achievement is tantamount to the continuation of constructive, creative life.

477 Steve Odin, “Blossom Scents Take Up The Ringing: Synesthesia in Japanese and Western Aesthetics.” *Soundings: An Interdisciplinary Journal*, Vol. 69, No. 3 (Fall 1986), pp. 256-281.



EPILOGUE

For a not insignificant number of creative minds, the attainment of “fluidity” is something that is generally prized, and understood as a sign of expressive and intellectual maturity. “Flow” becomes a pan-artistic metonym for nimbleness in improvisation, or for resilience and adaptability in the face of challenges both external and internal. As such, intermediate stages of the creative process are seen as being every bit as valuable as those processes’ originary and ending points. For those who agree with these assessments, rigidity in artistic approaches to style, technique, and thematic content is obviously thought of as a sign of weakness, laziness. Or, perhaps, it is even an indicator of insecurity cloaking itself in a deceptive mantle of brave - rather than counter-productive - resistance to change. Such a fascination with fluidity can only lead, eventually, to an exploration of the way in which the senses can be manipulated to experience life as continually dynamic and rich with - if not outright defined by - meaningful differentiation. It is the prerequisite, it would seem, for a view of creativity that sees “forces” as being superior to “forms,” with the latter being only the temporary crystallization of the former.

I would argue that there has been a dramatic spike in the acceptance of fluidity and hybridity as our means of technologically aided observation - i.e. those implements that allow us to perceive organic processes in motion, rather than merely seeing their “final” concrete forms - have increased. Laszlo Moholy-Nagy was just one of the more notable artists to seize on the potential of techno-organic discoveries to alter both everyday life and the creative arts, with his enthusiasm stemming from a particular attitude that art was meant to prepare our sensory apparatus for reception of “the new.” To that end, Moholy-Nagy went as far as to open his book *Vision in Motion* with the proclamation that “this book is an attempt to add to the socio-political a *biological* ‘bill of rights’ asserting the interrelatedness of man’s fundamental qualities.”⁴⁷⁸

With the benefit of hindsight, it is now clear how Moholy-Nagy’s enthusiasm for this type of connectivity led him down the path of multi-media

478 Laszlo Moholy-Nagy, *Vision in Motion*, p. 5. Theobald, Chicago, 1947.

experimentation that has, from time to time, become synonymous with cross-modal art and has manifested in the work of cultural engineers from Richard Wagner to Iannis Xenakis.

As we have seen, though, this revelation of man's "interrelatedness" can be a very demanding task that does not necessarily confer social or financial rewards on those who attempt to undertake it. It is a task that requires relentless defending against incredulous detractors (and as such, it's no accident that many synesthetically-inclined artists, from the Symbolists to the Futurists, developed a knack for writing explanatory manifestoes - sometimes at the expense of creating a greater quantity or quality of "primary" work). Even today there is no universal agreement about those fundamental, cross-modal units of information that the Gestalt linguists called "experiential primitives"; a consensus that is often required as a prerequisite to determining the hybrid forms that such "fundamental qualities" should eventually take.

This book has humbly attempted to make an inventory of cultural campaigns that the synesthetic condition, or the simple approximation of such, inspires. It has also attempted to show how the desire for sensory unity has been put into the service of, or used as a metaphor for, an even grander coming together of disparate elements - a key to the resolution of conflicts between quarreling tribes, between man and the natural world, and - importantly for culture creators - between the processes of art and life. Having completed this grand tour, though, it is understandable if some readers may be more confused, rather than less perplexed, about the aims of synesthetic and cross-modal art. This is not just because the aims themselves have been as diverse as the different eras and locales from which the artwork sprang, but because much of the work has laid itself open to the possibility of having interpretations that confound those very aims. Given its close kinship with pure abstraction, particularly from the time of Kandinsky onwards, much of the art discussed in this book has been practically synonymous with interpretive ambiguity. This has occurred in spite of the many efforts to steer audiences towards specific, if not systemic, interpretations such as those forwarded by the Theosophists in their esoteric manuals like *Thought Forms*.

The theory of synesthesia as a 'transitional' stage in the evolution of sensory modalities is interesting to consider in light of certain aesthetic ideals. Much art of the contemporary period (and especially since the advent of film and the increasing popularity of other 'time-based' arts) has increasingly come to recognize that transition itself can be a thing of beauty - or, put another way, beauty can be found in the "forming power" rather than in the resulting crystallization into a distinct form. Norman McLaren, discussed in this volume in the context of his concrete films and their visualization of sound, also valued the aesthetic quality of transition enough to claim, "What happens between each frame is more important than what exists on each frame."⁴⁷⁹ This view of transitionality as aesthetically good cannot be traced to a single ideological tendency, given that it has been thought of as such by both the spiritually inclined and by historical materialists who see objects as "transformative activities" in and of themselves. The whole of "experimental" art, meanwhile, seems to be concerned with transition rather than with fixed states of being.

This type of understanding has certainly influenced several decades of art production, during which time aesthetics and creative technique have been profoundly impacted by successive discoveries of life before and beyond humanity. This spirit continues to be seen in the sonoluminescence experiments by Domnitch and Gelfand, or in the bioelectrical recordings of Michael Prime, which give a "voice" to the hallucinogenic plants that have been one of the most reliable conveyors of synesthetic experience for that vast majority of individuals who are not clinical synesthetes. As we have seen already with the dramatic quivering-into-shape of Ernst Chladni's experiments, this type of creativity already has several hundred years' worth of history to it. In that time, the quest for synesthetic art has enlarged the concept of artwork as a "co-creation" between humanity and its environment. The reconciliation between them has become a greater possibility as artists have come to see themselves as scientists and vice versa; as performance

⁴⁷⁹ Norman McLaren quoted in Michael Betancourt, *The History of Motion Graphics*, p. 99. Wildside Press, 2013.

venues and studios have become investigative arenas endowed with the inquisitive rigor otherwise associated with the “non-artistic” atmosphere of laboratories. Domnitch and Gelfand have recognized the positive potential within this trend, advancing as it does towards a world where “technology and art need not strive to imitate nature, but instead ...participate in its multifarious unfolding.”⁴⁸⁰

Having achieved all that, though, some are still left wondering where we go from there, and skeptical about how an advanced understanding of sensory phenomena will do anything but provide a parallax view of an incomprehensible mystery. The purposive ambiguity of much cross-modal art is something for which it has been alternately praised and condemned. On the latter end of the spectrum, Willard Huntington-Wright’s contemporaneous diatribe against Wassily Kandinsky is again worth looking at: Kandinsky’s work is devalued because it “fails to achieve what the Marseillaise achieves in music, namely the dramatic presentation of an exhortation to action.”⁴⁸¹ In Wright’s estimation, art that sought to achieve the impressions received by other art forms had little more ultimate meaning than a puzzle or amusing game:

[Kandinsky] has contented himself with obscuring the delineations of natural objects in such a manner that the beholder feels led to decipher his cryptic realities. The suggestion of actuality is there, but there being no other strong attraction in the picture, aesthetic or otherwise, the spectator sets to work to penetrate its objective meaning. In the majority of cases he succeeds, and gains thereby a satisfaction similar to that of having solved a simple problem in fractions.⁴⁸²

480 Evelina Domnitch and Dmitry Gelfand, “‘Camera Lucida’: A Three-Dimensional Sonochemical Observatory.” *Leonardo*, Vol. 37, No. 5 (2004), pp. 391-396.

481 Willard Huntington Wright, *Modern Painting: Its Tendency and Meaning*, p. 311. Dodd, Mead & Company, New York, 1915.

482 *Ibid.*, p. 313.

On the other hand, artists have never been specifically obligated to be bearers of meaning (a fact which brings to mind the famous quote attributed to Isadora Duncan (and recalled by Gregory Bateson), "*If I could tell you what it meant, there would be no point in dancing it.*" Having touched upon this sentiment, Bateson also lambastes "the silly idea that it would be a good thing to be conscious of everything of which we are unconscious,"⁴⁸³ implying that the drive to make all aesthetic data meaningful is counter-productive or unnecessary.

It may be tiring to some of my readers to return to Bateson for yet more closing thoughts - especially after I have tried to spend the majority of this book lauding the diverse array of thinkers involved with cross-modal art - but it may be worth returning to a key concept of his in order to explain why this type of art is a valuable area of inquiry. Bateson's notion of "deutero-learning," in which the acquisition of certain types of knowledge makes it possible to understand how knowledge in general is acquired, is an idea that has had relevance to the arts for many years (the Macy Conferences, in which both Bateson and Marcel Duchamp gave presentations on "The Creative Act," testify to this fact, as did Bateson's influence upon the seminal video arts 'zine *Radical Software*).

Much art of the cross-modal variety can be seen as a species of art that deals with this process of deutero-learning, a process which again has much to do with this state of perpetual flux or transition: the triumph of these efforts is that they can be at once intriguing to the mind and alluring to the senses, in spite their ultimate failure at replicating the highly subjective phenomenon of synesthesia. This coordinated stimulation of the cognitive faculties and the sensory world is yet another of the key reconciliations that the more successful cross-modal artworks offer; providing us with the opportunity to the of "conceptual" art and that which is enjoyed only for its "aesthetic" value.

Given the challenges that continue to face the would-be purveyors of a truly, objectively synesthetic art, it does not seem too cynical to call the realization

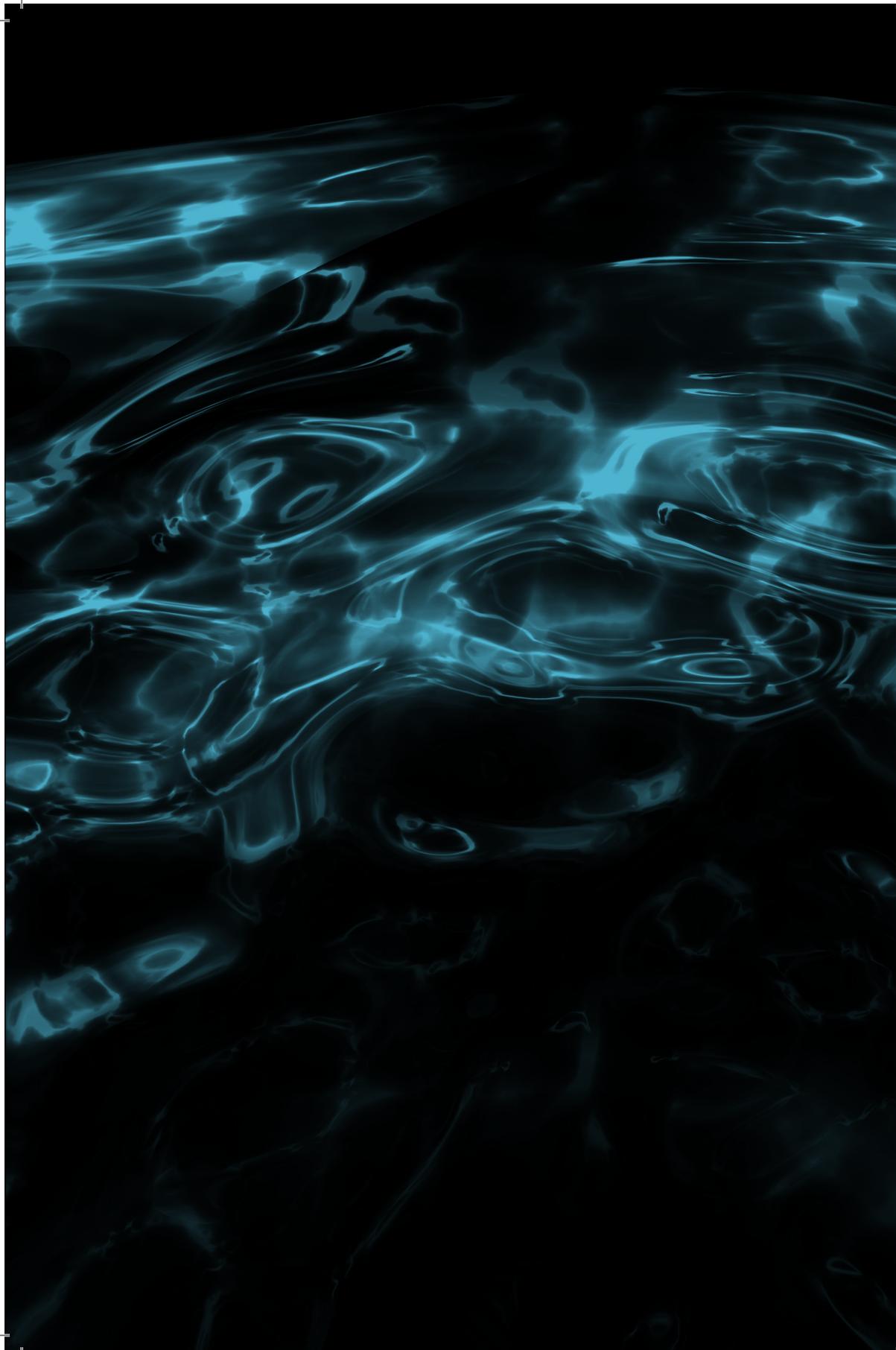
⁴⁸³ Gregory Bateson, *Steps to an Ecology of Mind*, p. 138. University of Chicago Press, Chicago, 1972.

of such art a “dream.” However, as Gaston Bachelard noted, dreams are often provide stronger impressions than what we otherwise know as experience: that is to say, the speculative reconfiguration of common reality remains a more powerful means of expanding the repertoire of experience than those experiences already accumulated. Even memories of past experiences, as Bachelard proposed, were “microfilms in our memory which can only be read by the living light of imagination.”⁴⁸⁴ This all-pervasive force, which Bachelard sees as indistinguishable from human will, also contributes to the aforementioned ideal of constant flux or transitionality, i.e. it is “the movement, more than the substance, which is immortal in us.”⁴⁸⁵

It is also worth concluding with Bachelard’s theory of the imagination because of its differentiation between the “synthetic” imagination (which “summarizes” a universe) and the “creative” imagination (which “makes” a universe). At numerous way stations on our journey, we have encountered artists and technical innovators who realized that the *summarizing* act of synthesizing sensory information was the primary stage in a larger *creative* program of developing new worlds to which audiences could be transported. The methods involved in these twin processes have changed dramatically over millenia, along with the illuminating means of Promethean ‘magical’ flame or the light of science, but each approach has had the ability to refine and expand the perceptual reach of those who were willing to pay attention. The story of the synesthetic and cross-modal arts, in the end, is a story worth celebrating even after cataloging its failures. It continues to provide a testimonial to the virtually infinite synthesizing powers of the imagination, and to the equally immeasurable scope of our creative power.

484 Gaston Bachelard, *La Poétique d’Espace*, p. 161. Trans. Edward D. Kaplan. Presses Universitaires de France, Paris, 1957.

485 Gaston Bachelard, *L’Air et les Songes, Essai sur l’imagination du mouvement*, p. 58. Trans. Edward D. Kaplan. Corti, Paris, 1943.



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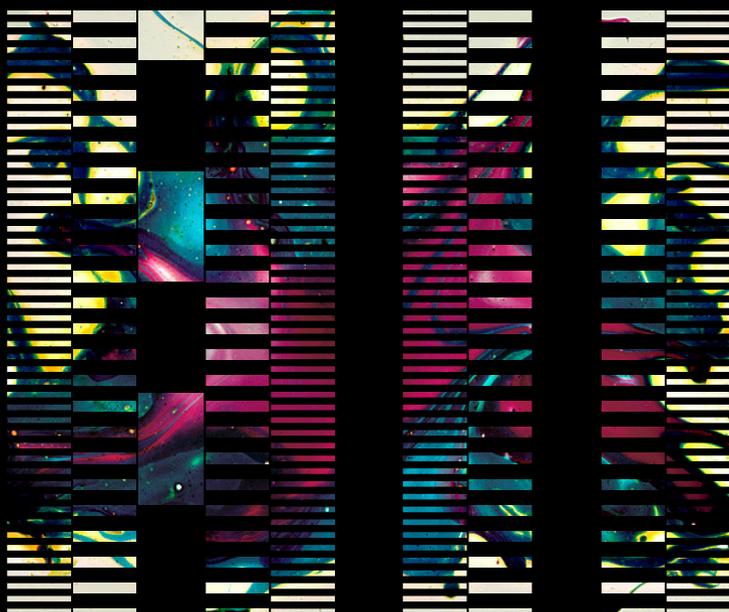
INDEX OF SUBJECTS

- A Rebours ["Against the Grain"] 18, 42, 69, 198, 244
Ackerman, Diane 22, 65
Ada or Ardour: A Family Portrait 29
Alexander Nevsky (film) 14, 229
Amaringo, Pablo 81
Anangu 15, 87
Aristophanes 49
Aristotle 63, 94, 134, 152
Axel, Richard 67
Bachelard, Gaston, 329
Backster, Cleve 84
Banes, Sally 70, 72
Bardo Thödöl [Tibetan Book of the Dead] 88
Baron-Cohen, Simon 39
Bateson, Gregory 50, 328
Baudelaire, Charles 15, 159-160, 163-169, 173, 180, 203, 300
Bell, Alexander Graham 151
Bell, Charles 31
Benarie, Michael 68
Bentham, Jeremy 56
Blavatsky, Helena Petrova 14, 178, 189, 193-194
Bleuler, Eugene 31
Boltz, Mary 73
Boy with the Incredible Brain, The 38
Brakhage, Stan 40, 41,
Burroughs, William 52, 228
Cage, John 57, 257, 284
Carus, Carl Gustav 55
Castaneda, Carlos 88
Chladni, Ernst 124-126, 188, 315, 317
Clockwork Orange, A 73, 75
Cook, Nicholas 35, 73
Coomaraswamy, Ananda 89
Cytowic, Richard 10, 32, 36, 41, 43, 99, 190, 211, 267
d'Arezzo, Guido 110, 314
De Anima 63
de Rios, Marina 15-16, 82, 84
Debord, Guy 56
Deleuze, Gilles 46
DeMarinis, Paul 61, 302
Divided Self, The 42
Domnitch, Evelina 21, 33, 51, 317-318, 326-327
Duncan, Isadora, 328
Duncan, John 63-64
Ebendorf, Brittany, 73
Eggeling, Viking 9, 254-255
Eisenstein, Sergei 14, 229-233, 237, 260
Eliade, Mircea 81, 87, 201
Eligio 83
Expanded Cinema (book) 18
Ferrari, Luc 60
Field, Benjamin 73
Fischinger, Oskar 254, 257
Food of the Gods 81
Frisch, Karl von 66
Froger, Clara 22
Galeyev, Bulat 12, 223
Galton, Francis 29
Gelfand, Dmitry 21, 33, 51, 317-318, 326-327
Genji Monogatari [Tale of the Genji] 70
Geschwind, Norman 51
Ghil, René 40-41, 169-170, 260
Gmachl, Matthias 302, 305
Goethe, Johann Wolfgang von 55, 88, 123, 134, 156
Guattari, Félix 46
Hallock-Greenewalt, Mary 28, 239, 248-249, 281, 318
Harris, John 71
Hegel, Georg Wilhelm Friedrich 14, 136
Heidegger, Martin 54
Helmholtz Institute 30
Helmholtz, Hermann 41, 57, 125, 150-153
Heroes (television series) 20
Hertz, Paul 25, 44
Hockney, David 28, 211-212
Hubbard, E.M. 24
Huizinga, Johan 106-108
Hutson, Scott 86, 98
Huysmans, Joris Karl 18, 42, 69, 197-198, 244
Jakobson, Roman 30, 224-225, 232, 237
James, William 43
Jenny, Hans 315
Jütte, Robert 63, 93
Kandinsky, Wassily 14, 28, 99, 189, 197-213, 222, 254, 270, 307, 325, 327
Katha Upanishad 90
Katz, Fred 82
Khlebnikov, Velimir 215, 219-220, 224, 227, 237
Kipling, Rudyard 65
Kittler, Friedrich 296-297
Klee, Paul 46, 99, 205-208
Köhler, Wolfgang 34
Kubrick, Stanley 73, 75

L Fields (album) 84
 Laing, Ronald David 42-43
 Leary, Timothy 81
 Lehmann, Karl 31
 Lissajous, Jules 126
 Lissitzky, El 220-221
 Lucier, Alvin 298, 316
 Luria, Alexander 39
 Marc, Franz 202-204, 209
 Marvick, Louis 41
 Maurer, Daphne 11, 35
 Mayakovsky, Vladimir 216, 220, 224, 235
 McIndoo, N.E. 67
 McKenna, Terrance 15, 81-82, 85
 McLaren, Norman 257-258
 McLean, Hope 83
 McLuhan, Marshall 295, 297
 Merleau-Ponty, Maurice, 8, 121
 Messiaen, Olivier 28, 169, 263-276, 279, 284, 289, 291, 298
 Mind of a Mnemonist, The 34
 Mlada, 14
 Moeran, Brian 70, 72
 Mondloch, Catherine 11
 Mumford, Lewis 108-109, 113-114, 117
 Nabokov, Dmitry 28
 Nabokov, Vladimir 28
 Natural History of the Senses, A 23
 Newton, Isaac 120-123
 Nietzsche, Friedrich 14, 135, 147-149, 155, 173, 175-178
 Nudds, Matthew 63
 O'Callaghan, Casey 11, 57-58
 Olin, Margaret 55, 61
 One Hour as Peyote (album), 84
 Paik, Nam Jun 308-309, 314
 Pfenninger, Rudolph 255-257
 Plato 94, 136
 Plotinus 77
 Prime, Michael 84, 326
 Ramachandran, Vilayanur 24, 26, 29-30, 34, 37, 225
 Richter, Hans 9
 Riley, Bridget 300
 Rimbaud, Arthur 15, 168-169, 173
 Rimington, A. Wallace 244
 Roinard, Paul 170-171, 182
 Rouget, Gilbert 79
 Samartzis, Philip 299
 Saussure, Ferdinand 25, 30
 Schaeffer, Pierre 9, 59-60, 284, 298
 Schiller, Friedrich 55
 Schopenhauer, Arthur 14, 88, 135, 137-144, 146-148, 165, 176-177
 Scriabin, Aleksandr 14, 139, 169, 172-185, 205-206, 215, 237, 243-244, 248-249, 283
 Serres, Michael 52
 Shepherd, Gordon 62
 Sibelius, Jean 132, 156
 Silence (book), 57
 Sounds (book), 57
 Smalley, Denis 298
 Speak, Memory, 28
 Steen, Carol 28
 Sterne, Jonathan 54, 125
 Still, Clyfford 253
 Survival Research Laboratories, 74
 Suzuki, Daisetz Teitaro 57, 82
 Suzuki, Shunryu 92
 Symposium (Plato) 49
 Tadasky (Tadasuke Kuwayama), 300
 Tammatt, Daniel 38-39
 Taylor, Mark 13
 Thales of Miletus, 50
 Thieving Magpie, The 73
 Traité des Objets Musicaux [Treatise on Sound Objects] 60
 Tudor, David 298
 Uexküll, Jakob 36, 48 van
 Campen, Crétien 32, 77-78
 Varieties of Religious Experience, The 43
 Vasulka, Steina & Woody, 305
 Verlaine, Paul 15
 Vertov, Dziga 227-229, 237, 299
 Victory Over the Sun, 220-223, 232
 Viola, Bill 298
 Virilio, Paul 296
 Wagner, Richard 139-151, 153-156, 165, 175-176, 178-180, 192, 218, 249, 266, 275, 325
 Wilfred, Thomas 242-250, 252, 260, 281, 305, 318
 Winterbourne, A.T. 71
 Yellow Sound, The 14, 206
 Youngblood, Gene 13, 17-18, 96, 232-234, 237, 251, 299
 Xenakis, Iannis 263-264, 273-293, 313, 325







“Between the scientific/technical and the esoteric, synesthesia has remained as a somewhat obscure and ungraspable myth, apparently of interest only for the initiated and the Orphic-minded. A broad cultural history of synesthesia, therefore, is not only an intelligent and brave undertaking, but also a much-needed contribution to a proper understanding of a form of cross-sensitivity that seems to have fundamentally influenced all sorts of artists and creators throughout the centuries. From music to painting to film to computer art, from the archaic to the contemporary, from Nabokov to McLaren, from Blavatsky to Merleau-Ponty, this book opens up the gates of what I would consider as the most intense and appealing form of ‘multi/trans/inter-media’: that which takes place *inside* the body.”

Francisco López, Editor.

