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AURALITY AS *METHEXIS* AND THE RISE OF CASTILIAN LITERATURE:
THE CASE OF THE *SIETE PARTIDAS*

by

MARISTELA VERÁSTEGUI

A dissertation submitted to the Graduate Faculty in Latin American, Iberian, and Latino Cultures
in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City
University of New York

2018

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This manuscript has been read and accepted for the Graduate Faculty in Latin American, Iberian, and Latino Cultures in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

Date

Marithelma Costa

Chair of Examining Committee

Date

Fernando Degiovanni

Executive Officer

Supervisory Committee:

Lía Schwartz

Ottavio DiCamillo

Juan Carlos Mercado

Jesús Rodríguez Velasco

THE CITY UNIVERSITY OF NEW YORK

ABSTRACT

Aurality as *Methexis* and the Rise of Castilian Literature: The Case of the *Siete Partidas*

by

Maristela Verástegui

Advisor: Marithelma Costa

Participation is the engine of cultural production. In the case of literature, the privileged modality that enables participation is auditory perception. In order to articulate a theory of literary cultural production based on auditory perception, participation needs to be analyzed in the context of Platonic *methexis*, understood as an embodied experience facilitated by brain mechanisms of sensory processing and cognition, which manifest in specific ways in written texts. The *Siete Partidas*, the first complete and systematic legal code of the Western World, provides the perfect case study to test a theory of literary cultural production based on *methexis* via auditory perception, because it is one of the first complete texts written in Castilian, making it ideal to illustrate the ways in which *methexis* affects the process of elaboration of a cultural product in a language that does not have a precedent in the form of an extensive body of texts, nor has it had time to develop a normalized system of grammar and rhetoric.

For Daniela, Francisco and Rosario

In loving memory of Juan Guillermo Ramírez Arango

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*And thus by constantly hearing words, as they occurred in
various sentences, I collected gradually for what they
stood; and having broken in my mouth to these signs, I
thereby gave utterance to my will.*

St. Augustine of Hippo, Confessions

1. *Sound*

Et ait ei: “Egredere et sta in monte coram Domino”.

*Et ecce Dominus transit, et ventus grandis et fortis
subvertens montes et conterens petras ante Dominum;*

non in vento Dominus. Et post ventum, commotio;

non in commotione Dominus.

Et post commotionem, ignis; non in igne Dominus.

Et post ignem, sibilus aurae tenuis.

*Quod cum audisset Elias, operuit vultum suum pallio et
egressus stetit in ostio speluncae; et ecce vox ad eum*

dicens: “Quid agis hic, Elia?”

Liber Primus Regum 19: 11-13

Participation is the engine of cultural production. Long before humans started writing, maybe even speaking, they started producing culture.¹ From paintings in cave walls to rudimentary idiophones and aerophones, the archaeological record is full of traces of the human drive to produce culture and to pass it on to future generations.² From the initial formation of early social units, people have strived to accompany the daily tasks aimed at their survival with other activities that helped them to make their life more bearable and even enjoyable. Ultimately this is what cultural production entails: a series of activities leading to the production of things that are not indispensable for survival. Music, poetry, dance, or decorative work on walls, like so many other cultural products, are not devices meant for nutrition, shelter, warmth, hydration, or any other basic necessity of human biological existence. And yet, humans from recorded history have used them to make their toil more bearable, to help time pass faster, to celebrate joyous events and commemorate painful ones, to communicate with forces unknown and, more importantly, to communicate with each other in order to maintain the cohesion of social units. Though cultural production might not have been important for individual survival, it was always essential for the preservation of social structures on which rests collective existence. This thesis argues that the reason cultural production is fundamental for coexistence is because it makes participation possible. Social units are built around participation; and participation, as stated at the beginning, is the engine of cultural production. Participation means more than just a series of

¹ For an overview of recent research on this subject, focusing on the scientific evidence that supports the idea that humans started producing music, and probably dance, before developing language, see Mithen.

² An aerophone is “any musical instrument in which the sound is produced by a vibrating column of air,” mainly what we know as wind instruments, and an idiophone is “a percussion instrument that consists simply of material such as metal or wood that is itself capable of producing sound, as opposed to a membranophone, in which stretched skin or similar is used as the agent of sound” (*OED*). For an archaeological perspective of acoustics and the study of sound see Scarre and Lawson. See also Mills.

actions undertaken as part of larger endeavors, or belonging to a determinate group, or taking part on a communal activity. Participation is before anything else a feeling: the feeling of belonging to something, of being part of something. Participation is what saves people from isolation and alienation, for it is alienation that leads human beings to literal and metaphorical death. Participation is what makes a teenager feel that he “fits in” a group at school, or what makes a scholar feel that he has earned his place among his peers. Participation is what compels people to extreme violence but also to incredible acts of self-sacrifice. Participation is what makes the public share in the exhilaration of a sports game, almost as if they were the ones scoring a goal or breaking a record. Participation is what makes it so hard to put down a good book when one is absorbed in the climax and gripped by the denouement of the action. It makes one’s heart rate increase, it accelerates one’s breathing, it gives one goosebumps, makes one sweat and shiver. All of these feelings are somatic manifestations of the way bodies and brains react to cultural products, because participation is the result of a sensory experience. Hence, the study of participation is, first and foremost, the study of an embodied aesthetic experience.³

The body’s agents that make participation possible are the senses. It is through the aesthetic experience that people participate in the world around them and that they are able to recognize that others participate as well. The senses also provide the raw material for the making of cultural products, such as sounds, words, melodies, images, contrasts, textures, smells, tastes, just to name a few. And cultural products, in turn, evoke the richness of human aesthetic experiences, and allow them to be reframed, developed or replaced. Since the very inception of Philosophy, the senses have been made the object of study, both as bodily mechanisms and as

³ An aesthetic experience encompasses all interaction and engagement with art or nature, characterized by an ineffable aspect and high value when compared to other experiences of the surrounding environment (Tomlin 1).

abstract processes; just as old has been the debate to establish a hierarchical order among them. Throughout centuries of Western Philosophy, vision has been accorded a privileged rank.⁴ Even with the advent of the scientific era, vision has maintained precedence, while hearing has occupied the second place. The purpose of this thesis is to argue that this value judgment regarding the senses has been a major factor that has contributed to a historically limited understanding of how auditory perception works and to underestimating its many contributions to human experience. This argument is needed to lay the foundation for my first premise: namely, that auditory perception is the privileged sense that makes human social structures and participation possible. The perception of sound is what takes people out of their individual selves and makes them aware of the presence of others. In fact, thanks to hearing, people start being aware of the existence of others before birth.

Though a developing fetus does not receive a considerable amount of visual, tactile, olfactory, or gustatory stimuli, permanent contrasting auditory stimuli penetrate the womb throughout the gestational cycle. In the womb, the fetus is surrounded by the sounds of the mother's body like heartbeat, breathing, digestion and blood circulation. The fetus also perceives external sounds, and even voices, both the mother's and that of others who come close enough to be heard. All of these sounds are attenuated and muffled, especially in the higher frequencies, but it gives a rough idea of what it sounds like in the womb to remember the experience of hearing under water.⁵ The fetus may not have anything in the way of language awareness at that point,

⁴ For an extensive study of the primacy of visual perception since Antiquity, and of the study of optics on the Middle Ages, see Meyering, who concentrates in the study of optics. For Aristotle's explicit hierarchy of the senses, see the beginning of the *Metaphysics*: "All men by nature desire to know. An indication of this is the delight we take in our senses; for even apart from their usefulness they are loved for themselves; and above all others the sense of sight."

⁵ For an overview of the transmission of sounds *in utero*, see Sohmer and Freeman. Hearing and reactions to hearing in fetuses are believed to start after the 20th week of gestation, and to occur

but there is where it receives the first samples of the various meaningful contents of a vocalization: inflections, rhythm, loudness, timbre, and pitch. While hearing those sounds, it is also exposed to interacting physiological changes to heart and breathing rates.⁶ Before birth, the fetus is already receiving information about the complex relationship between sound and emotion, and learning to recognize the first familiar voice, that of its mother. Furthermore, in the advanced stages of gestation, it starts to respond to some of these auditory stimuli. In sum, during gestation the fetus begins to be primed for the social existence that awaits it via the ear. This is not an attempt to advance an overly enthusiastic view of the potential intrinsic to the ability to hear in the womb. The last couple of decades have shown that playing Mozart to a growing belly does not guarantee giving birth of the next musical genius. But it is important to highlight the fact that the first contact with the social world occurs while one is still in the womb, and that this sensory experience through the ear lays the foundations for the basic interactions one will engage in after birth. It is obvious that the other senses also have very important functions for socialization, but they lack basic features that only hearing possesses. Hearing helps to detect the presence of others even when they are outside of the range of the other senses: one can detect the presence of sound without needing to see, touch, taste or smell its source; there is no need to be in contact with that source in order to hear it; and, lastly, hearing allows one to make judgements about that source, to classify it, to estimate its distance, and even to anticipate if it poses a danger. What is more, hearing is what allows humans to learn language and to communicate. This leads me to posit that hearing is the social sense *par excellence*, and thus the most important sense for participation and cultural production.

through the rest of gestation (91). The attenuation effect is due to the tissue and liquids surrounding the fetus. See also Hepper and Shahidullah.

⁶ For the effects of combined stimuli in fetal brain development, see Webb et al. See also Spence.

The present study aims to prove and support the stated claim by focusing on literature as the cultural product that better illustrates the central role of auditory perception. To provide a suitable case study, a specific historical period in the Middle Ages has been selected, because it was characterized by changes highlighting those aspects of cultural production under study and by documentary evidence that illustrates the impact auditory perception had in them. This period is the middle of the thirteenth century, and the region is the part of the Iberian Peninsula where Castilian was one of the spoken varieties of what is now the Spanish language.⁷ In this region, at this specific point in time, a process that had started two centuries earlier reaches its culmination, with the initial attempts to put in writing some of the spoken varieties of what was no longer Latin, but still lacked the official identity of a separate language.⁸ Of the many writings of the time, this thesis will focus specifically on one of the first complete and systematic cultural products written in Castilian, the *Siete Partidas* of Alfonso the Wise, for it offers a case study that best illustrates the various ways in which auditory perception helped shape the beginnings of Iberian literature. This legal corpus, written in Castilian, is a landmark of the cultural project of the Wise King. Together with the principles of Civil and Canon Law, it encompasses other aspects of the Castilian culture of the thirteenth century. It contains *exempla*, legends, proverbs, quotes from ancient authors, short narrations, tales, and references to the most important sources of knowledge of the era. It is precisely this encyclopedic diversity of oral and written traditions that makes the *Partidas* an ideal case study to analyze a fundamental aspect of written communication which until now has not been explored. The use of a legal text as case study has other advantages. As a discipline, Law has its foundations in human experiences and thus in the

⁷ For a recent approach focused on linguistics see Ralph Penny.

⁸ The classical study of this process is Ramón Menéndez Pidal's *Orígenes del español*.

different manifestations of sensory perception that are inherent to the nature of said experiences. It arises from the interaction between individuals and collectives, and it is largely a result of the need to regulate the consequences of such interactions in order to ensure the peaceful coexistence of a community. For medieval readers and listeners alike, legal and ecclesiastical precepts were the voice of authority and power in its divine and human manifestations.⁹

The practice of the law is intertwined with the aesthetic experience, and within it, most particularly with sound and its perception. Starting with legal terminology, one can see that the daily practice of the law has always been mediated by its relation to the ear: hearings, audits, interrogatories, depositions, oaths, juries, oral testimony, pronouncement of sentences, and the written representations of all these and other legal proceedings, represent the preeminence of the ear in the exercise of the law.¹⁰ Sound, moreover, also has a role in what is considered the written, and supposedly visual, representation of the law: legislation, legal opinions, textbooks, and other legal writings that are not the result of, or intended for, oral performance, still bear in different ways the marks of the aesthetic experience that underlies them. Among the written law's aims is the intent to regulate and normalize sound and its perception in order to make them conform to the expectations and interests that led to the drafting of the legal norm. The very inception of legal processes in general is based on an auditory event, the reception of a civil

⁹ It should be noted that Law at the particular moment of the Middle Ages when the *Partidas* were written, included not only Civil and Canon Law, but also some of the writings of the Church Fathers, the Scholastics, which facilitated access to divine Law, as well as collections of exempla and sermons, whose narrative techniques and influence were paramount for the rise of Castilian Literature.

¹⁰ For an analysis of this permanence in English-speaking legal traditions, as well as the often-conflicting relation to written instruments, see Bernard J. Hibbitts. For an in-depth study of the oral legal tradition in Castile and its written codification, see Alvarado Planas and Oliva Manso. See also Bermejo Cabrero. For the case of oral *fazañas*, see Bermejo Crespo. See also Soler Bistué, "Derecho, narración y racionalidad jurídica," and "Los usos del pasado."

claim or a criminal complaint, both instances of spoken events that need to be heard, often requiring a written record of such auditory event taking place, to become legally valid. This is one of the most ancient features of the law, from the time when disputes were settled in the public square or in front of tribal chiefs or other figures of authority. The practice of the law necessitates the aural reception of a spoken statement in order to allow the initiation of a legal process. Conversely, the process can only end with a legal decision or verdict which is communicated out loud to the interested parties. The etymology of the word verdict is a fitting testimony of the oral/aural substrate of legal practice from Antiquity to the present.¹¹ For this reason, in order to study the way in which sound and its perception impact the writing of the law as a cultural product it is essential to have a basic understanding of current knowledge on the subject, as well as the accepted theories that circulated in the Western Middle Ages. The latter will be discussed further ahead. First, some fundamental facts about the ear and auditory perception will be surveyed by reviewing recent research about aspects of this topic that are attracting increasing scrutiny.

From Wave to Sound

The ear, like the rest of the human body, is still somewhat mysterious and awe-inspiring. Although in the last century scientific knowledge of this organ has vastly increased, it is still very far from a complete understanding of how it works. Besides hearing, the ears are essential to keep balance and to walk. Hearing is what is normally associated with the ear: the perception

¹¹ Middle English *verdit*, *verdict*, borrowed from Anglo-French *veirdit* “announcement, finding, judicial decision,” from *veir* “true” (going back to Latin *vērus*) + *dit* “statement, judgment” (going back to Latin *dictum*), after Medieval Latin *vērumdictum*, *vēredictum*. . . . First Known Use: 15th century (*Merriam-Webster.com*).

and processing of sound. And even though this may seem to pertain more to a scientific endeavor than to the study of cultural production, there is a lot more at stake:

Sound and hearing are so useful because *things make sounds, and different things make different sounds*. Sound waves carry valuable clues about the physical properties of the objects or events that created them, and when we listen we do not seek to sense vibrating air for the sake of it, but rather we hope to learn something about the *sources*, that is, the objects and events surrounding us. (Schnupp et al., 2-3)

The perception of sound is a form of interaction between the body and the world, where the body experiences the environment that surrounds it and extracts information about the nature of the things present in that environment from the sounds they make. Sounds give information about both the things that can be seen and those that fall outside the visual range, allowing one to make decisions about future actions and to detect possible threats before they are visible.

Auditory perception is a field where there are more dilemmas than certainties.

Notwithstanding the current state of knowledge in this area, it would seem anachronistic to attempt to apply it to a legal code like the *Siete Partidas*, or to medieval culture in general. It is certainly justifiable to call it anachronistic if the aim of this study were to compare ancient and medieval discourses with modern theories in order to point out deficiencies and errors in the medieval and ancient accounts. But such a qualifier is not applicable when the goal is to inquire into the different manifestations of the distance between old and modern conceptions of aurality as applied to the emerging practice of writing texts in Castilian.¹² It is in that space where medieval theories are sometimes at odds with the physical and somatic phenomena of auditory perception. It is in that distance that one can study the relation between perceptual processes and

¹² For an in-depth discussion of aurality, see Chapter 2, pp. 96-107.

cultural products. That distance is the sphere where most receptors of literature dwell, and for them theoretical accounts are something completely foreign. They interact with texts, legal texts in the case of the *Partidas*, at a level where the sensory predominates: what is seen, what is heard, what is felt, smelled, or even tasted. It is also a place from which to look at narrative and pedagogical techniques from a different perspective, as communication strategies that want to make experience present, and, through this production of presence allow the simultaneous participation of the receiver.¹³ It is the sphere of action of what will be referred to as *auditory expectation*: a set of audible features that together represent something specific when perceived by the ear, giving it a particular sonority that helps its identification, classification and relative positioning; these features depend on the unique experience of the individual and on the strategies deployed by producers of written discourse.

Medieval theories relating to auditory perception postulated that perceptive and cognitive processes were separate and consecutive. A completely different view emerges when auditory perception is studied from the vantage point of current knowledge. Recent research has shown that they are in fact simultaneous and interconnected processes. Moreover, even before perception takes place, in the listener start taking place a series of conscious and unconscious extrapolations in anticipation of the act of hearing, thus creating an expectation of what will be heard (Plomp 7). During the emission of sound, the brain has to isolate the desired sound from within a complex soundscape. In most cases, overlapping sounds can effectively interrupt

¹³ Here, I partially follow Gumbrecht in his groundbreaking work *Production of Presence*. Although I am not interested in a direct connection with Phenomenology, his concept of production of presence as ideal for describing the dynamics between medieval listeners/readers and written texts, given the fact that its effects “exclusively appeal to the senses” (xv). His stated purpose of recovering the material, spatial and movement-related aspects of intellectual activity lays a solid foundation to the theory of cultural production proposed in this thesis.

auditory perception; this is known as auditory masking (51). When one is listening to a particular voice and more than one person is speaking the same time, for example, the competing voices can cause one to miss parts of what one is trying to hear. What is interesting is that this happens quite frequently without anyone ever realizing it; the brain actually fills these gaps with information it has accumulated from previous perceptual experiences (59). A lot of what one believes to have heard was never a real sound emission, but it is rather an interpolation of the brain which can at times be inaccurate (58). Speech perception is a process of prediction and recognition where reasoning is actively involved, and where individual experience directly affects what is perceived (93). Context is of paramount importance in this process, especially in the case of speech, given that the interpretation of spoken messages depends on experience as well as on what happens during and after the emission of sound (105).

Once sound is perceived, the brain classifies and stores sensory stimuli in ways that not always correspond to the actual way events unfolded. There is also a complex multimodal process of integration in the brain, where auditory stimuli come together with information from the other sensory organs to produce a structured memory. Aside from these stages, sensory stimuli are also processed in other neuronal structures not related to memory, but to the centers in charge of responses and reward systems that affect bodily function. All these mechanisms will become part of future perceptual experiences in a continuous cycle of adaptation and feedback that helps the individual to act in specific situations based on previous experience, as recently shown in the work of Arbib, Cook, Eichenbaum, Hurford, Kohler, Plomp, and Schnupp et al., among others. In sum, auditory perception depends on context, accumulated experience and the listeners' expectations. In order to understand these dynamics, it is necessary to have a general understanding of how sound is generated and of the anatomy and function of the ear.

Things that Sound

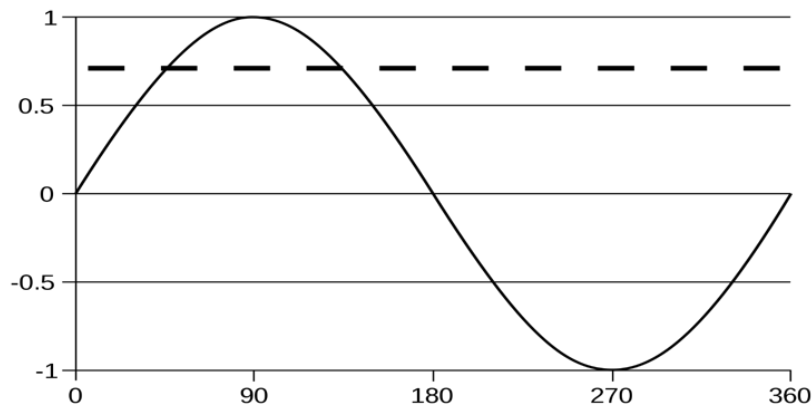


Figure 1. Sine wave.

By Booyabazooka at English Wikipedia (Transferred from en.wikipedia to Commons.) [Public domain], via Wikimedia Commons,
https://commons.wikimedia.org/wiki/File:Sine_wave_2.svg

So, one may ask, what is a sound? A sound, in the physical sense, is a wave of pressure changes produced by the vibration of a physical object, which propagates through an elastic medium, usually air or water (“Auditory Perception” 247; Schnupp et al. 1; Plomp 1).¹⁴

The term “sound” can also refer to the “the psychological construct of perceiving those vibrations” (“Auditory Perception” 247). For the purposes of formulating a theory of cultural production, the focus will be on this second meaning of sound; however, this overview of sound will refer to the physical sense of the term. When an object vibrates, it creates areas of high pressure or compression, and low pressure or rarefaction, in the surrounding molecules. What one hears are these changes in sound pressure. Each occurrence of a compression followed by a rarefaction is called a cycle. The succession of these pressure areas is called a wave. In their most simple manifestation, these oscillations obey the rules of simple harmonic motion which result in sinusoidal behavior (Schnupp et al. 6). Figure 1 illustrates a basic sinewave. The distance between identical points where the shape of the wave reoccurs is called wavelength or

¹⁴ This overview of sound mainly follows Baldwin, supplementing relevant areas with other sources like Mills, Mithen, Pinch and Bijsterveld, Plomp, Schnupp et al., and Wolfe et al.

period. These basic sine waves are also known as pure tones, which are the kind of sounds normally identified as beeps (3). This is important because the vast majority of laboratory experiments related to sound use pure tones, not real sounds, which are extremely complex. The main attributes of a sound wave are frequency, amplitude and phase. Frequency is the measure of the number of oscillations or cycles per second (“Auditory Perception” 248). A slow cycle results in a long wavelength, and a rapid cycle results in a short wavelength, this leads to low frequencies having a longer wavelength than high frequencies. Low frequencies are perceived as low in pitch, and pitch increases with frequency. The units for measuring frequency are called

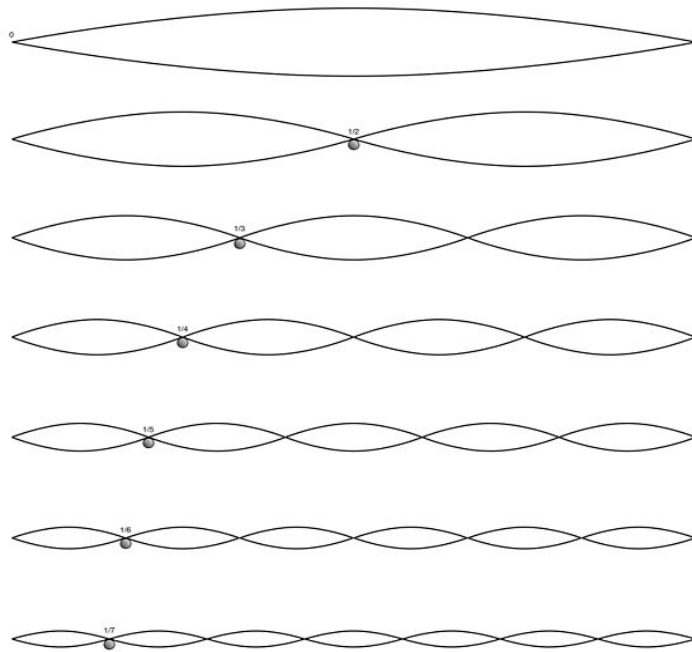


Figure 2. Harmonics or overtones.
No rights claimed, via Wikimedia Commons
<https://commons.wikimedia.org/wiki/File:Overtone.jpg>

hertz (Hz). The human range of audible frequencies, or audible spectrum, goes from 20 to 20,000 Hz; this assumes that the listener enjoys optimal conditions of health and young age.¹⁵ As age increases, there is a decrease in the audible spectrum.

Everyday sounds are much more complex than pure tones. Complex sounds consist of several frequencies vibrating at the same time in modes of vibration, commonly known as harmonics or overtones

¹⁵ This range also reflects the mechanical limitations of the outer and middle ear, due to the resonant shape of the ear canal and the inertia that limits the reception of high frequencies by the middle ear ossicles (Schnupp 53).

(Schnupp et al. 8). The lowest frequency present is the fundamental frequency, while the remaining overtones will be frequencies that are $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, etc. of the fundamental, as illustrated in Figure 2. Most of the time, what one perceives as the pitch of a complex sound is its fundamental frequency, which is the greatest common denominator of all the frequencies present in a complex sound (“Auditory Perception” 248). This circumstance generates one of the many intriguing aspects of auditory perception; it is known as the *missing fundamental*, and it occurs when what is perceived as the pitch of a sound is a fundamental frequency that is not part of the actual physical sound.¹⁶ This happens when the spectrum of frequencies results in a common denominator that corresponds to a fundamental that is not being generated by the source. This is one example of how the perception of sounds does not necessarily correspond to their physical



Figure 3. Complex soundwave.

From Public Domain Vectors: Vector illustration of sound recording graph. Image of black sound wave.

<https://publicdomainvectors.org/en/free-clipart/Black-sound-wave-vector-drawing/13832.html>

characteristics. There are many other instances of auditory perception where one hears sounds that were never produced, which are the focus of the field of *psychoacoustics*.¹⁷

Returning to the subject of

¹⁶ See p. 19 for the definition of fundamental frequency.

¹⁷ On a more personal note, it was getting acquainted with psychoacoustics that started me on the path that led to this research. When I first started reading about psychoacoustics in the 90's the field was very much in its infancy, yet it also had the advantage of encompassing disciplines like music and oral studies, which made its focus much closer to the humanities than other disciplines at the time. This helped me see the first connections when I started studying literature, and the fact that there was considerable common ground, which could provide abundant material for the study of aesthetics and cultural production.

frequency, the key notion to remember is that a complex sound is composed of a number of frequencies vibrating at the same time, as illustrated in Figure 3, and not all of them are inside the human audible spectrum. The importance of these frequencies will become clear later on, in the discussion about the qualities of sound, because frequency is connected to pitch perception.

The amplitude of a sinewave is “the amount of vibratory displacement resulting from the energy or power present in the sound wave” (“Auditory Perception” 248). It is perceived as the intensity or loudness of a sound. At higher amplitudes, one hears louder sounds and vice versa. The human ear can perceive such a wide range of amplitudes that it is necessary to measure them in logarithmic units known as decibels of sound pressure level, or dB SPL. Sound pressure level is a measure of “the effect that the power of a sound has on its surroundings” (Mills 28). A healthy ear can hear sounds from 0 dB SPL to 120 dB SPL (Schnupp et al. 46). The threshold of pain is 140 dB SPL (Mills 29). Keeping in mind that these are logarithmic units, the range of intensity that the ear can perceive is staggering, because 120 dB SPL is 1,000 billion times 0 dB SPL. This sensitivity is the result of “hundreds of millions of years of evolution during which you get eaten if you can’t hear the hungry predators trying to creep up on you.” But the physical intensity of a sound is not the same as its perceived loudness, and for one to detect changes in amplitude there needs to be an increase of at least 10% (48). Amplitude interacts with frequency, and some frequencies are easier to perceive than others (“Auditory Perception” 248-9). The optimal range of hearing is between 500 to 3500 Hz, which is the range of the human voice. The human vocal tract has evolved to amplify some overtones while suppressing others, resulting in resonant frequencies known as formants, which are important for speech perception (Schnupp et al. 35-6). Phase is a representation of the fraction of the wave cycle that has been completed relative to the point where a sinusoidal oscillation starts, called starting phase (“Auditory

Perception” 249). Since one complete cycle of a sinusoidal wave is equivalent to a complete circle (360°), phase can be measured in degrees. Phase is important in the measurement of sound phenomena like constructive or destructive interference, noise cancellation and frequency filtering, which are fundamental for technologies of noise reduction and acoustic design.

Things We Hear

The interaction of frequency, amplitude and phase result in many major features of auditory perception. Sound can behave in different ways depending on external factors, like the movement of the source or the receptor, changes in temperature, or the presence of natural or man-made barriers. The case of sound propagation in enclosed spaces is perhaps more familiar since its various effects are part of daily life: resonance, reverberation, standing waves, echoes, amongst others (Mills 29). It is a common error to mistake frequency for pitch. Frequency and pitch are only equal in the case of pure tones. But, while frequency is a physical characteristic of sound, pitch is a subjective quality of sound and cannot be measured objectively (Mills 31). Pitch is formally defined as “that auditory attribute of sound according to which sounds can be ordered on a scale from low to high” (Schnupp et al. 93). This attribute is very salient in music, but that is not its only role. Pitch is very important for the ear’s ability to differentiate human voices, adults from children, men from women. It also helps to estimate the size of a source: “larger creatures produce vocalizations with a lower pitch.” The absence of pitch is a good indicator that the source of the sound is inanimate. It is also essential to convey meaning in oral communication by the use of inflections, and in the differentiation of word meaning, as is the case in tonal languages. Pitch is one of the qualities of sound that helps to isolate and focus on

one particular voice in settings where multiple speakers are talking at the same time.¹⁸ Pitch, as was explained above, cannot be measured objectively, because it “is a percept that is evoked by sounds, rather than a physical property of sounds.”¹⁹ Actually, the perception of pitch still puzzles researchers. On the one hand, there are important psychophysical considerations that have been the subject of a large body of research focused on the development of assistive technology and the improvement of sound reproduction devices.²⁰ On the other hand, there have been recent discoveries in the study of how information about pitch is transmitted and encoded in the auditory pathways and in the auditory cortex.²¹ Most of these considerations are still subject to intense debate and exceed the limits of this study, but there are a couple of elements that should be mentioned because they will be further developed ahead.

A common topic of interest between the psychophysical and the neurocognitive research is the importance of periodicity in the perception of pitch: “A sound is periodic when it is composed of consecutive repetitions of a single short segment” (Schnupp et al. 94). A period is the duration of said segment, although the most common way of calculating periodicity is determining the number of periods per second. This number is the *fundamental frequency* of the sound, which in most cases will also be the perceived pitch of a complex sound. The longer the period, the lower the perceived pitch will be and vice versa, although there are numerous exceptions, like the *missing fundamental* phenomenon previously mentioned. Given that

¹⁸ Most experts have called this phenomenon the “cocktail party problem.” For a current overview of this topic see Haykin and Chen.

¹⁹ Percept: “The mental product or result of perceiving something (as distinguished from the action); a way in which something is perceived mentally” (OED).

²⁰ For the uses and problems of pitch in assistive technology, see Schnupp et al., pp. 269-319. For the psychophysical aspects in the design of sound reproduction devices see Fastl and Zwicker.

²¹ For an overview of current knowledge regarding the auditory cortex see Weinberger. For an analysis focused on pitch perception and encoding see Schnupp et al., pp. 156-159.

frequency and pitch are not always equivalent in complex sounds, sounds with equal pitch can be composed of different overtones, while sounds with similar frequency compositions can be perceived as having different pitch (Schnupp et al. 95). The auditory organs are highly attuned to periodicity, and can perceive pitch even when the periodicity of the physical sound deteriorates (Schnupp et al. 101). It has been argued that this may be because most sounds in nature are not strictly periodic. Another important characteristic of pitch is that it survives changes to other properties of sound. For instance, most of the time a periodic sound can be played at different levels without a noticeable change in pitch. Pitch is also independent of location, and in most cases, of the relative levels of the overtones. In music, one can order sounds sequentially by pitch, with similar distances along a continuum, to form scales (102).

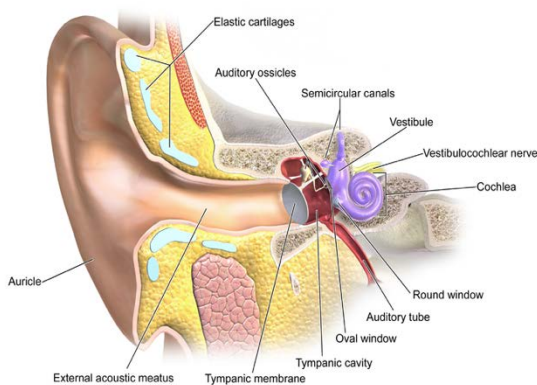
As previously discussed, complex sounds are composed by a fundamental frequency and its overtones. The resulting quality of sound is called *timbre*. When faced with more than one sound with the same pitch, location, and intensity, timbre is the attribute that helps the ear to tell them apart (Mills 31; Schnupp et al. 101). It is most noticeable in the case of music, where it helps to identify different instruments even when they are playing the same note (“Auditory Perception” 251). The ear can distinguish between several instruments playing the same melody or several voices talking at the same time because their timbre varies depending on the physical features of each source, which result in a different distribution and amount of energy of the fundamental frequency and its overtones (Wolfe et al. 289). Timbre plays a very important role in speech recognition, but it is also affected by factors external to the source, like the materials used in the construction of an enclosed space. The experience of hearing how different one’s own voice sounds when singing in the shower as opposed to, say, the living room, is quite common. It happens because highly reflective surfaces like tile or concrete enhance high

frequencies, while others like carpets or fabric tend to absorb them (Wolfe et al. 289-90).

Different materials affect frequencies differently; as a consequence, the auditory system relies on a variety of parameters to extract identifying information from the frequency spectra of sounds.

The Mystery of Our Ears

After summarizing some basic knowledge about sound as a physical phenomenon, it is time to focus on the organs responsible for capturing waves and turning them into the subjective percept known as sound. The part of the body usually associated with hearing and that is normally called ear, is in reality only its visible part, the pinna, which is part of the outer or



The Anatomy of the Ear

Figure 4. The Anatomy of the Ear.
Blausen.com staff (2014). "[Medical gallery of Blausen Medical 2014](#)". DOI:10.15347/wjm/2014.010. ISSN2002-4436. - Own work

external ear. Figures 4 and 5, show two other distinct parts, the middle and the inner ear. The main functions of this three-part organ are transducing and encoding. To understand what these functions entail, it is necessary to take a closer look at the way this organ is structured. The shape of the pinna is important for sound localization (Wolfe et al. 249). The sound waves captured in the pinna enter the ear canal, which is about 25 millimeters long. The canal's shape enhances the frequencies in the range of 2000 to

6000 Hz, and also serves to protect the tympanic membrane located at its end. The tympanic membrane or eardrum separates the outer and middle ear, and it vibrates when it is affected by the changes of pressure in the sound waves (Schnupp et al. 51). On the opposite site of the

eardrum is the middle ear, which is about one centimeter long and contains three small bones called *ossicles*. The first one is the *malleus*, and it is attached to the inner side of the eardrum. It is attached on the other end to the *incus*, which in turn is attached to the *stapes*. The stapes is attached on its other end to another membrane called the *oval window*, which separates the middle ear from the inner ear. The soundwaves are amplified as the vibrations pass from the

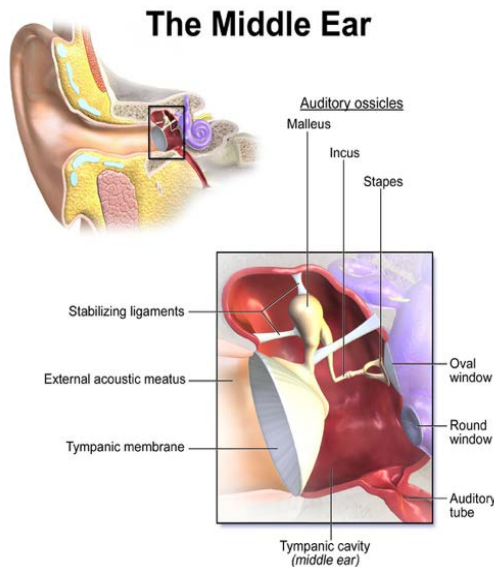


Figure 5. The Middle Ear, Blausen.com staff (2014). "Medical gallery of Blausen Medical 2014". WikiJournal of Medicine 1 (2). DOI:10.15347/wjm/2014.010. ISSN2002-4436. - Own work

eardrum through the ossicles to the oval window. The pressure in the oval window is 18 times larger than the one in the eardrum (Wolfe et al. 250).²² This is necessary because the inner ear, which starts on the other side of the oval window, is filled with fluid, which offers a very high mechanical resistance compared to the air that fills the outer and middle ear (Schnupp et al. 51). The middle ear also has two small muscles attached to the malleus and stapes, which tense in response to very loud sounds, limiting the movement of the ossicles to prevent damage to the inner ear (Wolfe et al. 250). This system is known as

acoustic reflex, and it also acts as a way to limit the transmission of sounds caused by swallowing, talking or other bodily movements. Unfortunately, the time response of the acoustic reflex is not fast enough to counter the effect of sudden loud sounds, which can cause permanent damage to the ear (Schnupp et al. 53).

²² The ossicles are the smallest bones in the human body. They act as a lever system that allows the concentration acoustic of energy in a smaller area (Schnupp et al. 52).



Figure 6. The Internal Ear,
Blausen.com staff (2014). "Medical gallery of
Blausen Medical 2014". WikiJournal of
Medicine **1** (2). DOI:10.15347/wjm/2014.010.
ISSN2002-4436. - Own work

The inner ear is perhaps the direct responsible for some of the mysterious aura that has shrouded auditory perception for thousands of years. Unfortunately, a detailed discussion of this incredibly sophisticated organ, though fascinating, exceeds the scope of this work, so this will only be a brief look at its major features.²³ It is here that transduction from mechanical to electro-chemical energy occurs.²⁴ The

most important part of the inner ear is the *cochlea*, which has a coiled shape, similar to a snail (Wolfe et al. 250; Schnupp et al. 54). Its outer wall is made of bone, and it has two openings: the oval window and the round window. The cochlea is filled with fluid and it is divided inside by *Reissner's membrane* and by a structure called the *cochlear partition*, which is where sound waves are ultimately transduced into neural impulses (Wolfe et al. 251). The cochlear partition contains two very important structures: the *basilar membrane* and the *Organ of Corti*. The latter is formed by *hair cells*, a special type of neurons that are connected to the *auditory nerve* (252). These cells are covered by minuscule bristles that move in response to the pressure waves traveling through the fluid-filled canals of the cochlea, converting the mechanical energy into

²³ For a detailed description of the inner ear see Schnupp et al., pp. 51-75.

²⁴ Transducer, n. Any device by which variations in one physical quantity (e.g. pressure, brightness) are quantitatively converted into variations in another (e.g. voltage, position) (*OED*).

neural impulses that will then be carried through the auditory nerve to the brain (254). The cochlea has a *place coding for frequency* or *tonotopy*, that is, different frequencies create

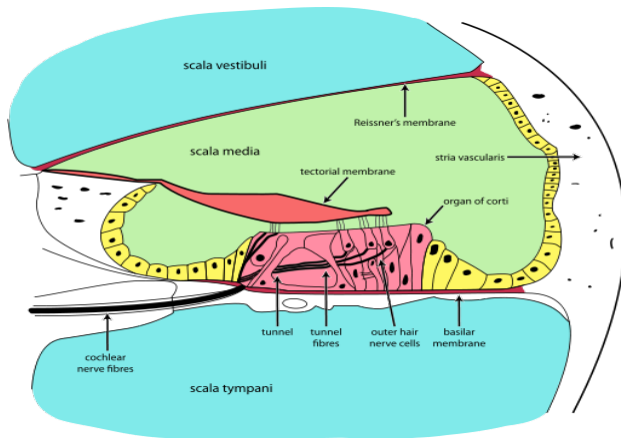


Figure 7. The Cochlea. [Cochlea-crosssection.png](#): The original uploader was [Oarih](#) at [English Wikipedia](#) derivative work: [Fred the Oyster](#) - This is a *retouched picture*, which means that it has been digitally altered from its original version. Modifications: *Vectorised*. The original can be viewed here: [Cochlea-crosssection.png](#). Modifications made by [Fred the Oyster](#). This [vector graphics image](#) was created with [Adobe Illustrator](#).

vibrations in different sections of the basilar membrane. It should be noted, however, that this tonotopy is for frequency, not for pitch perception, because, as discussed above, complex sounds are made up of many simultaneous frequencies (Schnupp et al. 62).

The cochlea encodes information about time, frequency and amplitude, which is then transmitted through the auditory nerve to the brain. It will become apparent throughout the sections that follow that the information encoded does not necessarily correspond to all the physical characteristics of the pressure waves the ear captures.

Several auditory nerve fibers are connected to each hair cell (Schnupp et al. 76). They maintain their tonotopy, while showing varying degrees of sensitivity to loudness depending on the frequency range (80). The frequency to which each nerve fiber responds the most is known as its *characteristic frequency* (Wolfe et al. 256). In the case on low frequencies, auditory nerve fibers behave in a particular way known as *phase locking* (Schnupp et al. 82). This means that they tend to reach their maximum release of neurotransmitters near the crests of the wave, but

they do not do so in every crest, and they may skip cycles.²⁵ Scientists believe this ability to phase lock is what allows for time coding of sounds, and it is also used in pitch perception and sound localization (84). The transmission of complex sounds presents some complications that further change the information that is transmitted through the auditory nerve. One of the most studied is called *two-tone suppression*. When there are two tones of similar frequency present, one of them, usually the one with the lower frequency, will have a suppressing effect that makes the other tone seem much weaker than it really is (75). This is an additional instance where the perceived sound is not an exact replica of the actual wave that reaches the ears. Another example is *rate saturation*, where at higher intensities the firing rate of nerve fibers reaches its peak for other frequencies that are not the characteristic frequency (Wolfe et al. 258). In this case, the auditory system must use information from many auditory nerve fibers to detect the correct frequency of a stimulus (259). These are just two examples to illustrate the challenges inherent to the transmission and processing of information happening already at the level of the auditory nerve, and the many ways in which those processes change the characteristics of the physical wave into the percept called sound.

The three parts of the ear just described form what is known as the *peripheral auditory system*, which is connected via the auditory nerve to the *central auditory system*. Here it is necessary to acknowledge the existence of a part of the ear that has not been mentioned so far, and which is notoriously absent in most of the literature about auditory perception. Figure 6 illustrates another component to the inner ear called the *vestibular system*. The traditional explanation for ignoring this very important part of the inner ear is that it senses the motion of

²⁵ The concept of phase is explained in p. 17. For a more detailed explanation of phase locking see Schnupp et al., pp. 82-86.

the head and the orientation of gravity, and this information is essential for the processing of tilt, self-motion and balance, which together form the sense of *spatial orientation* (Wolfe et al. 329). The most a reader will find about the vestibular system in a study of auditory perception is that, yes, it is in the inner ear but aside from that it has no relation with its more famous neighbor, the cochlea. It is misleading, however, to think of it as only structurally adjacent. The vestibular system also has hair cells and nerve fibers. These nerve fibers share the same nerve with auditory nerve fibers, the VIIIth cranial or vestibulocochlear nerve. But, different from the other senses, the vestibular system's function is "largely automatic," which means that most of it consists of reflexive reactions, and one only becomes aware of it when there are problems like motion sickness, vertigo, or imbalance. Given that the chief function of the vestibular system relates to space and movement, its main interaction is with visual perception, and there is ample literature about the integration of information from both systems. There is much less information regarding any possible interaction with auditory perception, but very recent research has proposed a link between the vestibular system and the perception of rhythm.²⁶ It is important to remember that the peripheral auditory system consists of two ears, conveniently located at opposite sides of the head, and their location is critical to the human ability to have a sense of space and place. This also means that from each comes a set of auditory nerve fibers that transmit what the ears perceive through *auditory pathways* that will be briefly described below.

²⁶ For some recent perspectives on the interaction of the vestibular and auditory systems see: Trainor et al., Todd and Lee, and Trainor and Unrau.

Winding Paths

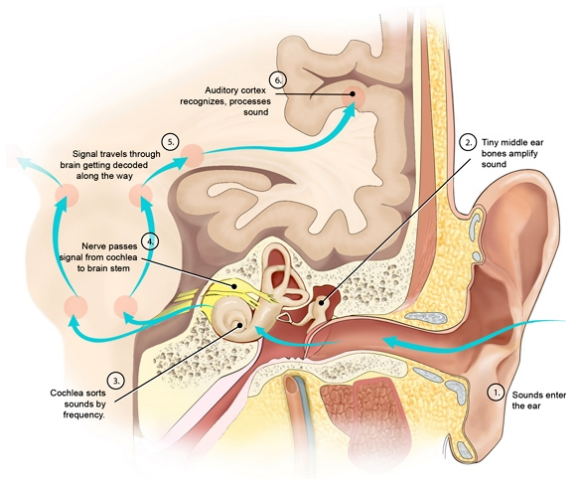


Figure 8. Hearing mechanics,
by Zina Deretsky, National Science
Foundation [Public domain], via
Wikimedia Commons
https://commons.wikimedia.org/wiki/File%3AHearing_mechanics.jpg

There is still much that is uncertain about the way the brain processes the electrochemical impulses transmitted through the auditory nerves. Unfortunately, the details exceed the scope of this thesis, and this section only undertake a description of major processes and structures that are essential to a basic understanding of auditory perception.

Before describing what are widely accepted as the main stages of auditory processing, it is necessary to understand that most of these conclusions have been drawn from research either done directly on animals or indirectly on humans, and therefore should

always be taken as subject to further changes or revisions. The main caveat is that, although it is true that the latest technology (PET, fMRI), has supported and expanded the conclusions drawn from previous decades of research, it is still limited both by the scope set by different research studies for which it is used, and by its resolution, and therefore by the inability to represent the most detailed structures of the brain.²⁷ Functional magnetic resonance (fMRI), for instance, is an indirect functional method of brain imaging that measures changes in the oxygen concentration of the blood flow. The resulting data that does not directly represent the neural activity under study and can thus be imprecise (Hickok 251). Just like the rest of the body, brains are

²⁷ In this context, the term resolution refers to the level of detail an imaging device can render in the depiction of anatomical structures.

structurally similar, but they are not identical, so in order to draw general conclusions, studies need to be conducted on a significant number of subjects, and this is not always the case. In addition, more direct and invasive methods of research cannot be used in human subjects, and are instead used in animals, whose brains are not necessarily like the human brain.²⁸ Still, many recent neuroimaging studies have provided support for what are currently the most widely accepted theories of auditory processing in the brain.

The auditory nerve fibers coming out of the cochlea “join the VIIIth cranial (vestibulocochlear) nerve and enter the cochlear nucleus (CN) in the brainstem” (Schnupp et al. 86). They then proceed to several major centers located in both sides of the brainstem: the *superior olive*, the *inferior colliculus* and, finally, the *medial geniculate nucleus* of the thalamus (Wolfe et al. 262). Their path, the *ascending auditory pathway*, is not a straight line between each of these points. As can be seen in Figure 8, the nerve fibers bifurcate into two branches in the CN (263). This information pathway is bilateral, and there are many binaural interactions between hemispheres (Schnupp et al. 88). There are a large number of specialized neurons that interact with many neurons from other non-auditory areas.²⁹ This contrasts with the information pathways of the other senses, which usually remain contralateral all the way up to the cerebral cortex, so stimuli coming from one side of the body are transmitted to the opposite hemisphere of the brain (*Auditory Cognition* 40).³⁰ Some of these binaural interactions, especially at the superior olive, are very important for the stereophonic perception of sound, which is basic for the perception of space. Tonotopy is maintained throughout many of the midbrain structures of the

²⁸ For a discussion of individual methods and the limitations of experiments in humans see Hickok, pp. 249-53.

²⁹ For an overview of the main types of neurons in auditory processing see Schnupp et al., pp. 86.

³⁰ Contralateral refers to structures located on the opposite side of the brain, while those on the same side are called ipsilateral (*Auditory Cognition* 40).

ascending auditory pathway (41). As Wolfe et al. note, this shows the importance of frequency composition for auditory processing (263). From the thalamus, most nerve fibers continue to the auditory cortex, located in the temporal lobes; however, a small portion of them “connect to the limbic structures of the brain, such as the amygdala, which is thought to coordinate certain types of emotional or affective responses and conditioned reflexes to sound” (Schnupp et al. 90). The bilateralism continues, as the auditory cortical areas of both hemispheres share common connections in the corpus callosum, so the information from both ears can reach all neurons.

The study of the auditory cortex brings many challenges. The cerebral cortex is “the youngest and most malleable part of the brain in evolutionary terms” (Schnupp et al. 91). While the ascending auditory pathway is similarly organized in all mammals, the auditory cortex is different among species (90). Many of the studies that have helped map the cortex in other mammal species cannot be performed in humans, so the human auditory cortex map is still imprecise. Although there is no certainty about the details of how certain areas of the brain work, there is evidence of the results of many processes, and the existence of certain mechanisms. This awareness makes it possible to explore the ways in which cultural products evince the existence of such mechanisms; it suggests, moreover, the particular ways in which cognitive processes have evolved and interact with other brain functions. The auditory cortex has a primary and a secondary area, both of which interact at all levels with the rest of the brain (91). In addition, there is a descending auditory pathway (Schofield). Auditory processing involves feedback. There are descending projections of information from neurons at several levels of the pathway: from the frontal lobe to the auditory cortex, and from there to the different midbrain levels, the brainstem, and some even reaching the cochlea (Schnupp et al. 92). These are believed to form feedback loops that support various aspects of auditory processing, either reinforcing or

inhibiting signals and responses to stimuli; they help in the perception of frequency, intensity and specific sounds within complex environments (He and Yu; Schofield).³¹ As Schnupp et al. have observed, these projections and loops show that “auditory processing does not occur on a purely feedforward fashion,” and these projections “make it possible to retune the system on the fly, right down to the level of the mechanics of the cochlea, to suit the particular demands the auditory system faces in different environments or circumstances” (92). Most of these loops work around the *medial geniculate body* of the thalamus, and the thalamus is believed to be central for multimodal integration:³²

The thalamus is actively involved in shaping afferent signals through both facilitatory and inhibitory processes. It selectively facilitates or inhibits frequency channels, amplifies or attenuates signals depending on their intensity, and minimizes the interference from other sensory inputs. It participates in highly complex integrative functions, and is crucial for shifting the functional mode of the brain between an adaptive behavioral state, open to the outside world, and a disconnected state such as in slow-wave sleep when thalamic gates are closed. (He and Yu)

The thalamus is not the only part of the pathway where loops and projections occur; it illustrates, nevertheless, the general complexity of the descending pathway, whose many aspects are still poorly understood.³³ It is important to recognize their underlying presence at all levels of

³¹ For a description of current theories about feedback loops see also Weinberger.

³² “Multimodal (or multisensory) integration refers to the neural integration or combination of information from different sensory modalities (the classic five senses of vision, hearing, touch, taste, and smell, and, perhaps less obviously, proprioception, kinesthesia, pain, and the vestibular senses), which gives rise to changes in behavior associated with the perception of and reaction to those stimuli” (Holmes et al. 2457).

³³ For a detailed analysis of the descending auditory pathway see Schofield. For traditional but still relevant theories before the advent of advanced imaging technologies, see Oertel et al., and

auditory processing because they show a system designed to use past experience in order to adapt, improve and modify future auditory perception. It is worth reiterating that both the concept of participation and of auditory expectation rely on a similar model of cognitive and perceptive processes where experience is essential to the ability of an individual to interact at any level with a cultural product. As will be further argued, these loops and projections facilitate the functions of reward that ensure a continued motivation for individuals to engage in and, more importantly, to innovate in cultural production.

The existence of ascending and descending auditory pathways also illustrates two very important concepts: *bottom-up* and *top-down* processing. Both concepts are applied to the study of the mind as part of the *information processing approach* (Rookes and Willson 13; Bermudez 47). Bottom-up processing is based on the analysis of low-level individual sensory inputs, which are assumed to control perception, and which can be as detailed as to look at the molecular level, for instance. This information is then combined at higher cognitive levels with neural input from other sensory modalities to eventually arrive at a percept. Conversely, top-down processing begins with the general high-level functions which drive and inform the mechanisms that work at lower levels. A bottom-up approach attempts to arrive at the general principles of cognitive processes through the study of low-level processes, while the top-down approach starts from the general principles, based on accumulated sensory experience, to arrive at an understanding of low-level mechanisms. For students of the humanities, it is not hard to see the similarities of these two approaches with two long-standing concepts of logic: inductive and deductive reasoning. Hence, the way the brain works influences the production of knowledge and the

Syka and Masterton. See also He and Yu, and Weinberger. For examples of psychoacoustic studies involving the auditory pathways see Ando and Cariani.

systems that are developed to enhance and improve on such knowledge. This is also the case with auditory perception, as Plomp explains: “Audition can be primarily seen as bottom-up processing stressing the significance of information in the actual stimulus, versus cognition as top-down processing stressing the significance of concepts, expectation, and memory as a context for stimulus perception” (6). It is clear from the previous discussion regarding the auditory system that these are not separate modes of processing either in terms of time or space. They occur simultaneously and share the same anatomical structures; they enable the aforementioned process of conscious and unconscious extrapolations that starts before a perceptive event takes place, anticipating what will be heard (7). This dynamic is what underlies the concept of auditory expectation, which is a manifestation of it in the context of cultural production.³⁴ The ability to anticipate does not only mean old information is used to predict future perceptive events, but also that such information will have an impact on the way one produces and conceptualizes sound. It is key to keep this framework in mind for the following overview of how the auditory system processes and integrates the different qualities of sound.

(Not So) Perfect Pitch

The foregoing discussion highlighted the importance of periodicity for pitch perception, and the importance of distinguishing frequency as a physical characteristic of a sound wave from pitch, which is a percept and not necessarily equivalent to frequency.³⁵ As mentioned, complex sounds are composed of many different frequencies, and, although most of the time the fundamental frequency of a sound may determine its pitch, this is not always the case. The

³⁴ For the definition of auditory expectation see p. 12.

³⁵ Regarding phase, see p. 17. For periodicity, see p. 19.

discussion also included some of the many important functions of pitch: how it helps to distinguish the gender and age of a speaker, and to pick out their voice when several individuals speak at the same time; similarly, it facilitates the identification of musical melodies, and contributes to the interpretation of meaning according to voice inflections and melodic contours; finally, it helps to determine if the sound source is alive or inanimate, and to estimate qualities like the size or material it is made of (Schnupp et al. 93). For more than a century, the periodicity of the fundamental frequency was believed to be what determined pitch (Plomp 25). Decades of experiments have shown a more complex picture. The ears not only can perceive a missing fundamental, as discussed previously, but they also can, for instance, perceive the pitch of a single sinusoidal tone as that of its subharmonic (27).³⁶ This becomes even more complicated in the presence of noise (28). Another problem is related to the length of the sound's periods. When they are too long, the pitch perceived is not that of the fundamental, and when they are too short, it causes a deterioration in the perception of pitch (Schnupp et al. 96). On the other hand, the ears can perceive pitch even if sounds are not strictly periodic, as is the case with the human voice. The ears can even create an "internal representation of periodicity" when a different sound is presented to each ear. In addition, although periodicity is certainly an important factor, pitch perception depends also on frequency content.

It was said before that pitch is independent of sound level and spatial location, and that it is partially independent of the level of the harmonics of a sound. Pitch is also mostly independent of timbre. As with many other abilities, pitch perception improves with training; this is called

³⁶ A subharmonic is "a component of a periodic wave having a frequency that is an integral submultiple of the fundamental frequency" (Merriam-Webster). There is a subharmonic series that can be calculated mathematically and partially mirrors the harmonic series of a given pitch (Paynter et al. 267). Subharmonics have traditionally been considered to be inaudible, but as Plomp's example shows, this is not completely accurate.

perceptual learning (103).³⁷ This is visible not only through formal training, but also in the fact that the ear adapts when faced with altered inputs (291). Improvement can happen as a result of perceptual learning tasks that are not specifically designed for that purpose, like playing video games.³⁸ What is impressive about pitch perception is that “the brain is ready to accept rather weak evidence of periodicity and transform it into the sensation of pitch” (138). It is easy to see how this is an essential ability given that humans are constantly surrounded by noise. What makes it possible is the fact that the sensation of pitch is a product of top down processing, probably at the highest levels of the auditory cortex. Although the ears capture and process detailed information about sound waves, in order to create the sensation of pitch, the brain has to ignore most of it:

Thus, an explicit representation of pitch is almost antithetical to the general rules of representation in the early auditory system, which seems to be optimized for keeping all the details of sounds, rather than ignoring those that may be irrelevant for a particular purpose. It makes sense for the auditory system (and presumably for any sensory system) to push generalizations far up in the processing hierarchy. (Schnupp et al. 138)

In spite of such generalizations, the ear is able to perceive very small changes in frequency, especially in the middle range (Wolfe et al. 266). As part of the description of the ascending auditory pathway, there was brief mention of the concept of phase locking, the propensity of auditory nerve fibers to produce spikes at specific points in a period, mostly at or close to the point of maximum amplitude, generating periodic firing patterns (Schnupp et al. 117). The

³⁷ Perceptual learning may but does not necessarily result in increased brain activity in areas related to the attribute of sound on which training focuses, in this case pitch (Schnupp et al. 291).

³⁸ Improvement can come from the performance of unrelated tasks that involve the brain areas necessary for pitch perception (Schnupp et al. 291).

patterns come from the combination of the firing trains of dozens of fibers attuned to different frequencies. This is necessary to account for an additional complexity in this process: the limited bandwidth of nerve fibers, which makes it necessary to integrate information from across frequencies (120).³⁹ But, although at this level of processing the information necessary to extract periodicity is encoded and available, the actual processes to determine periodicity and pitch occur at higher levels (122). At different stages in the ascending auditory pathway different attributes of a stimulus are enhanced, including periodicity (124). There is evidence that at the level of the ventral cochlear nucleus a certain type of neuron enhances periodicity independent of sound level (126). Some experts think there are neurons that attune to periodicity at the level of the inferior colliculus, although it is not clear if this is specifically related to pitch perception.

As discussed above, the auditory cortex is still poorly understood. Yet, there is evidence that points to a response to periodicity in some of its areas (129). But the fact that pitch is a percept implies that its representation in the auditory cortex should correspond more to the experience of the listener than to the sound itself (130). Given that the experience of perception is subjective, the resulting representations should reflect the inherent flaws of an individual's perceptual process. In this context, the studies that have attempted to locate specific centers or modules of cortical pitch processing have proved insufficient, as they do not provide evidence beyond selective responses to sounds with pitch (131). Something similar has happened with attempts to prove the existence of a periodotopic map in the cortex.⁴⁰ Recent research, however,

³⁹ Auditory nerve fibers have limitations in both the range of frequencies they are attuned to, and the amount of time it takes them to be available again after firing, known as refractory period. One proposed solution to this problem is known as "the volley principle," which means that while one nerve fiber is on a refractory period, one of the neighboring fibers may fire in response to the stimulus (Schnupp et al. 85-6).

⁴⁰ Similar to the idea of tonotopy presented in p. 24, a periodotopy would be a topographical map for periodicity in some of the brain areas related to sound perception and processing (Langner

continues to make positive findings that might in time provide a clearer picture of how pitch processing works. What can be surmised from current knowledge is that top-down processing underlies perceptive abilities, and that it helps to look at possible ways in which generalization impacts auditory expectation in the context of cultural production. One of the functions of pitch already mentioned can help to illustrate this with examples focused on non-verbal sounds. A very interesting instance of the importance of pitch in a non-verbal situation is what is known as *urgency mapping* (*Auditory Cognition* 242). The existence of warning systems is not something that comes immediately to mind when thinking about sounds in the environment, and this is the way it should be. These systems are designed to alert the listener about events that do not happen often, but that require immediate attention when they occur. In the case of time-critical situations, visual warnings are not ideal, especially if the intent is to warn individuals who are not within reasonable distance of the place where they are located (240). Sound has the potential of covering very large distances, and to reach individuals who are not in the visual range where an alert might be detected. Beyond that, sound can also be used to enhance the effectiveness of these warnings by the appropriate use of specific parameters, one of which is pitch. The concept of urgency mapping attempts to improve aural warning design by connecting both the “perceived urgency of the warning and the situational urgency of the condition presented by the warning” (242). One of the goals of this approach is to design alert systems that can represent different levels of urgency corresponding to different situations. Pitch is one of the main parameters that help in maximizing the effectiveness of aural warnings. Perhaps the most familiar example is the

143). Although many authors claim to have proven this, there is no consensus on the matter, as those studies have failed to show a clear connection of such an arrangement with the subjective perception of pitch (Schnupp et al. 131). For a current perspective supporting periodotopy and its relation to tonotopy, see Chapter 10 in Langner.

sound of a siren.⁴¹ Although originally sirens were not invented as warning devices, their use became widespread at the beginning of the 20th century.⁴² The key recognizable characteristic of a siren is that its pitch fluctuates at considerable speed. Through long-term use and training, listeners have come to automatically recognize them as signs of danger (Edworthy and Adams 145). Studies have shown that higher pitch is perceived as more urgent (*Auditory Cognition* 242-3). In modern fire alarms, sometimes the sound of the siren may be accompanied by an intermittent higher frequency sound, which can be extremely annoying, but quite effective to enhance the sensation of urgency and the need to evacuate. In naturally occurring sounds, everyone has had the experience of the unsettling effects of high-pitched emissions, for instance, the cry of a baby or the scream of someone in pain. When accompanied by other adequate parameters, the effectiveness of an auditory warning can be even higher. One of these important parameters is loudness. Going back to the example of sirens and alarms, increased loudness is yet another indication of urgency, and it is a crucial factor in trying to reach a large number of people or cover a vast area. Loudness is an essential aspect of sound, as will be explained in the following overview regarding the particulars of how it is perceived.

Thinking Out Loud

It was observed previously that the intensity or loudness of a sound is connected to the amplitude of the perceived soundwave; however, it depends also on the characteristics of the

⁴¹ This form of warning is the only one that bears the name of a mythological figure associated with song, something that professor Ottavio DiCamillo generously brought to my attention. Perhaps the name is especially fitting, since, just as one cannot help but hear the beautiful melody of the mythical sirens' song, neither can one avoid hearing a warning siren, although for the opposite attribute of extreme dissonance.

⁴² For the history of the use of sirens as warning devices, and their previous widespread use in experiments related to pitch and periodicity, see Jackson, pp. 205-207.

surrounding environment. It is important to remember that amplitude is measured according to sound pressure level, but perceived loudness varies depending on frequency.⁴³ Between two tones presented at the same sound pressure level, the ears will perceive the one with higher frequency as louder than the other (Wolfe et al. 265). Hence, sound pressure level and loudness are not equal. Another factor that alters the perception of loudness is the duration of the sound: longer sounds are perceived as louder. This is because loudness depends on the summation of energy over an interval between 100-200 milliseconds. Sounds below this interval will appear softer compared to others with the same amplitude that are in or above this window. Due to the structure of the cochlea, amplitude impacts the amount of displacement in the cochlear partition, resulting in more force in the movement of the tectorial membrane in the organ of Corti, which in turn causes hair cells to bend farther and increase the release of neurotransmitters (254).⁴⁴ As a consequence, in the auditory nerve fibers increased loudness will manifest in increased firing rates and vice versa. Nerve fibers have only up to 30 dB of range from the threshold where they start firing to the point that their firing rate saturates, and this window varies among fibers. So, the proper encoding of sound intensity is achieved by the combined work of many fibers.⁴⁵ Nerve fibers also become responsive to wider frequency ranges as intensity increases, so a larger number of fibers will fire as a result of higher sound levels. The perception of loudness, as was mentioned, is not equivalent to amplitude. Another aspect that affects it is the frequency spectrum of the sound. Two sounds with equal intensity can be perceived as different in loudness: “The more the intensity is spread over a wider frequency range, the louder the tone seems to be” (Plomp 29). A sinusoidal tone sounds considerably softer than a complex tone.

⁴³ See pp. 17.

⁴⁴ For the anatomical description of the cochlea see pp. 23-24.

⁴⁵ This is another instance of the volley principle, which was mentioned in note 38.

Loudness is also remarkably stable. When one hears more than one sound at the same time, like human voices, for instance, from a purely physical perspective there is a lot of interference and masking between them; however, one perceives them as if they did not conflict with each other in terms of loudness.⁴⁶ In daily life, individuals are used to the fact that distance affects loudness, yet they perceive it as a characteristic of the source rather than the sound wave (145).

It All Boils Down to Timbre

After covering some basic notions regarding the perception of two of the three main attributes of sound, frequency and loudness, the focus can shift to the last one: timbre. Timbre, as previously defined, is the attribute of sound that makes it possible to distinguish the sound of different musical instruments playing the same note, or the voices of several interlocutors, and this is mainly due to the different amplitude distributions of the sound's harmonics or overtones (Wolfe et al. 289). As part of the discussion regarding the perception of pitch, it was remarked that it is almost independent of timbre; a violin can play many different pitches, and one still recognizes its sound. Timbre is also very stable in relation to changes in amplitude: the same fictional violin can play at different levels of intensity and still be recognized as a violin (Plomp 19). Something similar happens with regard to phase. If the violin sounds inside an enclosed space, the sound waves will reflect against the walls, the floor and the ceiling, causing the form of the soundwave to vary from its original form. This implies changes in phase and also in the amplitudes of the overtones, but one continues to hear a violin, because the auditory process calibrates according to the most reliable features of the context where sound is perceived (Wolfe et al. 291). While changes in phase do not seem to have a major effect on the perception of

⁴⁶ This is another aspect of the already mentioned “cocktail party problem.” See note 17.

timbre, differences in amplitude are more complex, and timbre remains stable to changes in amplitude “up to a factor of 3,” while larger changes will lead to the perception of a different timbre (20). Different from pitch and loudness, “differences in timbre appear to be multidimensional, depending on the amplitudes of a series of harmonics”.⁴⁷.

Out of the three basic attributes of sound, timbre is the least resistant to interferences. Sounds in enclosed spaces can vary greatly due to physical phenomena like reverberation (146). However, timbre remains a fundamental factor in the ability to process and discriminate among sounds. For instance, it had been mentioned that pitch helps to identify the approximate age and gender of a speaker, but in order to identify individual voices, it is necessary to look at the spectral characteristics that determine their timbre. Plomp observes that there is a paradox in timbre as a physical reality, because it is “at once the most vulnerable and the most informative attribute of sounds” (146). This observation leads him to assert that such instability is compensated by the cognitive aspect of auditory perception. Everyone has experienced the differences between listening to a voice on the phone versus listening to it inside a highly reflective space like a bathroom. Yet nobody gets too concerned with these differences, and they seem to be accepted for what they are. This shows the enormous flexibility in the way the ears perceive timbre, and this is yet another example of the high level of adaptability of perceptive systems in the face of an ever-changing environment. This adaptability is going to be even more evident in the following discussion about the main aspects of sound perception and processing.

⁴⁷ One important fact about the auditory processing of harmonics is that one only distinguishes the first five, while higher harmonics remain unresolved, and enough information about difference in frequency spectra can be drawn from as little as the first two harmonics. The main factor for the perception of timbre is the overall slope of the frequency spectra (Plomp 21-24).

Focus on sense

After surveying the most important aspects of sound perception and auditory processing, including some of the complexities of what a sound wave is, how it is captured and processed, and how it becomes the percept known as sound, the discussion can go back to cultural production and the ways in which auditory perception can help achieve a broader understanding of it as an embodied experience. The significant advances over the last decades in fields related to sensory perception in general, and auditory perception in particular, have become part of the subject matter of disciplines such as embodied cognition, musicology, neuroaesthetics, neuroscience, psychoacoustics and psychology, opening the way for the in-depth study of the link between sensory perception and cultural production. But the majority of research heretofore has focused on visual perception, with an emphasis on interdisciplinary studies examining the relation between the visual arts, literature, music and the humanities in general. Research that explores the role of auditory perception in the arts and the humanities is more recent and scant. In the case of literature, these studies have strived to broaden concepts belonging to the fields of aesthetics (like memory, harmony, synesthesia, rhythm and prosody), and to the study of soundscape and its relation to different cultural products and practices.⁴⁸ Conversely, auditory perception will be analyzed as a set of somatic phenomena that affect the individual both emotionally and intellectually, and thus impact cultural production in a specific way. In order to do this, it is indispensable to introduce the concept of *methexis*, the Greek word for participation

⁴⁸ For a comprehensive bibliography on the subject see Zunshine, “Bibliography” and also her *Introduction to Cognitive Cultural Studies*. For a historical approach to the relation between sound, science and philosophy see Erlman, *Reason and Resonance*. For a historical survey of sound and hearing theories see Burnett. For a specific study of sound perception in the Classical period see Butler. For the concept of soundscape, the classic study is Schaffer. For the use of the concept in a medieval context, see Cazelles. See also the continuing research of Filippi. For a musicological approach to this topic in the Middle Ages, see Boynton et al.

or sharing; in this case, it refers to the kind participation that occurs between the producer and transmitter of culture and the receiver of a text as consumer of the cultural product, keeping in mind that the producer of culture, the author, is always also a receiver, a consumer of other texts. The use of the word “receiver” intends to highlight the fact that throughout the Middle Ages literacy was exceptional, and the intended audience of a given work was composed of a few readers and a multitude of listeners. Similarly, the word “transmitter” encompasses all the different actors that may play a part in the oral, aural and/or written transmission of a text, among others: authors, copyists, forgers, jurists, notaries, plagiarists, orators, preachers, town criers and heralds, lecturers and teachers, anonymous agents that quote the text, lettered individuals who read the text aloud to others, or receivers who later repeat sections of the text to others. This chapter began asserting that participation is the engine of cultural production. The goal of this thesis is to show that auditory perception is the mode of perception that allows the *methexis* of authors, transmitters and receivers of literature. It is the possibility of *methexis* what causes the desire to read more, to hear more and to write more. Within the context of the case study, thirteenth-century Castile, a thorough scrutiny of the participatory aspect of auditory perception can shed new light on the motivations behind some of the decisions taken by the first authors who wrote in Castilian, which are reflected in certain stylistic features that become apparent at the dawn of written literature. These features, apparently motivated by rhetorical precepts or pedagogical concerns, sometimes hide their functional nature behind a purported archaism, an origin in orality or an almost ornamental facade. In reality, they are pragmatic solutions to the obstacles and limitations presented by perceptive phenomena in the practice of communication, the participatory practice *par excellence*. It is then necessary to start by establishing the need to use the word *methexis* as a specific mode of participation in this thesis.

2. Methexis

Because if that's your desire, I'd like to weld you together and join you into something that is naturally whole, so that the two of you are made into one. Then the two of you would share one life, as long as you lived, because you would be one being...

Plato, *Symposium*

Methexis

Methexis, as previously mentioned, is the Greek word for participation or sharing. It was first used in philosophy by Plato, and continued to be developed throughout history by some of the most important figures of the Western tradition. In English, the preferred word to refer to this tradition has been participation. Aside from Philosophy, participation has been explored extensively as a concept in the fields of Anthropology, Education, Sociology, Political Science, Theology and Religious Studies. Anthropological perspectives could be said to constitute the earliest to study this subject, given that scholars consider participation as already present in primitive societies, mainly in cultural practices regarding the relation between humans and the world around them, like animism and mysticism (Thomas et al. 598). For the purposes of this thesis, however, the focus is on the philosophical concept of participation that begins with Plato's *methexis*, because it is centered on the human creative experience and whose century-old tradition eventually culminates in the phenomenological approaches that are linked to enactivism and embodiment.⁴⁹ The use of this Greek word is intended to highlight that in the context of cultural production *methexis* is more than mere participation or sharing. It goes beyond the simple act of taking part in something, possessing something, or the idea of being part of something other than oneself. *Methexis*, in fact, is also the experience of a body feeling actively

⁴⁹ "Enactivism is an emerging perspective in cognitive science proposed most explicitly by Varela, Thompson, and Rosch (1991) as an alternative to representational theories of cognition. As a perspective in cultural psychology, it was first proposed by Baerveldt and Verheggen (1999) as a way to give an account of consensually orchestrated personal conduct, without evoking culture as an already established meaningful order. Both enactive cognitive science and enactive cultural psychology are characterized by a focus on sense-making as a situated, embodied activity" (Baerveldt and Verheggen). Embodiment is a term used in the theoretical framework of embodied cognition. Shapiro explains that "there is as yet no firm consensus among practitioners about how to understand crucial concepts such as 'embodiment.' Nor is there unanimity about the goals of embodied cognition, or whether and to what extent ideas and methods from traditional cognitive science should have a place in embodied cognition research."

present in something, even when there is no physical act of participation. Methexis is an embodied experience, and this is what places it at the center of the study cultural production.

A look at the way in which the philosophical concept of participation has developed reveals a constant interdependence with creativity and embodiment, although most of the time this concept seems to be at odds with the actual presence of the body. A great part of its evolution occurred in settings where Philosophy and Religion where, if not inseparable, deeply intertwined. Even today, participation remains a very important topic of debate in Philosophy and Religion. In his essay on Theology and Religious Studies, Jacob Sherman divides the history of participatory approaches into three main stages or “turns,” which he describes in terms of their leading exponents. The initial stage or “formal turn” begins with Plato’s methexis, and will be further explored below. The second stage or “existential turn” reaches its peak with Thomas Aquinas’ concept of *participatio* that shifts the emphasis from describing the status of a being to “the ontological question of why a being is” (86-92). Sherman finds support for this interpretation in the *Summa Theologiae*: “Natural things have a natural inclination not only toward their own proper good. . . but also to diffuse their own goodness among others as far as possible. . . to communicate their own goodness to others.” (I, q. 19, art. 2, quoted in Sherman 91). The last stage or “creative turn,” which is practiced at present, focuses on dealing with “the problem of creative agency,” for which “a third mode of participation had to be discovered or invented, a mode whereby not only are essence and existence participated, but creativity itself is shared through the series of participatory mediations” (92). Sherman explains that this “turn” emerged out of the possibility that, if the source of existence was located outside of creatures, they might ultimately become empty vessels devoid of agency. This mode has its origin in Hermetism, as well as in the Patristic tradition. It is also rooted in sophists like Dio Chrysostom

and Philostratus, and in the Neo-Platonism of Plotinus, and represent a shift from imitation or inspiration to contemplation (93). In the fourteenth century, Meister Eckhart links these traditions by focusing on the theurgical aspect of participation, that is, on the “operation of a divine or supernatural agency in human affairs” (*OED*). As Sherman explains: “human artistry finds its proper object when the imagination rises to contemplate the Divine Ideas. . . . our thoughts and imagination are echoes of God’s *Logos*” (94). This is an important change for the purposes of this thesis, because it is connected to Christian conceptions of communion as a truly embodied participatory experience where the creature shares fully in the Divine by eating Christ’s body and drinking his blood, and eventually leads to what Umberto Eco identified as “the germ of new directions in aesthetics akin to our own world” (113). Sherman argues this new direction is taken to the limit in Baruch Spinoza’s pantheism, which “revises the concept of participation in a thoroughly immanentist fashion by doing away with the transcendence involved in all earlier participatory theories,” opening the way for modern expressionism, understood as “the idea that an agent is genuinely present within rather than external to its actions” (95-6). Out of the turmoil that Spinoza’s ideas sparked all over Europe during the following two centuries, involving thinkers such as Jacobi, Kant and Hegel, came several attempts to reconcile immanence and transcendence that culminated in the ideas of Friedrich Schelling. Schelling presents three kinds of participation: “in existence, in ideality and in creativity” (101). This allows him to argue that human beings can participate in the life of God by using their productive imagination (102).

This survey of the most important stages in participatory approaches gives the necessary context for a detailed analysis of Platonic methexis, in order to justify the need to use it instead of simply referring to sharing or participation. The best way to do this is to start with a definition

of participation. Sherman offers the following explanation: “In its most general sense, the metaphysical concept of participation refers to a constitutive structure whereby a being or beings share to varying degrees in a positive quality or perfection that they receive from a donating source that alone enjoys the fullness of this quality or perfection” (81). This definition is significant because the debates that lead to important changes in participatory approaches in both Philosophy and Religion throughout history are centered on the problem that Plato was facing in the first place: the relation between the material world and the divine (82). As Plato conceived it, methexis is the kind of relation where a particular shares in a form, and, hence, it lies at the other end of the spectrum from *mimesis*, where the particular only imitates the form. In Sherman’s words, “these two realms [forms and particulars] must be distinguished but by no means divided. For Plato, the one realm becomes the *raison d’être* of the other and participation or methexis describes this crucial, constitutive relationship of one realm to another” (83). Note that above the word “share” was purposely used alongside the word “participate.” In doing so, it follows what Sherman does in the above-quoted definition, as well as the important observation of Gadamer about the problems of translating the word methexis in the context of Plato’s philosophy:

Methexis actually means “participation” [*Teilhabe*], and if one says it in Latin, it will be yet further misunderstood: *participatio*. For here the idea of the whole and the parts intrudes, which, in the Greek expression, as with German equivalents such as “*Teilnahme*” and “*Teilhabe*,” is really not relevant.

Can one really speak of taking a part [*Nehmen eines Teils*] when one takes part [*Anteil nimmt*]? (262)

The problem of the “part and whole” connotation of the word “participate” does not entirely disappear by using the word “share,” but at least such connotation is not reinforced by the visual

presentation of the word itself. In any case, it is still necessary to emphasize the two meanings of “share” that do not carry this connotation: “Use, occupy, or enjoy (something) jointly with another or others; possess (a view or quality) in common with others” (*OED*). Still, this does not mean that the word “participate” can be ignored altogether, precisely because it is the Latin translation on which a centuries-old philosophical and religious tradition rests. So, in maintaining this ambiguity by using both terms, the need for a word that overcomes these limitations is reinforced as well; and what better word than Plato’s.

Returning to the problem of methexis that starts with Plato, it was suggested above that this is an embodied concept. It arises at that undetermined place in the spectrum where mimesis fails to establish a dynamic relation between forms and particulars, especially because for Plato “the embodied and temporal being is not a second-rate version of the Form it participates; it is this Form in embodied and temporal form” (Sherman 83). But here, at the very origin of the debate, is where methexis as a philosophical concept becomes problematic. On the one hand, it seems to require a conscious distancing from the body in favor of a purely intellectual approach. This would conform to Sherman’s assertion that “it is clear that by his middle period Plato understands such participation to be analogical in nature. . . . Statements such as the rose is beautiful are therefore relational, not attributive.” Indeed, one has but to listen to Socrates at the beginning of the *Phaedo*:

For example, do men find any truth in sight or hearing, or are not even the poets forever telling us that we do not see or hear anything accurately, and surely if those two physical senses are not clear or precise, our other senses can hardly be accurate, as they are all inferior to these. (65B)

What follows this assertion is an argument on how the body and the senses are obstacles for the soul to reason and grasp the truth. To grasp the ideal forms, Socrates argues, is something that thought can do only when freed from the whole body, “because the body confuses the soul and does not allow it to acquire truth and wisdom whenever it is associated with it” (66A). Similar statements about the body as a distraction and an obstacle to intellectual activity appear several other times in the *Phaedo*, but it is important to remember that Socrates is speaking on the day of his death, literally hours away from drinking the hemlock, and within the context in which he argues that any philosopher should be happy to die and be rid of his body. The radical separation from the body is then something to look forward to, not something that is possible in the here and now. There clearly is no way for the Forms to be manifested in the physical world, albeit defectively, absent the body’s perceptual mechanisms.

Plato’s intention in the *Phaedo* was not to deny the unavoidable fact of the existence of the body; on the contrary, he was trying to emphasize the immortality of the soul and its primordial role in the work of the philosopher. In this regard, it is crucial to remember that another important concept that plays a part in the *Phaedo* is *anamnesis*, as a determinant component of the participation of particulars in the Forms. When Cebes notes that “. . . learning is no other than recollection” (72E), Socrates explains: “when a man sees or hears or in some other way perceives one thing and not only knows that thing but also thinks of another thing of which the knowledge is not the same but different, are we not right to say that he recollects the second thing that comes into his mind?” (73C). Later on, he further elaborates:

Whenever someone, on seeing something, realizes that that which he now sees wants to be like some other reality but falls short and cannot be like that other since it is inferior, do we agree that one who thinks this must have prior knowledge of that to which he says

it is like, but deficiently so? . . . We must then possess knowledge of the Equal before that time when we first saw the equal objects and realized that all these objects strive to be like the Equal but are deficient in this. (74D -75A)

Gadamer argues that the concept of anamnesis is a manifestation of the participation of one *eidos* in another, which realizes the meaning of the syllable *meta* in methexis as being-with (265).⁵⁰

But there was another major problem to confront regarding the relation between forms and particulars, namely, if Plato considered the essence of the ideas, the *eidos*, to be present in the particulars (261). Gadamer addresses this with a reference to the myth of the soul in the *Phaedrus*: “it is said that the beautiful stands out above all others, because it shines forth (*to ekphanestaton*). Thus, the beautiful is conceptualized in Platonic terms as something to whose essence it belongs to appear.” Here Gadamer remembers that, before Plato, the Pythagoreans had already used the word *mimesis* to describe a similar kind of relationship; later, Aristotle took this as a basis to argue that, when addressing the relation between forms and particulars, all Plato had done was to replace the Pythagorean *mimesis* with the word *methexis*, there being no change in meaning. Another interesting translation problem arises here. According to Gadamer, “imitation” is not a completely accurate translation of *mimesis*, which means “re-presentation,” which is still not the same as participating or sharing:

In contrast to this, “methexis” is a wholly formal relationship of participation, based on mutuality. “Mimesis” always points in the direction of that which one approaches, or towards which one is oriented, when one represents something. “Methexis,” however, as the Greek *meta* already signifies, implies that one thing is there together with something

⁵⁰ *Eidos* is the term used by Plato for the abstract Forms or ideas (Blackburn).

else. Participation, *metalambanein*, completes itself [*erfüllt sich*] only in genuine being-together and belonging-together, *metechein*. (262)

To participate or share in something presupposes the presence of something. In spite of Sherman's previously quoted assertion that "by his middle period Plato understands such participation to be analogical in nature," in the use of *methexis* proposed here, this presence is not allegorical but actual, insofar as the body feels it and reacts to it. It is a presence in the sense Gumbrecht uses it to define 'production of presence' as a purely embodied concept:

The word "presence" does not refer (at least does not mainly refer) to a temporal but to a spatial relationship to the world and its objects. . . . "Production," then, is used according to the meaning of its etymological root (i.e., Latin *producere*) that refers to the act of "bringing forth" an object in space. . . . Therefore, "production of presence" points to all kinds of events and processes in which the impact that "present" objects have on human bodies is being initiated or intensified. (xiii)

The argument of this thesis is that auditory perception is one of such processes where this impact is initiated or intensified, on the one hand, and, on the other, it goes beyond production of presence by making the receiver feel that he or she is sharing in such a process or event. This is pure *methexis*. Whereas Philosophy and Religion have delved into the participation of what is or comes into being with God, or Wisdom, or Knowledge, or the primary Cause, or the ideal Forms, the purpose here is to conduct an inquiry into the *methexis* of human beings with their own creative activities, with the act of being alive manifested in a series of actions and events that are grouped under the term "cultural production." This *methexis* does of necessity occur given that its products are something other than human beings or mere static things: they contain an inherent dynamism that comes from the fact that an embodied mind engendered them. In the case

of literature, the auditory system is the privileged means of perception, cognition and processing that makes methexis possible. Literary cultural production has traditionally been studied as a visually centered activity revolving around “written culture” as distinct from “oral culture” that was long neglected as a field of study. The increasing attention led to a discrete approach to orality which may have been necessary in the beginning, but has now turned into an obstacle to the study of literary cultural production. The conception of literature as a mimetic endeavor has also cast a shadow on the importance of its methexic nature. One more reason to shift the focus to auditory perception in order to better understand methexis. The survey of sound generation and perception in the previous chapter was necessary in order to pinpoint the ways in which they can influence cultural production. Now that there is a framework for the use of methexis as a particular form of participation, it is possible to explore some of the neurocognitive features of auditory perception that make possible the embodied methexis of humans in cultural production.

The Text and the Brain

In order to look for the bodily manifestations of methexis, it is necessary to consider the major stages that would encompass the process of literary cultural production and the neurocognitive interactions that may play a part in them. It would seem that everything starts with an author writing a text, either in a creative setting or otherwise. But an author does not simply sit and starts to write in a vacuum. There is always a previous complex experience that provides the raw materials necessary for the act of writing, which may include, amongst others, past experience, formal education, other types of training, practice, and different introspective creative processes. And then there is a voice. Not an actual, physically measureable voice, but an inner voice. It is that voice that speaks inside one’s mind when one is thinking, that reads when

one engages in silent reading, and that dictates when one is writing.⁵¹ After the text is written, comes the satisfaction of achieving a purpose, the pleasure of having others read one's work, or the disappointment generated by rejection or criticism. Either satisfaction or disappointment, or the many other possible emotional reactions one may experience, can become the force that propels one into writing again. Similarly, for a reader there is a series of expectations about reading a text. The reactions to the text can fall anywhere within the spectrum between complete obsession and radical rejection. The effect of a "page-turner" is precisely that, an inability to put the book down without enormous effort, because the reader is completely captivated by the text, anticipating the climactic moment of denouement. After such a pleasurable experience, readers may very well become die-hard fans of the author, and even camp all night outside a bookstore to get their hands on the first edition of the next book. And all throughout this cycle there are different perceptual and cognitive mechanisms at play.

Whether writing or reading, perception occurs at all stages of textual production and consumption. Although traditionally reading and writing are conceptualized as predominantly visual activities, the present argument is that they are intrinsically multimodal, and that auditory perception has the predominant role in both activities. Reading and writing, even in the digital

⁵¹ Cf. Jean-Luc Nancy's *Listening*: "Lacan calls the voice 'the alterity of what is said:' what, in the saying, is other than what is said, in a sense the non-said or silence, but still the saying itself, and even that telling silence [*silence disant*] like the space in which 'I hear myself' when I grasp significations, when I hear them coming from my thoughts (which is the same thing). I can hear them, in fact, only if I listen to them resound 'in me.'" Later on he adds: "But 'pure resonance' (as Bernard Baas calls it) is still a sonority – . . . a 'sonorous materiality, vibration that animates the auditory apparatus as much as the phonatory apparatus, or rather: that seizes all somatic locations where the phenomenal voice resonates (rhythmic pulsation, muscular contraction or relaxation, respiratory amplification, epidermal shiver. . . or everything we used to call, more or less confusedly, the manifestations of the 'speaking body [*corps parlant*]'") (28-9).

age, engage vision, hearing and touch, and may involve gustatory and olfactory sensations.⁵² In fact, the senses also play an anticipatory role in both cases, based on previous experience or lack thereof. Cognitive mechanisms also function in anticipation and during one's engagement with a text, as well as after the interaction with it is over. Whether it is planning the outline of the new book an author is about to write, or it is a reader browsing a bookshelf looking for something appealing to read, the text is already in the person's mind. Finally, there is the experience of the various somatic manifestations of reward: a tingling of curiosity or anticipation, the excitement of a gripping story, the pain of a sad ending, or the satisfaction of finishing the last revision of one's first novel. There are specific processes corresponding to the perceptive, cognitive and reward mechanisms that generate the wide range of interactions just mentioned. Some of them are especially adequate to illustrate the ways in which methexis is realized via brain function, and how they may influence cultural production. Understanding some of these processes will help to illustrate how, even in centuries past, before the advent of modern science, cultural products have made present human intuitions about the way cultural production works: through methexis made possible by the human brain's perception, cognition and reward systems.

Rewarding Experiences

Readers have long been acquainted with the pleasure of the unexpected: humor, mystery, poetic justice, the hero's journey, David's impossible victory over Goliath . . . whatever plot twists or common-place endings may exist for a story, they probably have already been exploited *ad nauseam* for the sake of profit in the ever-expanding world of the bestseller. The same can be

⁵² Think about the act of licking one's fingers in order to turn a stubbornly attached page, or the particular smell of a book that has spent too long on the shelf without being opened.

said of all forms of commercial cultural production: there is a tendency to take any successful model to its ultimate consequences, until consumers become numb to its effects, to then move on to the next model. Radio stations, for instance, play a song repeatedly until it becomes a hit, and then even more regularly, but with slightly decreasing frequency as the audience begins to lose interest. There lies the focus of this section. What happens that makes one lose interest, and sometimes even feel aversion towards that song one had been constantly playing just a couple of weeks ago? Why do readers not experience the exact same thrill after reading a wonderful spy novel for the second or third time? The cause of such reactions lies in the depths of the brain, in the reward systems, which modulate some of the most basic vital functions and assign value to innumerable human experiences. This is not an attempt to advance a scientifically deterministic view of human cultural production, nor an intervention into any of the various debates about the existence of free will, or lack thereof, when it comes to what people like or dislike. The goal here is to show how the processes that underlie the human experience are participative, methexic, in nature. Methexis lies at the core of cultural production because there are brain processes that make people feel they are sharing in said production at different levels. Perhaps the most basic of these levels is the continuum between pleasure and pain, mediated by brain reward systems.

As was the case with auditory perception and processing, current knowledge about the workings of brain reward systems is far from complete. Still, the insights gained by decades of research show some features that can help to understand how the brain rewards and incentivizes cultural production, and to hypothesize why it does so. The main function of reward is to mediate behavior, learning, affect and decision making: “Rewards are the most crucial objects for life. Their function is to make us eat, drink, and mate. Species with brains that allow them to get

better rewards will win in evolution” (Schultz 853).⁵³ Theories about reward look at different types of behavior and the kinds of value the brain may assign to them in order to predict future actions and results (854). Although the clearest connection between the cultural production of written texts and reward mechanisms would seem to be in the area of learning, other brain processes mentioned below make it possible to see connections in the areas of behavior, emotion and decision making. This is important because cultural products, and specifically literature, are both the precursors and the results of a combination of all these areas and of the ability of the brain to keep actualizing human interactions with the world that surrounds them. Schultz proposes these main functions of reward: “learning, approach behavior and decision making, and pleasure” (854). Pavlov’s dog has become an almost heuristic device for learning as a reward function. It represents the most basic form of classical conditioning, occurring without the need for an individual’s actions. More sophisticated kinds of learning need the active participation of the subject. This is known as operant learning.⁵⁴ Both kinds of learning can occur simultaneously. Schultz calls Pavlovian and operant learning “the building blocks of behavioral reactions to rewards.” It is operant conditioning, however, that best exemplifies reward functions as positive reinforcers (855).⁵⁵ This type of learning is what keeps one coming “back for more,” and thus strengthens the skills that allow access to whatever one is seeking, be it stimuli, things, actions, events, and even products of one’s imagination. Learning also comes from attraction that makes people want to get close to a reward and work to obtain it. This is called approach

⁵³ This section is largely based on Schultz, “Neuronal Reward and Decision Signals,” supplemented in relevant sections with other works.

⁵⁴ For a more detailed treatment of operant learning see Schultz, pp. 864-5.

⁵⁵ “A positive reinforcer is a stimulus that increases the frequency or likelihood of a response when its presentation is made contingent upon that response. Giving a child candy for cleaning his or her room is an example of a positive reinforcer” (Doorey).

behavior, and it implies not only getting close to the reward, but also preparing to get it and consuming it, motivating one to make decisions.⁵⁶ Finally, rewards can lead to “positive emotions,” the most common of which is pleasure. Schultz observes that “pleasure constitutes a transient response that may lead to the longer lasting state of happiness.” It is not, however, the same as happiness, because pleasure can have many different intensities and can manifest itself in many different ways, as varied as human experience.

Reward is primarily geared at supporting the two essential functions for human survival: nourishment and procreation. These two functions are the reason behind the evolution of brain reward systems and they are called primary rewards. They are homeostatic⁵⁷ and reproductive: “To ensure gene propagation, the primary rewards mediate the survival of the individual gene carrier and her reproduction” (857). While food and drink support homeostasis, sexual drive is both dependent on hormonal activity and on the experience of pleasure. This does not mean, however, that only those things directly involved in primary functions are important. There are secondary functions that support them to go beyond identifying potential sources of reward and working to procure them. These other rewards indirectly support primary ones, and they can be tangible or affective, sensory or intellectual. From everyday objects to artworks, from images to sounds, smells and textures, the senses help to identify rewards, but more than that is needed to

⁵⁶ For more on approach behavior and choice see Schultz, pp. 887-90.

⁵⁷ Homeostasis is “the maintenance of a dynamically stable state within a system by means of internal regulatory processes that tend to counteract any disturbance of the stability by external forces or influences; the state of stability so maintained; spec. in *Physiol.*, the maintenance of relatively constant conditions in the body (e.g. as regards blood temperature) by physiological processes that act to counter any departure from the normal” (*OED*). The body needs to regulate the amount of specific substances and their derivatives that make possible our optimal physiologic functioning, given the highly fine-tuned nature of body chemistry (Schultz 859). Sensations such as hunger and thirst are examples of ways in which reward systems support this balance by motivating us to seek the necessary nourishment to maintain our bodies.

discover “their motivating or pleasing properties” (858). The sensory component is the first of three types that maximize the possibilities of obtaining the best rewards with the least effort. The other two are geared at catching the eye and motivating action (856). Salience is the component that helps to attract attention, and it can be physical, motivational, or related to novelty and surprise. Motivation, on the other hand, depends on value, which depends on subjective preferences. Some of these components reflect external reality, while others come from internal reactions and processes of assessment. Value is perhaps the most difficult component to study, because it is subjective and does not necessarily correspond to measurable physical qualities.⁵⁸ It also interacts with learning and memory of external events, and with the novelty and surprise that comes from the difference between previous and current experiences (857).

All these components share common neural substrates responsible for reward processing, which, despite the ongoing research, are still only partially understood. One aspect where there is agreement among the theories thus far advanced on the question of reward, is the important role of dopamine. Recent research has shed light on the complexity of the brain systems that regulate dopamine and their different functions, as well as the brain regions that may be involved.⁵⁹ Although a detailed account of this system falls outside of the scope of this thesis, there are relevant features that merit, however briefly, a comment. One important feature is the existence of two distinct networks related to attentional control: dorsal and ventral (Brunia et al. 866). While the dorsal network processes actual stimuli, the ventral is concerned with anticipation of

⁵⁸ For a detailed treatment of reward value see Schultz, pp. 890-912.

⁵⁹ Aside from Brunia et al, for recent knowledge on specific types of dopamine and their reward function see Berridge and Kringelbach, pp. 469-72. A more scientific explanation of specific dopamine roles, including phasic dopamine responses in learning and prediction can be found in Schultz, pp. 869-87. For specific studies involving auditory perception, see Kraus and White-Schwoch, Brodal et al., Asutay and Västfjäll, and Salimpoor et al.

future stimuli. The importance of these networks lies in what some theories call dopaminergic teaching signals, which are relative to the outcome of an action as compared to previous expectation, and are handled depending on whether they are “motivationally versus perceptually relevant” (867). This could help explain, for example, the way the body influences choice: “when a person imagines the consequences of an action he or she might make, a ‘gut feeling’ is generated that helps guide decision making” (866). It may also inform future research into the way humans respond to manifestations of cultural production that focus precisely on unexpected outcomes or unmet expectations, like humor, mystery, and drama, as well as musical and plastic works that manipulate or reject expected normative frameworks.

At this point it is possible to see the connection among reward systems and auditory perception and processing in the context of cultural production. There is a large portion of cultural production that relies on the interplay between expectations and outcomes. That is the reason why it has been necessary to propose a concept like auditory expectation.⁶⁰ Prior auditory experiences are the basis for what one expects to hear. Instrumental music exemplifies this in its most pure form because there are no additional factors other than the sound; even the most basic compositions have structures based on the creation of tension and resolution, most notably in western tonal harmonic works based on chord progressions. But other cultural products with an auditory dimension also create and are affected by auditory expectation, with an enhanced complexity that comes from the presence of other layers of meaning that are also subject to anticipation and outcome prediction. When the role of reward systems in turning interaction with a cultural product into a pleasurable experience is factored in, one is entering into the embodied, methexic area of cultural production. The experience of pleasure leads to desire. Having had this

⁶⁰ For the definition of auditory expectation see p. 12.

experience, one will seek to replicate it or to gain access to those things that will bring gratification; as a result, one will form an expectation: “Desire requires a prediction, or at least a representation, of reward and constitutes an active process that is intentional” (Schultz 855). Desire leads to certain kinds of behavior depending on what reward one is trying to obtain or achieve. While pleasure is not an action, but something that results from the expectation or achievement of a reward, desire propels the individual into action with the goal of getting such a reward. Pleasure and desire are closely interconnected, and they are the two most important results of rewards. They are also important for behavior regulation. Given that most research on reward systems comes from the study of addiction, pleasure and desire are usually referred to with terms devised for that field: liking and wanting, respectively. For instance, Berridge and Kringelbach define reward systems as the sum of liking, wanting, and learning (458). But current research has expanded the concept of reward beyond this formula, for it has come to include a wider range of areas that are more subjective and cannot be measured directly in experiments, like assigned value and emotional responses. It is precisely in this gray area that cultural production intersects with brain reward systems, via methexis. Participation is made possible by the expectation of reward, but will also inform anticipation of future rewards.

Literature as a cultural product may fall into more than one reward category. According to Schultz, the “nonphysical, nonmaterial rewards, such as novelty, gambling, jokes, suspense, poems, or relaxation, are attractive but less tangible than primary rewards” (858). It is evident that more than one of these rewards is present in various literary genres. Schultz also talks about activities that generate pleasure independently of the nonprimary function of supporting homeostatic or reproductive needs. He calls them “intrinsic rewards,” and among his examples he includes reading. A look at today’s best-seller phenomenon proves the high reward value

accorded to literature. It would be otherwise impossible to understand the willingness of some hardcore readers to camp outside a bookstore through the night in order to get their hands on the next installment of *Harry Potter*, or to get their copy autographed by the author, or the exorbitant amounts some collectors will pay for a first edition or an autograph manuscript. Some authors become celebrities, and adoring fans will go to incredible lengths to get a glimpse of them at a public appearance or to find out details of their personal lives. Although many of these phenomena are mediated by sophisticated, relentless media campaigns, no amount of commercial advertisement would convince reasonable individuals to behave in such a manner if they did not enjoy it. The same is true of the numerous subcultures arising from the notoriety of a popular book or series, or around a charismatic writer, which expand the rewarding experience beyond the text and its material manifestations into a wider spectrum of objects, activities and even lifestyles. Authors also derive all kinds of rewards from their work. Fame and fortune can be powerful motivators in the drive to continue writing. All these examples have one underlying common principle: *methexis*. They are instances of the way in which individuals share in cultural production, whether as producers or consumers, motivated by the anticipation and achievement of pleasure that manifests itself in a variety of ways.

There are, however, other kinds of motivations for action that can also have an impact on the way people participate in cultural production and engage with cultural products. Pleasure and reward have a negative counterpart in fear, pain and punishment, and the need to avoid them and other potentially negative events and emotions is linked to negative reinforcement and learning (Schultz 855). Just as feeding and mating are essential for survival, it is crucial to have appropriate ways to detect and avoid danger. One of the primordial roles of the auditory system is helping to detect, classify and respond to threats in the immediate environment. The

predominant paradigm used to study this function is known as fear conditioning.⁶¹ Through learning and experience the brain develops appropriate responses to relevant auditory stimuli that might signal the presence of danger (Armony and LeDoux 2). This means that there is an individual aspect that depends on specific temporal and spatial circumstances (1). This kind of learning is extremely efficient; it only needs a couple of occurrences for one to develop a conditioned response to specific sounds that characterize a perceived threat. There are many measurable physical signs of this type of reaction: “muscle tension, pupil dilation, changes in heart rate, blood pressure, respiration and, most often, electrodermal or skin conductance responses, which are mediated by the sympathetic nervous system” (2).⁶² Fear conditioning is common across all mammals, and its main neural substrate, the amygdala, seems to have remained structurally and functionally stable throughout evolution (3). The amygdala responds to affective value and it does so more strongly when faced with the first occurrence as opposed to repetitive stimuli (7). Recent research has shown it plays an integrative function across modalities, and especially with auditory and visual stimuli. The speed with which this system works is made possible by neural plasticity, which will be discussed below.

⁶¹ Studies that follow this paradigm use conditioned and unconditioned stimuli simultaneously in order to measure the unconditioned initial reaction and subsequent learning by association: “through conditioning, new stimuli that become warning signals for impending threat can gain access to evolutionary shaped defensive responses, allowing the individual to rapidly respond to, or even avoid, the dangerous situation” (Armony and LeDoux 2).

⁶² “The sympathetic nervous system normally functions to produce localized adjustments (such as sweating as a response to an increase in temperature) and reflex adjustments of the cardiovascular system. Under conditions of stress, however the entire sympathetic nervous system is activated, producing an immediate, widespread response called the fight-or-flight response. This response is characterized by the release of large quantities of epinephrine from the adrenal gland, an increase in heart rate, an increase in cardiac output, skeletal muscle vasodilation, cutaneous and gastrointestinal vasoconstriction, pupillary dilation, bronchial dilation, and piloerection. The overall effect is to prepare the individual for imminent danger” (Rogers 76).

Another important aspect is the way the brain anticipates pain and uses bodily reactions as alerts. Brunia et al., as previously mentioned, identify two attentional control networks, dorsal and ventral (866). While the dorsal network “implements top-down, goal-driven control of perceptual resources,” the ventral network “mediates the involuntary capture of attention by intense, novel, motivationally relevant or otherwise salient stimuli” (862). One of the brain structures of this network, the right anterior insula, is involved in “awareness of visceral sensations.” This would be the basis for that “gut feeling” discussed above, which is crucial for anticipation of unpleasant events and immediate decision making (866).⁶³ The right anterior insula has also been connected to attention and task control. This is important because it points to an embodied experience of expectation fulfillment where negative results also lead to bodily reactions, but instead of the pleasurable release of dopamine, there is, at the very least, discomfort. Those who have had the experience of falling prey to a page-turner know all too well the rollercoaster ride that the body experiences as the process of reading progresses through an emotionally-charged plot. Such experiences are akin to interactions with every other form of cultural product: music, cinema, sculpture, performance, and even intellectual activities like attending a lecture or writing an academic article. There are a variety of common-place phrases to describe them, in addition to gut feeling, like butterflies in one’s stomach, the hairs on one’s neck standing on end, feeling shivers down the spine, lumps in one’s throat, or goosebumps, just

⁶³ See p. 60. Brunia et al. see this as representative of Bechara and Damasio’s somatic marker hypothesis, a game theory approach that posits a learning relation between emotions and somatic reactions, where experience increases the anticipation of outcomes based on such reactions. For instance, if a certain olfactory stimulus produces nausea in a person, after a number of similar events take place, over time, the possibility of a future similar scenario will create an anticipation of nausea as a somatic reaction, and this will impact the subject’s decision making regarding that particular stimulus, especially in situations where there is little time for a cognitive evaluation of the situation or the decision-making process would be too complex. For a full account of this hypothesis see Bechara and Damasio.

to name a few. These are all embodied forms of methexis made possible by brain reward systems. Anticipation not only of pleasure but also of pain or discomfort lies at the core of human affective reactions to cultural products. One could even venture to affirm that, in the case of literature, the classification of genres usually rests on premises of fulfillment of expectations, or the lack thereof: happy endings, the excitement of unpredictable denouements, sad stories, miscarriages of justice, punishment of evil, saving the hero or allowing his needless demise, or Elizabeth finally saying yes to Mr. Darcy after months of misunderstandings.

To establish a link between the brain reward system and auditory perception it is necessary to look at another cultural product where the ear plays a more prominent role: music. This is in part necessary due to the lack of research geared at studying auditory perception in textual contexts, but it is also convenient because it highlights the main features of auditory reward without having to introduce the text as an additional factor subject to brain processing. Another advantage that will prove valuable later on in this thesis is that music and literature, from Antiquity to well after the Middle Ages, used to be a lot closer to each other than they are now. The artificial separation that is now assumed to be the norm was not always true throughout recorded history. Contrary to what happens with literature, the last two decades have seen a considerable increase in research about music, auditory perception and the brain. Recent studies have shown that within a complex auditory environment, where several auditory stimuli compete for attention, those associated to high rewards will receive more attention, especially if such rewards are believed to depend on the perceiver's performance of a determined task (Asutay and Västfjäll 1). This is an example of the motivational salience discussed above. Attentional selection is also connected to the orienting function of auditory perception, and it alerts the brain to the presence of relevant stimuli in the surrounding environment (2). In the case of music, this

spatial dimension interacts with the temporal dimension of developing sound patterns and with the predictive function of the reward system (Salimpoor et al. 86). Musical pleasure, according to recent studies, may be the result of “interactions between the sensory, cognitive, and emotional systems with reinforcement circuits.” Following Schultz and Berridge, Salimpoor et al. state that midbrain dopamine neurons are responsible for signaling possible rewards and fine-tuning future error predictions by encoding how much an actual outcome corresponds to an anticipated result (86-7). The interaction of dopamine networks with the opioid system is thought to help regulate affective responses to music, as well as predictive and learning functions (89). Listening to unfolding sound patterns over time enhances the pleasure of listening due to a “continuous generation of expectations and predictions.” These may derive from actual knowledge of the work of music in question or of the particular rules governing specific styles. Such knowledge need not necessarily come from formal training; it can be a result of cultural practices or statistical learning.⁶⁴ Such regularities are much more evident in music than in written texts, where, besides poetry, they are manifested in more nuanced stylistic and prosodic characteristics, many of which only become apparent through oral performance. Still, in both music and literature, repetition and regularity play a role in learning, and the violation of expectations of regularity, in turn, plays a role in the pleasure these cultural products afford to the listener. Dopamine, however, is not the only reason why listening to music is pleasurable. There is a cognitive component mediated by the cortical areas responsible for auditory, temporal and emotional processing (Salimpoor et al. 88-9).

⁶⁴ Statistical learning is a concept that originated in psychological studies of language acquisition and is now applied to a wider range of sensory perception studies: “Statistical learning is computational in nature, and reflects implicit rather than explicit learning. It relies on the ability to automatically pick up and learn from the statistical regularities that exist in the stream of sensory information we process. . .” (Kuhl).

Patel and Iversen have argued that “music perception is a form of ‘predictive listening’ in which listeners have expectations about upcoming events and the confirmation or denial of these expectations arouses emotion” (5). In order to support this, they study musical beat perception in the context of what they call “action simulation for auditory prediction,” a hypothesis that establishes a link between the motor areas of the cerebral cortex and the auditory system (1). They believe that the predictive nature of beat perception rests on this connection via the dorsal pathway. They also observe that there is accumulating evidence that points to rhythm as essential for brain organization. Their study is valuable for the present thesis for two reasons. First, rhythm is one of the main features common to music and language. Second, it may be one of the most ancient neural mechanisms that developed in human evolution. In fact, recent anthropological research has found strong evidence that human linguistic and musical abilities, and maybe even human intelligence, are the result of anatomical changes caused by the rise of bipedalism (Mithen 146). Walking on two feet led to drastic changes not only in human bones and muscles, but also in the nervous system, chest cavity and vocal tract (147). It also made rhythm necessary, therefore leading to “the evolution of mental mechanisms to maintain the rhythmic coordination of muscle groups” (150). This perspective adds credence to a link between the motor and auditory systems, and it is directly related to the topic of reward and auditory perception. The involvement of motor systems has important consequences for the types of rewards that can come from listening to rhythmically structured sounds. The natural human tendency to move to the rhythm of music, many times involuntarily, is just one of the many ways in which this link is realized in embodied experience. From foot tapping all the way to professional dance, rhythmic movement is one of the quintessential pleasurable activities for humans. But even without music, many physical activities integrate rhythm as a way of

organizing tasks and maximizing efficiency. This ability was developed by our earliest bipedal ancestors in their first manual labors (152). Walking, running, swimming, hammering, and even sweeping the floor, are all examples of the natural tendency to fall into rhythmic patterns during daily physical activities. In fact, humans purposely use rhythmic music to accompany many of these activities; for example, exercise facilities and other commercial fitness providers offer dance and music based classes, and maintain specific types of music continuously playing in the background to enhance the experience of their clientele. At the very end of the spectrum, there are the dance club and live concert experiences, where moving to the rhythm is less about organization and more about expression of affect. Very recently, Brodal et al. found evidence of this in a reduction of functional connectivity but a stronger activation of reward systems when listening to rhythmic music (6). This means that the experience of the listener is less constrained in terms of dopaminergic reward and more rewarding affectively due to this reduced control (1). Returning to the link with bipedalism, it is also supported by recent research that shows how non-bipedal primates do not exhibit the same ability as humans to synchronize to rhythmic stimuli; on the other hand, non-primate animals with vocal abilities, like parrots and Asian elephants, have demonstrated an ability to synchronize to musical beats, pointing to a link between vocal learning and beat perception (Patel and Iversen 10).

The previous discussion about rhythm illustrates the complexity and the wide range of possible rewards that auditory perception offers, thanks in great part to the same predictive function that enables auditory expectation. Zald and Zatorre observe: “‘Prediction confirmation’ is rewarding to the brain” (Patel and Iversen 5). Brain reward systems help evince the predictive nature of perception in general.⁶⁵ Given that beat perception, and music perception in general,

⁶⁵ See Sloos and McKeown for more on top-down processing and anticipation of stimuli.

are predictive, they fall within this assertion. Brain rewards also shed light on human activities that are not indispensable for the immediate survival of the human species, yet provide support for higher-order functions favored by evolution. In the case of cultural products that involve the ear, and in this case literature, this opens the door to countless experiences that integrate sound into an intricate landscape that also includes vision, touch, movement, cognition, affect and creativity. The recent findings mentioned above also point to a complex, embodied auditory experience facilitated by the interaction of brain reward systems with sensory and cognitive processes, where individual experience will provide the raw material for auditory expectation by continuously actualizing the interplay between predictions and outcomes. Such actualization also has a neural basis manifested in the ability of the brain to make temporary or permanent structural adjustments based on everyday experiences and their outcomes. These complex interactions lead to continuous changes in responses to reward, which constitute an embodied manifestation of methexis insofar as they make the subject feel actively involved in said interactions not only at an abstract level but also at a somatic, material level. In order to understand how this occurs, it is necessary to look at the brain mechanisms that allow such adaptability: it is necessary to get acquainted with neural plasticity.

Life is Flux

Heraclitus' famous words were not predicated on anything that would now be called scientific; they were based on the Presocratics' view of change as the guiding principle of existence, not only for the outside environment but also for the human body.⁶⁶ Yet, from

⁶⁶ Heraclitus of Ephesus (6th century BC), was a Presocratic philosopher. Fragments of his work survive quoted in the work of important philosophers such as Plato and Aristotle. He is mostly known for his doctrine of universal flux (Graham).

Antiquity to the present, one of the goals of natural philosophy and medicine has been to reveal the inherent stability of the human body, especially the brain, as material manifestations of metaphysical eternal truths. These two seemingly opposite approaches have intersected throughout history, and, as will become apparent in the following pages, both have proven partially correct. For the purposes of this thesis, the analysis will focus on change as present in the most fundamental brain functions. Adaptability is a key component of life experience and, therefore, of cultural production. It may manifest as a skill that allows one to thrive in a changing environment, or as circumstantial conditions that force one to seek transformation and variety. The fact that people eventually get bored of things they used to enjoy makes them look for variations of them, or for entirely new objects or experiences. That is why this chapter started by affirming that participation is the engine of cultural production. If people derived the same level of reward or aversion from the same object or experience, there would be little incentive for them to improve and diversify their cultural products. But just as the desire for gratification that comes from cultural products is a byproduct of brain mechanisms primarily geared at guaranteeing the survival of a species, so is the ability to adapt to change. Methexis is not only comprised of a search for rewards. It is also manifested in the experience of constant transformation and the thirst for innovation, which are also byproducts of brain mechanisms that evolved primarily to allow human survival in a changing environment. These mechanisms reveal the participative nature of brain processes and they are collectively known as neural plasticity (Irvine 4). As it was the case in reward systems, not all changes are beneficial and positive, and plastic changes can also be maladaptive (Hickok 52; Irvine 35).⁶⁷ The study of plasticity in the

⁶⁷ This section is based primarily on Irvine, and Weinberger, complemented when appropriate by other sources.

human brain has met similar challenges as other areas of neurocognitive research. Current theories rely greatly on the findings of animal studies due to the limitations on the kinds of methods that can be used in humans, and on the resolution of neuroimaging technologies (Hickok 251).⁶⁸ The study of plasticity also relies heavily on research into modalities other than hearing, like vision and somatosensory systems. All of these circumstances add uncertainty to the interpretation of recent findings. However, they are still useful for the study of cultural production because they consistently point to an embodied experience characterized by adaptability and the constant drive to improve and diversify human interactions with the surrounding environment.

In the case of the auditory pathway, plasticity is even more of a gray area than the reward system. The traditional view of neural plasticity, which has come under extensive scrutiny in the last decades, held that it was limited to critical developmental periods of the human lifespan, during childhood and adolescence, and that it did not occur in the adult brain (Irvine 3; Weinberger 1).⁶⁹ In the case of auditory perception, this led to the long-standing belief that the primary auditory cortical areas of the adult brain were unmodifiable. However, in the last couple of decades evidence to the contrary has accumulated, and adult plasticity is currently a burgeoning research field. Plasticity refers to a series of processes connected to learning and experience that occur in different places in the brain; they may be temporary or may lead to long term or even permanent structural and functional changes in neurons, which alter an individual's behavior (Herholz and Zatorre 486). Such alterations in neurons happen “in response to changes

⁶⁸ See p. 27, note 26.

⁶⁹ The rationale behind this idea is that in order to rely on sensory input there needs to be stability in its underlying neural substrates, leading to what Irvine calls the “stability/plasticity dilemma” (3-4). For more on developmental plasticity see West-Eberhard.

in the nature or significance of their input” (Irvine 4). It is key to emphasize that there are other types of neural changes that do not constitute plasticity, like those produced by lesions that alter sensory inputs or by variations in the state of an organism. Another concern is how to determine the location of plastic changes, either in the auditory system or in areas of the brain considered to carry out higher order processes of attention and cognition. This is due in part to the other traditional view that has been challenged recently; namely, that the auditory cortex only analyzes acoustic stimuli but it does not perform any cognitive functions (Weinberger 1-2).

It is important to elaborate on this, because it establishes a link with the ancient and medieval theories of sound generation and perception that provide the context for the specific case study that will be used to support this thesis regarding participation and cultural production. Weinberger sees these traditional views as “the logical product of the long-established assumption that sensory processes and higher cognitive processes are separable within the cerebral cortex. Indeed, they are assumed to be ‘in series.’ In other words, the products of sensory analysis are supposed to be ‘passed on’ to ‘higher’ cortical areas, where cognition takes place” (2). The traditional conception of an inalterable adult brain, as will be shown later on, spans all the way back to ancient medical theories that were still very much alive during the Middle Ages. Those theories not only conceived the brain as a stable organ that could only be altered by lesion or illness, but also proposed sensory processing and cognition as separate and sequential, and the brain as neatly divided into discrete areas according to supposed stages of processing. What is most astonishing is that remnants of such views were still influential in the 20th century, in spite of considerable advances in the study of the human brain. In light of mounting evidence against an unchangeable adult brain with discrete parts and sequential processes, researchers have

proposed various paradigms to paint a more accurate picture of brain structures, as well as the ways in which they can adapt either temporarily or permanently to different types of change.

The discovery of developmental plasticity during the second half of the twentieth century brought into focus the importance of perception for the development of the human brain, but it took several decades more for researchers to study learning and memory formation as indicative of continuing plasticity in the adult brain (Irvine 3). The evidence that led to this switch in paradigms came from studies that found changes in the topography of primary cortical areas in response to the interruption of input from somatosensory receptors caused by lesion. Similar findings were soon made in the visual and auditory primary cortices. Such changes are examples of injury-induced plasticity. As pointed out earlier, the auditory pathway that starts in the cochlea is arranged tonotopically.⁷⁰ This organization is maintained in the primary auditory cortex, forming a frequency map (Irvine 5). Recent studies have found contralateral reorganization of this map in response to mechanical lesions in the cochlea.⁷¹ Perhaps the most common example of such changes is the increased aural acuity of individuals who suffer visual impairments, most dramatically manifested in an increased ability to localize sounds in the surrounding space (Elbert et al. 329).⁷² The earliest sources of evidence of adult plasticity, however, were the behavioral conditioning studies of auditory perception and processing. Unfortunately, they were largely ignored until evidence of lesion-induced plasticity gained attention, in part because they lacked the specific control methods to ascertain the kind of change that they represented. As discussed in the context of brain reward systems, the two most important types of learning are

⁷⁰ See pp. 24 and 28.

⁷¹ For a definition of contralaterality see note 29. For injury-induced plasticity see Irvine, pp. 5-9.

⁷² Elbert et al. also reference several studies of crossmodal plasticity where the visual cortex of blind subjects assumes the processing of auditory and tactile stimuli.

classical conditioning and instrumental or operant learning.⁷³ The effects of either kind of training are not only the procurement or prediction of reward or aversion; they can also lead to temporary or permanent plastic changes, depending on the tasks and learning methods employed.⁷⁴ In opposition to their use in the study of reward systems, both types of learning are considered to involve plasticity when the changes in behavior validate neurophysiological measurements.⁷⁵ In the first auditory classical conditioning studies, subjects were exposed to contrasting tones that generate reward or aversion, referred to respectively as conditioned stimulus (CS) and unconditioned stimulus (UCS) (Irvine 9). The results consistently led to an increased cluster response to the CS frequency and a decreased response to the UCS.⁷⁶ This is known as receptive field plasticity, and it occurs in the primary auditory cortex and in other parts of the auditory pathway (Asutay and Västfjäll 4). Later studies expanded to include other tasks and testing procedures, which showed that the occurrence of plasticity is linked to the specific requirements of each task, and that the occurrence of learning is not direct evidence of plasticity.

Another important difference is that plastic changes may or may not involve the formation of memory traces, or associative memory, which constitutes “the substrate of information storage” (Weinberger 3-4). The link between learning and memory is extremely

⁷³ See p. 57, and Weinberger, pp. 3-4.

⁷⁴ Regarding this topic, Irvine remarks: “All learning undoubtedly involves plasticity in some part of the CNS [Central Nervous System]. In many cases it is unclear, however, whether the neural changes underlying learning have taken place in the auditory system or in ‘higher order’ attentional or cognitive processing areas” (4). Even if the location of a plastic change is uncertain, for the purposes of formulating an embodied theory of cultural production this is still representative of the kind of brain mechanisms that enable methexis.

⁷⁵ Depending on the technology used, these may include electroencephalographic readings, evoked potentials, metabolic changes, oxygen concentration levels, etc. See Weinberger, p. 3 and Hickok, pp. 249-53.

⁷⁶ Cluster response is linked to the lack of individual neuron recordings on human conditioning studies (Weinberger 6-7).

important, because both have traditionally been considered as higher order cognitive process that would only happen *after* the perceptive processing is complete. Plasticity, however, is only a part of these processes, but it is not equal to them, as illustrated by another type of learning called perceptual learning, which is “the increased ability to discriminate stimuli within a trained dimension, usually due to increasingly difficult discrimination training” (4).⁷⁷ There is a tendency to conflate perceptual with all associative learning, but perceptual learning does not lead to the formation of memory traces, that is, one does not remember the process of training in detail, with the countless repetitions that lead to the mastery of a certain auditory skill. One gets better at performing a certain task, but one does not recall every trial or training session that it took to get there (5). This is the kind of auditory training that humans undergo in their early years of learning how to speak, read and write. It is also one of the main components of musical education, where there is evidence of cortical reorganization and increased user-dependent responses (Elbert et al. 329).⁷⁸ What is important is that there need not be a formal training program in order for plasticity to occur. Many learning experiences take place in informal contexts. While plasticity in learning may manifest itself in increased acuity, predictive behavior or conditioned reactions, it may also be revealed in the effect described at the beginning of this section: habituation. Initial studies on this phenomenon date from the 1950’s, and their findings showed that repetition of the same sound resulted in decreased responses in both evoked potentials and neural discharges. These plastic changes were mostly temporary and responses went back to normal levels in the presence of different sounds or after a period of silence.

⁷⁷ See also pp. 33-4 and note 36.

⁷⁸ These are responses related to specialized and prolonged training of specific musical skills or instruments. User-dependent responses in musicians are also present in the somatosensory cortex in response to long-term instrument practice.

Modern listeners who live in populated areas very often experience the effects of habituation from experiences like riding public transportation or walking on a busy commercial street, to sometimes extreme experiences like attending a live rock concert or being close to an explosion or some other abnormally loud sound. In the second case, an extreme auditory experience can lead from habituation to a conditioned response consistent with operant learning. Consequently, life experiences may involve more than one type of learning, they may result in the creation of memory traces, and also in temporary or long-term plasticity.

The same flexibility described when reviewing what is known about brain reward systems can also be evinced in neural plasticity. Recent research methods have expanded their criteria to include non-measurable, psychological aspects of plasticity through behavioral analysis in order to better account for this flexibility. A good example comes from the study of fear conditioning, where recent findings have revealed the complexities of the neural circuits involved in conditioning-induced plasticity.⁷⁹ The most familiar example of this type of plasticity presents in aversive classical conditioning, involving stress and defensive responses to sound stimuli interpreted as warning signals (Armony and LeDoux 2). This includes plastic changes to the human auditory cortex (18). A conditioned fear response can develop extremely fast; even after one occurrence “new stimuli that become warning signals for impending threat can gain access to evolutionary shaped defensive responses,” which may include measurable sympathetic nervous system responses.⁸⁰ In humans, stimuli can also be emotional and fear conditioning has been recently used to study maladaptive disorders like phobias and post-

⁷⁹ The most important pathway involves the hippocampus, amygdala and prefrontal cortex, and presents chemical reactions proven to affect neural synapses in the long term. For a detailed account of this process see Depperman et al., and Armony and LeDoux, pp. 2-15.

⁸⁰ See p. 63, note 61.

traumatic stress disorder (PTSD) (3). This emotional component is one of the most important areas where there is a connection between cultural production and methexis as manifested in neurocognitive processes. Extreme cases like PTSD also expand this connection to include auditory memory and emotional trauma, two fundamental components of literature throughout history. This is also the case with plasticity related to emotional vocalizations, which has been recently found in both animals and humans, and, for the latter, is a crucial component of communication, social interaction and cohesion. Both verbal and non-verbal vocalizations have been studied, but results have been difficult to interpret due to the wide range of emotions that compose the human experience and the added complexity of the crossmodal character of most emotional expressions, especially the integration of facial and vocal reactions.

The foregoing examples do not constitute a complete survey of all the forms of plasticity that show the participatory nature of perceptive brain processes. Nonetheless, they do illustrate some of the areas where the connection with familiar topics and aspects of cultural production is present. Emotional responses and conditioning-induced plasticity are particularly interesting because of their direct relation to everyday human experience as well as to the genres and technical implications of literary cultural production. Emotional reactions to verbal vocalizations bear particular importance in the area of oral cultural production and literature originated in oral contexts. Experience is also responsible for long-term changes achieved through learning and training, which may indirectly benefit the development of common abilities, as is the case of the enhancement of language processing due to musical training, an ability which strengthens “relationships between cognitive and perceptual abilities” (Strait et al. 27). Such changes are also related to the type of top-down fine-tuning discussed above regarding the dorsal network and its relation to the reward system and dopamine networks. Specific evidence from studies on the

dorsal pathway have found “evidence that white matter connectivity in this pathway is associated with the ability to learn new syntactic structures in the auditory domain” (Salimpoor et al. 88). This means the very building blocks of literary cultural production are constantly being remodeled via plastic changes produced by the complex interaction between experience and memory, and therefore, through methexis. Studies on music perception have shown similar connections which help to fine-tune auditory expectation through the storage of “auditory templates, which can then induce emotional arousal and feelings of pleasure” and support the learning of basic elements of sound organization (89). It is important to keep in mind that language and music have some of these elements in common, like rhythm, timbre and prosody, with various degrees of importance in accordance with different literary genres. For instance, rhythm is paramount in poetry, and part of the pleasure derived from poems rests on the interplay of predictions and outcomes present in its patterns; the other part has to do with the fact that beat perception aids memorization and its flexibility allows for individual interpretations of accent patterns, periodicity, and changes in speed (Patel and Iversen 3). Thus, the ability to adapt to experience and change has a direct influence in cultural production, not only because it supports learning and memory, but because it provides both the long and short-term flexibility that are indispensable for sharing in processes of creation and innovation.

Through the Looking Glass

The foregoing discussions about the reward system and neural plasticity offer a glimpse into brain mechanisms that allow participation in a vast spectrum of human activities, from the most basic for survival to the most abstract and creative. This does not constitute an attempt to constrain and reduce human cultural production to a set of biological realities. On the contrary, it

is but a door that opens into the complexity that underlies those activities and an invitation to explore the limits of the myriad issues yet to be resolved. The general nature of the two aforementioned brain mechanisms is one of such issues. These systems are so pervasive that, one could argue, they may potentially influence every conceivable human activity and therefore turn out to be too general to be considered unambiguously methexic. There is need for more specific examples of how a participatory brain mechanism might present. That is why the discussion must now turn to a relatively recent discovery that offers a more focused illustration of the embodied nature of methexis. Relatively recent refers to the past three decades, as opposed to the much longer span of time since the inception of studies related to the reward system and of neural plasticity. The discovery in question dates from 1988. The reason the date can be pointed out with such certainty is that it came as an unintended consequence of a research study focused on the motor neurons that control grasping movements in macaque monkeys (Hickok 9).⁸¹ The original intent was to find evidence of neurons in the monkey premotor cortex that mediated action selection by coding information connecting the size and shape of an object with the appropriate grip necessary to grab it (10). The group, led by Giacomo Rizzolatti, placed microelectrodes to measure a group of these motor neurons during several trials of specific tasks. The unintended discovery came when, during the intervals between trials, the microelectrodes, which were still connected, recorded activity in response to reaching and grasping movements that were not performed by the monkey but by a researcher as he was preparing the following

⁸¹ For a complete account of the study and its repercussions see Hickok, pp. 9-26. For a complete bibliography of studies published by Rizzolatti and other members of his team, both jointly and separately, see Ferrari and Rizzolatti. See also the bibliography in the Mirror Neuron page of the Department of Psychology at Macalester University at <https://www.macalester.edu/academics/psychology/whathap/UBNRP/mirrorneurons08/bibliography.html>.

trial (12). Out of a total of 184 neurons, 87 fired not only when the monkey was making the movements, but also in response to various visual stimuli, whereas 39 responded to observed actions. Such neural activity was known to happen in sensory neurons, but this was the first time it was recorded in motor neurons. The greater impact of this accidental discovery came from a subgroup of 12 neurons which not only showed this novel behavior, but also a “correspondence between the actions they preferred in observation and execution” (13). In subsequent years, this group of researchers reported their findings in several publications, where they proposed connections between these neurons and several important areas of neuroscientific study. In 1996, they referred to them with the name that would make them famous to the point of becoming a topic even in mainstream media: Mirror Neurons (15).

Over the following decade, members of the original research team, together with other scientists, continued to expand their original research, aiming to prove that there was indeed a mirror neuron system (MNS) present not only in macaque monkeys but also in the human brain. The initial report, published in 1992, included a hypothesis regarding the 12 cells that fired when the action observed closely resembled those already executed. The group argued that these cells could offer evidentiary support for “motor theories of perception” (Hickok 14). In lay terms, these theories contend that people are able to understand the perceived actions of others because they can perform them themselves.⁸² They pointed specifically to the motor theory of speech perception as a valid candidate, given that the F₅ area of the macaque brain, where the mirror neurons had been recorded, corresponded in part to Broca’s area, the part of the human brain long believed to be involved in motor speech processing. This theory posited that speech

⁸² One of the obvious counterarguments to this position is that humans are able to understand a lot of actions they cannot perform, like flying or echolocation (Hickok 43-6).

perception did not rest on the perception of sound alone but on “reconstructing the motor gestures that generated those sounds.” Even though the motor theory of speech perception had been abandoned decades earlier for reasons that fall outside the scope of this thesis, the discovery of mirror neurons brought it back into the fore, opening the door to a conception of the MNS as the evolutionary basis for speech (17). The theory was then expanded beyond speech into a motor theory of action understanding, which, in a nutshell, posited that people are able to understand the actions of others because their brains simulate those actions via the MNS (Rizzolati and Craighero 172). Several studies led to conclusions that supported the existence of a human MNS and connected it with visual sensory processing (169). By 2002, this connection also included auditory processing and the existence of audio-visual mirror neurons that “code actions independently of whether these actions are performed, heard, or seen” (Kohler et al. 846). In the two decades after their discovery, mirror neurons went from the limited significance of 12 neurons in the premotor cortex of the brains of macaque monkeys to being heralded as the neural basis of a long list of neurocognitive areas, like language development, theory of mind, emotion, empathy, imitation, gestural communication, and even specific phenomena like phantom limbs, stuttering, addiction, and obesity, to name only a few.⁸³

⁸³ Perhaps the most popular example is Vilayanur Ramachandran's 2009 TED Talk, “The neurons that shaped civilization,” still widely shared in social media platforms like YouTube and Facebook (https://www.ted.com/talks/vs_ramachandran_the_neurons_that_shaped_civilization). For a detailed account of the discovery and rise of mirror neurons, and their current status in neuroscientific debates see Hickok, chapters 1-3. For a survey of the MNS see Rizzolati and Craighero. For the theory connecting the MNS with sense perception, simulation, emotion, and theory of mind see Keyser and Gazzola. For a critical assessment of the connection between the MNS and the evolution of speech see Hurford. For the connection between the auditory MNS and empathy, see Gazzola et al. For the connection between the auditory MNS and action understanding, see Kohler et al. For the possible connection between mirror neurons and the evolution of the ear and the cochlea, see Mithen, pp. 126-31. For the connection between the auditory MNS and emotions, see Warren et al.

The story of mirror neurons broadly summarized in the last two paragraphs is essential in providing a context for problems and opportunities that an embodied approach to cultural production entails. Mirror neurons have had a prominent role in Embodied Cognition and its application to Philosophy and the Humanities, due in part to their seemingly overriding influence in so many aspects of human experience. As will be discussed later in this section, their influence led to a confusing terminology that has obfuscated whatever common ground there is among the Embodied Cognition paradigm and current neuroscientific approaches. It started as a new paradigm in Psychology, and was quickly adopted, and mostly confused, with some philosophical approaches to perception.⁸⁴ Mirror neurons seemed like the perfect example to support the idea of an embodied brain and debunk traditional behaviorist views of the human mind.⁸⁵ This is not surprising, given the fact that Mirror Neurons would provide a simple solution to a series of very complex problems: a system that allows putting oneself in someone else's shoes, understanding what they are feeling and thinking, anticipating their behavior, sharing in the emotions of a collective happening or event; in short, to explain the mystery of human social existence (Hickok 188). I, for one, saw mirror neurons as the Holy Grail of cultural production for many years, based in part on my belief that they had been proven to be the neural substrate of shared human experience, since they allowed people to understand the actions of others at an embodied level.

The last decade has seen new evidence emerging that has called into question many of the assumptions that helped mirror neurons become the science phenomenon of the new

⁸⁴ For instance, the work of Merleau-Ponty and other phenomenologists. For a history of the term and its ties to Philosophy, see Wilson and Foglia.

⁸⁵ Behaviorism argues that the mind works through associations of increased complexity, from basic reflexive behaviors to complex processes (Hickok 111). These processes follow the conditioning models previously discussed: classical and operant conditioning. See p. 57.

millennium. Some important concerns touch on the very foundations of a theory of action understanding based on mirror neurons: namely, speech perception, lesion-induced changes in brain function, maladaptive plasticity, cerebral cortex mapping and goal-oriented motor function.⁸⁶ An overriding point of contention seems to be redundancy: many of the supposed mechanisms that mirror neurons are thought to enable are already performed by other, well-known and amply proven brain mechanisms.⁸⁷ Many, in fact, see redundancy, from an evolutionary standpoint, as a waste of resources better employed elsewhere; even those who do not, see it as a warning sign of the need to revise a theory. The good news is that no one denies that mirror neurons exist in the human brain, or that they have specific functions somehow connected to important high-level mechanisms that control action, emotion and perception. Hickok, for instance, on the basis of current research, has argued compellingly that mirror neurons provide “sensorimotor association for the purpose of action selection” (226). An important factor supporting his position is that mirror neurons do not fire in response to all actions (227). For Hickok, they “are part of a highly plastic sensorimotor association circuit” (195). Hurford has effectively challenged the notion that mirror neurons are the substrate of speech perception, highlighting in the process important areas where mirror neurons may play a role, like speech articulation, concept representation, and automatic behaviors (3-9). They share with others a common concern, specifically, that most of what is known about mirror neurons comes from the study of macaque brains and not from the human brain, whose MNS clearly has different functions. Nonetheless, it is still in essence a brain mechanism that is participative,

⁸⁶ See Hickok, pp. 41-76, for a detailed discussion of these and other anomalies that contradict the tenets of mirror neuron theory.

⁸⁷ For an example, see Hickok, p. 44.

indeed methexic. As such, it provides a concrete example of a particular kind of functioning: a mirror-like behavior that may be present in many other brain mechanisms.⁸⁸

While this is neither the place nor the context for a detailed survey of what these methexic mechanisms would be or look like, it is certainly the place to explore the ways in which cultural production may point to areas where they could be found. This would allow, further ahead, the use of a medieval case study in order to provide examples of products that derived from the operation of such mechanisms, as well as the impact such cultural products may have in said mechanisms, given their high degree of plasticity. First, it is necessary to address the overarching claim that mirror neurons are, in Ramachandran's words, the basis of human civilization.⁸⁹ In 2004, Rizzolatti and Craighero published a comprehensive description of the human MNS. In the abstract of the article, they described how pervasive the influence of the MNS system could be:

A category of great importance for primates, humans in particular, is that formed by actions done by other individuals. If we want to survive, we must understand the actions of others. Furthermore, without action understanding, social organization is impossible. In the case of humans, there is another faculty that depends on the observation of others' actions: imitation learning. Unlike most species, we are able to learn by imitation, and this faculty is at the basis of human culture. (169)

Without prior knowledge regarding the nature of this research, this introduction would probably create confusion. It could be part of a study having to do with Psychology, Anthropology or Philosophy. This is not necessarily a bad thing, but it is important to observe that such wide-

⁸⁸ See Hurford, pp. 5-9, for a discussion of possible examples of mirror-like brain mechanisms.

⁸⁹ See note 82.

ranging assertions have important consequences for any interdisciplinary effort that attempts to explore scientific knowledge in connection with the Humanities. Here is the first problem: learning by imitation has been conflated with cultural production, but the latter is participative, not imitative per se, methexic, not mimetic. Mirror neurons, when seen as the basis of action understanding and imitation are mimetic, but they are methexic when seen as precursors of action selection (as Hickok proposes) or as the substrate of concept representation (as suggested by Hurford). There is a second problem: mirroring is not really imitating, because neurons are repeating a previous experience *one* has lived in response to a current experience being lived by *someone else*. This is of fundamental importance within the context of theory of mind. There is no absolute certainty of knowing whether another person is experiencing the same set of sensations one is experiencing. These questions are by no means new to the Humanities; they are the very prime matter of fields like Aesthetics, Phenomenology, and Literary Criticism.

Another area of concern important for a theory of literary cultural production based on the methexic nature of auditory perception is discussed in Rizzolatti and Craighero's work, namely, the existence of an auditory mirror neuron system (185-7). Their argument assumes that the system evolved from an audiovisual MNS originally dealing with ingestion and, at a later stage, with the coding of object related actions. Other scholars have also supported the existence of an auditory MNS that responds specifically to the sounds of actions without a visual component. Gazzola et al. found areas in the human brain corresponding to those in macaque monkeys that showed a kind of response they consider somatotopic, given that different areas on the left premotor cortex activate according to whether an action is performed with the hands or the mouth (1824). They also measured their test subjects on an empathy scale, and found that those with higher scores on that scales also showed stronger activations in their auditory MNS,

leading them to hypothesize a possible link between the two. Other authors have found that this system reacts in response to affective prosody (Warren et al. 1967). After a study focusing on affective non-verbal vocalizations, Warren et al. concluded that specific parts of the auditory MNS respond to emotional valence and arousal level, arguing that these responses signal the “preparation of responsive orofacial gestures.” They found that such responses were particularly high in the case of positive emotions. These findings, although impressive, met with many of the objections mentioned previously. Still, they show that emotional responses to auditory stimuli have a motor component that merits further study, if only because daily life is full of auditory experiences that elicit mirror-like responses that make one feel like an active participant of events that are happening to others. Furthermore, the experience of this type of response can occur even when no actual perceptible event is taking place, by just merely reading about it or listening to a fictional version of it. That is the kind of methexic interaction that underlies literary cultural production and that hopefully will be better understood as the neurocognitive mechanisms that underlie it are studied in greater depth.

Returning to Rizzolatti and Craighero’s argument in favor of an auditory MNS, their position draws on the motor theory of speech perception, quoting a very interesting passage from Paget’s *Human Speech*, written in 1930. In this study, the author connects the observation of the “universally recognized” oro-facial movements characteristic of eating with the perception of the sound produced by such movements: “mnyam-mnyam” (185). The conclusion he reaches will sound oddly familiar to anyone who has studied linguistics, the history of language, or any of the critical or philosophical theories about meaning: “Thus through such an association mechanism, the meaning of an action, naturally understood, is transferred to sound.” In general, this is clearly a very inconspicuous function when compared to the whole phenomenon of human language. In

particular, it hearkens back to the debates that led to Saussure's groundbreaking theories regarding the relation between signifier and signified, between linguistic signs and meaning (Hurford 2). The relation is completely arbitrary, even accepting Paget's contention that these gestures and sounds are "universally recognized." There is nothing in the sound itself that can represent the concept, if only because the word "mnyam" may visually seem to be one, but may sound in millions of different ways. It also brings forth the matter on meaning itself: does participation require meaning?⁹⁰ This is by no means a settled matter. In this regard, it is useful to refer again to the work of Gumbrecht: not everything can be conveyed by meaning.⁹¹ What takes place at the sensory level, even though there is no categorical definition yet, is already methexis, which intensifies with every cognitive refinement and level of abstraction. This implies finding what is general amongst an infinite variety of experiences in order to form categories. At this level, there is not one sensory modality that is superior to others, nor one motor ability: "core meaning is abstracted across sensory and motor experiences" (Hickok 163).

A unified framework

The scientific fields that delve into the matter just surveyed need to focus on finding the neural substrates of the processes that lead to the formation of meaning, thus "grounding" their work in actual, measureable phenomena: "We need to develop a theory that transcends sensory and motor systems" because "some sensorimotor details clearly impact how we understand and reason about the world, so we need a theory that is at least partly 'grounded'" (Hickok 160). Methexis, on the other hand, is more like production of presence, it does not require meaning, it

⁹⁰ Cf. Hickok, pp. 159: "one might be tempted to infer that meaning arises in sensory systems."

⁹¹ See p. 52 and note 12.

provides from experience what meaning cannot; thus, it probably corresponds to a middle point between lower-level sensory processes and higher-level cognitive processes, getting close enough to meaning, but not too far from sheer feeling. Cultural production most likely oscillates between these two points of brain processing. It finds scientific support in something previously discussed in the context of the reward system, considered by Hickok as a pervasive, dual brain architecture: the dorsal and ventral, *how* and *what* streams (162).⁹² Such architecture, as well as the discrete modal processing areas of the brain, are not completely separate. They feed information needed for higher order processes of conceptual knowledge to large areas of the cerebral cortex not related to any particular modality (168). The study of these areas has shown that they function on what are considered as “resting” states (171). The brain is not resting in such states, but engaging in higher order functions of information processing. Current research is beginning to focus on these areas and what they might entail. They have been shown to be active in processes of autobiographical memory, imagining the future, evaluating the opinions of other individuals, daydreaming, semantics, and, in general, thinking.

I propose that methexis is somewhere in between lower and higher-level brain processes precisely because these processes, as mentioned earlier, are not sequential or unidirectional, but simultaneous and based on continuous feedback enabled by the combination of top-down and bottom-up processing. Human cultural production is neither a purely intellectual, higher-order process, nor a basic sensorimotor experience; it is the product of everything in between, and also a factor in the constant adaptation and change that characterize brain mechanisms. There is a continuum between these processes and the activities that come from them as well as lead to them, like writing, singing, oral debate, or poetic improvisation. Cultural production *is*, in part, a

⁹² See pp. 59-60, and 64.

continuum. It cannot have a sequential structure, because creative activities are dynamic. Purely intellectual processes are constantly overlapping and interacting with perceptive and sensorimotor activities and with all the intermediate stages in between; they affect and modify each other with constant impetus. This is the material, embodied manifestation of methexis proposed earlier, as one end of the spectrum, with mimesis, imitation, occupying the opposite end.⁹³ The prior section showed that imitation learning is one of the areas where mirror neurons were proposed as neural substrate and thus as being the very foundation of the human social experience. Although in recent centuries cultural production has been increasingly tied to notions of creativity and originality, it is necessary to remember that this is something relatively new. In the context of the Middle Ages that will be addressed further ahead, imitation was the preferred standard since the inception of written culture, and that fact remained unchanged for most of previous recorded history. This was also methexis, manifested as sharing in inherited knowledge, because methexis has no causal relation to any notion of originality or innovation. This is not to say that innovation did not occur, but that it was not the object of cultural production, nor was it encouraged or celebrated. It was the thorough knowledge and skillful imitation of the ancient authorities that constituted true genius, and although in reality it was always accompanied by innovation, the latter was not conceptualized as such. And how could it be otherwise, when human social development, from its most fundamental stages, is marked by imitation learning, and most social cohesion strategies and marketing trends rest on imitating given models, even when such models are supposedly original, rebellious or iconoclastic.

Developmental psychologists have discussed for decades the fundamental role of imitation, not only for learning, but also for the development of a whole host of cognitive

⁹³ See pp. 48-9, and 51.

abilities that eventually enable the individual to interpret and interact with the world (Hickok 185). They have also argued that imitation is the basis of cultural transmission, theory of mind and empathy, all fundamental areas of human social existence. Obviously cultural transmission is of primary interest in this thesis, given that it antecedes the advent of writing and even of philosophical speculation. It harkens back to the very origins of humanity (186). It allowed knowledge to be passed on between generations, so that it could be gathered and improved upon, thus enhancing human chances of survival compared to other species. It also led to the actual production of culture that was not tied to practices necessary for survival, but that was complementary to social existence. It further led to its transmission in visual representations and oral traditions, which continued after the advent of writing and other recent technologies for recording and storing knowledge and culture. It is evident that imitation and methexis are deeply intertwined in the phenomenon of learning that makes cultural transmission possible.

There is no contradiction between a methexic theory of cultural production and the traditional mimetic discourse because they are both part of the same human experience. The purpose of emphasizing methexis in this thesis is not to try to present it as a better candidate than mimesis but as the missing part of the current understanding of cultural production, the part where the body, brain included, is taken into account. That this is the case is clear from the fact that the imitative learning that has been discussed is not strictly mimetic: it is based on association and emulation (Hickok 192-3). In humans, this kind of learning can lead to a complete rejection of certain behaviors, reflecting the adaptability characteristic of all brain processes (200). Imitation is also tied to complex processes of social interaction, like the *chameleon effect*, where people unconsciously imitate the social behaviors that help them fit into a certain group and increase their likability among its members (203). Many cultural products are

reflective or complementary to such interactions, like drama, fashion, music, visual arts, local accents and social variations of speech. The existence of cultural products that make present the complex reality of cognitive processes further supports the contention that models of behaviorist association and reinforcement alone are insufficient because they erase the mediating role of the mind (228). As mentioned in the discussions about reward, plasticity and mirror neurons, this mediating role is complex and adaptable. It uses previous experience to refine models of prediction and error detection in real time through constant feedback at all levels of the cerebral pathways. The mind is not immune to the effects of experience. On the contrary, it is modified by its impact, and cultural products are part of that experience. Thus, when it comes to methexis, there is ample common ground between the science and the different theoretical approaches in the Humanities. Standing on that common ground, with a unified framework, it is possible to return to the concept that underpins the theory proposed in this thesis.

Coming back to the concept of methexis, the starting point is Plato's definition of it as participation, which is placed at the opposite end of the spectrum from mimesis. It will be useful to qualify the previous remark with Nancy's insight: "Mímesis y Méthexis, una dentro de otra, de modo que no pueden darse por separado. No hay mimesis, pues, si no es en la resonancia con un cierto tono, en la participación distante de lo que viene a la forma" ["Mimesis and Methexis, one within the other, so that they cannot occur separately. Thus, there is no mimesis but in the resonance of a tone, in sharing from a distance into what comes from the form"] (my trans.; "La imagen" 7). Nancy's contribution lends support to a conception of mimesis and methexis at opposite ends of a spectrum in which participation or sharing is the condition *sine qua non* for imitation to take place. At the same time, imitation allows the emergence of new forms of participation, establishing between the two a permanent feedback cycle that underlies human

creativity. Aurality is where the methexic aspect of literary cultural production is best revealed, and where the complex relationship between mimesis and methexis is more evident. When addressing the medieval literature this is a key component, given that a vast majority of a text's receivers were completely or partially illiterate, making their experience of the text predominantly aural. A good way of beginning to explore this context of aural *methexis* is taking Brian Stock's concept of "textual communities" as the starting point:

These textual communities were not entirely composed of literates. The minimal requirement was just one literate, the *interpretes*, who understood a set of texts and was able to pass his message on verbally to others. By a process of absorption and reflection the behavioral norms of the group's other members were eventually altered. . . . The unlettered and semiletted members thereby conceptualized a link between textuality, as the script for the enactment of behavioral norms, and rationality, as the alleged reasonableness of those norms. (23)

This communal process of adaptation is not limited to imitation. It is a process of methexis even before it has started, because it draws on what the receiver anticipates he or she will hear, that is, on auditory expectation. And auditory expectation is both created and creative, because it is a process of feedback and interaction, due to its dependence on the specific context of perceptual acts, and on the fact that they are simultaneous. Auditory expectation is created when the material circumstances where it takes place modify in some way, in part or in total, what up to that moment had been the accepted and expected sound; it is creative when its manifestation modifies the material circumstances that generate that sound.

It is not simply a cycle of imitation or repetition of what has been heard before in order to make things sound familiar or adapt them for reading aloud. There is also an interaction between

the aural and other aspects that informs writing practices; the mutual impact they have on each other enables the production of presence of the text. In the case of a legal text, the power of the law to penetrate even to the last crevice of the life of an individual comes from the auditory perception of the voice of power and authority; this voice is processed and stored in the brain of the receiver, hence becoming part of the subject's auditory expectation and actualizing it constantly. This type of sensory state allows the transmitter of a text to generate in the receiver the feeling of being actively present, living the experience narrated, or the sensation that what is being said is an unquestionable truth. This aural and sensory authority is what the first authors of literature written in Castilian wanted to achieve, not as a conscious objective, but driven by that same sensation, the feeling of there being no other option but to hold on to it. This aural and sensory authority has fostered in generation after generation of readers the desire to have the experience that Cervantes masterfully embodied in the *Quijote* with the episode of reading aloud *El curioso impertinente*;⁹⁴ the experience of a group of people that feels part of the story they are hearing, just as if it was their own, commenting it and transmitting it because it has now become part of their own lived experience.

⁹⁴ *El curioso impertinente* unfortunately has no set English title, which varies in the different translations. It is one of the short narratives inserted in the first part of *Don Quijote* (book 4, chapters 33-35). A group of people that include Don Quijote and Sancho are staying at an inn, and they gather around to listen to the curate read the short story aloud, the manuscript supposedly being part of the belongings forgotten by a previous guest at the inn.

3. *Aurality*

*My ears have not yet drunk a hundred words
Of that tongue's utterance, yet I know the sound.*
William Shakespeare, Romeo and Juliet

Aurality (Un)Defined

The structure and workings of the auditory system have long been the subject of extensive research, much of which has led to important advances in a variety of fields, like architecture, defense, digital audio, computer science, linguistics, music and psychology. Perhaps the main motivation for focusing on the ear as a window into the development of a centuries-old cultural product is the fact that one can be certain there has been no significant change in the structure and function of the auditory system from what they were in the Middle Ages, or even before the advent of written history. Although, as discussed previously, the auditory system has a particular adaptability that is manifest in the various mechanisms of neural plasticity, its overall structure is remarkably stable, and its anatomy and functions have remained the same for millennia. Such changes have indeed happened throughout human evolution, but they require much longer spans of time, hundreds of millennia as opposed to hundreds of years, to be noticeable. It is reasonable, therefore, to assume that while utterances, whether linguistic or otherwise, have undergone dramatic changes throughout history, hearing, and the other senses, work exactly as they did thousands of years ago. This is important because it allows this thesis to focus on that which makes us similar to our medieval counterparts, contrary to the more popular tendency of studying that which makes us different, “better” or “more advanced.” This, however, does not entail a need ignore the evident adaptability and plasticity of human perceptual organs and processes, nor the external differences in which such systems operated: a changing environment, the difference in architectural techniques and building materials, the advancements in the manufacture of a multiplicity of artifacts, from musical instruments to weapons, or the increasing tendency of populations to concentrate in what became the first cities in Western Europe. In fact, this is the main reason for the use of the term *aurality*, broadly understood as

“the quality, degree or condition of being aural” (Collins English Dictionary), where *aural* is understood as everything “relating to the ear or the sense of hearing” (Merriam-Webster).⁹⁵ It allows the present discussion to encompass both the structure and function of the auditory system and the external circumstances in which it operates. Thus, the use of the term is consistent with an embodied approach to cultural production. Still, it is important, before becoming comfortable with it, to understand its origins and acknowledge the several different ways in which it is used in order to appreciate its breath and complexity.

Aside from the very broad and vague dictionary definitions presented above, aurality seems to be more often addressed not in terms of what it is, but in terms of what it is not, or as one of the components of a binary opposition. The most popular of these binaries, albeit not the only ones, seem to be orality/aurality and visual/aural; they are clearly the modern heirs of the much older and prevalent hear/see, hear/read, speak/hear, emitter/receiver, observe/listen, and orality/literacy, just to name a few. There is a broad spectrum of topics and problems related to both approaches to aurality. Perhaps the most eloquent example is Ana Maria Ochoa Gautier’s very recent work, *Aurality*, where oral tradition is discussed as part a complex cultural analysis of the processes of identity formation and nation construction in nineteenth-century Colombia. Remarkably, Ochoa Gautier never offers a precise definition of aurality, yet it is the guiding thread of her discussion, which shows it is precisely the general nature of the term that makes it ideal to frame an analysis related to cultural theory. Another recent example where aurality is presented by reference to what it is not, is Veit Erlmann’s *Reason and Resonance*, an insightful

⁹⁵ Burnett et al. offer the following definitions, not included in this discussion because they date from 1991, but they are interesting for comparison: “According to the *Shorter Oxford English Dictionary* ‘hearing’ is (1) ‘the faculty or sense by which sound is perceived’ and (2) ‘the action of listening to a lecture, music, etc.’ In the process of hearing an attempt is made to order and synthesize masses of sounds into meaningful units” (1).

investigation into the complex yet indivisible relationship between Philosophy and aurality starting in the 17th century. Erlmann uses aurality as an umbrella term under which coexist a variety of specialized and specific terms, the central of them being resonance, which allow him to explore the intricacies of a shared history of philosophical and scientific inquiry focused on the ear. His analysis relies on the aforementioned strategy of highlighting what aurality is not, in order to expose some of the historical rejections of the term in Philosophy as little more than lip service that could barely disguise a much more unstable dynamics between the two. Erlmann's analysis also uses this negative logic in historical terms, elaborating a theory of modern aurality that in itself highlights what ancient or previous concepts of aurality were not: they were not founded on a Cartesian conception of the mind, nor were they based on empirical research, they were still dependent on religious ideology, amongst other concerns.

In *The Audible Past*, Jonathan Sterne offers a short but revealing account of the history of this word:

The term *aural* began its history in 1847 meaning “of or pertaining to the organ of hearing”; it did not appear in print denoting something “received or perceived by the ear” until 1860. Prior to that period, the term *auricular* was used to describe something “of or pertaining to the ear” or perceived by the ear. This was not a mere semantic difference: *auricular* carried with it connotations of oral tradition and hearsay as well as the external features of the ear visible to the naked eye (the folded mass of skin that is often synecdochally referred to as the ear is technically either the *auricle*, the *pinna*, or the *outer ear*). *Aural*, meanwhile, carried with it no connotations of oral tradition and referred specifically to the middle ear, the inner ear, and the nerves that turn vibrations into what the brain perceives as sound. . . . (10)

That the differences in meaning between both terms, aural and auricular, are no longer as relevant becomes evident after an initial look at some of the most recent publications, where the use of ‘aural’ and ‘aurality’ seems to be preferred in works outside of the field of medicine and of philosophical accounts of auditory perception.⁹⁶ It is clear that this occurs because there is a need for detailed accounts of either the physiology, physics, or metaphysics of sound and its perception, as opposed to the more general and inclusive approaches of Cultural Studies and the Humanities in general. Where the field of inquiry can be quite varied and large in scope, as is the case with the latter, even the sometimes unfortunate homophony inherent to the binary opposition oral/aural becomes rather fortunate insofar as it encompasses the universe of the spoken word as part of, not as opposite to, aurality. Perhaps one can posit that part of this binary’s power resides in how pleasant it is for the ear, allowing one to enjoy confusing the listener and even the inattentive reader, while still addressing serious matters.

In her introduction to the recent article “Sound Matters,” musicologist Susan Boynton offers, rather than a strict definition, an encompassing view of aurality that incorporates cultural and historical perspectives, and reflects the general approach just discussed: “One of the central concepts in historical sound studies is the notion of aurality, encompassing both auditory culture (including the production and reproduction of sound) and the history of audition (habits of hearing and listening)” (998). Although it is stimulating to find a reference to the production of sound that does not privilege the spoken word, and thus orality, this view of aurality would be more productive without the separation between auditory culture and the history of audition, because the production and reproduction of sound are definitely worthy subjects of such a

⁹⁶ For instance, philosophers like Nancy, Casey O’Callaghan and Szendy avoid the term altogether.

history, while habits of hearing and listening are an indispensable part of auditory culture.

Mainly adhering to the general dictionary definition of aurality in the context of radio, Siobhán McHugh offers an interesting addition which is also quite rare when it comes to establishing a hierarchy of the binary oral/aural. After remarking on the prevalent confusion when referring to ‘aurality’ and ‘orality,’ and referring to the dictionary definition of the former, McHugh states: “Thus orality is a subset of aurality...” (491). McHugh’s position is in stark contrast with the more popular view of aurality as a neglected aspect of orality. Of course, one would expect such a position from theoretical approaches that focus on the utterance as, for instance, Pragmatics. One example is the appearance of aurality in the *Concise Encyclopedia of Pragmatics*, which happens only twice, both under the entry “Orality” (Fox 686). It almost seems surprising that the entry makes passing mention of aurality as part of an embodiment of culture “that does not reduce to production (‘orality’) or reception (‘aurality’).” However, it is undeniably a reduction to equate aurality with reception, precisely because one of its important characteristics is the influence of past experience in future auditory events, as discussed above. The perception and processing of speech is much more than a simple capture and storage operation, and the act of uttering speech is in itself an auditory event. Aurality seems to be currently the subject of a struggle to be free from the yoke of orality, and the rise of novel ways to study sound and its perception show that to be the case.

Another refreshing approach that uses the term aurality is that of *archaeoacoustics* and *auditory archaeology*, where the focus on sound has been reinforced by the fortunate circumstance of the unavoidable absence of utterances and other audible phenomena: “The ecologically constructed and dynamic sensoria essential to daily life in the past no longer remain” (Mills 20). The original inhabitants and users of archaeological sites are no longer

present, and even when attempting to simulate how their presence at the sites would have unfolded, researchers have to place a greater importance on the ear and how it perceives, as well as its adaptability and plasticity, and attempt to explain how the organ and its faculties would have developed. The advantage resides in that they can do this without being plagued by the uncertainty that surrounds the utterances of long ago, or, more precisely, what little of them we may still possess combined with everything that has been added to them throughout the centuries. In this context, Mills offers an interesting compromise: “Auditory: Of or relating to hearing or the sense of hearing. Aural: A listener’s experience of sound” (243). Mills assigns the traditional dictionary definition for the term ‘auditory,’ and uses an embodied definition for ‘aural.’ This is consistent with the approach of auditory archaeology, which places a greater emphasis on the experiences of the people that lived in the places under investigation. These innovative fields of study provide an invaluable framework to study the power of auditory perception in the conceptualization of space and place, which are essential for the implementation of the law and the concept of jurisdiction, and for shaping the ability of an individual to navigate the surrounding environment.

Orality’s shadow has been a powerful one in recent decades, and as important as it was in dissipating some of the exaggerated importance given to written culture and the visual text as the preferred objects of study, it also had the probably unintended effect of creating the illusion that somehow the utterance alone has an intrinsic value. This illusion rests in part on long-standing yet erroneous assumptions about what a sound is, how it is perceived, and how this influences future sound events and perceptions. It is also a consequence of the predominant role that, until very recently, Linguistics has occupied in monopolizing the study of speech production and perception. In this regard, the argument of this thesis is that the importance of the utterance rests

entirely on it being heard. If it is not heard, it never completely becomes an utterance. Otherwise, it cannot be studied or theorized. The aforementioned tendency to avoid the use of ‘aural’ and ‘aurality’ in philosophical and scientific discourses regarding auditory perception has an advantage: it makes it possible to consider definitions of sound and auditory perception based on a detailed analysis of their ontological status or their physical characteristics. Philosopher Casey O’Callaghan has recently argued for a need to move away from what he calls “visuocentrism,” and from traditional philosophical and scientific accounts of sound and audition (“Constructing” 1). He rightly questions the long-standing practice, which he claims started in the Early Modern period, of ascribing the characteristics of the eye and of visual perception to the other senses, assuming that all perceptual processes are modeled identically and that vision is at the top of the senses’ hierarchy. In fact, as will become apparent further ahead, this was the case long before the Early Modern period, for medieval scholars also used the visual model to attempt to explain the workings of the other senses. O’Callaghan also rejects the traditional philosophical classification of sounds as secondary qualities,⁹⁷ and uses current research to argue that sounds are better understood as particulars,⁹⁸ and specifically as events.⁹⁹

⁹⁷ “The division is especially associated with the 17th-century rise of modern science, with its recognition that the fundamental explanatory properties of things are not the qualities that perception most immediately concerns. These latter are the secondary qualities, or immediate sensory qualities, including colour, taste, smell, felt warmth or texture, and sound. The primary properties are less tied to the deliverance of one particular sense, and include the size, shape, and motion of objects” (“primary/secondary qualities”).

⁹⁸ “A particular is a single thing, thought of in contrast to qualities or universals, or in contrast to an aggregate of things. Universals themselves can be regarded as particulars, themselves having higher order properties and relations. However, a universal can be instanced by particular things, whereas a genuine particular cannot” (“particulars”).

⁹⁹ “A change or happening. The central debate in the philosophy of events is whether they are to be thought of as individuals, like objects, capable of date and place and capable of being described in different ways, or whether they are more like propositions or facts, whose identity depends essentially on the concepts in which they are framed. On the former model, it may prove easier to understand how events can cause things, and how one event (e.g. a commotion in the

Regarding scientific discourses of auditory perception, O'Callaghan argues against the model that equates sound with waves propagating in an elastic medium because some of their features, like standing in causal relations, having spatial boundaries, depending on the medium and surviving changes to their properties, are distinctive of dependent particulars ("Constructing" 7-8). For O'Callaghan "Sounds are events located in the environment near their sources" (1). He explains that, contrary to the objects of vision, sounds "are essentially temporal" and "bearers of audible qualities" (21). This definition rests on the need to ascertain more than just a defined ontological category, as it is necessary to take into account that sounds have duration and location, and after proper auditory perception they are "as they seem to be" (22). This last assertion addresses the fact that both duration and location are not perceived for what they really are. What is perceived as the lifetime of a sound is not the actual physical duration of the propagating waves, which "may continue to exist long after the sound has seemed to cease" (14). Sounds undergo temporal changes to their properties, like changes in pitch and level, without that leading one to conclude that they are different sounds, as is the case with words (4). Although the pressure waves that are perceived as sound travel through a medium, listeners do not hear a sound as something moving from the source towards them, but as located somewhere at a distance from them (11).

As Steve Mills has remarked, the value of O'Callaghan's insights lies in his ability to incorporate the scientific discourse without falling into the trap of equating sounds with waves:

brain) may be identical with another (e.g. being struck by a thought). The latter model assimilates events to facts, so that just as it can be a fact that the admiral did not arrive, his non-arrival can be a significant event (not at all a non-event) which may have its own causes and effects. Similarly, there can exist disjunctive events (John's going to India or China) or quantificational events (Mary's finding a job, i.e. there being some job-finding by Mary)" ("event").

“Philosophically the waves do not really matter; it is the sound events themselves that matter to us” (Mills 44). I partially agree with O’Callaghan on the importance of leaving behind old philosophical conceptions that equate vision and hearing. I also agree that the scientific model of sounds as waves fails to serve as a comprehensive framework to understand auditory perception, especially in the context of cultural production, which is the aim of this thesis. O’Callaghan, however, in considering the sound to be an event that takes place near the source and independently of the waves, enacts a separation between the sounds and the actual process of auditory perception, because for him “sounds cause waves” (16). Thus, the act of creating the disturbance in the medium is the sound, not the disturbance itself, which is the wave propagating through a medium. The sounds defined thus, are “the proper objects of auditory perception” (20). From this point of view, the act of perception, in many respects illusory, is the consequence of the encounter between the wave and the perceiver, and this encounter does not involve the sound. I do not agree with separating the sound as event from the act of perception.

As mentioned above, current notions of aurality come in part from ideas about what sound is and what place it occupies in the world. Although in partial agreement with O’Callaghan’s rejection of traditional theories of sound, this thesis, contrary to what he proposes, posits that sounds are not yet sounds unless they have been perceived and processed in the brain. Sound is not the object of auditory perception but its result.¹⁰⁰ As seen in the previous chapters, a sound is certainly not just a wave, which clearly does not depend on the presence of a perceiver to exist. A wave is just one of many kinds of physical phenomena of vibrations and oscillations, and it can and does take place when there is an appropriate elastic medium to allow its

¹⁰⁰ Plomp uses the word sound in both senses: “in a physical sense as air vibrations originating from a source, and in a perceptual sense referring to how these vibrations are heard” (1). Baldwin has a similar approach (247). My definition is consistent with the second meaning.

propagation. Human beings are not equipped to perceive all the oscillations and vibrations that are constantly happening around them. This claim is not an attempt to get into the centuries-old ‘if a tree falls in the forest’ philosophical question.¹⁰¹ This thesis posits that in order to study the role of auditory perception as an enabler of methexis in cultural production, it is necessary to consider sounds from the moment of their production to the moment they become part of future perceptual experiences. This includes everything that happens after the wave reaches the ears. The prior overview about sound and auditory perception summarized the most important aspects and current knowledge of these subjects, and allowed the exploration of some of the brain mechanisms connected to cultural production. It pointed out some of the main differences between the traditional view of auditory perception and current knowledge on the subject. Perhaps the most important is the fact that perceptual and rational processes do not occur one after the other in a sequential manner, at least not in spans of time that are even detectable to a human observer. In addition, both processes are constantly modified by continuous feedback.

It was mentioned earlier that, throughout history, perception, processing and cognition were thought to be separate and sequential stages located in separate anatomical areas of the body and the brain. This led to what Hickok calls the “classical sandwich,” where “cognition is distinct from, and sandwiched between, sensory and motor processes,” with perception

¹⁰¹ There is no clear reference of where this question originated. The general outline of the question asks: if a tree falls in the forest and there is no one there to hear it, can we say that it made a sound? The problem has become a general one for the philosophy of perception, as well as for the study of sound and its perception, and it is directly related to the problem of primary and secondary qualities (“sound”). A simple Google search reveals a plethora of articles, blog posts, videos and other types of content related to this question. Wikipedia, in all its un-academic greatness, has traced it back to a newspaper article from 1883, while referencing the more academic fact that the precedent for the question is the subjective idealism of George Berkeley (https://en.wikipedia.org/wiki/If_a_tree_falls_in_a_forest). For more on Berkeley’s philosophy see Warnock.

conceptualized as mere input and action as output (121). One of the terminological quagmires that currently hinder the interdisciplinary study of the mind in the context of the humanities comes from this confusion. While Philosophy has continued embracing the classical sandwich model and considering embodied conceptions as revolutionary, scientific approaches like the cognitive and neurologic sciences have long abandoned this model. The publication of Ulrich Neisser's *Cognitive Psychology* in 1967 marked the beginning of this shift, offering a more encompassing definition of cognition, not limited to higher-order processes.¹⁰² So, while movements like Embodied Cognition and Enactivism have claimed to be revolutionizing scientific thought, what they are really doing is forcing the Humanities to finally catch up to scientific thought on the matter. This is not a value judgement on the status of these problems to argue that science is better or more advanced. But it is necessary to provide a background to the discussion that will follow, where it will become evident that the "classical sandwich" is perhaps one of the oldest conceptions of the mind, rooted in ancient philosophy, and its pervasiveness was a defining characteristic of medieval models of perception and cognition.

As previously stated, the purpose of this thesis is to study the impact of auditory perception on cultural production by exploring the distance between past and present theories of aurality in the context of the emergence of Castilian literature, using the *Siete Partidas* as a case study. This distance is the place where one can delve into the ways in which perception impacts cultural products and how it allows individuals to have experiences of participation even when they are not the ones creating those products. This is where one can find discontinuities and

¹⁰² Neisser defines it as "all the processes by which the sensory input is transformed, reduced, elaborated, stored, recovered, and used. . . . Such terms as *sensation*, *perception*, *imagery*, *retention*, *recall*, *problem-solving*, and *thinking*, among many others, refer to hypothetical stages or aspects of cognition" (Hickok 119).

discrepancies between the actual phenomena of auditory perception and the different medieval theories on the subject. Faced with a reality of perception that was different from the accepted theories of the time, medieval cultural producers of legal texts had to find practical solutions in order to write a legislation consistent with the experience of everyday life and accessible to an overwhelmingly illiterate audience for whom theoretical concerns were completely foreign. Exploring this gray area between theory and everyday life can give new insights into the dynamics of literary cultural production. In order to do this, it is necessary to have a general understanding of the origins and development of medieval theories of sound and its perception.

Medieval Ears

The previous chapters outlined the more general aspects of sound and its perception and processing, and now it is time to listen to a different period in time, arguably a period with a very different soundscape, much closer to the barely perceptible levels of sound that are currently conceptualized as silence, and yet deeply dependent on the power of auditory perception to navigate the complexities of daily life. Thirteenth century Europe had several bustling cultural centers, and amongst the many scientific endeavors of European scholars at the time, the study of sensory perception, and in particular of vision and optics, was one of the most active.¹⁰³ Alfonso the Wise's court was a hub of scholarship that gathered some of the most brilliant minds of the era. There is no doubt that the scholars of Alfonso's court were aware of the different theories of perception that circulated at the time, and of many of their ancient sources. As will be discussed in detail further ahead, there are echoes of some of them present in the *Siete Partidas*, and sound and its perception are used in different ways in this legal code. But before addressing them, it is

¹⁰³ For a comprehensive study of medieval theories of vision and optics see Meyering.

necessary to look at the origins and development of the most important theories of auditory perception in the broader context of perception and cognitive studies in the Middle Ages.

The dominant discourse regarding the history of the study of sound and its perception states that it is no possible to understand their medieval manifestations without going back to Aristotle.¹⁰⁴ Although it is true that the study of many disciplines begins with Aristotle, I will side in this instance with a less dominant discourse that acknowledges the fact that, even though most of Aristotle's ideas regarding cognition and perception were the main foundation on which medieval scholars built their own accounts on these subjects, some of Plato's ideas also remained highly influential in the Middle Ages, mainly through the presence of Neoplatonism in the work prominent intellectuals like Augustine, Boethius, Avicenna and others. An important caveat in this regard is that the ideas of Plato and Aristotle did not remain intact throughout the centuries, and that the need to reconcile them with Christian doctrine and Theology was the force behind their transmission via commentaries and scholarly debates. Different from the Islamic kingdoms and the Eastern part of the Holy Roman Empire, which inherited the wealth of knowledge of Greek antiquity, only a very limited amount of the original works of Aristotle, and barely any of Plato's, survived in the Medieval West. Most of what was known were excerpts found in the work and the commentaries of important figures like Avicenna, Averroes, Thomas Aquinas, William of Auvergne, Roger Bacon, Robert Grosseteste, Petrus Hispanus, and Albertus Magnus (Kemp 7). Certainly, as Kemp observes, the rediscovery and translation of Aristotle and his commentators brought about an intellectual revolution in Western Europe (1). Aristotle became *The Philosopher*, and his ideas became paradigmatic in many areas of inquiry, including the generation and perception of sound. But it is important to remember that Aristotle was in a

¹⁰⁴ Cf. Burnett, p. 43.

constant dialogue with Plato's ideas, whether to confirm or deny them, and, in fact, one of the primary interests of Neoplatonism was to reconcile the ideas of both philosophers. Plato's thought regarding sound perception can help to better understand some of the medieval debates on the subject, which were still about many of the same concerns prevalent in antiquity.

Listening to Plato

Plato not only included the production and perception of sound as an individual topic in his works, but he also used sound and sense perception in general as a metaphor to explain a wide range of concepts, which shows his general interest in the human experience of sound. This interest had been pursued by his predecessors: "considerable interest was shown in the physics and physiology of sound and hearing from the Presocratics onwards. The subject is discussed within larger texts – on the soul, on physics, on aesthetics – in medical and theological works, and in encyclopedias" (Burnett et al. 2). In fact, Plato acknowledges one of his predecessors, Anaxagoras, in the *Phaedo*, and he sarcastically criticizes his lack of interest in the mind, and his focus on external phenomena, like sound and hearing (98 B-D). As with many other topics, Plato's passages about this matter are succinct, but taken within the wider context of his writing they present a specific theory of perception that is consistent with his understanding of what is currently called cognitive psychology (Kemp 1). One of the main objections to seriously considering Plato's views regarding sound is that they are mostly about music, and that he was not interested as much in the actual phenomena of sound as in the relation between music and philosophy. As Kemp explains, one of the main concerns of Greek philosophy was the soul, conceived as that which gave life to all living beings, animals and plants included, and controlled their bodies. In the case of human bodies, this includes perceptive and cognitive functions. The

body was considered as subject to the soul, which for Plato shared the same composition as the soul of the world.¹⁰⁵ Pelosi has beautifully expressed the importance of both concepts in Plato: “In Platonic reflection the authentic interlocutor of music is the soul” (6). Still, Plato’s ideas about sound and its perception are embedded into a wider conception of physics and the nature of creation, while at the same time there is a clear separation between material reality and the dimension of the soul and the intelligible, where higher cognitive processes occur. This framework had a lasting influence well into the Middle Ages.

Plato’s most specific explanations about sound production and perception appear in the *Timaeus*, but they would seem rather short and obscure unless considered in conjunction with his conception of the cosmos and his conception of the mind.¹⁰⁶ This is precisely what Francis MacDonald Cornford did in his classic study *Plato’s Cosmology: The Timaeus of Plato*. Cornford’s commentary on the *Timaeus* puts the short passages of this dialogue about sound and hearing not only into the context of Plato’s opus, but also of the philosophical debates of his time regarding perception and acoustic phenomena. In true erudite fashion, Cornford includes in the dissection of these passages an important warning: “In reconstructing the acoustic theory here implied we must avoid attributing to Plato modern theories of the transmission of sound by vibrations or wave motions” (320). This thesis has been insisting on the idea of exploring the distance between the modern conception of aurality and medieval ideas about sound and its perception, and now it will become apparent that this distance is not that different from the one that separates the current understanding from that of the philosophers of ancient Greece. Still, the limited availability of translation options for specific concepts, or the fact that such concepts

¹⁰⁵ This belief continued in Stoic philosophy, associated with the concept of “pneuma” (see note 142).

¹⁰⁶ Regarding the relation between philosophy of mind and music see Pelosi, p. 3.

have radically changed over the centuries, increase the dangers of assuming that the modern idea of a wave, for instance, is closer to Plato's or Aristotle's than it really is. It is also important to remember that Plato was drawing from the Pythagorean tradition, where the central concept is harmony as the organizing principle of the cosmos after which everything else is modeled.¹⁰⁷ This kind of cosmology was not exclusive of the Greeks. Other ancient cultures formulated their accounts of the origins and order of the cosmos in terms of sounds, vibrations and numerical proportions, although there was no "cross-cultural" agreement or dominant theory about them.¹⁰⁸ Pythagorean harmony is expressed in numerical ratios that form musical intervals, and this very model is the foundation of Plato's cosmology. In the *Timaeus*, Plato uses a series of numbers and the intervals they form as the basic model for the fabric of the soul of the cosmos (34A-36B). This series of intervals do not form any actual musical scale, nor are they intended to do so, as the harmony they express is not formulated as part of a theory of music (Cornford 66-72).

It is necessary wait until much later in the *Timaeus* to learn something about how actual musical sound is generated, and I say musical sound because for Plato, as will also later be the

¹⁰⁷ The Pythagorean concept of harmony is based on a mathematical conception of a universe where the number is the controlling principle (Barker 28). This universe was ordered in divine harmony expressed in mathematical ratios between the orbits of celestial bodies. Major traditions traced the origins of this belief to Pythagoras' discovery of the ratios underlying the relation between a musical tone and its overtones or harmonics. The most basic, the octave, corresponds to a 2:1 ratio. A 3:2 corresponds to the interval of a fifth, a 4:3, ratio to a fourth, etc. These intervals were the basis of the first musical scales. Thus, Pythagoras is also traditionally considered the founder of musical theory. These ratios, when manifested in the movements of celestial bodies, generated a "harmony of the spheres" and the numbers that compose them are those of the *tetraktys*, the basic numerical structure of Pythagorean cosmology. As we will see, Plato's cosmology draws heavily from the Pythagorean concept. This universal structure and the concept of a "music of the spheres" continued to exert an influence not only in Philosophy, but also in musical theory beyond the Middle Ages, and survives even today, albeit in a very commercialized and simplified form, in the New Age movement. It also lived on in scientific thought well beyond the Middle Ages, as attested by Johannes Kepler's *Harmonices Mundi*. For more on Pythagorean cosmology and musical theory see Barker, pp. 28-52.

¹⁰⁸ For a synopsis of ancient ideas about sound see Tobey.

case for Aristotle, noise did not have a significant place in the discussion of sound and its perception (Cornford 321; Burnett 46-7). Sound was either the product of the human voice, or of an object, vessel or string, which would generate a specific pitch when struck or plucked.¹⁰⁹ With very few exceptions, this will continue to be the case throughout the Middle Ages (Burnett 48-9). In the *Timaeus*, Plato addresses sound in two different passages. In the first one, 67B-C, he provides both a definition of sound and a description of its main qualities. Though short, the passage presents many difficulties. First, the very definition of sound is given in the context of a description of the sense organs and their function, so it includes the perception of sound as part of its definition, while hearing is defined as what happens after sound is perceived:

A third kind of perception that we want to consider is hearing. We must describe the causes that produce the properties connected with this perception. In general, let us take it that sound is the percussion of air by way of the ears upon the brain and the blood and transmitted to the soul, and that hearing is the motion caused by the percussion that begins in the head and ends in the place where the liver is situated. (67B)

This succinct description does not include any anatomical details, like the existence of the eardrums, and simply provides a rather unclear path for a percussion or stroke to reach the soul.¹¹⁰ Similarly, hearing, the movement from head to liver, is not explained further, and this should come as no surprise, given that Plato was not writing a medical treatise, and that his

¹⁰⁹ Book XI of the Aristotelian *Problemata*, entitled “Problems Concerning Voice,” the term voice indistinctly to describe the sounds made by either the human voice or any other object: “. . . language, which is a kind of voice. . .” (898b29-30). See also *De Audibilibus*, 800a23ss. See below for Aristotle’s definition of sound as something only “ensouled” things can produce.

¹¹⁰ Here I am taking into account Cornford’s translation: “stroke” and “movement.”

general outline is consistent with the accepted medical discourse of his time.¹¹¹ He follows with a short but much clearer description of what we now call pitch, loudness and timbre:

And let us take it that whenever the percussion is rapid, the sound is *high-pitched*, and that the slower the percussion, the lower the pitch. A regular percussion produces a uniform, smooth sound, while a contrary one produces one that is *rough*. A forceful percussion produces a *loud* sound, while a contrary one produces one that is *soft*.

This passage shows that Plato was indeed only interested in sounds closer to what could be considered musical than to everyday sounds coming from nature or animals, or any others that could be classified as noise. It also shows the inherited knowledge about the qualities of sound and their relation to the transmission of vibrations.

The second passage of the *Timaeus* where Plato addresses sound is a continuation of 67B-C. At the end of it, he had announced that he would reserve the matter of “harmonization in sounds” for later in his discussion. In 80A-B, he fulfills this promise. The reason he waited to do so is interesting, given that this second passage is part of a section about human physiology. Right before it, there are lengthy passages about blood circulation and respiration, aimed at explaining what causes the *movement* of the blood and the air. Understanding such movement was paramount because both processes were responsible for transmitting the breath of life or animal spirit to all body parts, and this included what was perceived through the senses. That is

¹¹¹ Alcmaeon and Empedocles were the most prominent medical scholars whose ideas influenced Plato (Finger 108). Their theories covered both sound production and perception, and the anatomy and function of the ear. Their work only survives as quoted in later sources. Aristotle mentions them as predecessors and presents some of their ideas in *De Anima*. Hippocrates, though a contemporary of Plato, does not seem to have treated topics of auditory anatomy, in his work, nor of the other senses, except for his descriptions of the anatomy of the eye (Siegel 42-50). The *Corpus Hippocraticum*, however, deals with the general concerns of the soul or *psykhé*, the internal cognitive processes it supports, and its interactions with the soma (Laín 85).

why in 67B Plato talks about the percussion striking the brain and the blood, and defines hearing as the movement that culminates in the area of the liver. This particular kind of movement, which Cornford calls the “circular thrust,” occurs not only in bodily air and blood circulation, but in other types of movement like swallowing and projectile motion (319). This should not be interpreted, however, as a literal mass of air traveling from one place to the other. In fact, when Plato explains this kind of movement during respiration, he speaks of the air that comes out of the body “displacing its neighbors successively,” which is different from a projectile displacing the air around it (316). Still, his theory may sound strange to the modern reader, because it would seem to suggest that the air that is set in motion travels as a block, instead of striking the neighboring air, until it reaches the ear, and that it does so at different speeds depending on pitch:

We should also investigate all sounds, whether fast or slow – sounds that appear to us as high pitched or low. Sometimes, when the motion they produce in us as they move towards us lacks conformity, these sounds are inharmonious; at other times, when the motion does have conformity, the sounds are harmonious. The slower sounds catch up with the motions of the earlier and quicker sounds as these are already dying away and have come to a point of conformity with the motions produced by the slower sounds that travel later. In catching up with them, the slower sounds do not upset them, even though they introduce another motion. On the contrary, they graft onto the quicker movement, now dying away, the beginning of a slower one that conforms to it, and so they produce a single effect, a mixture of high and low. Hence the pleasure they bring to fools and the delight they afford – by their expression of divine harmony in mortal movement – to the wise. (80A-B)

The presence or lack of conformity between slow and fast-moving sounds, corresponding to low and high pitch, is what would currently be called consonance or dissonance. Again, Plato is interested in musical sounds, but this time he uses a phenomenon familiar to the average listener. Of course, in acoustical terms the explanation is even more obscure than the one given in 67B-C, but it is clear that Plato is only interested in it insofar as it illustrates his cosmology by way of everyday experience. The context provided in this section illustrates one of his main concerns regarding sense-perception and cognition that will remain influential well into the Middle Ages thanks to Neoplatonism: the harmonious concordance of sounds echoes that of the entire cosmos, but in order to understand it beyond mere sensual pleasure it is necessary to have wisdom. The idea that reason is a precondition for the ability to recognize this “expression of divine harmony in mortal movement,” is one of the most recurrent *leit motifs* medieval scholars inherited from antiquity. As Socrates concludes in the *Thaetetus*, “knowledge is to be found not in the experiences but in the process of reasoning about them; it is here, seemingly, not in the experiences, that it is possible to grasp being and truth” (186D).¹¹²

The idea of overcoming the temptation of merely enjoying the pleasure caused by aesthetic experiences in order to gain access to the truth greatly influenced the way in which cognitive processes were accounted for and cemented the already prevalent notion that the senses are unreliable.¹¹³ These ideas pervade many of the Platonic dialogues, and sometimes use sound

¹¹² Earlier in the same dialogue, Socrates addresses the products of perception in relation to the principle that everything must be in motion and this generates two different forms, active and passive: “an offspring infinite in multitude but always twin births, on the one hand what is perceived, on the other, the perception of it. . . . For the perceptions we have such names as sight, hearing. . . . And on the other side there is the race of things perceived, for each of these perceptions perceived things born of the same parentage, for all kinds of visions all kinds of colors, for all kinds of hearings all kinds of sounds. . . .” (156A-C).

¹¹³ Socrates concludes that “perception and knowledge could never be the same thing” (*Thaetetus* 186E).

perception as an example, and to inform discussions about many important topics.¹¹⁴ In the *Phaedo*, the senses are presented as obstacles for the soul in its search for the truth: “do men find any truth in sight or hearing. . . . When then, he asked, does the soul grasp the truth? For whenever it attempts to examine anything with the body, it is clearly deceived by it” (65B).¹¹⁵ The answer to this question is that “the soul reasons best when none of these senses troubles it” (65C). These statements are made in the context of a discussion regarding the nature of learning where Plato argues through Socrates that “learning is no other than recollection” (72E).¹¹⁶ This argument is also the subject of the famous geometrical problem that Socrates poses to the slave boy in the *Meno*. It is one of the main tenets of Plato’s cognitive psychology and his treatment of the nature of the soul. This idea was prominent in Augustine and Boethius, and it influenced medieval debates regarding perception, learning and memory. In this context, the theory of sound and its perception in the two passages of the *Timaeus* is consistent with a view of the processes in the human body and the mind as mirroring those of the cosmos, and therefore in harmony with all that exists. Taken in isolation they seem rather obscure and insufficient if one fails to take into

¹¹⁴ In *Crito*, for instance, Socrates makes reference to the sound of the inner voice: “these are the words I seem to hear, as the Corybants seem to hear the music of their flutes, and the echo of these words resounds in me, and makes it impossible for me to hear anything else” (54D). Another reference to the inner voice appears in the *Sophist* 263E-264B. In his discourse about the philosophy of language in *Cratylus*, Socrates contends: “So mustn’t a rule-setter also know how to embody in sounds and syllables the name naturally suited to each thing?” (389D). And later on in the same dialogue he criticizes the ornamental treatment of words: “letters were added or subtracted to make them sound good in the mouth, resulting in distortions and ornamentation of every kind. . . this sort of thing is the work of people who think nothing of the truth, but only of the sounds their mouths make” (414C-D). Another famous example is the simile Socrates uses in his debate in *Protagoras* questioning if virtue can be taught (Socrates, obviously, thinks it cannot). Socrates uses sound to highlight the emptiness of the discourse of the sophists: “Question the least little thing in their speeches and they will go on like bronze bowls that keep ringing for a long time after they have been struck and prolong the sound indefinitely unless you dampen them” (329A). See also the exchange about voice and music in *Philebus* 17A-18D.

¹¹⁵ See pp. 49-50 for an analysis of this section of the *Phaedo* in the context of Platonic methexis.

¹¹⁶ See pp. 50-1 for more on anamnesis and how Gadamer connects it to methexis.

account the tradition that they follow, compared to which they take the further step of connecting the acoustic aspect of sound production with the act of perception as part of the physiology of the body. They also had an impact in the way Aristotle formulated his own accounts of the generation and perception of sound, and of cognition and memory in general.

Aristotle, the Soul and the Ear

Now that Plato's relevant ideas about sound and its perception have been presented, it is time to consider Aristotle's ideas on the subject with a background that will make it possible to avoid the temptation of taking his as the only ideas that survived into the Middle Ages, and also as independent from the tradition that preceded them. Aristotle was keenly aware of that tradition and had a constant dialogue with it whether it was to reject it or adopt it.¹¹⁷ While, as mentioned above, Plato's works were practically unknown in the Middle Ages, many of Aristotle's major works had been translated in the twelfth century, and quickly became required reading in some medieval universities (Kemp 29). Even before then, Aristotle was known via the commentaries of Arab philosophers like Avicenna and Averroes, which were also translated during the twelfth and thirteenth centuries. Avicenna's commentary was translated in the 1160s by Dominicus Gundissalinus, who also translated Algazel's commentary of Avicenna's work, and Averroes' *Long Commentary on the De Anima* was translated at the beginning of the thirteenth century (Burnett 44). In fact, these commentaries were circulating widely long before the direct translations of Aristotle's work, and thus were more important as sources even in the thirteenth century. Burnett observes that, even though Robert Grosseteste and Albertus Magnus had access to the translation of Aristotle's *De Anima*, they "relied more heavily on Avicenna." One of the

¹¹⁷ See *De Anima* 1.2.403b24-1.3.405b30.

reasons for this preference was that “Aristotle was generally reckoned to be difficult to read and difficult to comprehend” (Kemp 30). In any event, by the thirteenth century, Aristotle had become *The Philosopher*, and was quoted as such in the *Siete Partidas* as well as in a wide variety of texts by the most important minds of Western Europe.

Aristotle’s writings about perception and cognition, although lengthier and more detailed than Plato’s, and covering a broader range of topics, are still rather succinct, and the lack of examples and details make them obscure and subject to multiple interpretations (Kemp 30). There are also problems with the differences between various translations and misattributed texts. Lastly, Aristotle, just like Plato before him, was developing his theories building on the information that was available during his time, and he seems to have assumed prior knowledge and availability of texts that are no longer extant.¹¹⁸ The majority of relevant passages about sound and its perception appear in the second book of Aristotle’s *De Anima* (DA) and in *De sensu et sensato*, which is part of the *Parva Naturalia* (Johnstone 1; Burnett 43). While the second book of *De Anima* contains an entire chapter on the subject, *De sensu* treats it in a fragmented fashion, in passages interspersed across the text. There are additional discussions regarding sound and its perception in two sources that are now believed to be from different authors who were probably either Aristotle’s disciples or authors that frequented the Lyceum: the *Problemata* and *De Audibilibus* (Burnett 43).¹¹⁹ Although there were translations of sections of the *Problemata* in the early Middle Ages, the full work was not translated until the middle of the thirteenth century. *De Audibilibus* survived incomplete in the form of long quotations in Porphyry’s *In Ptolemaei Harmonica commentarium* (Mathiessen, 517; Barker 98). Although not

¹¹⁸ For instance, the work of Alcmaeon of Croton on the anatomy of the ear. See p. 134.

¹¹⁹ Regarding problems with authorship see *Minor Works* p. 49 and *Problems* pp. 345-7.

written by the Philosopher, these works provide valuable information about the concerns and topics of discussion in the circles Aristotle and his disciples frequented. They also show the presence in such discussions of Platonic ideas about sound and its perception, as well as the increasing interest in the psychological aspects of sound perception and sensory integration.

The first book of *DA* illustrates how, as pointed above, Aristotle acknowledged the existence of a tradition in order to formulate his own account of sense perception or any other topic related to the soul. His stated purpose for the first book was to “collect the views of our predecessors who had anything to say on the subject, in order that we may adopt what is right in their conclusions and guard against their mistakes” (1.2.403b20-22).¹²⁰ Maybe the idea that Aristotle rejected tradition in regard to sound perception stems from his assertion at the beginning of the second book: “So much for the theories of the soul handed down by our predecessors. Let us then, make a fresh start and try to determine what soul is and what will be its most comprehensive definition” (2.1.412a1-6). At first glance, there does not seem to be a radical rejection of the tradition implied in the idea of making “a fresh start.” However, this is just one possibility of translation, from the 1907 version translated by R.D. Hicks. Although a detailed analysis of all existing translations would lead too far from the subject at hand, a contrasting example can illustrate the wide range of possible interpretations of this text. For instance, this is a more recent translation of the same passage by J.A. Smith: “Let the foregoing suffice as our account of the views concerning the soul which have been handed on by our predecessors; let us now dismiss them and make as it were a completely fresh start, endeavoring to give a precise answer to the question, What is soul?” It is evident that readers of *DA* throughout the centuries must have pondered and chosen more or less radical interpretations of

¹²⁰ All quotes from *DA* come from Hicks’ translation and spelling has been modernized.

this passage and, thus, of Aristotle's relation with tradition regarding the matter of the soul. This is just an example of the obscurity that was discussed above, which explains the rich tradition of commentary in the centuries that intervened between Antiquity and the Middle Ages, as well as the numerous current debates regarding Aristotle's views on perception and cognition. But it is necessary to remember that in this particular text Aristotle is referring to the matter of the soul in general (Gendlin II.2). It would be short-sighted to assume that such a broad statement would equally apply to each individual aspect of the entire text of *DA*. Even if Aristotle meant to start from scratch to formulate a theory of the soul, he would have probably reached a number of conclusions that coincided with those of his predecessors. In fact, there are such overlaps in his ideas about sound and its perception, and in some areas where he had nothing to say, it is more reasonable to think that he had no conflict with the tradition handed down by those before him, and therefore saw no need to restate what they had already said.

Chapter eight of the second book of *DA* addresses both the physics of sound generation and the specific attributes of voice. In order to understand the context of this discussion, it is first necessary to highlight the topics covered in the first seven chapters of this book. Aristotle begins with a series of definitions and subdivisions of substance in order to properly classify those natural bodies that are ensouled, which in turn allows him to present a definition of the soul as "the first actuality of a body having in it the capacity for life" (2.1.412a25-41). From this he can undertake a description of the powers of living things, from plants to humans: "Thus there is intellect, sensation, motion from place to place and rest, the motion concerned with nutrition and, further, decay and growth" (2.2.413a22-25). The power of nutrition is common to all living things, and is the only power plants possess, while "it is sensation primarily which constitutes the animal" (2.2.413b1-3). Having established these distinctive categories, Aristotle can now classify

animals based on the senses they possess: at a minimum, all animals have the sense of touch (2.2.413b7-10). There are different varieties of soul, depending on what powers and senses a living thing possesses. Aristotle argues that those who have sensation must have imagination and appetency: “For, where there is sensation, there is also pleasure and pain: and, where these are, desire also must of necessity be present” (2.2.413b21-24). Contrary to this clear classification, the possession of intellect and thinking presents a challenge for the Philosopher. He hypothesizes that it may be a distinct kind of soul, which can stand alone in the absence of the body (2.2.413b24-27). These considerations allow Aristotle to adjust his definition of soul as “a certain actuality, a notion or form, of that which has the capacity to be endowed with soul” (2.2.413b25-28). From this postulate follows a more detailed discussion of the vital functions and the different living things that possess them, connecting each faculty to the different senses. These connections were fundamental for the development of the medieval theory of the inner senses, which pervaded all the scholarly debates about sensory perception and cognition.¹²¹ It is important to keep in mind that Aristotle’s theory of the powers of the soul is not the origin of the theory of the inner senses, although the Philosopher’s commentators went to great lengths to reconcile his psychology with their own theories (Kemp 59).

The general discussion about the senses begins in chapter five of *DA*. According to Aristotle “sensation consists of being moved and acted upon, for it is held to be a species of qualitative change. Some add that like is in fact acted upon by like” (2.5.416b33-35). Each sense has a dedicated organ, a specific medium, and its own proper objects, which are qualifications of external objects (Cohen 1). In the case of auditory perception, the organ is the ear, the medium can be air or water, and the proper objects are sounds. Perception is a “causal process” beginning

¹²¹ See p. 140, note 146.

in the external object, via the medium, to the organ, and ending in the heart, which Aristotle considered the center of cognitive processing (Kemp 32). Perception is the transmission of a sensible quality of the external object to the sense organ (Cohen 1).¹²² Key to understanding his account of sense perception is the clear differentiation between potentiality and actuality, which to this day continues to be a source of disagreement among scholars who seek to establish exactly what Aristotle meant when he described sound production and its perception. Aristotle presents two kinds of potentiality (*DA* 2.5.417a21-417b1). The first consists in the ability to acquire some kind of knowledge, while the second one resides in having that knowledge but not making use of it. The difference is that, in the first instance, to gain knowledge there needs to be a “qualitative change through instruction,” and such transition will destroy the previous condition of ignorance. In the second instance, there is a transition from simply having the knowledge to using it. Potential knowledge is actualized when it is exercised (2.5.417b2-7). This is important because one of the processes is destructive, while the process of perception, which corresponds to the second example, preserves what was potential in what is actualized (Cohen 2). Aristotle’s explanation, in the case of perception, clearly means that the transition from potentiality to actuality is not an alteration of the sense organ (Cohen 2; *DA* 2.5.417a21-417b2). Thus, there are two different scenarios:

The reason is that actual sensation is always of particulars, while knowledge is of universals: and these universals are in a manner in the soul itself. Hence it is in our power to think whenever we please, but sensation is not in our power: for the presence of the sensible object is necessary. It is much the same with the sciences that deal with sensible

¹²² Aristotle’s actual definition of perception at the end of the second book: “that which is receptive of sensible forms apart from their matter” (2.7.418b26-27).

objects; and for the same reason, namely, that sensibles are particulars and are external. . .

Now, as has been explained, the sensible faculty is potentially such as the sensible object is in actuality. While it is being acted upon, it is not yet similar, but, when once it has been acted upon, it is assimilated and has the same character as the sensible object. (*DA* 2.5.417b18-6.418a3-6)

This distinction allows Aristotle to differentiate the proper objects for each sense from the common sensibles. While the proper object of hearing is sound, common sensibles like “motion, rest, number, figure, size,” can be perceived by more than one sense (2.6.418a11-18).

Aristotle’s account of perception begins to turn increasingly obscure when he addresses the subject of the medium, in part because it is developed at the same time as his explanation of visual perception. From this point, the explanations of what happens regarding the medium and the organ of perception are given separately for each sense. This is of course necessary because both the medium and the organ are specific to every one of the senses. The problem is that the only complete account given is the one for sight, and in the case of the remaining four the reader is asked to apply the explanations given for sight to the other senses. For instance, in chapter seven, Aristotle engages on a lengthy description of sight, where the proper object is color and the medium is transparent, like air or water, and actualized by light (2.7.418b4-6). The medium cannot possess in itself the attribute of the proper object: “It is that which is colorless which is receptive of color, as it is that which is soundless which is receptive of sound” (2.7.418b4-6). The medium is necessary for perception because proper objects cannot be perceived directly. Perception takes place when there is “an affection of the sensitive faculty,” which can only be affected “by the intervening medium” (2.7.419a17-19). Aristotle then expands this definition to hearing and smell: “For no sound or scent produces sensation by contact with the sense-organ: it

is the intervening medium which is excited by sound and odor, and the respective sense-organs by the medium. But when the body which emits the sound or odor is placed on the sense organ itself, it will not produce any sensation” (2.7.418b25-29). This assertion is rather strange, given that it would be very difficult to actually place a sounding object over the tympanic membrane, and Aristotle was aware of its existence, but this allows him to present a unified description of sense perception, with air as the intervening medium for sound, and to transition into chapter eight, where the specific discussion of sound and hearing takes place (2.7.419a32).

It was previously argued that the understanding of actuality and potentiality would be fundamental for the topic of sense perception. The discussion about sound and hearing illustrates this very fact, as Aristotle begins by pointing to this distinction (2.8.419b4-5). This is necessary because he has to define which objects are able to produce sound: “For some things we say have no sound, as sponge, wool; others, for example, bronze and all things solid and smooth, we say have sound, because they can emit sound, that is, they can produce actual sound between the sonorous body and the organ of hearing” (2.8.419b6-9). Actual sound is the result of two solid and smooth objects colliding with each other and with the air. Objects that are not smooth and solid, like wool, are not able to produce sound. Hollow objects are said to produce further collisions because the air cannot escape, thus causing reverberation. When there is no hollow object, the air must be “struck quickly and forcibly” to avoid its dispersion (II.8, 419b10-25). Next, Aristotle dedicates considerable space to the echo. This phenomenon attracted wide attention in Aristotle’s time, as evidenced by how prominently it features in the *Problemata*.¹²³ The air, according to the Philosopher, “is made to rebound backwards like a ball from some other air which has become a single mass owing to its being within a cavity which confines it and

¹²³ *Problemata* 11.7-9, 23, 51; 19.11, 42.

prevents its dispersion” (2.8.419b25-27). This description calls to mind the kind of movement Plato presented in the *Timaeus*, which could be applied to things as different as respiration and projectile motion.¹²⁴ Here it could also be tempting to misinterpret the image of the bouncing ball as an affirmation that there is an actual mass of air that travels, when in reality both accounts are describing the successive displacement of neighboring air. In Aristotle’s explanation of the echo, however, the air is trapped in an enclosed space, so the successive displacement of neighboring air is so strong as to produce the effect of the sound being replicated. This is one of those instances where one can appreciate that Aristotle was not necessarily rejecting everything that Plato had proposed regarding sound production and perception, but in reality, he was elaborating and expanding on the tradition he inherited.

In both cases just described, smooth bodies and enclosed spaces, what is important is that there is a unified surface that sets the air in motion without dispersing it (2.8.419b34-420a2). This is the necessary precondition in the medium for sound to reach the ear: “That, then, is resonant which is capable of exciting motion in a mass of air continuously one as far as the ear.” (2.8.420a3-4). This allows Aristotle to transition into the area of sound perception, starting with how sound is captured by the ear, in a passage that is a perfect example of the aforesaid difficulty that led to the writing of many commentaries over the centuries and well into the Middle Ages:

There is air naturally attached to the ear. And because the ear is in air, when the external air is set in motion, the air within the ear moves. . . . Of itself, then, the air is a soundless thing because it is easily broken up. But whenever it is prevented from breaking up, its movement is sound. But the air within the ear has been lodged fast within walls to make it immoveable, in order that it may perceive exactly all the varieties of auditory

¹²⁴ See p. 114 and Cornford, p. 316.

movement. This is why we hear in water also, because the water does not pass right up to the air attached to the ear, nor even into the ear at all, because of its convolutions. Should this happen, hearing is destroyed, as it is by an injury to the membrane of the tympanum (2.8.420a4-14)

The main cause for the obscurity of this passage is that Aristotle engages in an explanation that hints at an anatomy of the ear without ever actually describing the anatomy of the ear. There is mention of an enclosed space where air cannot move, of the existence of a membrane that is presumably the eardrum and of a convoluted structure that prevents contact with the inner part of the ear. It is stated that as the external air moves, this causes the internal air to also move. But the location of the internal air and the distribution of the internal structure is never established. On the one hand, it would seem like the internal air is obviously trapped behind the eardrum, in the middle ear, but then the reference to water not being able to even get into the ear due to the convolutions of its structure is quite perplexing, because it is easily contradicted by mere experience, even without knowledge of the structure of the outer ear. Such a convoluted structure is found in the inner ear, and could refer to either the entire labyrinth or to the cochlea, which are filled with liquid, not with air. The structures of the channels in both the outer ear, the external acoustic meatus, and the middle ear, the Eustachian tube, do not present anything close to convolutions. In the *Historia Animalium*, Aristotle mentions a passage from the ear to the palate but does not give specific details about the section of the ear where it is located (492a20). According to Siegel, however, Aristotle was not aware it led to the Middle Ear, and considered its only function was draining “superfluous matter from the inner ear into the oral cavity” (137). If water cannot get inside the outer ear and reach the eardrum, anyway, how can the external air do so, and how exactly is its movement then passed on to the inner air? The alternative would be

to think there is an internal air attached to both sides of the eardrum, and that in the case of water, external air mediates the transmission of sound to this internal air. But then how can the internal air be trapped? This dilemma will be revisited below with examples of the way in which it was addressed by the Philosopher's commentators.

In the following section of *DA* 2.8 Aristotle turns his attention to sound again, and addresses one important topic mentioned at beginning of this thesis, namely, that sounds give clues as to the kind of source that generates them: "The varieties of resonant bodies are clearly distinguished by the sound they actually emit" (2.8.420a26-27). He presents pitch as the main identifying feature of sound, and echoes Plato in ambiguously speaking of high and low pitch in reference to frequency, stating that the sensation comes from the rapidity or slowness of the movement (2.8.420a30-33). After this, the treatment of sound is cut abruptly in order to pass to a section dedicated specifically to voice, defined as "a sound made by an animate being," that is, a being with a soul.¹²⁵ Aristotle clarifies that when it is said that a musical instrument, like a flute or a lyre, has a voice, this is only an analogy (2.8.420b5-8). He also clarifies that not all animals have a voice. In those who do, there needs to be respiration in order to provide the medium (2.8.420b13-15). In the case of the generation of voice, the thing that strikes and the thing struck are the air breathed and the windpipe; the impact between the two is voice if the cause of it is "the soul which animates the vocal organs" (2.8.420b27-29). Aristotle clarifies that this is necessary to distinguish the noises made by animals from voice, because the vocal organs can produce many noises (2.8.420b30-31). In order to have voice it is necessary to have the presence of soul and of "some mental image," because "voice is certainly a sound which has significance" (2.8.420b31-32). The proof that this is so, according to Aristotle, is that humans cannot speak

¹²⁵ As mentioned in pp. 120-1, there are different degrees to which a being can have a soul.

while they are breathing in or out, but only when holding in the air (2.8.421a1-3). Thus, different from the sound generated by the collision of inanimate objects, the production of voice requires at least a partial cognitive process that yields a mental image, which then leads the soul to generate movement in the vocal organs. Aristotle does not elaborate further on the mechanisms that generate speech or the rest of the cognitive process that takes place in this section of *DA*, indicating that this is no longer related to the realm of sense perception and belongs to a separate, cognitive process. Just as no clear explanation was given regarding the internal air and its location in relation to the eardrum, the reader is also left with a very short and obscure description of the process of speech production.

These questions were equally perplexing for the commentators and intellectuals who wrote extensively about the *De Anima* from Antiquity to the Middle Ages, not only attempting to clarify Aristotle's views, but also contributing their own opinions and supplementing them with the current medical and philosophical discourse of their time. One could interpret the ambiguities of the passages analyzed above as Aristotle again engaging in what he has been doing throughout the entire text of *De Anima*: assuming prior knowledge of a body of works that are no longer extant. But even this is difficult to confirm because of the presence of fundamental differences between translations of this text. Some of these discrepancies are relevant because they may potentially lead to very different conclusions regarding the particularities of auditory perception. It is worthwhile, therefore, to take a close look at them.

The Commentary Tradition

In an early example, the commentary by Christian theologian and Neoplatonic commentator Philoponus (490 AD- 570 AD), there is both an attempt at providing a detailed

anatomy and to elaborate it further with an account of what happens after sound is perceived, which goes far beyond Aristotle's original explanation.¹²⁶ Philoponus' text provides some insights regarding the accepted theories of his time. He shared Aristotle's view of the production and propagation of sound, and added to it further details in keeping with the elaborations made by the Philosopher's successors. He clearly interpreted the propagation of sound not as a single mass but as a wave, using the example of a cup filled with water: "If one fills a cup with water one can see how ripples are produced in the water when the finger moves around the rim" (Sambursky 100).¹²⁷ Philoponus clarifies that when in *DA* 2.8.420a3-4 air is said to be "one in continuity up to hearing," this refers specifically to what he calls "heard sound," because "sound can move beyond hearing, but no longer as heard [sound]" (50). This points to a proximal conception of auditory perception and allows him to elaborate on the internal air problem.¹²⁸ The translation he uses characterizes air as "inborn in hearing," and he explains that this is said to show that the external air never actually reaches the eardrum. Thus, for Philoponus this inborn air actually surrounds the eardrum. It receives the information about sounds from the external air and passes it on to be perceived by the "acoustic pneuma that resides in the eardrum itself." The introduction of the acoustic pneuma is followed by summary description of how sensory perception works: "For the senses, starting from the brain, proceed through the nerves as far as the sense-organs. The power to hear, then, proceeds to the roots of the ears, which are called the 'eardrums'. There is a nerve proceeding from the brain which is equipped with a channel, and the

¹²⁶ Little is known about Philoponus' life, except for the criticism and debates related to his Christian views (Blumenthal 61). There are problems with the attributions of his commentaries, especially book 3 of his *DA* (45-51).

¹²⁷ See note 137 for the origins of this description in Zeno of Citium.

¹²⁸ Regarding proximal and distal philosophical conceptions of sound and auditory experiences see Pasnau, "Sensible Qualities," and Casey O'Callaghan.

acoustic pneuma is in that channel.” Philoponus observes that the inner air around the eardrum is not always the same but it is generated by the body as a kind of protection, and if it disappears, damage to the ears ensues. Charlton explains that the pneuma was “a kind of gaseous substance” thought to possess the sensory capacities, and the nerves were its channels; its function would be close to that of the electric impulses in modern physiology (147, note 181).¹²⁹ Philoponus also justified the presence of internal air by positing that, although Aristotle said it was possible to hear in air and in water, water was not sound-conveying, thus needing the mediation of the air to transmit the sounds to the eardrum (51). Protecting the eardrum was also the reason for the “tortuous layout” of the ear (53).

Philoponus struggled with exactly what kind of movement would occur in transmitting sounds, given that Aristotle described the internal air as unmoving, yet it is the continuous movement of the external air that it is supposed to transmit to the eardrum. He ventured that perhaps this is not a movement of place but only a “change,” and he proposed a simple empirical test, that of blocking one ear with a finger. Doing this makes one notice “a sort of sound and change in the air inside” which causes the internal air to rebound and produce sound, thereby also proving that the ear is healthy (52). This is one example of the empirical approach of Philoponus regarding perception, which is consistent with a Greek tradition of empiricism dating back to the 4th century BC, with Aristoxenus’ study of musical sound (Barker 5).¹³⁰ Philoponus, just as Aristoxenus, albeit with a different focus, grounds his arguments with an analysis

¹²⁹ For more about the concept of pneuma see below in the section about Galen, p. 136, note 142.

¹³⁰ Aristoxenus of Tarentum, a pupil of Aristotle, wrote one of the first surviving collections of writings on music and acoustical theory, the *Elementa Harmonica*. Aside from it and a fragment from his book on rhythmics, the rest of his monumental work on philosophy, biography, education, and politics, only survives as quoted in other sources. It was so influential it is considered as the beginner of a tradition that ran parallel to the Pythagorean. For a biography of Aristoxenus and a detailed analysis of the *Elementa Harmonica*, see Barker, pp. 119-89.

controlled by human experience. He tries to complement Aristotle's obscure statements about the anatomy and function of the ear with examples derived from everyday life and also with parallels between visual and sound perception and their respective sense organs.¹³¹ However, there are specific areas where this empirical approach cannot shed light on the issue, and where he can only follow what the text says; for instance, the assertion that the convoluted structure of the ear prevents water from entering. In this case, Philoponus can only add that this is the reason why nature made the ear with such a structure, which seems to indicate, quite misleadingly in light of the relevant medical tradition, that in the intervening centuries between The Philosopher and his commentator no significant advances had been made regarding the internal anatomy of the ear (54). Returning to the matter of the internal air, the main problem is determining why Aristotle seems to contradict himself in one part saying it is unmovable, then describing it later on in *DA* 2.8.420a16-18 as "moving with its own movement" (55). Philoponus takes this as only meaning that the air never leaves the inside of the ear, something suggested empirically by comparing it to "the air of hollow horns." Thus, he argues that this particular movement may be understood as happening "not in respect of place, but in a vital way, and he [Aristotle] means by 'movement' the transmission of sounds to the sense." Up to this point, the empiricist approach that Philoponus applies to this passage seemed to cast a shadow on his Neoplatonism. Here, however, one sees a glimpse of it in the form of a transmission that does not really depend on the bodily organ or the internal air, that is, in the materiality of the process of perception.¹³²

¹³¹ For example, in his commentary on the passage about the echo, *DA* 2.8.419b27-30, where Aristotle uses the reflection of sunlight to illustrate the way sound reflects from solid and smooth bodies, Philoponus adds specific examples and hypothetical scenarios where light and shadow are generated (362.19-363.14).

¹³² Regarding the Neoplatonist reduction of Aristotle's materialistic aspects see Blumenthal, p. 123.

Although a dissection of Philoponus' observations regarding voice falls outside the scope of this thesis, the interested reader will find in them much more evidence of the advances in medical knowledge during the centuries that separated the commentator from Aristotle. Philoponus offers detailed anatomical descriptions of the vocal and breathing organs, and also spends considerable time explaining the way voice is generated and how it differs from noise, again offering numerous examples to support his arguments. One particularly exhaustive explanation merits special attention: the passages regarding the difference between voice and noise (*DA* 2.8.420b5-8). Whereas this section of *DA* merely states what voice is and who can produce it, clarifying that musical instruments do not really have a voice because they have no soul, and describing the qualities of sound that characterize it, Philoponus uses it as an opportunity to start a long digression. While voice is the result of an organized and voluntary process that renders euphonious sound, noise is involuntary and, absent a process, "the breath is moved in a manner contrary to nature," causing it to strike the vocal organs "in a disorderly way" (379.20-5). This already establishes that in order to convey meaning, the utterance has to be produced by an orderly process that yields a harmonious result. The commentator compares the vocal organs with the acoustic properties of musical instruments, to then enter into a lengthy description of the qualities of sound from a rhetorical perspective, in which the attendant medical and philosophical considerations are framed by the act of communication that is the function of voice, and which can be verbal or non-verbal. Philoponus underscores the role of prosody, rhythm, affect, and eloquence, in the Aristotelian concept of voice, and highlights the links between its acoustic and anatomical properties and the products of their use. He does this especially with speech, a uniquely human ability, and the only system of production of sound

that clearly encompasses perception and cognition. In doing so, he presents what is probably the earliest example of an embodied approach to the study of sound perception and cognition.

In the twelfth century, Averroes (1126-1198 AD) faces the same problems of interpretation in his *Long Commentary on the De Anima*. His analysis is extremely close to Philoponus' in the interpretation of the text, but he does not elaborate extensively on the cognitive aspects, nor does he rely as heavily on an empirical approach. Averroes shares Philoponus' interpretation of *DA* 2.8.420a3-4 as a description of continuous motion rather than a single moving block of air, and complements his argument with recourse to the example of the wave produced by a rock thrown in water, the same one Galen had also espoused.¹³³ He also shares a similar outlook on the internal structure of the ear: "And for this reason we also hear in water. . . since it does not enter in the ear also on account of the twist [of the tube of the ear]" (*DA* II.8.420a7-10). The translator's addition in brackets is accompanied by a note stating that this is the Eustachian tube (199, n. 204). This assumption is not supported by Averroes' analysis of this passage: ". . . we hear in water when water has not entered upon the air which is in the ear and has not corrupted it, on account of the spiral which is in the created nature of the ear" (200). Averroes does not offer any additional details in this passage to warrant the assumption that he even knew about the existence of the Eustachian tube, which does not have twists; however, he describes the structure as a spiral, not simply as windings or convolutions. The only convoluted or spiraled structure in the ear is the labyrinth, which encompasses the cochlea and the vestibular system, and which is located in the inner ear.¹³⁴ Whether this is just a coincidence or Averroes was in fact describing this structure based on knowledge or following another medical or

¹³³ See p. 136, note 141.

¹³⁴ See Chapter 1, Figure 6, p. 23.

philosophical tradition is not discernable from the text of the *Long Commentary*, but the fact that he wrote a commentary on Avicenna's *Cantica*, and also on the works of Galen, clearly shows that he is referring to the inner ear structure.¹³⁵ In order to appreciate some of the implications of these different interpretations, it is necessary to open a short parenthesis to look at the medical tradition regarding the anatomy and function of the ear.

Medical Tradition: from Antiquity to Avicenna

Knowledge of the Eustachian tube precedes Galen, and can be traced back to the pre-Socratic era. Alcmaeon of Croton (5th century BC) is credited with its discovery, and although Aristotle does not mention him specifically in regard to this particular matter, he includes him in the number of his predecessors in the first book of *De Anima*, and briefly discusses his views on the immortality of the soul (405a29-b1).¹³⁶ Alcmaeon is believed to have practiced anatomic dissection and maybe even vivisection (Laín 72).¹³⁷ According to Cornford, Diogenes of Apollonia and Anaxagoras thought the ear was just a “channel for sound” (276). Diogenes said that the motion was transmitted from the outside to the inside air and from there to the brain, while for Anaxagoras the sound penetrated the brain due to it rebounding from the skull. The *On Flesh* of the *Corpus Hippocraticum* argued against this view that the brain could not resonate

¹³⁵ For a complete list of Averroes' works, including his medical treatises and commentaries, see the “Averroes' Works” section of *DARE: The Digital Averroes Research Environment*. http://dare.uni-koeln.de/dare-cgi/vaporlinks.pas?darevurl=leftBoxContent%3A%3D%2Fdare-cgi%2Ftexts_all.pas%3A%3DonLoadedTableOfTexts.

¹³⁶ Although Alcmaeon's name does not appear in Averroes' *Long Commentary*, it appears in his *Middle Commentary* (*Long Commentary*, p. 39, note 137).

¹³⁷ Alcmaeon, just like Empedocles, approached the study of medicine holistically, so anatomy, physiology and psychology were not seen as separate disciplines. This was in part due to the general view of the human body as a microcosm, just as reality was seen as a reflection of cosmic harmony (Laín 72).

because it was moist and soft; it also included a description of the tympanic membrane (Laín 73). The brief description Plato offers in the *Timaeus* was discussed above.¹³⁸ As previously stated, Aristotle mentions a passage that connects to “the roof of the mouth,” which corresponds to the Eustachian tube, in his *Historia Animalium* (Cornford 275).¹³⁹ Certainly, knowledge of the ear’s anatomy was not the same in the entire medical tradition, and different parts seem to have survived in various texts at different times, not necessarily following any kind of incremental teleology. Still, although there is no surviving text from the intervening centuries before Galen dealing specifically with the ear, it is evident that there were advances in this area, especially in regard to cognitive processing, probably in great part due to the influence of the medical school that flourished in Alexandria in the third century BC, and where Galen studied centuries later (Serageldin).¹⁴⁰

Galen, writing in the second century AD, even though heavily influenced by Aristotle, did not refer to any structure identifiable as the Eustachian tube nor did he describe the particular anatomy of the middle ear (Siegel 136; Lain 77-8). Nonetheless, he offered detailed descriptions of the outer and inner ear, and the connection of the cranial nerve with a spiraled structure he named *helix*, that is, the cochlea (Siegel 127-31).¹⁴¹ He also believed that the ear was filled with

¹³⁸ See p. 112.

¹³⁹ See p. 126.

¹⁴⁰ The medical school in Alexandria, which followed the teachings of Hippocrates, also benefited from the influence of ancient Egyptian medicine. Its oldest written example, the Edwin Smith papyrus, dates back to 1600 BCE, and may reflect knowledge as old as 3000 BCE (Serageldin). It is the first medical text to pinpoint the brain as the control center of the body, and to describe surgical procedures, including the use of techniques like trepanation, as well as the use of dissection and vivisection. See also Laín, pp. 75-6.

¹⁴¹ It is believed that Galen used the anatomy of the ear of a large animal, probably an ox, for his description of the inner ear (Siegel 127). The human inner ear is microscopic, which made it impossible to use it directly for anatomical study, and there is no concrete evidence of the use on magnifying lenses in Galen’s time.

air and he followed Zeno's view regarding the propagation of sound as waves spreading spherically (134).¹⁴² Contrary to other natural philosophers, Galen did not interpret the internal air as being different from the external one (136). He spoke of a cerebral pneuma in ambiguous terms, as that which filled the nerves and the cerebral ventricles.¹⁴³ Galen thought that the sensory nerves were directly connected to the front ventricle, while the motor nerves were connected to the rear ventricle (Kemp 46). His views differed radically from the Greek tradition

¹⁴² Zeno of Citium (circa 300 BCE) was the founder of the Stoic school of philosophy. Regarding wave propagation, he stated: "We hear when the air between the sonant body and the organ of hearing suffers a concussion, a vibration, which spreads spherically and then forms waves and strikes upon the ears, just as water in a reservoir forms circles when a stone is thrown into it" (Diogenes Laertius VII.1; quoted in Siegel, p. 134, note 12).

¹⁴³ Kemp explains that this pneuma or spirit was "extracted by the liver. This spirit, called "natural" spirit, is mixed with the blood and conveyed around the body. Some goes to the heart, where it is refined to produce "vital" spirit. Some of the vital spirit, in turn, is further refined to produce "animal" spirit. . . . The refined animal spirit fills the ventricles of the brain. It also fills the sensory and motor nerves, which, in Galen's account, are connected to the ventricles" (45-6). The term "pneuma" was used with varying meanings throughout the history of medicine, and different authors disagreed about its function, composition and location in the human body. For example, Diogenes of Apollonia (5th century BCE), considered that the main element in the composition of the human body was air, which became pneuma after entering a living body (Lain 79). His views and those of his followers initiated the medical doctrine known as "pneumatism." In the context of the *Corpus Hippocraticum*, the notion of pneuma gives way to the new concept of "humor," which will be fundamental in medieval medicine. It was believed to enter the body through the nose, mouth and skin, and then pass first to the brain to enable intelligence, and then to the other major organs (85). It was also described as part of the process of embryonic development during pregnancy (82). Aristotle combined both notions in his descriptions of the human body, and gave the pneuma the important status of life-giving agent (80). Greek physician Herophilos (3rd century BCE), thought that the pneuma circulated in the arteries, together with blood, but not in the veins, while his contemporary Erasistratus argued that arteries contained only pneuma and veins only blood (75). By the time of Zeno of Citium, pneumatism is the dominant doctrine, and there are various classifications of "pneumata" (81). Galen gave a more stable classification to these pneumata, and also to the humors, leading to the famous identification of individuals as sanguine, phlegmatic, choleric and melancholic. But Galen distinguished between soul (psyché, following the Platonic model) and pneuma (spirit). For Galen, the pneumata are subtle material substances which actualize the potentiality of the bodily organs, including the brain (89-90). To add to the confusion, the word "spirit" (spiritus) had also multiple interpretations, from Aristotle's use of it to mean "breath," to the aforesaid meaning of "soul" as a physical bodily attribute, to its later medieval uses as the intermediary between the body and the soul, or as the liquid in the ventricles of the brain (Kemp 45).

when it came to perception and cognitive processing, which he considered to be ultimately seated in the brain, not in the heart like Aristotle, or in the liver like Plato, or in the ventricles, as later believed by most medieval scholars as part of the theory of the inner senses. Galen was not very successful in advancing his theory that sound was ultimately processed in the brain mainly because he did not provide a satisfactory explanation about how the air vibrations were transmitted to the acoustic nerve and the brain, in part because he did not discover the function of the ossicles in the middle ear, nor did he know that the inner ear was filled with fluid instead of air (135-6). Still, throughout the rest of Antiquity and the Middle Ages, Galen was the main source of medical knowledge, both as transmitted through Arabic sources and as developed in medieval European universities.

Whereas the conservation and transmission in Byzantium of Greek and Roman knowledge, and of Galen's works specifically, was almost unknown in the West until the end of the Middle Ages, the Arab medical tradition reached Europe centuries earlier via the translations and commentaries of eminent Arab scholars.¹⁴⁴ But the contributions of these scholars went beyond translation and transmission, as they helped to shape the medical theories and the conception of cognitive psychology that were predominant until the end of the Renaissance. After the initial centuries of gathering and translating the works of the Classical past into Arabic, in the ninth century starts to flourish in Baghdad a new approach to medicine that combines the refashioning of the inherited tradition with the development of new medical knowledge (Lain 159). From this new source will emerge an educational compilation of Galenic medicine that circulated in Medieval Europe, as well as treatises on subjects as varied as pharmacology and blood circulation. The splendor of Arab medicine spans the tenth and eleventh centuries, the

¹⁴⁴ Regarding the Byzantine medical tradition, see Lain, pp. 144-156.

second of which will see its rise in Western Europe, centered on the Caliphate of Cordoba. It incorporated the Hippocratic and Galenic traditions and the wealth of Aristotelian, Neoplatonic and Atomistic knowledge. Some of the medical texts produced during these two centuries by Islamic and Jewish scholars were still in use in Europe in the eighteenth century (160).

Avicenna embodies the pinnacle of Islamic thought and his influence in the Medieval West went far beyond medicine. As mentioned above, he was one of the main sources of Aristotelian philosophy before the rediscovery and translation of The Philosopher's works. Avicenna's opus encompassed medicine, astronomy, philosophy and theology (161). His most important medical work, the *Canon of Medicine* (*al-Qānūn fī l-tibb*), is a monumental encyclopedic work in five volumes and it was translated into Latin in the twelfth century. The *Canon* was one of the principal textbooks in universities across medieval Europe and it circulated up until the seventeenth century (Kemp 6). Its third volume contains a fifteen-chapter treatise on the ear that covers anatomy, hygiene, hearing loss, illnesses and trauma, as well as references to the knowledge inherited from Persian and Greek sources (Elhendi, "La Audiología" 68).¹⁴⁵ It contains a description of the anatomy of the ear clearly based on the tradition, including some of the same difficulties for interpretation, but lengthier and more detailed. It also includes some elaboration on the probable causes of the spiraled shape of the hard bone structure of the ear, which is said to force the air to travel a longer distance, protecting the organ from sudden bursts of heat, cold or excessive strength of the incoming air (Elhendi, "Anatomía del oído" 7). There is also a more detailed description of the auditory and vestibular nerves, a depiction of the tympanic membrane as responsive to sound vibrations and what appears to be a description of

¹⁴⁵ Avicenna included concrete affections like ringing in the ears (Canon §202), ear infections (§511-2) and a minute description of the veins around the ear (§1023).

the middle ear (8). Avicenna also offers an explanation of sound as the result sound waves that strike the tympanic membrane, which is connected with the endings of each pair of nerves at the end of the ear canal. He compared the mechanisms of auditory nerve function to those of the optic nerve and offered a detailed discussion of the cranial nerves and their connection to the brain. Even though in the *Canon* there is no discussion of the specifics of sound perception in the brain, Avicenna attributed hearing loss to problems in the brain and its adjacent structures.

The discussion of sensory processing is part of Avicenna's psychology, of which three treatises contain specific sections about perception: the *Compendium on the Soul* (*Kitāb fī l-Nafs' alā sunnat al-iḥtiṣār*), the *De Anima*, part of *The Cure* (*al-Shifā'*), and *The Salvation* (*Kitāb al-Najāt*). Of the three, the discussion of the *De Anima* is the only one that does not reinstate the Aristotelian theory of sound production and perception, or any of the other senses, and instead concentrates in a discussion of the internal senses and the way they process the information gathered by the five external senses. Still, it contains interesting insights on auditory phenomena that give a glimpse into how medieval intellectuals attempted to explain them in the context of their views regarding cognition.¹⁴⁶ As mentioned above, the theory of the inner senses was extremely important in the Middle Ages. It assigned particular cognitive functions to specific

¹⁴⁶ I.e. The discussion about the need for the imaginative faculty for non-rational animals to live: "Si autem non esset in animalibus virtus in qua coniungerentur formae sesatorum, difficilis esset eis vita. . . et si sonus non ostendere saporem. . ." (*Avicenna Latinus* IV.I.23-5). See also the discussion about auditory hallucinations and how to the ill mind they appear completely real as if perceived by the external senses due to the impairment to the action of the cogitative and intellectual faculties: ". . . et formae quae sunt in formali praesentantur in sensu communi et videntur quasi habeant esse extrinsecus. . . . Si autem cognitio et intellectus subvenerint ei in aliquot istorum et revocaverint ad se virtutem imaginativam excitando eam, delebuntur formae illae et imaginationes" (IV.II.34-45). Finally, the discussion on how extreme stimuli may alter or damage the sensory organs: "sicut est disposition sensus, quem sensibilia difficilia et assidua debilitant et aliquando destruunt, sicut splendor visum et tonitruum maximum auditum, ita ut sensus postquam apprehenderit difficile, nequeat apprehendere debile" (IV.II.18-21).

parts of the ventricles of the brain (Kemp 32).¹⁴⁷ Avicenna contributed greatly to the development of this theory, suggesting five different cognitive processes, and he had enormous influence in its later medieval elaborations.¹⁴⁸ The *al-Najāt* contains a few sentences that summarize the Aristotelian account of sound production and perception, as well as the main anatomical features of the ear, adhering also to the notion of an internal, motionless air that is altered by the external vibration, transmitting it to the nerve (Rahman 26).

The discussion about sense perception in the *Compendium* stands apart in that it elaborates extensively on a comparison of the Aristotelian account with other theories, and mainly with Plato's theory of visual perception from the *Timaeus*, which Avicenna rejects in categorical terms (51-4). It is a very salient example of the general line of inquiry that Avicenna

¹⁴⁷ Galen's theory that the spirit was housed in the ventricles of the brain was still followed in the Middle Ages, and Avicenna had a very important role in its transmission (Kemp 46). As mentioned earlier, Galen did not assign cognitive functions to the ventricles. It is not known where the tradition of locating cognitive functions to the ventricles stems from, but Kemp observes both Augustine and Aquinas thought it came from medicine, and the doctrine was already widespread by the time of Augustine and Nemesius. The medieval conception of the ventricles was based on a very schematic, simplified, and linear, anatomy of the ventricles (47). See Kemp 47-8 for examples of medieval illustrations of the anatomy of the brain. This inaccurate representation, however, supported the existence of the inner senses and the general conception of cognitive processes as successive rather than simultaneous. Kemp observes that the theory of the inner sense was problematic from a theological standpoint, because it placed cognitive functions on bodily organs, which led to the inevitable conundrum of what happens to the memories stored in them after the physical body dies (48). But any theory regarding the nature of perception had to account for the fact that animals, although supposed to be devoid of an immortal soul, possessed obvious cognitive abilities, something that Aristotle had already established and Augustine had reaffirmed (50). What is more, there had to be a way of accounting for the cognitive impairments caused by illnesses and brain injuries, and the evident fact that damage to different areas of the head resulted in different kinds of impairments. This led to medieval conceptions of psychiatric disorders as related to damage or malfunction of each specific ventricle (51).

¹⁴⁸ Avicenna's account of the inner senses is comprised of five cognitive processes. Fantasy was subdivided into common sense and image store, and was located in the front ventricle. Cognitive power and estimation were located in the middle ventricle. Lastly, memory was located in the rear ventricle (Kemp 51).

followed, and that also led to his adoption of many Platonic concepts within his primarily Aristotelian framework. The *Compendium* also reinstates the Aristotelian account, elaborating on specific topics like the inner air, the required physical qualities of sounding bodies and the particular circumstances of the generation of the echo (55). Sense perception is further developed in the *Compendium* in regards to the topic of the sensibles, of which Avicenna offers a specific classification into eight different pairs (57).¹⁴⁹ In the case of hearing, the pair of primary sensibles is heavy and sharp sound, regarding which he makes a distinction as to mode of perception: “Moreover all sensibles are felt wholly and solely through a sort of gathering and sundering, shrinking and spreading; except sounds, which are felt only through sundering”. Avicenna also reasserts the characteristics of the medium, stating that air is absolutely void and free of form (58). Another area which was not addressed in any of the other discussions on perception is that of how hearing perceives general characteristics like shape, number, size, motion and rest (59). Avicenna acknowledges that, in contrast with the other senses, it is not obvious in which way the ear would perceive them. Number, for instance, is perceived through the differentiation of various sounds, while loudness allows the estimation of the size of the objects striking each other, as well as if they are solid or hollow. The “change and fixedness of the sounds” allow the perception of motion and rest. These are very important assertions that show a more sophisticated conception of sound as a phenomenon in the time of Avicenna. This is the first presentation I have encountered of a psychoacoustic theory of auditory perception founded on the medical and philosophical theories of an author. Such an advanced account could only come from a scholar who was at the forefront of both disciplines and its importance cannot

¹⁴⁹ For a detailed analysis of the problem of the sensibles in the case of auditory perception in the Aristotelian tradition, see Pasnau, “Sensible Qualities,” pp. 27-31.

be overstated, as it attests to the awareness of the interrelation of both aspects of auditory perception at a level not only of intuition but also of intellectual inquiry.

After Avicenna: Reconciling Aristotle and Religion

We had opened this parenthesis to inquire into the medical knowledge that Averroes might have derived from the sources available to him regarding sound and its perception. This is the tradition that Averroes inherits and further develops in the twelfth century, a tradition which, aside from Avicenna, also includes important Arabic scholars like al-Fārābī, al-Kindī and al-Ghazālī. To the wealth of philosophical, theological and medical tradition, Averroes adds another important component: his work as a legal scholar. Even though all the scholars and intellectuals surveyed here, from antiquity to the Middle Ages, showed varying degrees of interest in the law, wrote about it and theorized about it, Averroes was both a scholar and an actual jurist, serving as *qâḍī* of Seville for many years (*Long Commentary* xv).¹⁵⁰ He was also at odds with the more conservative legal and theological schools that were dominant in the Caliphate of Cordoba, and because of this he had to live in exile for a short time (xviii). Taylor defines Averroes' view as an "Aristotelian rationalism" very critical of traditional theology, which may have been one of the reasons for his falling into disfavor (xvii). This prosecution included an order to have his works burned, in spite of which many of them survived, some in translation from Hebrew and Latin sources (xix). In regards to psychology, Averroes, just as his predecessors, was mainly interested in the nature of the intellect and in the question of how it could operate without reference to the sense organs and what they perceived: "What is at issue here is simply the most important and fundamental epistemological question of the Aristotelian

¹⁵⁰ Regarding Averroes' career as a jurist and philosopher see Kukkonen, pp. 495-7.

and Platonic tradition: Is it possible for human beings while existing in extended physical bodies to think intelligible objects which are separate from physical conditions?” (xxi-xxii). This is a question which Plato and Aristotle never really answered, and that their successors and commentators, especially in the Aristotelian tradition, attempted to resolve in different ways (xxi). Starting with the Peripatetic Alexander of Aphrodisias (c. 200 AD), there is a clear drive in this direction in the commentary tradition, which begins with sense perception, and with its relation to specific bodily organs (Blumenthal 121-3). The Neoplatonists, following Alexander, “reduced or removed the materialistic aspects of Aristotle’s theories on perception through the senses” (123). The sense organs were defined as instruments and the sense impressions that they gathered were later translated into thoughts by the soul. Plotinus, for instance, considered that the soul made “judgements about affections which happened in bodies.” In sum, the tension the Neoplatonists were grappling with, between the seemingly materialistic nature of Aristotelian psychology and the fact that its most fundamental question had remained unanswered, continued to occupy a central place in the Arabic tradition that deeply influenced the medieval west.

Averroes held varying views throughout his life regarding the intellect and its relation to the body. He reached a definitive opinion on the subject in the *Long Commentary*, concluding that there is one material intellect all humans share which is, in the words of Taylor, “a receptive disposition for intelligibles of things of the world while itself being separate intellect” (*Long Commentary* lii).¹⁵¹ There is a distinction between this kind of intellect, which can receive universal forms, and the perception of individual sensible forms by the agent intellect, which

¹⁵¹ For an outline of Averroes works, culminating in the commentaries, see Kukkonen, pp. 496-7. Even though Aristotle had specified that the material intellect could not understand without the use of the imaginative faculty, Averroes argued that The Philosopher was not implying that therefore it would be “generable and corruptible” (liii). For Averroes’ detailed treatment of the different intellects see *Long Commentary*, pp. 292-401 (cf. *DA* 3.4.429a10-3.8.431b19).

Averroes defines as “the actuality of the material intellect” (lviii-lix).¹⁵² Averroes was grappling with the complex relationship between sensing and understanding: “That is, because the things which move the rational power are inside the soul and possessed by us always in act, for this reason a human being can contemplate them when he wishes and this is called ‘to conceptualize,’ and he cannot sense when he wishes because he necessarily needs sensibles which are outside the soul” (*Long Commentary* 172).¹⁵³ Contrary to the material intellect, the agent intellect is not receptive and it has no ability to understand (lxii). Given that the agent intellect is the one that participates in perception, this means that understanding is not possible when perception is occurring, and it only takes place after the perceived forms are processed by the internal powers of imagination, cogitation and memory (lvii).¹⁵⁴ An important aspect of Averroes’ theory of the material intellect for the subject of perception in the context this thesis has set out to investigate is that it follows Aristotle in rejecting Plato’s “opinion that learning and recollection are the

¹⁵² The material intellect of Averroes’ account is still only one and it is separate from the human mind. In order to establish a connection between the individual and the agent and material intellects, Averroes develops a process where the material intellect is viewed as an apprehensive power itself devoid of any material or intelligible form. Just like the medium in perception processes cannot have form in order to receive all the forms, the material intellect is pure potentiality so it can be receptive of the intentions processed in the individual mind. The connection with the individual mind is possible through prime matter, which is “a potency for the actual material reception” of those intentions. Whereas the material intellect apprehends universal forms, the prime matter does not. But this does not answer the question of how, if there is only one material intellect, individual human beings can come to know things in different ways. In order to explain this, Averroes posits what is known as his two-subject theory, where intelligibles have two different subjects, one external and one that actualizes the form. For a detailed analysis of these theories, see *Long Commentary*, pp. lvi-lxxvi.

¹⁵³ Cf. *DA* 2.5.417b22-29.

¹⁵⁴ The agent intellect’s function is to transfer intelligibles in potency into the realm of the intellect. They become intelligibles in act in the material intellect. The agent intellect has no potency. Aristotle says, “in its substance it is activity,” so it cannot be potentially receptive. Averroes concludes that for Aristotle “the agent intelligence understands nothing of the things which are there” (*Long Commentary* lxviii). For an overview of the concept of conjoining that allows the agent intellect to act in individual human beings see *Long Commentary*, pp. lxix-lxxvi.

same” (169).¹⁵⁵ As mentioned previously, this theory of learning as recollection was important for intellectuals like Augustine and Boethius, and thus was very influential in medieval debates about cognition.¹⁵⁶ Averroes’ account seems to have been highly regarded, but that did not translate into a passive acceptance of it, or of any of the other interpretations of Aristotle’s psychology. The order these processes followed, for instance, was a matter of contention throughout the Middle Ages, especially regarding abstraction and understanding (Kemp 67).

Continuing with his commentary on Aristotle’s account of sound and its perception, Averroes also maintained the traditional view regarding the hierarchy of the senses presided by vision, something he comments at the very beginning of Aristotle’s exposition about sound generation in *DA* 2.8.419b2. To the aforementioned use of the image of a rock thrown in water to illustrate sound waves, Averroes adds the description of “a spherical figure or one nearly spherical” of sequentially displaced air, with its center in the sound source (*Long Commentary* 193). The fact that one can hear the same sound if one stands at the same distance from the source in different directions is proof that waves propagate in a spherical fashion. This additional explanation evinces an awareness of the spatial pervasiveness of sound, something he attributes to the propagation of smells and colors. Regarding the matter of internal air in *DA* 2.8.420a7-8, Averroes conveniently sidesteps the medical debate by simply restating that there needs to be a continuity with the external air without ever actually discussing the location of the internal air. He draws the same parallels with breathing and vision to illustrate why the organ of hearing responds to the movement of the air (199).¹⁵⁷ He does, however, elaborate ambiguously on the

¹⁵⁵ Cf. *DA* 2.5.417b8-16.

¹⁵⁶ For Plato’s concept of anamnesis see pp. 50-1 and 116.

¹⁵⁷ Taylor observes that this may be the result of the original text’s omission and describes it as a “confused version of the Greek” (*Long Commentary* 198, note 201).

internal air as something that “surpasses the external air in stillness,” and also on the fact that it has to mediate the sounds transmitted to water (200). He does so, first, in order to emphasize the importance of air as the medium and the fact that it is receptive of sounds “because it does not have sound in itself, since there is no motion in it which causes sound.” This allows him to support his interpretation of Aristotle’s preceding general account of perception: “He meant to explain that the relation of the air placed in the ear is just as the relation of a member proper to each thing sensed, namely, [that it is that] through which the action of that sentient being is first actualized.” Averroes thus effectively uses sound as a means to corroborate his interpretation of Aristotle’s psychology, showing that the same correspondence of functions that is manifested between the material intellect and the intelligibles is replicated in the relation between the air as the medium and sound as its proper object. Secondly, Averroes uses the aforementioned ambiguous qualification of internal air as being of greater stillness than the external air to solve the apparent contradiction in the following section, *DA* 2.8.420a16-17, when Aristotle states that the internal air “moves with some motion of its own.”¹⁵⁸

The section about voice in the *DA* gives a more complete picture of the medical knowledge Averroes inherited, and of his critical treatment of it. In the passages regarding the voice organs and the way voice is produced, he focuses his analysis on the functions of respiration, lamenting the unavailability of Aristotle’s treatise on the subject. In light of this, Averroes decides to elaborate on the matter because he considers Galen’s account “is not sufficient” (205).¹⁵⁹ His explanation includes additional anatomical detail, like the mention of the epiglottis, illustrating its function by comparing it to the way a reed works in a reed-pipe (206).

¹⁵⁸ See pp. 129-31 regarding Philoponus’ inability to solve the same problem.

¹⁵⁹ See also *Long Commentary*, p. xciv.

He also contradicts Galen's account of respiration in favor of Aristotle's. This leads to an interesting contribution in the psychological aspect. Above, in the case of Philoponus, it was noted that a consequence of the presence of soul in voice production is that the speaker's will is what causes the process to begin, motivated by the imaginative power. Averroes adds to this the contention that, given the multiple functions of respiration, there needs to be a particular mode of breathing, just as a flute player needs to exhale in a specific way to produce a melody (207). For air to strike the windpipe in the specific way that leads to the production of voice "by a voluntary exhalation on the part of the imaginative soul which is in those bodily parts," two powers of the soul need to act: imaginative and concupiscible (208). So, for Averroes, voice is not the result of the physical act of air striking the windpipe, but the result of the cognitive powers, without which, instead of voice, one would produce involuntary noise like, for instance, a cough. Again, Averroes separates here the cognitive aspects of sound from those where there seems to be an uncomfortable closeness to the materiality of the bodily organ.

Averroes was very much a follower of inherited classical tradition in considering that the ultimate realization of an individual was to achieve full knowledge of the theoretical sciences, so for him, the union of the soul with the intellect was not an end in itself, but the means to reach the understanding of philosophy. This was important because it was the essence of the law: "The Sharî'ah specific to the philosophers. . . is the investigation of all beings, since the Creator is not worshipped by a worship more noble than the knowledge of those things that He produced which lead to the knowledge in truth of His essence. . ." (lxxvi). As will become apparent further ahead, the *Siete Partidas* echo this posture in many ways, which also shared common ground with the early Christian tradition, either in relation to the epistemological status of the law or its concrete aims, and the consequent authority to legislate knowledge. Averroes was extremely important for

Christian scholars because he had managed to reconcile the teachings of Aristotle with his religious views; however, many of his ideas led to problematic interpretations and deep divisions among Christian scholars.¹⁶⁰ But he did not merely adjust to tradition in his treatment of the soul, the intellect and perception. In the case of Avicenna, for example, Averroes followed some of his teachings regarding the agent intellect, but he differed in many areas, like the function and organization of the inner senses, and his interpretation of the workings of the intellect in the *De Anima*. Although both Avicenna and Averroes were fierce Aristotelians, their interpretations of The Philosopher and their own additions to his work were considerably different. Christian scholars were heavily influenced by these two philosophers in their own study of Aristotle's philosophy and they made their own attempts to reconcile them with Christian doctrine, to the point where we still refer to the philosophical schools of Averroism and Avicennism.

Contemporary Debates

The scholars who continued the study of perception and cognition during the thirteenth century centered mostly in developing the traditions surveyed previously.¹⁶¹ The decades of the thirteenth century when the *Siete Partidas* were produced were witness to some of the most important philosophical and theological debates of the Middle Ages, and Averroism was perhaps at the center of the controversies surrounding the recent translations of Aristotle's works and the interest they generated in medieval universities. Many of the translations that made possible the renewed study of Aristotle and his commentators were produced in Toledo (Piché 911). The extent to which these works were studied in the Iberian Peninsula, unfortunately, exceeds the

¹⁶⁰ See p.149.

¹⁶¹ For an overview of the contemporary treatises, commentaries, and the scholars who authored them, see Burnett.

scope of this thesis. What is important to recognize is that the thirteenth century was marked by an intellectual growth made possible by the rising importance of universities and the increased availability of translations and commentaries. Scholars as important as Albertus Magnus, Thomas Aquinas, Robert Grosseteste, Roger Bacon, Petrus Hispanus and Pietro D'Amato, among others, lived in this century and participated in the debates generated by the renewed study of non-Christian philosophers and commentators (Kemp 69). Aristotle's psychology played a key role in theories about the workings of the rational soul and the nature of intellect. There were various interpretations of the tradition previously discussed when cognition was concerned, that is, after the inner senses had processed the products of perception; for instance, how the soul submitted them to intellective processes and where those processes took place. The Aristotelian divisions between the potential and active intellects were, as seen above, difficult to interpret and uncomfortably materialistic. The debates surrounding cognition reached their highest point with the Parisian condemnations of 1270 and 1277, many of which were the consequence of what were perceived as heterodox philosophical teachings in the University of Paris, related precisely to the study of the works of Aristotle and his commentators, especially Averroes (Piché 912). The decades that preceded the condemnations were marked by the increasing encroachment of philosophers into areas traditionally under the purview of theologians. This led to processes of censure where many philosophical inquiries were taken out of context and presented in ways in which they seemed to be assertions that openly contradicted the very pillars of Christian doctrine, like human freedom, immortality, the Holy Trinity, the creation of the world, and the omnipotence and omniscience of God (913-4). Even defenders of

the orthodoxy of the faith, like Thomas Aquinas, were subject to this one-sided examination of any theses that had some connection to theological matters.¹⁶²

These debates revolved more around the processes that were believed to occur after perception, but, as discussed above, the study of sound perception focused primarily on voice, and this involved cognitive processes related to meaning and the soul. Although the importance of these debates might have cast a shadow over the study of aspects of perception not considered as pertaining to cognition, they were still discussed and improved upon. One example of such advances is Robert Grosseteste's short treatise on sound production, *De Generatione Sonorum*.¹⁶³ Although most of the treatise revolves around the subject of voice production, the first section describes in fair detail the process of transmission of sound through a medium. This is very important because a common feature of the accounts surveyed previously is that they spend little time on this area, concentrating more on the production and perception stages. Both Plato and Aristotle were extremely vague when describing how sound traveled through the medium, and their commentators elaborated only in clarifying that there was no single block of air but that successive blocks struck each other. Grosseteste follows the main tenets of the Aristotelian account, but he also focuses on the mechanical movement of the parts of the medium, made possible by its elasticity, generating the expansion and compression that results in a wave, which can be perceived visually and by touch (Sparavigna 1). This detailed description allows him to differentiate types of sound according to the cause of the movement of the medium, concluding that voice is generated by an internal cause, namely breathing (2). The rest of the treatise focuses on phonetics, and it is remarkable in the sophisticated analysis of the

¹⁶² For the background and process that led to the condemnations see Piché. For the inclusion of Aquinas' thesis and his position in regard to monopsychism see Upham.

¹⁶³ For a complete translation of this treatise see Sparavigna.

physics of voice production, which unfortunately also fall outside of the scope of this thesis. *De Generatione Sonorum* offers a glimpse into the advances in the study of physics and mechanics as well as the extent of the interests of the most important scholars of the age. There was an evident interest in reconciling the advancements made in scientific fields with psychological theories, and to reconcile those, in turn, with the theological tenets of Christian doctrine.

From the tradition represented in this survey from Antiquity to the High Middle Ages, emerge the prevailing theories of cognitive psychology of the thirteenth century. The application of such models of human cognition has very important consequences for the understanding of auditory perception and cognitive processing, which in turn will impact the way the law conceptualizes and legislates the different aspects of human experience related to sound and hearing. Whether learning is merely recollection or it is a sequential process that requires access to the material intellect in order to pass from abstraction to understanding, in both cases we are faced with consecutive events within the cognitive process, which could potentially be interrupted, altered or influenced in order to avoid incorrect interpretations of the information obtained. Also, there is supposed to be no difference in the way different subjects perceive the same thing, and the assumption that, save for illness or physical damage of the sense organ, there is just one possible correct outcome in the perceptive process. The products of such a process are considered as unrelated to intellection unless they go through a complete series of subsequent cognitive processes. These theories concentrate rather on errors in the processing of what has been perceived. They also assume some kind of universal knowledge and blame equivocations on the inability of the subject to correctly tap into it. Although there is an awareness of the importance of previous experience in the functioning of cognitive processes, the simultaneity and actual interpolation of past experience that it is now known to underlie perceptive and cognitive

processes is not part of the way experience is conceptualized as learning. These assumptions lead to an emphasis on corrective or punitive actions that should lead the individual to reach the right conclusions, which will obviously be those that the law defines as such. For instance, in the case under study in this thesis, problems like auditory masking or other interruptions to sound perception, and the interpolation of information by the brain in attempting to correct them, would be perplexing for anyone holding a sequential understanding of perception and cognition. They would probably lead to very wrong conclusions like the notion that an individual is pretending not to understand something or rebelling against something he or she is assumed to understand. In the following pages, it will become apparent that this was indeed the case, and that in many instances the legislation interpreted a certain expected outcome as respect for the law and the unexpected as contempt or rejection of the statute.

4. *Experience*

Et commo quier que yo nunca ley nin aprendi ninguna sçiençia, [por] que so mucho ançiano et guareçi en casa de muchos sennores, oy departir a muchos omnes sabios. Et bien cred que para los legos non ha tan buena escuela en el mundo cuemo criar se omne et beuir en casa de los sennores; ca y se ayuntan muchos buenos et muchos sabios, et el que ha sabor de aprender cosas por que vala mas, en ningun lugar non las puede mejor aprender.

[And though I never read nor learned any science, given that I am so old and I lived in the households of many lords, I heard many wise men speak. And you can be certain that for laymen there is no better school in the world than to be raised and to dwell in the households of the lords; because therein come together many men of high birth and many sages, and him who delights in learning things to increase his own worth, cannot learn them better in any other place]
(my trans.).

Don Juan Manuel, Libro del cavallero et del escudero

The case study

In order to support a theory of methexis as the engine of cultural production, and specifically literary cultural production, like the one developed so far, it is necessary to use a case study that encompasses as many aspects of it as possible. Although it would seem that the best way to test the theory would be to choose the earliest example available, such an option would be seriously hindered by the very limited availability of surviving texts and, as a consequence, a scarcity of studies and editions of them. A medieval example offers not only more extant sources, but also the advantage of having been produced at a time where the technology of writing is not yet fixated by projects of normalization and standardization. It also benefits from the absence of print culture, which makes it unfeasible to select a later example. The use of a case study that supersedes the advent of printing would bring new variables and reflect a more controlled and rigid book culture, lacking the fluidity of medieval written culture. There are other advantages particular to the *Siete Partidas*. The most important, perhaps, is that this legal code is one of the first completed and systematic written products of a new language: Castilian. This allows a survey of the choices made by those tasked with writing in that new language, which they had been using orally for many generations. In the present case study, the text expands as a consequence of auditory expectation. This presents a unique opportunity to evaluate auditory expectation in action, not only as created by a text but as creator of a text, and to explore the ways in which auditory expectation can be used as a strategy to establish the voice of authority and power. Auditory expectation emerges primarily as a sensory education that informs the legal code, which must adopt its consequences and incorporate them into the body of the law. At the same time, the new version of the law impacts the process of sensory education, modifying auditory expectation. While this feedback process unfolds, not only is the text

expanded, but also the space that the text creates and occupies; with this expansion comes an increase in the individual sensation of being part of said space, of there not being any other option but to belong to it or cease existing. This ‘sensation of being part of’ is, up to a certain extent, the result of a process of occupation of the physical space where the law fills the entire area of the jurisdiction, and this has a profound effect on the process of definition and positioning of the subject before the law. In the context of the *Siete Partidas*, auditory perception is essential to the relative positioning of the individual in relation to the voice of power and authority manifested in the law, and for the creation of what I conceive as a sensory state, frequently referred to as the “rule of law.”

A text like the *Siete Partidas* is not simply a legal text. It contains a large amount of other types of texts that help enhance the authority of the code and, in the process, become invested by that same authority. In this kind of text the process described in the previous paragraph is taken to the limit, by incorporating the experience of *methexis* into a project that aims to define and regulate every aspect of the human experience. The study of the *Partidas* from this new perspective helps to illustrate with a specific case how literature, as a cultural product, did not evolve in a vacuum. It is the result of a long process of negotiation and codification of norms, based on the experience of perception, organizing discourse and making it intelligible. Most of these norms arise in the context of oratory, which requires intelligibility, as well as a structure that facilitates the memorization of discourse. All these norms evolved under the direct influence of auditory perception phenomena that are out of human control. It is the functionality of the human body that determines the feasibility of normative models, not the other way around. Human systems of communication reflect the ability to identify, discriminate, classify, and make maximum use of the physiological and anatomical characteristics of the vocal and auditory

systems. As individuals born in a culture of writing and recording, it is easy to forget that these systems emerged out of negotiations with realities that are not subject to change. Human beings do not dictate the rules of communication to their perceptive organs; these organs dictate their own rules and human beings have no choice but to obey them. Today, such attempts to restrict and regulate perception fall under negatively charged concepts, like fettering freedom of expression or obstructing free interpretation. This should give an idea of how unsuccessful were the attempts throughout history to force perceptive systems to adapt to notions of what communication ought to be as part of a particular conception of society. The very existence of critical and theoretical constructs is founded on the innate tendency to start interpreting at the same time that one starts perceiving. Even though, as true heirs to the enlightened elites that sought to monopolize knowledge and its interpretation, it seems almost impossible to conceive the preexistence of perceptual acts to the normalization of discourse, scientific knowledge has reached a point where it makes it imperative to start an inquiry into sensory perception as the driving force of culture. Within the many ways in which this is taking place, undertaking a study of the role of auditory perception in the rise of Castilian literature is the first step towards a valuable contribution in the field of Medieval Studies.

It is important to keep in mind that the case study is not being proposed here as chronologically the first cultural product to present the specific features of a participative theory of cultural production. I am not arguing that this process starts with the *Siete Partidas*. The process of cultural production clearly has been ongoing since times immemorial, probably in every human group, and in the case of literature in every group that developed a written system. But it is necessary to wait for a fairly developed written culture and the rise of a new language for the case study to cover as much scenarios as possible. This is the advantage of the *Siete*

Partidas. Examples from different sections will be used to illustrate the theory in four areas. First, some of the ways in which discourses about sound and its perception are present in this legal code will be examined. Second, there will be a discussion about voice, because it was the sound that most attracted the interest of ancient and medieval scholars, and because the *Partidas* treat it extensively. Third, affect and the way it is manifested in the aural events that the code contemplates will be analyzed. Lastly, there will be an examination of the way in which sound and its perception, and especially voice, help to establish the concept of jurisdiction and how they facilitate the relative positioning of the subject within said jurisdiction and before the law.

Aurality

The *Siete Partidas* presents the theoretical approach that was discussed throughout this thesis, where perception and cognition are separate and sequential.¹⁶⁴ A literal example appears in *Partidas* 2.21.20, where the legislation argues that in times of peace knights should devote their time to learn about military history “by means of their hearing and understanding.”¹⁶⁵ This is opposed to the actual “science of arms,”¹⁶⁶ which they should learn “by sight and experience.”¹⁶⁷ Rodriguez-Velasco has argued that in this law “the legislator describes the hierarchy of its pedagogical or cultural products,” of which historical narratives occupy the first place; when they were read aloud, they were both interpreted and cast as something akin to a sacred text (“Theorizing” 80). Aside from this, however, the fact that these processes are

¹⁶⁴ Unless otherwise indicated, all the textual quotations of the *Partidas* are taken from the English translation by Samuel Parsons Scott. All the quotes in Castilian come from the 1555 edition by Gregorio Lopez.

¹⁶⁵ . . . por oyda por entendimiento.

¹⁶⁶ . . . fecho de armas

¹⁶⁷ . . . por vista o por prueba

presented vis-à-vis vision and action, and divided in two discrete parts, hearing and understanding, instead of presented as a unified task, shows that these were conceptualized as independent and consecutive. Such division has a very important consequence: no matter how insistently the law attempts to impose specific parameters of interpretation on human communication, it cannot preserve it from the impact caused by the experiences and expectations of its subjects. Highlighting the distance between the medieval model of sound and its perception and current theories does not simply mean pointing to their differences. It means acknowledging that, although the available theories were not sufficient to account for such discrepancies, the practice of the law constantly made them present, and they did not go unnoticed. From the very beginning of the *Partidas*, the legislation points to communication as the central problem of the law, which makes it necessary to draft laws that all subjects can understand and to appoint specific persons who can clarify the meaning of the laws in cases of doubt (*Partidas* 1.1). Given that people tend to form different opinions, the law has to elucidate what is the correct interpretation of specific situations to avoid conflicts, grievances and violent reactions, or to correct and punish accordingly those who do not abide by what the law mandates. It is clear that the legal scholars tasked with writing the *Partidas* were aware of this reality and developed codification strategies to address it. Their evident knowledge of current theories of auditory perception is evidenced in their approach to the cultural production of the legal text. Therefore, the first step is to analyze the way in which these theories are present in the code.

The most extensive treatment of perception appears in the *Segunda Partida*. It is not presented as a theory of perception, however, but as part of an all-encompassing analogy describing the body of the king and the way in which it relates to his subjects. It is a clear example of the thorough knowledge that Alfonso the Wise's legal scholars had of the subject and

it shows that they were following specific traditions. The Aristotelian account from *De Anima* is immediately recognizable in the following example, the foreword to *Partidas* 2.12:¹⁶⁸

Aristotle, and other wise men declared, that the spirits which exist naturally in living things, are of three kinds. One they called fruitful, and this trees, plants, and all other products of the earth possess. Another they said was endowed with feeling, for this all things have that live, and naturally move, of themselves. The third they called gifted with reasoning power, which itself has understanding to learn and distinguish matters by the power of reason. The first two above mentioned, as well as the last, belong to man and to no other animal whatever. . . .¹⁶⁹

Although here the English translator uses the word spirit, the original uses the term “alma” both in this law and in others where it refers strictly to the Christian concept of soul.¹⁷⁰

The important fact is that the analogy using the three Aristotelian spirits or souls serves to illustrate the way in which the people, the king’s subjects, should relate to God, to the King, and to their country.¹⁷¹ The relationship between the people and their country corresponds to the

¹⁶⁸ See pp. 120-1. Aristotle’s full account of the three kinds of soul appears in the second book of *DA* 2.2.412a1-416b31.

¹⁶⁹ Almas, de tres maneras, dixo Aristo(teles) e los otros sabios, que son naturalmente en las cosas que biven. E la una dellas llamaron criadera: e a tal como esta han los arboles, e las plantas, e todas las otras yerbas de la tierra. E a la segunda dixero(n) sentidora, e esta han todas las cosas que biven, e se mueven naturalmente por si mismas. E a la tercera llamaron alma razonable, que ha en si ente(n)dimie(n)to, para saber conoscer, las cosas, e departirlas co(n) razo(n). E las otras dos sobredichas, e esta de mas, ha(n) los omes tan solame(n)te e no(n) otra animalia alguna.

¹⁷⁰ For instance, in the *Primera Partida*, which pertains to Canon Law, the word “alma” is used throughout in the Christian sense. The problems with the translation of terms like anima, spiritus, and pneuma, were addressed previously. See p. 136, note 138.

¹⁷¹ The term country is used here not in the modern sense of the nation-state, but in the general sense of homeland, which was the meaning of the word in the thirteenth century. See the *OED* entry, which records its first written use circa 1250-1300.

“fruitful” soul, which is Aristotle’s nutritive soul.¹⁷² This is the power of the soul that enables nourishment, growth, and procreation (*Partidas* 2.20). The people’s relationship with God compares to the attributes of the “spirit endowed with reason,” which is Aristotle’s intellectual soul, and which makes it possible to know God and all celestial things, as well as His creation (2.12.1).¹⁷³ The relationship between the people and the King is represented in the ten senses of the spirit “endowed with feeling” (2.13). These are the Aristotelian inner and outer senses.¹⁷⁴

Partidas 2.13.2 is dedicated to hearing:

Hearing is the second sense that the perceptive spirit possesses, which is mentioned in the third law before this, and it God placed especially in the ears. For, as the auditory sense, when it is healthy and unobstructed, hears sounds and voices at a distance, and is pleased with those that are joyful and agreeable, and dislikes such as are loud and terrifying; on the other hand, in the same manner, the people should praise, and desire to hear good spoken of the king, and endeavor by all means to add to it.¹⁷⁵

The use of this analogy shows that the knowledge of theories of auditory perception was not exclusive of the scholars who wrote the *Partidas*. The analogy would only be useful if there was a wider awareness of at least the main tenets of such theories among the potential readers of the law, so that the comparison would resonate also with the illiterate members of a given textual

¹⁷² See DA 2.2.412b25-31. The English translator refers to it as “creative soul” in *Partidas* 2.20.

¹⁷³ See DA 2.2.413b24-414a3.

¹⁷⁴ See pp. 139-40 and DA 2.8.416b32-432a14.

¹⁷⁵ Oyr es el segundo sentido de q(ue) fablamos en la tercera ley ante desta, que ha el alma sentidora: Es este puso Dios señaladame(n)te, de(n)tro en las orejas. Ca bie(n) assi como el oydo, qua(n)do es sano, e desembargado, oye los sones, e las bozes de lueñe, es se paga con los q(ue) son plaze(n)teros, e sabrosos, e aborresce los q(ue) son fuertes, e espantables: Otrosi, a semeiante desto, deve el pueblo loar, e querer, oyr el bien q(ue) del Rey dixere(n), e trabajar se de lo acrescentar, lo mas q(ue) ellos pudiese(n).

community, harnessing the methexic potential of textual cultural production.¹⁷⁶ It is also an instance where it is more useful to make the law present in a way that appeals to all its subjects, instead of articulating it as legal theory. This is evident in the descriptions of the correct function of the ear using terms that evoke sensory experiences, like “terrifying,” and “loud,” and others which are unfortunately lost in the English translation.¹⁷⁷ Such words bring forth for the listener concrete sensations that are transformed in the context of the law into collective participative experiences of the social body.

Another instance of a theory of auditory perception appears in *Partidas* 1.10.18, in a passage from St. Augustine’s sermon 293.¹⁷⁸ The legislator quotes it to illustrate need for

¹⁷⁶ See p. 92 for a discussion of Brian Stock’s concept of textual community.

¹⁷⁷ The original also uses terms like “pleasurable,” and “delectable.”

¹⁷⁸ I was not able to find a complete English translation of the sermon. Although I will provide translations of selected paragraphs, I provide the full Spanish translation below for reference:

“Juan era la voz; pero el Señor era la Palabra que *existía ya al comienzo de las cosas*. Juan era una voz pasajera, Cristo la Palabra eterna desde el principio.

Suprime la palabra, y ¿qué es la voz? Donde falta la idea no hay más que un sonido. La voz sin la palabra entra en el oído, pero no llega al corazón.

Observemos el desarrollo interior de nuestras ideas. Mientras reflexiono sobre lo que voy a decir, la palabra está dentro de mí; pero, si quiero hablar contigo, busco el modo de hacer llegar a tu corazón lo que ya está en el mío.

Al buscar cómo hacerla llegar a ti, cómo introducir en tu corazón esta palabra interior mía, recorro a la voz y con su ayuda te hablo. El sonido de la voz conduce a tu espíritu la inteligencia de una idea mía, y cuando el sonido vocal te ha llevado a la comprensión de la idea, se desvanece y pasa, pero la idea que te transmitió permanece en ti sin haber dejado de estar en mí.

Y una vez el sonido ha servido como puente a la palabra desde mi espíritu al tuyo, ¿no parece decirte: *Es preciso que él crezca y que yo disminuya?* Y una vez que ha cumplido su oficio y desaparece ¿no es como si te dijera: *Mi alegría ahora rebasa todo límite?*

Apoderémonos de la palabra, hagámosla entrar en lo más íntimo de nuestro corazón, no dejemos que se esfume.

¿Quieres ver cómo la voz pasa y la divinidad de la Palabra permanece? ¿Dónde está ahora el bautismo de Juan? Él cumplió su oficio y desapareció. Pero el bautismo de Cristo permanece. Todos creemos en Cristo y esperamos de él la salvación; esto es lo que dijo la voz.

devotion to make prayer meaningful, and more than an empty sound: “As the sound of a voice, which has no meaning is like the cry of a bird which does not understand what it says; so a prayer which is not made with devotion is like the roar of an ox when he bellows” (1.10.18).¹⁷⁹

This sermon does more than just use auditory perception as a metaphor; it presents a theory of auditory perception where the separation of perception and cognition is less radical and more problematic than in the Aristotelian account just analyzed. As previously discussed, most modern portrayals of medieval theories of sound and its perception take Aristotle as the starting point and main source of study (Burnett 43). But this passage from St. Augustine is representative of the other source surveyed, which starts with Plato and reaches the Middle Ages through Neoplatonic currents of thought.¹⁸⁰ The Bishop of Hippo is one of the primordial Christian sources for this tradition. This does not mean that he crafted a specific account of perception and cognition, but rather that such accounts inform many of his writings.¹⁸¹ He also used auditory perception as a metaphor to illuminate concepts more in line with the Christian tradition of the spiritual senses (Carruthers 58, note 4). His reflections on the process also illustrate the concerns that auditory perception still presented for medieval scholars centuries later.

Y como es difícil discernir entre la Palabra y la voz, los hombres creyeron que Juan era Cristo. Tomaron a la voz por la palabra. Pero Juan se reconoció como la voz para no usurparle los derechos a la Palabra. Dijo: *No soy el Mesías, ni Elías, ni el Profeta*. Le preguntaron: *¿Qué dices de tu persona?* Y él respondió: *Yo soy la voz del que clama en el desierto: «Preparad el camino del Señor.» La voz del que clama en el desierto, la voz que rompe el silencio. Preparad el camino del Señor, como si dijera: «Soy la voz cuyo sonido no hace sino introducir la Palabra en el corazón; pero, si no le preparáis el camino, la Palabra no vendrá a donde yo quiero que ella entre»*” (“Sermón 293” 129-31).

¹⁷⁹ . . . asi como el sueno de la boz, que non ha entendimiento, es como la boz del ave que non entie(n)de lo que dize, otrosi la oracion que non es fecha devotamente, tal es como boz del buey quando brama.

¹⁸⁰ See pp. 131-145.

¹⁸¹ Aside from the sermons, they are found in the *Confessions* and *Introducción al catecumenado* (*De Catechizandis Rudibus*).

The first question St. Augustine poses in the sermon is how an idea, converted into sound, can travel a physical distance to reach the listener, to once again be transformed into an idea and stored in memory: “In searching a way to make it reach you, to instill in your heart this inner word of mine, I resort to voice and aided by it I speak to you. The sound of voice carries to your spirit the intelligence of my idea, and when vocal sound has led you to understanding the idea, it fades away and passes, but the idea it conveyed remains in you without ever leaving me” (my trans.; 130). It is important to remember that the use of the heart as a metaphor for memory continued throughout the Middle Ages (Carruthers 59). Augustine shares the belief that an act of the will is necessary for communication to occur, lest the meaning carried by the words be lost: “if you do not prepare the way for it, the Word shall not come to the place where I want it to enter” (my trans.; 130). The act of the will is humility, a voluntary submission to authority when listening, which leads to obedience. This idea, which appears in other works of Augustine, is embodied in this sermon in John the Baptist.¹⁸² It is also an idea that the *Partidas* emphasize repeatedly, including several appearances of John the Baptist himself.¹⁸³ Another concern shared in the *Partidas* is the link to memory, where justice remains:

Justice is a firmly established virtue, as the ancient sages stated, which endures in the minds of all just men, and gives and equally apportions his rights to every individual.

And, though men perish, nevertheless, justice itself never dies, but, on the other hand,

¹⁸² See also *Confessions*, pp. 27 and 50.

¹⁸³ For instance, in *Partidas* 1.4.17 the following depiction is offered in the context of the sacrament of penance: “St. John the Baptist possessed in himself exceeding sanctity, and for that reason our Lord Jesus Christ loved him so much that he said to him that he was the greatest of all who had been born of man and of woman; and he loved him so perfectly that he sent him as his messenger, to preach before his coming and to show men the way of salvation, preaching to them Penance and Baptism, for by its means they obtain the kingdom of God. . . .”

abides forever in the hearts of living persons who are just and good. (3.1.1)¹⁸⁴

The legislator echoes Augustine in ascribing the ability to keep justice in memory to “just and good” men, while remaining silent on what would happen to those who do not fall into this category. This silence evinces the influence of auditory expectation, manifested in the everyday reality of individuals who do not hear what the legal code mandates, but, rather, what they want to hear. The legislator, in keeping silent, does not go as far as denying that such individuals may keep in their memories a certain concept of justice, but merely emphasizes that it is not the correct concept, the one stipulated by law. Here, the distance between the theory and practice of auditory perception can be clearly appreciated. Absent a theory that can account for such behavior, it is concluded that individuals who behave thus are willingly disobedient.

A second question in St. Augustine’s sermon is what happens to the voice that carries meaning once it is perceived by the ear; how can it be both in the speaker and the listener? The Bishop of Hippo does not go beyond the obscure statement that the voice fades away while the idea remains. The survey of the medical tradition previously presented showed that the Aristotelian account of perception, the one more widely used and developed, established the clear separation of the perceptive and cognitive processes, with the soul as the functional and organizing principle of the human body (Carruthers 60). The production of meaning and the interpretation of what is perceived did not necessarily have to take place, and when they did, they operated based on sensory images stored in the *phantasia* (62). St. Augustine seems to have this in mind when the sermon exhorts the listener to let the word “enter into the innermost recesses of

¹⁸⁴ Raygada virtud es la Justicia, segun dixeron los sabios antiguos que dura siempre en las voluntades de los omes justos, e da e comparte a cada uno su derecho igualmente. E como quier que los omes mueren, pero ella, quanto en si, nunca desfallece ante finca siempre en los coraçones de los omes bivros, que son derechureros e buenos.

our heart” so that it will not vanish (my trans.; 130). But the word is, at the same time, the result of a rational process. This is the most perplexing aspect: if reason can only begin acting after perception, how can the word be in the heart of the listener instantaneously after being spoken? For St. Augustine, this leads to another problem, because “it is difficult to distinguish between the Word and the voice” (my trans.). Keeping in mind that both the Aristotelian and Platonic accounts focus on voice, and that this continued to be a matter of debate up until the Middle Ages, it is clear that this is what is at stake when the *Partidas* use the Augustinian sermon. Even though the law where the passage appears talks about prayer, it is unlikely that the quote was placed there without an awareness of what it implies. This is even more relevant taking into account the importance that interpretation has within the systematic organization of the *Siete Partidas*. Rodriguez-Velasco has underscored this in his characterization of this legal code as “a text capable of controlling its own interpretation,” from the moment of its elaboration, through its institutional use, to the moment it reaches its subjects (“Theorizing” 64).

Indeed, Saint Augustine’s contention that the voice is fleeting and destined to fade so that the word may remain, allows the legal scholars in Alfonso’s service to do more than just a comparison exercise. A model that conceptualizes perception as independent from reason implies the possibility to intervene and alter the process of interpretation of what the ear perceives by means of strategies of literary cultural production. If there are sensory images stored and waiting to be submitted to a subsequent intellectual process, then an attempt can be made to regulate that process by only allowing the circulation of messages that meet the criteria set by the statute. In spite of the systematic aims of the code, however, in reality most of its subjects belong to illiterate or semi-lettered groups within its jurisdiction. Their interactions with the letter of the law occur in overwhelmingly aural contexts, whenever selected passages are read aloud, quoted

or paraphrased during legal proceedings. As a consequence, their experience and understanding of the law vary depending on their auditory expectations and the particular circumstances of the perceptive event. In their case, lengthy theoretical elaborations, no matter how clear, logic, and systematic, may not only prove insufficient, but also confusing and detrimental. The problem compounds because some subjects obey and some do not, forcing the legislation to respond using either the threat of punishment to deter them, or new codification strategies to persuade or educate them. The following sections will look at some of the ways in which these two options are implemented in the three remaining areas of concern: voice, affect, and relative positioning.

Voice

In the survey of the different traditions regarding sound and its perception voice appeared as their main focus. The same occurs in the *Partidas*, as has already become apparent in the previous section. But in this case the centrality of the spoken word exceeds any theoretical considerations to become an overriding principle of power and authority. As such, it also poses intrinsic dangers that must be addressed and harnessed through strategies of literary cultural production, for the benefit of the legislation and to protect its subjects from its potential threat. The scholars responsible for writing this corpus were unambiguous in highlighting such dangers. In *Partidas* 2.4 the need for legislating speech is justified by the irrevocable character of enunciation: “for, after it issues from his mouth, man cannot cause it to be unsaid” (2.4.1).¹⁸⁵ A few laws later, the warning is more urgent: “Great injury results to the king and to other men, when they utter wicked and villainous words, and such as are improper, because, after they are

¹⁸⁵ Ca despues que sale de la boca, non puede ome fazer, que no(n) sea dicha.

spoken, they cannot be recalled” (2.4.5).¹⁸⁶ Auditory perception is what causes the irreversibility of enunciation, aggravated by the fact that once sound is produced and starts propagating there is no way for it not to be heard; a sensory image will be formed using this aural material, and it will become part of the cumulative experience of the listener, thereby altering his auditory expectation. Despite all efforts to control it, sound propagates inexorably, and actual listeners do not abide by the theoretical model of perception. One of the ways in which the legislator attempts to solve this problem is by regulating the king’s utterances. This is another instance of an extended allegory of a body whose head is the king (2.1.1). As the head of the social body and God’s vicar, the king constitutes the model all subjects must follow (2.1.5). To be effective, this model must be replicated throughout the jurisdiction, and this is accomplished through the appointment of officials who are portrayed as the king’s “brain and members” (2.9.1). Different officials are compared to specific members of the king’s body (2.9.16-25). The *adelantados*, for example, are compared to the king’s hands (2.9.19). The messengers are classified according to their duties: those who transport letters are likened to the king’s feet, while those sent to observe and report are his eyes and ears (2.9.21). Others embody the king’s power of enunciation: “On this account Aristotle compared them to the king’s tongue, for the reason that, wherever he sends them they are required to say for him what he cannot say,” thus, they should be “ready in speech,” otherwise “they will not be able to explain what the king ordered them to say.”

The most interesting case for the present discussion is that of a heterogeneous group of officials who are referred to as “voz de rey” [“the voice of the king”] (my trans.), something which is unfortunately lost in the English translation. The original uses this phrase consistently,

¹⁸⁶ The ambiguity of this English translation is not present in the original: “Daño muy gra(n)de viene al rey e a los otros omes qua(n)do dixeren palabras malas e villanas, e como no(n) deven, porq(ue) despues que fueran dichas no(n) las puede(n) tornar q(ue) dichas no(n) sean.”

while the English translation uses different phrases for each case. For instance, the “merinos mayores” [“chief merinos”], are said to act “in special cases in which the authority of the king is invoked,” which I would rather translate as “only in specific cases, known as the voice of the king” (2.9.23).¹⁸⁷ Similarly, the officials sent to appoint “adalides” [“commanders”] do so “in the name of the king,” which should read “as the voice of the king” (2.22.3).¹⁸⁸ The official who takes possession of the war booty from a city or castle in the king’s absence is said to be “there in his stead,” which more accurately would be “him who is the voice of the king” (2.26.19).¹⁸⁹ *Partidas* 2.36.33 describes what the king’s auctioneers should do regarding the sale of the spoils of war, which, being a public event, requires that the amounts offered and paid be communicated aloud to attendees, “crying the amount given for it. . . whatever is offered for them, they should state many times in a loud voice so that all may hear it.”¹⁹⁰ In *Partidas* 7.10.4-5, specific penalties are prescribed for judges and tax collectors who violate the law while acting as “the voice of the king,” which is also changed in English to “the authority of the king.” Of special interest is the case of a specialized reader that the code presents under the title of “questor,” and who is in charge of reading aloud the “secret letters” sent to the king, as well as “laws recently made, before they are published” (4.18.10). This particular official is not included with the others just referred to in the *Segunda Partida*, but is instead mentioned in the *Cuarta Partida* as one of the court officials who, by virtue of his position, is no longer under the control of his father. The use of the Latin name points more to a remnant from Roman law than to an actual individual in the service of the king. Nonetheless, it is quite telling that Alfonso’s scholars felt the need to not

¹⁸⁷ In the original: “si no(n) sobre cosas señaladas, a q(ue) llama(n) boz del Rey. . .”

¹⁸⁸ In the original: “en boz del Rey.”

¹⁸⁹ In the original: “en boz del Rey.”

¹⁹⁰ E aquello que ovieren prometido por ellas deven decir . . . a gra(n)des bozes quanto es aquello: de manera que todos lo oyan.

only mention him, but also to describe his task of reading the laws aloud before their publication, which is a clear step in a process of literary cultural production. It is necessary to hear how the laws sound before allowing them to be heard in the public space. This is another instance where the code betrays a constant anxiety regarding the irrevocable nature of auditory perception.¹⁹¹

The voice of the king makes present the sound of power and authority; it is in charge of maintaining the social order through the administration of justice. Thus, the law must protect its integrity and regulate its diverse manifestations, either as actual, live speech, when the king or one of his representatives is physically present in judicial acts, or as *dead voice*, or potential utterance, in the documents emanating from the king's court or its representative entities (*Partidas* 2.4; 3.18).¹⁹² In both cases, regulation implies a range of measures, from outlining the features of legitimate utterances, through specifying the body language that should accompany them, to silencing or destruction when the voice does not conform to legislated norms. The best place to start this analysis is the treatment of actual utterances. The *Partidas* present the statutes related to the regulation and protection of the king's voice in terms of the effects caused by its

¹⁹¹ The promulgation of the law is so important that Saint Thomas Aquinas includes it in his definition of law (*Treatise on Law*, Question 90, Article 4). He considers the act of promulgation essential for the enactment of the law upon its subjects, so that it may have the force of law. Every subsequent repetition of the act of enunciation guarantees that the law will reach all those who were not present during its initial promulgation. This includes written law, which is an extension of the act of promulgation in time, and, I would add, also in space. For Aquinas, "the durability of written characters" makes it possible for the law to be continuously promulgated. He bases his conclusion on Saint Isidore's *Ethimologies* (vol. 3; ii.10), which connect "lex" with "legere," thereby showing that he is not referring to silent, individual reading of the law, but to its promulgation and subsequent transmission.

¹⁹² Although the English translator uses "dead speech," I follow Rodriguez-Velasco in using "dead voice" with all the connotations he outlines in his lectures "Dead Voice" and "Archiving Memory," where he traces the beginning of the use of this term to refer to written transcriptions of oral statements into documents to be used as proof in legal proceedings, as well as the initial resistance of jurists to their use as substitutes of live voices. Rodriguez-Velasco argues that dead voice is made possible through the imposition of form, consisting on material specifications and fixed written structures.

resonance throughout the jurisdiction, conceptualized as the body of the king. These statutes go beyond actual sound, to construct a new sonority and auditory expectation. For instance, *Partidas* 2.5.4 frames the regulation of the king's live utterances within the totality of his body language, which makes power and authority present to the senses. The title of this law gives a good idea of what this entails: "A King Should Perform His Actions With a Good Demeanor."¹⁹³ The law covers a wide spectrum of everyday activities, like manners for eating and drinking; the speed and manner of his gait while walking; in which posture and how long he should be standing; what length of time he should be sitting in one attitude; and what he should mind when riding through a town on horseback, as not to linger too long, nor pass too fast. Included in these considerations is the way his speech should be uttered to accompany this body language:

Moreover, he should take care to assume a good mien when he speaks, especially as regards his mouth, his head, and his hands, which are members that are constantly employed by men in conversation. He should also be careful rather to explain by words, than by gestures, what he desires to say. The ancient sages, who considered everything minutely, showed that kings should observe all this which we have mentioned. . . as men imitate their example in what they see them do.

The utterances of the king are part both of a production of his presence and a performative view of power and authority, thus they are also cultural production. The balance between them and the gestures that complement them reflects the correct function of the social body. The order of the public sphere can be both maintained and altered by the clarity and completeness of his speech.

Speech is such a fundamental aspect of the performance of the king's power and authority that there is an entire title dedicated to the subject, which specifically addresses it as the

¹⁹³ Que el Rey deve fazer sus fechos, en buen continente.

basis for enunciation, and highlights its ability to make present that which the king “wishes to say, and what is in his heart” (*Partidas* 2.4.1).¹⁹⁴ To regulate enunciation, it is necessary to go beyond words and their meaning, into the different qualities of sound. *Partidas* 2.4.2 talks about loudness. In a very telling gesture, it returns to Aristotle to frame the issue, echoing again the awareness of a theory of sound and its perception: “On this subject Aristotle spoke to King Alexander, in the way of criticism, when he told him it is not becoming of a king to be a great talker, and that he should not utter what he had to say in a loud tone, except in a place where it was suitable: . . .”¹⁹⁵ There is also the matter of speech quantity: “because the use of too many words makes him who utters them contemptible.”¹⁹⁶ The lack of control over these two characteristics impacts the order of discourse: “loud tones, exceeding moderation, prevent him from speaking with elegance.”¹⁹⁷ Intonation and pitch also need regulation: “a king should be careful to have his words uniform and harmonious.”¹⁹⁸ It is important to remember that loudness and pitch are basic sound qualities that affect auditory processing, and together with speech quantity, they are related to the ability to interpret prosodic elements like inflection and rhythm.¹⁹⁹ One of the means to control these sound properties is through the selection of appropriate vocabulary, avoiding “useless and foolish words, for they cause great injury to those who hear them, and still more to those who utter them.”²⁰⁰ This sentence underscores the

¹⁹⁴ . . . muestra con ella aquello q(ue) dezir, e lo que contiene en el coraço(n).

¹⁹⁵ E sobre esta razon fablo Aristoteles al Rey Alexandre, como en manera de castigo, quando le dixo q(ue) non conviene al Rey de ser muy fablador, nin que dicesse a muy grandes bozes, lo que oviessse decir: fueras ende en logar: do co(n)veniesse. . . .

¹⁹⁶ . . . por quel uso de las muchas palabras, envilesce al q(ue) las dize.

¹⁹⁷ E otrosi las grandes bozes, saca(n)le de medida fazie(n)dole, que no(n) fable apuesto.

¹⁹⁸ . . . por esto deve el Rey guardar, que sus palabras sean eguales, e en buen son.

¹⁹⁹ See Chapter 1, pp. 32-9, for pitch and loudness, and Chapter 2, pp. 66-87, for the importance of prosody in reward systems, neural plasticity and mirror systems.

²⁰⁰ . . . palabras enatias e necias, . . . : ca estas tienen muy grand daño, a los que las oye(n) e muy mayor a los que las dize(n).

importance of the perception of the formal dimension as a reflection of the loftiness of discourse. This is a radically acoustic aspect of speech that encompasses pronunciation, articulation, syntax, semantics, and the overall prosodic flow of phrases and sentences. It is further supported in the law that follows, which cautions against uttering “words so rapidly, that those who hear them cannot understand them” (*Partidas* 2.4.3).²⁰¹ The proper articulation of speech acts implies the control of the temporal dimension on account of its effects on the listener, for whom intelligibility is essential for accurate interpretation.²⁰²

Poor enunciation has a double impact on the image of the king before society. On the one hand, listeners may attribute it to a lack of intellectual ability, eroding his power and authority. On the other, it sets a bad example that may hamper communication, cause misunderstandings, and even lead to chaos. In order to prevent such outcomes, and to preserve the king’s ability to rule, it is necessary to set preemptive norms that regulate speech acts before they become actual sound phenomena and cease to be under the control of the law. As seen above, after they become utterances, words cannot be unsaid. What is more, even when intelligibility is poor and the actual meaning of the words may be lost, other features of sound may still relay auditory information that, once perceived, will leave its trace in memory, increasing the chances of future replication by those exposed to it. The legislation needs to be proactive in its approach to utterances because, “ears do not have eyelids” (*Listening* 14). In their treatment of utterances, Alfonso’s scholars acknowledged the power of auditory stimuli to spread their effects, affecting both listeners and the speakers within the jurisdiction, defining “the king as a space and as a space in

²⁰¹ . . . quando dixesse las palabras, ta(n) breves e tan apriessa, que las non pudiessen entender aquellos que las oyesen.

²⁰² In the science of speech perception, speed is one of the main determinants of speech intelligibility (Plomp 103).

which discourse resonates” (“Theorizing” 68).²⁰³ This regulation of the performative aspect of the king’s utterances is also a strategy of literary cultural production, insofar as it capitalizes on the potential for such performances to reiterate the norms that all subjects should later imitate.

The strategies for the regulation of the voice of power and authority are not limited to the king. It was shown above how they extend to his officials insofar as they make him present throughout the jurisdiction. This extension also has a written manifestation that involves some of those officers and the development of specific strategies of literary cultural production. The replication of the king’s voice, both in utterance and in writing, is encompassed in the figure of the chancellor as mediator between the king and his subjects, and as the guardian of the royal secrets (*Partidas* 2.9.4). In his role as the first instance of replication of the king’s utterance, the chancellor is subject to the same regulations just reviewed. He must also have a good memory and be well versed in Latin and vernacular, so that all his communications, whether oral or written, conform to the aforementioned sound qualities (*Partidas* 3.20.4). Although the chancellor may delegate some functions to his subordinates, he is responsible for reviewing and correcting the oral and written communications that convey the sound of power and authority of the king. In fact, the very definition of chancellor rests on the need to erase all potentially problematic texts: “And if he finds a law which ought not to have been drawn up he must tear it, or deface it with his pen, which is called in Latin *cancellare*, and from this word the term chancery is derived” (2.9.4).²⁰⁴ This officer subsumes all the spectrum of preemptive literary cultural production strategies aimed at protecting the sound of the voice of power and authority,

²⁰³ This is also a manifestation of the “capilarization” of society proposed by Rodríguez-Velasco in “Dead Voice,” where he uses it to refer to the power of the legal *persona authentica* to produce and multiply the presence of authority in society.

²⁰⁴ E si fallasse, q(ue) alguna y avia, q(ue) no(n) fuesse assi fecha, deve la ro(m)per o desatar, con la peñola, aq(ue) dize(n) en latin ca(n)cellare, e desta palabra tomo nome cha(n)celleria.

from guaranteeing its conformity to established norms to ensuring its destruction when its integrity and intelligibility are in danger. This matter is central to the concept of auditory expectation. I had argued earlier that, due to the nature of perceptual acts as simultaneous processes of feedback and interaction, auditory expectation can be both created and creative.²⁰⁵ One of the ways in which this is manifested in the written documents that are under the purview of the chancellor is through the imposition of a particular form which results in what the legislation calls *mortua voce*, the dead voice we mentioned above:²⁰⁶ “we desire to speak here of all instruments in writing of every description whatsoever, from which evidence or verification may be obtained in court, which is another kind of testimony called dead speech” (3.18).²⁰⁷

Partidas 3.18 outlines a comprehensive taxonomy of documents, including detailed descriptions of their material and rhetorical characteristics.²⁰⁸ Legibility, for instance, is repeatedly mentioned in this title of the *Tercera Partida* as part of the criteria for determining the authenticity and authority of written documents.²⁰⁹ These documents, be they letters, privileges,

²⁰⁵ See p. 92.

²⁰⁶ See note 182.

²⁰⁷ . . . queremos aqui dezir, de todas las escrituras, de qual manera quier que sean, de que pueda nacer prueva, o averiguamiento en juyzio, q(ue) es otra manera de prueva aque llaman boz muerta.

²⁰⁸ The use of letter samples is connected to the tradition known as the *Ars Dictaminis*, which were collections of letter models in Latin that started being compiled in the Middle Ages for the benefit of officials in European courts and chanceries. These were in turn one of several kinds of corpuses with similar compilations based on classical rhetoric for different types of written compositions, which also included, among others, the *Ars Notariae* and *Ars Poeticae*. The *Summa Totius Artium Notarie de Passeggieri* is perhaps the most comprehensive example of the *Ars Notariae* on which *Partidas* 3.18 was modeled (“Archiving Memory” 2). For the history and varieties of *Ars Dictaminis*, see Camargo.

²⁰⁹ See *Partidas* 3.18.28 and 44, regarding the use of abbreviations and other alterations; 3.18.63, where the use of the physical act of tearing the letter signifies the settlement of a debt; 3.18.111, where accidental or deliberate alterations that make the document illegible invalidate letters and privileges; 3.18.114, where other physical damage to the document do not render it invalid as long as it is still legible; and 3.19.12, where legibility is one of the criteria to decide if a copy of a letter should be made.

registries, or any other type admissible, are repositories of the king's voice, containing the potentiality of his sound and the auditory expectation it creates. Their destruction is the destruction of unauthorized voice, and it is equivalent to the prevention of speech acts in oral communications. When the document is torn, it is rendered illegible, thus eliminating any possibility of potential enunciations to be actualized in speech. Their destruction is needed to safeguard the integrity of the voice of the king throughout the jurisdiction, eliminating any possibility of unauthorized versions to become utterances and to be perceived by the ear. The ultimate goal of the codification of these acts of destruction and silencing is to prevent an exegesis of judicial proceedings by turning writing into something fixed and regulated.²¹⁰ This regulatory strategy underscores the performative character of the administration of justice, which encompasses both the role of the king's officials and the preparation of written documents, their functions similar to the one that McKenzie sees in theatrical texts, which "are perhaps best seen, not as fixed, determined artifacts in a specific medium, but as potential" (51). This is, in sum, another way of preventing the memorization of unauthorized voices through the deployment of literary cultural production strategies.

The foregoing does not preclude the use of memory as part of the tactics to regulate voice, taking advantage precisely of the features of auditory perception that facilitate memorization in order to modify auditory expectation. Since repetition is the mother of learning, another cultural production method where practice supersedes theory is the repetitive use of written and oral formulae to affix the sound of power and authority in the memories of readers and listeners. In the case of writing, one instance are the dozens of models of letters outlined in

²¹⁰ This process of codification corresponds to what Armando Petrucci has called "escripción" ["scription"] (my trans.), a way of turning writing into a kind of inscription (42).

Partidas 3.18. Aside from providing templates for letter writing, their use of repetitive formulae constitutes a form of sensory education that capitalizes on auditory expectation to disseminate the sound of the voice of power and authority. The more salient example is the sort of theme and variations on the formula “know all those who see this letter,”²¹¹ which appears initially in *Partidas* 3.18.4, and recurs in almost all the remaining letter models in this title.²¹² A notable subgroup of four letters call special attention because they use a variation of the formula with “know all those who see and hear.”²¹³ They are: the “Letter of Agreement” (3.18.15);²¹⁴ the letter with the mandate “for Watching the Ports” (3.18.17);²¹⁵ the letter “to Assure the Safe Passage of Beasts” (3.18.19);²¹⁶ and the letter “Evidencing a Donation Made by One Party to Another” (3.18.67).²¹⁷ It is quite tempting, and beneficial for the present argument, to conclude that these four letters represent the explicit intention of the legislation for certain documents to be read aloud and not others. However, some of these models already appear in the *Espéculo*, considered to be an earlier stage in the writing of the *Partidas*, and the aforementioned variation of the formula appears in some letters that do not use it in the latter.²¹⁸ For instance, in the *Espéculo* the formula “know all those who see and hear” appears in the “carta de vendida” [“letter of sale”] (my trans.; 4.12.25). There are ten different models of letters of sale in the *Tercera Partida*, and none of them uses that formula (3.18.56-65). Similarly, the letter of loan in

²¹¹ . . . que sepan los q(ue) aquella carta vieren. . . .

²¹² As in other instances, here the English translation also obscures the repetition of the formulae by varying the terms used for what in the original is always the term “carta,” rendered alternatively as instrument, document, or letter.

²¹³ . . . sepa(n) los q(ue) esta carta viere(n), e oyeren. . . .

²¹⁴ Carta de avenencia.

²¹⁵ . . . para guardar los puertos.

²¹⁶ . . . porque anden los ganados seguros.

²¹⁷ . . . de la donacion que un ome faze a otro.

²¹⁸ See Alfonso the Wise, *Opúsculos legales del rey don Alfonso el sabio: El Espéculo o espejo de todos los derechos*. For a history of the stages in the writing of the *Partidas* see Craddock.

Espéculo 4.12.27 uses the formula, while none of the models in the *Partidas* uses it (3.18.70-71).

What can be concluded from these letter templates is that their usefulness went beyond administrative convenience into a deliberate process of cultural production, and that they enabled the use of the power implicit in the public reading of documents to disseminate a particular mode of expression that made the voice of power and authority present in the context of judicial acts, creating auditory expectation.

The particular mode of expression of the voice of power and authority does not depend only on the presence of formulae in written documents. It is also present in basic prosodic attributes, as previously mentioned.²¹⁹ It was established above that the *Partidas* regulate sound qualities and prosody in the speech acts of the king. This also occurs in the case of dead voice, and written documents are expected to bear the aural marks that help the ear identify the voice of power and authority of the king, not only for the issuance of the law, but also for its authentication and interpretation. In *Partidas* 3.18.27, the king is the last instance for the resolution of conflicts arising from the interpretation of letters and privileges.²²⁰ Both kinds of documents, because they originate in the king's court, should be interpreted "without malice and without fraud, as law" (*Partidas* 3.18.28).²²¹ In order to replicate the presence of the king's voice in his absence, it is necessary to replicate the auditory expectation that will guarantee his

²¹⁹ See pp. 171-2.

²²⁰ A privilege is both a specific type of law and the resulting document granting it, issued directly by the king: "A privilege means a law given or granted by the king especially to some place or to some man, as a matter of kindness and favor" ["Previlejo tanto quiere dezir como ley que es dada o otorgada del Rey apartadamente, a algun lugar: o algun ome para fazerle bien e merced"] (my trans.; *Partidas* 3.18.2). The rest of this law and the one that follows it describe in detail the formal structure that the text of the privilege should follow, as well as the materials that should be used in its elaboration.

²²¹ In the original it reads "sin escatima e sin punto, así como ley," which literally means without having to consult the legal glossae or commentaries to interpret the law.

presence in the legal document. The document leaves always open the possibility of an oral performance, a potential enunciation, and therein lies the power of the auditory expectation it embodies. When the text is read aloud, quoted, paraphrased, or explained, this potentiality becomes actuality, and it leaves an impression in the listener. Thus, auditory expectation is inserted into this material manifestation of cultural production through the aural features that allow the recognition and classification of a style of expression, just as the stroke of a paintbrush allows the identification of the author of a painting and its authentication. *Partidas* 3.18 shows great concern for the regulation of the material and textual criteria to authenticate documents. Aside from being templates for letter writing, many of those models are also tools for the comparison and reiteration of the aural features that ensure such authenticity, and complement other features of their cultural production, like leaden seals and silken chords (*Partidas* 3.18.3).

An example of such an aural feature in the *Tercera Partida* implies the appropriation of a rhetorical strategy that had heretofore been associated with the voice of spiritual power and authority, and its adjustment and incorporation into the auditory expectation of royal power. It is an adjustment because, while the voice of spiritual power in the Middle Ages speaks Latin, the voice of the king that appears in the *Partidas* speaks that revolutionary “castellano drecho” [“proper Castilian”] ²²² that was already in use in Alfonso’s royal chancery (“Dead Voice” 4). Taking into account Alfonso’s imperial ambitions, it is easy to gather that there was an active exchange between his court and the Papal chancery. ²²³ This is important because the Papal chancery was at the forefront of rhetorical and material innovations in the cultural production of legal documents, which would spread during the Middle Ages throughout all of Europe, in part

²²² Rodríguez-Velasco’s translation.

²²³ For Alfonso’s aspirations to become Holy Roman Emperor, see Doubleday, pp. 94-5.

via treatises for notaries and *dictatores*.²²⁴ These innovations greatly influenced the aural conception of authority in written documents emanating from European courts. An example of this influence is *Partidas* 3.18.44, where one of the rhetorical strategies that characterized the prosody of the written documents of the Papal chancery is presented as a marker of the authenticity of royal privileges: “We also decree that if said privilege does not coincide in form and terms with other privileges which this same king was in the habit of granting, it shall not be admitted.” Although this English translation still expresses the need for a specific style of writing, the most important part, which connects this law to the innovations of the Papal chancery, is lost. The original states: “Otrosí dezimos, q(ue) si el previllejo desacordasse del curso, e de la manera, en q(ue) costu(m)brava(n) a fazer los otros previllejos q(ue) solía dar aq(ue)l Rey mismo q(ue) non deve ser creydo”. The key word that does not make it to the English version is “curso.” Charles Faulhaber has argued compellingly that this passage proves that the *cursus*, which originated in the Papal chancery, had by this point already been adapted to be used in Castilian (76).²²⁵ Here, the *cursus* appears as part of a writing style characteristic of the privileges issued by a certain king, which refers back to the notion of auditory expectation as part of an oral and written mode of cultural production. The rhythmic patterns of the *cursus* can be identified visually and aurally, which makes them extremely useful as a tool for the evaluation of the authenticity of a document. In the case of privileges, the *cursus* is a stylistic marker of authenticity and authority expressed in terms of auditory expectation. Just as the style of a painting or a text allows one to recognize the work of an author and certify its authenticity, the

²²⁴ Regarding the history of the Papal chancery and the innovations implemented during the Middle Ages, see Poole. See also note 190 regarding the *Ars Notariae* and the *Ars Dictaminis*.

²²⁵ Regarding the history and adaptation of the Latin *cursus* to Castilian, and the different accentual patterns that were used, see Verástegui, pp. 7-16.

author of privileges is the collective body of the chancery, and its mouth utters the authorized voice of the body of the king, which follows a series of recognizable rhythmic patterns.

The extent to which the *Partidas* attempt to regulate the oral and written manifestations of the voice of the king underscores the importance of sound and its perception in the codification of the law. This comes back full circle to the initial argument of this chapter: there is a theoretical discourse of sound and its perception in the legal code, which needs to be reconciled with the actual auditory phenomena encountered in the everyday practice of the law. The analysis started with the Aristotelian discourse present in the *Segunda Partida*, and now the focus can shift to the way in which it is used as sensory education of another sort. In the quote from *Partidas* 2.13.2, the Aristotelian account of hearing is used as an allegory for the relationship between the king and his people.²²⁶ In *Partidas* 2.12, the relationship between the people and God had been compared to the operation of the rational soul. This establishes a separation where the relationship between the people and the king is merely perceptual, and has no intellectual component, and therefore precludes subjects from interpreting the voice of power and authority.²²⁷ This theorization is in line with the general concern of preventing a hermeneutics of the law, evinced in *Partidas* 1.1:

All that might be added to the word of the law or to the word of the king is a determinant to justice, because it causes not only imbalance, as both truth and law are just and equal, but also hermeneutic errors from which, according to the exegetic principles of tropology and anagogy, “nasçeria danno e grand blasmo en este mundo e en el otro dar les ya dios

²²⁶ See pp. 160-1.

²²⁷ It should be noted that this does not necessarily correspond entirely to the account of Aristotle, for whom hearing was the dominant sense in the development of intellect, even if in general he followed tradition in privileging vision in the hierarchy of the external senses (see Gouk 139).

pena” (great injury and harm will come to this world and in the next, God will punish them) [1.1]. The words are air and have a dangerous quality. . . . (“Theorizing” 69)

This danger, as previously discussed, lies in the inexorable character of enunciation, in its ability to remain even when its source is no longer present, as Nancy has pointed out: “The visual persists until its disappearance; the sonorous appears and fades away into its permanence” (*Listening* 2). Sound perception, in addition, entails the potential of being shared and replicated in speech, becoming methexis in the propagation not only of a message, but also of the aural qualities of its enunciation.²²⁸ In fact, all of the literary cultural production strategies for the regulation of voice that have been surveyed are methexic to different degrees and to different extents, and not all those who participate in them do so knowingly or even willingly. As a consequence, the law needs to impose limits and define roles for them.

The first six laws of *Partidas* 2.13 reaffirm the methexic nature of perception and also its radical separation from intellection. It was previously shown that the second law of this title refers to the ear’s healthy function using language that evokes reactions to sensory experiences.²²⁹ These reactions allow the participation of the people in the exercise of the law, but only insofar as they are adequate according to the law. They also exemplify the way in which the people should react when they hear anything said about the king, depending on if it is positive or negative. They are instinctive responses that make unnecessary any further reflection on the nature of such messages. The law that treats the sense of taste presents the tongue as part of the act of enunciation; hence, the people should use it to spread the good name of the king:

²²⁸ In this sense, it corresponds to Nancy’s insight regarding the difference between visual and auditory perception: “the visual is tendentially mimetic, and the sonorous tendentially methexic (that is, having to do with participation, sharing, or contagion)” (*Listening* 10).

²²⁹ See p. 161.

For as taste distinguishes sweet things from those that are bitter, is gratified with such as are savory, and detests others, and as the tongue is the experimenter, and the intermediary between all these things; the people should likewise be acquainted with the good reputation of their lord, and speak of it with their tongues, and cherish it: and words which are spoken to defame him should not be uttered by them, or preserved in any way, and they should be seldom repeated or remembered. (2.13.4)²³⁰

This is another example of the use of sensory images that evoke physical reactions to stimuli in order to establish adequate responses to aural messages. Here, however, these reactions include potential utterances, which need to be limited and precluded from possible interpretation. Central to this need is a term that appears twice in the original but is translated in ways that evince a lack of awareness of its meaning, which points directly to the subject of voice. The word “retraer” means to orally narrate, and in the *Partidas* it is used regarding past events, whether historical or exemplary.²³¹ There is a complete law, 2.9.30, which establishes the correct context, structure and moment for such narratives to be orally performed. It is replaced in the English translation with the terms “cherish” and “preserved.” Rodríguez-Velasco has argued that “we could understand the act of retraer as a way to regulate not agreement between words and events, but rather between words and their hermeneutic problems” (“Theorizing” 70). The act of narrating

²³⁰ Ca assi como el gustar, departe las cosas dulces de las amargas, e pagase de las que bien saben e aborece las otras, e la lengua es provadora e medianera, de todas cosas. Otrosi a semejante desto, debe al pueblo fazer bien la buena fama, de su Señor, e dezirla con las lenguas, e retraerla. E las palabras que fuessen a enfamamiento del, non las querer decir nin retraer en ninguna manera.

²³¹ The English translator completely misses the meaning of “retraer” in his rendering of this law, where he chooses the terms “ridicule” and “jest.” I follow here Rodríguez-Velasco’s translation of “retraer” as “to narrate” (“Theorizing” 70).

implies a double danger. To narrate is to listen to oneself narrating, and thus not only replicate voice for others to hear it, but to reinforce its presence in one's own memory.²³²

In both instances of *Partidas* 2.13.4, what is at stake is the ability to encourage the dissemination of desirable messages while dissuading from doing the same with unauthorized ones. But instead of engaging in a theoretical explanation, the law again takes recourse to words that make present the act of articulation, “speak of it with their tongues,” and the sensations that speakers and listeners feel according to the suitability of the words, “sweet” versus “bitter.” Furthermore, it is not enough to prevent the words from being pronounced, it is also necessary to avoid the temptation of remembering them, an act that is directly related to auditory expectation and its effect on memory. This same approach continues in the law that follows, where articulation is further restricted by ascribing to the tongue of the people a legislated function:

God not only gave man his tongue for the purpose of taste, but also for speech, and to display his reasoning power by its means. And, just as he bestowed upon him the sense of taste, in order that he might distinguish things which are palatable from others which are not so; in like manner he gave him taste in words, to enable him to make a distinction between falsehood which is bitter, and which nature, when normal and loyal, detests, and truth, with which the understanding of a good man is delighted, and derives great pleasure from. For this reason, the people in like manner, as wise men have said, should always speak true words to the king, and avoid lying to him openly. . . . (2.13.5)²³³

²³² See Nancy, p. 8, regarding the self-referential character of sound, and the sounding body that is simultaneously the source and the receiver of its resonance, which the French philosopher frames within Aristotelian *aisthesis* as a “feeling-oneself-feel.”

²³³ La lengua non la puso Dios ta(n) solamente al ome para gustar, mas aun para fablar, e mostrar su razon con ella. E bien assi, como le dio sentido en el gusto para departir las cosas sabrosas de las otras que lo non son. Otrosi gelo dio, en las palabras, para fazer departimiento, entre la mentira, que es amarga, que aboresce la natura, que es sana e complida de lealtad, e entre la

Authorized responses continue to be instinctive, even though the tongue is supposed to show a person's power to reason. This power, however, is limited to separating truth from falsehood when listening to voice, and, if used well, will lead to immediate gratification, presented in terms that specifically evoke the kinds of rewards the brain gives during purely sensory experiences: delight and pleasure. The mere idea of dwelling into falsehood evokes bitterness, assigning an immediate aversive response that also precludes reasoning. Both reactions appeal to basic participatory functions of the brain, whose somatic manifestations are familiar, causing the listener or reader to have an expectation based on previous experience. It is clear that this strategy comes from a framework that considers it is actually possible to enact a separation between perception and intellection, and to attempt to limit the latter if it cannot be avoided.

The legal context in which this approach can be seen in action is when judicial acts necessitate actual human interactions and oral performances to be valid, which is the case of betrothals, marriages and contracts. In the case of marriages, the law also takes recourse to the use of formulaic dialogue that must be repeated aloud by the parties. *Partidas* 4.1.2 lists six types of betrothals, and for each one there is a formula preceded by a variation of the phrase “as if saying,”²³⁴ which are variously translated in the present tense, losing the connotation of possibility of the imperfect subjunctive in the original. This is important because five of the six types of betrothals are celebrated “related to the future,”²³⁵ and thus the subjunctive shows that there is an agreement to formalize the union at a future date. In fact, some examples of formulae are given to illustrate when the oral performance ends in actual marriage and when it only ends

verdad, de que se paga el entendimiento, del ome bueno, e a grand sabor con ella. E porende el pueblo a semeiante desto dixerón los sabios deve siempre dezir palabras verdaderas al Rey , e guardarse de mentir, le llanamente: . . .

²³⁴ . . . como si dicesse. . . .

²³⁵ . . . que muestra el tiempo que es por venir.

in betrothal (4.1.3-4). Some of them sound very familiar to the modern ear: “where a man says: ‘I take you for my wife;’ and she replies: ‘I take you for my husband;’ or other words similar to these. . .” (4.1.2).²³⁶ The law allows the use of words similar to the given formula, which are still valid, a clear consequence of delving into the quicksand of orality. As a cultural production strategy, the oral performance of marriage is framed as a return to the origins that justifies the imposition of codified formulae: ²³⁷ “The words by which marriage was contracted are the following which Adam said when he saw Eve his wife. . . namely, that her bones and flesh were his, and that they should both be one flesh” (4.2.4).²³⁸ In such cases, interestingly enough, those who are deaf or mute may still consent through gestures, because marriage is valid upon consent, whereas in the case of promises the deaf and mute are excluded, because they are unable to ask further questions regarding the obligation (4.2.5; cf. 5.11.2).

The phrase “as if saying” reappears in the context of contracts, where the presence of voice alongside writing leads to a quite unstable dynamic, more prone to conflict. The case of promises is remarkable in the amount of times the phrase is repeated (*Partidas* 5.11.3, 7, 10, 11, 15-17, 21, 23, 24, 26 and 27), and several times accompanied by the notice that similar words can be used (5.11.3, 11, 21, 24 and 27). These oral exchanges must be carefully regulated to prevent the entrance of elements foreign to the law, absent a written record to consult after the agreement is closed. This is especially important when the contracts are performed in front of others, since those are ideal circumstances to deploy the pedagogic strategy of repeating the legislated voice. This is the case in *Partidas* 5.11.2, where, given the purely oral nature of

²³⁶ . . . como qua(n)do dize el ome: yo te rescibo por mi muger: e ella dize: yo the rescibo por mi marido, o otras palabras semeja(n)tes destas: . . .

²³⁷ Genesis 2:23.

²³⁸ E las palabras por que se fizo el casamiento, son aquellas que dixo Adam quando vio a eva su muger: . . . que los huessos, e la carne della que fueran del. E que serian ambos como una carne.

promises, irrelevant words and nonverbal expressions must be excluded from authorized verbal exchanges. The legislator explains that this type of transaction implies “question and answer. . . verbally and with an understanding of the obligation, and when this is done no other words should be spoken. When one party asks the question the other should answer whether he gives his consent or not.”²³⁹ The legislation even provides examples of the kinds answers that obligate the parties, and clarifies that silence should always be interpreted as denial of consent. The effectiveness of this strategy lies mainly in the repetition of formulae, revealing in the process the difference already underscored, between the legislation and the actual workings of perception. The focus is always on the listener, while the speaker is secondary. Thus, promises may be performed even if the parties do not speak the same language, or only understand each other partially. It is sufficient if “they both understand the question and the answer,”²⁴⁰ or if they do it “through an interpreter” (5.11.1).²⁴¹ In the second case, the power of words is based on a legal fiction:²⁴² if there is an interpreter present, the promise is equally valid “just as if those who made the contract understood one another.”²⁴³ All the foregoing examples display the use of the repetition of formulae, whether oral or written, in different contexts of the legislation, and they show the desire of the scholars involved in the literary cultural production of this legal code to take full advantage precisely of those features of auditory expectation and the perception of the voice that threaten the stability of the legislation, and which arise in the daily practice of the law.

²³⁹ Pregunta e respuesta. . . por palabras, en co(n) ente(n)dimie(n)to de se obligar. E qua(n) esto fiziere(n) no(n) deve(n) entremeter otras palabras. Mas qua(n)do la una parte pregu(n)tare, deve respo(n)der la otra, si le plaze, o si no(n).

²⁴⁰ . . . q(ue) se entie(n)da el uno al otro, sobre la pregunta, e respuesta.

²⁴¹ . . . Por algu(n)a trujamania, . . .

²⁴² The legal fiction I am referring to is the *fictio legis* of Roman law, the use of which experienced a revival and expansion in the thirteenth century. For more on its origins and medieval use see *Plebeyos márgenes*, pp. 29-47.

²⁴³ . . . tambien como si se entendiessen, los que fazen el pleyto.

Affect

“Seneca, the philosopher, who was born at Cordova, said that it is not becoming to a man to mention publicly everything which it is improper to do. It is also said that bad words corrupt good manners: for which reason we declare that every kind of speaking of the character above mentioned, is intemperate” (*Partidas* 2.4.2).²⁴⁴ In his commentary to *De Anima*, Saint Thomas Aquinas mentions that for Aristotle temperance was related to the sense of touch (261). This is a subject he treated in the third book of the *Ethics*, where he argues that if taste is seen as the ability to discriminate flavors, there is no problem with temperance, and this only arises if one sees taste as something that “distinguishes tangible qualities” (260). As seen previously, according to Aristotle, touch is the only sense common to all animals.²⁴⁵ The idea that “hearing is a specialized form of touch”²⁴⁶ is implied in most the accounts of sound propagation and perception surveyed in the previous chapter, including both Plato’s and Aristotle’s. They describe these phenomena in terms of contact between surfaces, which include bodily surfaces like the eardrum and the ear canal. The same connection has been recently shown to go deeper, to areas of the brain that are shared by the auditory and somatosensory systems; there are many interactions where one of these systems generates a reaction in the other (Ro et al. 1724). It is no wonder then that, over the centuries, intemperance has been linked to sound with as much emphasis as to other sensory modalities. It is enough to remember the rueful acknowledgement of St. Augustine that he had also fallen prey to auditory temptations: “The pleasures of hearing

²⁴⁴ E sobre esto dixo Seneca el philosopho, q(ue) fue de cordova, que toda cosa q(ue) es fea de fazer, non esta a ome bien, de la dezir paladinamente. E aun dixeron, mas que las malas palabras afuella(n) las buenas costu(m)bres, por que dezimos, que toda manera de fablar, que fuesse de alguna destas sobredichas, seria sobejana.

²⁴⁵ See p. 121.

²⁴⁶ This phrase was made famous by deaf percussionist Evelyn Glennie in her “Hearing Essay.”

had held me in tighter bonds and had imposed their yoke upon me” (*Confessions* 306). The perils that Seneca cautioned against come from the fact that voice has an effect on others that goes beyond being perceived and remembered. Sound in general shares this characteristic: it causes emotional reactions, which may include pleasure or aversion, thus impacting brain reward systems and even causing plastic changes. Sound also has the power to evoke sensations from past events, many times making one feel as if one is living someone else’s experiences, like the sensation of shivers and the appearance of goosebumps after hearing someone scream in agonizing pain. These reactions are consistent with mirror-like mechanisms, which, together with reward and plasticity, are of a methexic nature. Such experiences have been shared across centuries and human groups, driving the search for ways to explain them and to harness their power, leaving their particular imprint in the way human beings produce culture. Because pleasure and emotion are deeply intertwined, and they can both cause and be caused by each other, sound and its perception have a very important affective component, and the scholars that worked in the literary cultural production of the *Partidas* were keenly aware of its importance.

One way the legislation answers the problem of affective responses to auditory stimuli consists in changing codification strategies. More than imposing a specific interpretation, the law seeks to make the voice of power and authority present in concrete actions, in order to elicit responses that are in line with the communication standards established by the legislation. In this case, the change begins with another return to origins that illustrates the practical imperative of the legislation. The ways in which the legislation regulates the utterances of the king in *Partidas* 2.4 were examined earlier.²⁴⁷ This title provides a definition of speech and its virtues, where theory seems insufficient for the law, which resorts to exemplary narrative by framing the

²⁴⁷ See pp. 167 and 173-4.

explanation as advice that Aristotle is giving to Alexander the Great (2.4.2). This recourse to exemplary narrative is a form of return to origins that presents regulations as the result of cumulative experience manifested in the wisdom of the ancients and in popular tradition. Sound perception underlies this wisdom. In this title, as previously discussed, the warning against uttering too many words is related to the problem of intelligibility of speech and its dependence on the temporal aspect of enunciation (Plomp 103).²⁴⁸ Although the science regarding the perception of speech is fairly new, its daily occurrence is not, and the legislation relies on centuries of accumulated experience that have led to the conclusion that the faster someone speaks, the harder it is to understand them. This is corroborated in *Partidas* 2.4.3, which approaches the problem in terms of speed: “when a person utters such words so rapidly, that those who hear them cannot understand them.”²⁴⁹ It is quite telling that the law appeals to this kind of empirical knowledge, given that it could have invoked the copious and venerable grammatical and rhetorical traditions, which also rested on ancient authority. This evinces the need for codification strategies that can reach as many subjects as possible within the jurisdiction, and it entails writing the law in ways that facilitate its repetition and dissemination by word of mouth.

Another form of return to origins in the *Partidas* is the use of the concept of concord as a means to justify the existence of the legal code. On the one hand, it explains the origins of the law as a consequence of the very nature of human relations. On the other hand, it presents the code as the indispensable means to reconcile custom and written legislation, the two pillars that sustain common law. The groundbreaking character of the *Partidas* as a legal code made this

²⁴⁸ See p. 172.

²⁴⁹ . . . quando dixesse las palabras, ta(n) breves e tan apriessa, que las non pudiessen entender aquellos que las oyessen.

double legitimation even more urgent. Concord is the requisite *sine qua non* for a stable and prosperous society, and the new law is its guardian: “Concord is a virtue similar to friendship, which sages and great lords who made the books of the law favored bringing about, so that men may live together in unity” (4.27.1).²⁵⁰ It is different from friendship, love and benevolence, which represent different levels of affective dynamics. Friendship appears at the beginning of this title as a virtue which Aristotle considered good and useful, and which “arises when one person who loves another is beloved by him for, under other circumstances, true friendship could not exist.”²⁵¹ Love, contrariwise, does not require mutuality: “A man can love an object and receive no affection in return, as happens with lovers, who are sometimes enamored of women who dislike them. For this reason wise men have said that love conquers all things, for it not only causes a man to become attached to those who love him, but also to those who hate him.”²⁵² These are striking statements in the context of a legal code. While emphasizing the virtues of concord is clearly relevant for evaluating the usefulness of legislation, delving into deeply subjective manifestations of affect like love and friendship seems to exceed the scope of what the law should ponder. The discussion, however, continues: “Moreover, men love precious stones and other things which have neither souls nor understanding to love those who love them. Thus it

²⁵⁰ E concordia es una virtud que es semejante ala amistad. E desta se trabajaron los sabios, e los grandes señores, que fizieron los libros delas leyes, porque los omes biviessen acordadamente.

²⁵¹ . . . e ha logar propiamente, quando aquel que ama, es amado del otro aquien ama. ca de otra guisa non seria verdadera amistad. . . .

²⁵² E puede ome aver amor ala cosa, e non avra amistad a ella: assi como aviene alos enamorados, que aman a las vegadas a las mugeres, que les quiere(n) mal. E por ende dixeron los sabios, que amor vence todas las cosas, ca non tan solamente faze amar al ome alas quel aman, mas aun alas que le desaman.

is evident that friendship and love are not one and the same thing, because love can proceed from one side only, but it is proper, under all circumstances, for friendship to exist on both sides.”²⁵³

Notwithstanding the purely political implications that terms like love and friendship had in the medieval context, what is happening in this title of the *Cuarta Partida* is different.²⁵⁴ The discussion is of a general and deeply affective tone. It describes human connections and passions, and it establishes important differences in regard to levels of interaction or lack thereof. It also references the connection between the soul and affective relations, establishing a need for reason only in those which require mutuality. Love, conversely, is linked to purely sensory and irrational connections like romantic entanglements and material yearning. Benevolence appears as an alternative to friendship and love, because it appeals to the loftiest of virtues:

Benevolence is, properly speaking, the good will which springs up in a man's heart, when he hears some excellent quality attributed to a certain person, or to something which he does not see, or with which he has no other connection; he experiencing [sic] particular fondness for the party on account of the goodness he is said to possess, and not knowing him to whom he wishes well. (*Partidas* 4.27.1)²⁵⁵

It is interesting to see the use of the vision/hearing binary to illustrate the affective level that separates benevolence from the other forms of interaction considered in this title. It is also a

²⁵³ E otrosi han amor los omes alas piedras preciosas, e alas otras cosas, que non han almas, nin entendimiento para amar a aquellos que las aman. E assi se prueba que non es una cosa amistad e amor: porque amor puede venir de una parte tan solamente: mas la amistad conviene en todas guisas que ve(n)ga de amos ados.

²⁵⁴ Regarding the concepts of love and friendship and their different uses in the Middle Ages, see Oschema. For the specific case of the Iberian Peninsula see Liuzzo Scorpo, especially the section about Alfonso X.

²⁵⁵ E bien querencia, es propiamente buena voluntad, que nasce enel coraçon del ome, luego que oye dezir alguna bondad de ome, o de otra cosa que non vee, o con quien el non ha otro afazimiento queriendol bien señaladamente por aquella bondad que oyedel, nolo sabiendo aquel quien quiere bien.

good example of the power of spoken words to evoke strong emotions and of how the legislation harnesses that power in order to establish a continuum of affect, both ends of which are affective states where no actual human interaction is needed. On one end is love, which can be non-reciprocated or directed towards inanimate objects, while on the other end is benevolence, which does not require the presence of a person for one to experience a strong emotional response to their assumed qualities. In the middle are friendship and concord; while the former constitutes a reciprocal, rational form of love, the latter only requires simple mutuality manifested in peaceful coexistence, without love or friendship present. Thus, concord as a virtue is the more realistic alternative in front of the precarious reality of human relations, as it has the lowest affective component of the four. This allows the law to distinguish between idealistic forms of human interactions, which the law has very little power to regulate, from the one form that the law not only regulates, but also realizes through its daily practice. Concord is contrasted to love as the rational is to the irrational, and this is done at the end of the *Partida* that legislates marriage and family matters, the area of social life where affect is more visible and potentially destabilizing.

The *Primera Partida* already seeks to justify the writing of the legislation as the only weapon that allows the king to maintain justice and peace throughout the jurisdiction. *Partidas* 1.1.2 develops this idea further in the context of the *ius naturale* and the *ius gentium*. While the first is something that all animals, including men, naturally have, the second “was established by reason as well as by force, because men could not live properly with one another, in concord and in peace, if all did not observe it.”²⁵⁶ This is another form of return to origins which establishes an immemorial genesis of the law that is parallel with the genesis of living beings. In the case of

²⁵⁶ E este fue hallado con razon, e otrosi por fuerça, porque los omes non podrian bien bivar entresi en concordia, e en paz si todos non usassen del.

humans, additional regulation is the necessary answer to the permanent threat that affect presents to social stability. In the practice of the law, such response function is actualized in the resolution of conflicts through agreement: “Peace is the end of the hatred and strife which exist between those who make it. . . the discord and malevolence which men cherish against one another arise from three things. . . either from homicide, injury, or dishonor which they commit, or on account of evil speech which they utter. . .” (7.12.4).²⁵⁷ Voice takes center stage again, and as a category of its own. Extreme affective reactions are underscored as well: strife, hatred, discord, malevolence. In response to them, the law establishes two manifest actions that must be part of the judicial act of reconciliation: the individuals involved must forgive each other verbally and kiss. After this performative stage, the restoration of concord is further affirmed in a written record of the event, an “instrument of peace,”²⁵⁸ which is also a beautiful example of literary cultural production of letter models reviewed earlier:

Know all persons who see this instrument, that Don Diego Alfonso, for himself, and for So-and-So, and So-and-So, of the first part; and Don Ramir Ruiz for himself, and for So-and-So and So-and-So of the second part; have mutually agreed to keep peace with one another perpetually with regard to the disagreements, disputes, grudges, and insults, of which they have been guilty toward one another in word and deed, up to the day and ear of this instrument, and especially with reference to the ill feeling growing out of such-and-such a homicide. And as a mark of the true love and concord which should be preserved between them, they kissed each other before me, notary public, and the

²⁵⁷ Paz, es fin, e acabamiento de la discordia, e del desamor que era entre aquellos que la fazen. . . el desacuerdo, e la mal querencia q(ue) los omes ha(n) entresi nasce de tres cosas. Por omezillo, o por daño, o por deshonrra que se fazen, o por malas palabras que se dizen los unos a los otros.

²⁵⁸ . . . carta de la paz. . .

witnesses whose names are subscribed to this instrument, and promised and agreed with one another that this peace and concord should forever remain secure. . . . (3.18.82)²⁵⁹

The letter actualizes written legislation. It corroborates its effectiveness for posterity as part of an archive, while at the same time it guarantees the preservation of peace and concord in the present. And because it is presented as inscribed into the ancestral practice of the law, as the actualization of natural and common law, it appeals to tradition and custom.

This chapter began with an analysis of the way *Partidas* 2.21.20 presents the education of knights through hearing, especially historical narratives, as an activity proper for them in times of peace.²⁶⁰ There was also discussion regarding the way the law regulates the production, content, and performance of such narratives (2.9.30).²⁶¹ This sensory education through the reading or relating aloud of histories and stories is specifically intended to generate an affective response in order to achieve its pedagogical aim: “This was done in order that, hearing them, their minds and hearts might be enlarged and strengthened by the performance of good actions, and to awaken a desire to attain to what others had accomplished, or to surpass their efforts” (2.21.20).²⁶² The act of perceiving through the ear is what arouses the emotions that inspire men of arms to emulate the heroes of the past. The act of hearing, however, is not only relevant for

²⁵⁹ Sepan quantos esta carta vieren. Como don Rodrigo Alfonso por si e por fulano e por fulano de la una parte, e don Ramir ruyz porsí por fulano e por fulano dela otra fiziero(n) entresi acordadamente paz que durasse para siempre sobre todas las desavene(n)cias e desacuerdos e mal q(ue)rencias e desonrras que los unos oviessen feho co(n)tra los otros de palabras, o de fecho fasta el día del la era desta carta e señaladamente por rason de la malquerencia de tal omezillo. E en señal de verdadero amor e de concordia que deve entrellos ser guardada se besaron ante mi el escrivano publico elos testigos que son escritos en esta carta. E prometieron e otorgaron los unos a los otros esta paz e esta concordia de la aver siempre por firme

²⁶⁰ See p. 158.

²⁶¹ See p. 183.

²⁶² E esto era porque oyendo las les crescian las volu(n)tades, e los coraçones, e esforçavan se, faziendo bie(n), e querie(n)do llegar, a lo que los otros fizieran, o passaran por ellos.

learning, but also for the maintenance of the appropriate behaviors for optimal social interactions. *Partidas* 2.5.21, for instance, discusses the kinds of entertainments the king can use to lift his spirits in times of affliction, like “listening to songs and musical instruments, and playing chess, draughts, or other similar games,”²⁶³ although it cautions that such use should be moderate and limited to specific times. Such activities “also include histories, romances, and other books, which treat of those matters from which men derive joy and pleasure.”²⁶⁴ The law acknowledges that these activities, which involve different types of cultural products, can impact behavior in extreme ways, like compulsive gambling, or excessive listening of songs, which can take away the enjoyment and “transform it into a kind of insanity.”²⁶⁵ In regulating the way in which the king may participate in these activities, the legislation again emphasizes the importance of his demeanor as an example to all his subjects, while it also highlights the threat that unchecked affective responses pose to the general stability of his court and his kingdom.

This is not an attempt to diminish the importance of the pedagogical goals of the legislation in the aforementioned laws; however, it is imperative to recognize that for too long the study of cultural production has shied away from giving feelings the place they need to have in theoretical discussions, often dismissing them as too vague or subjective to be worthy of serious consideration, or excusing indifference by alleging that they are the purview of other disciplines. In the case of literature, specifically, the study of affect is always restricted within the confines of specific “literary theory” areas, safely tucked away in the analysis of plays or poetry, or studied as something that authors write about. Even in approaches that supposedly focus on the readers’

²⁶³ . . . oyr cantares, e sones, de estrume(n)tos, e jugar axedrez, o tablas, o otros juegos semejantes destos.

²⁶⁴ . . . esso mismo dezimos de las estorias, e delos romances, e delos otros libros, q(ue) fabla(n) de aq(ue)llas cosas, de que los omes reciben alegria, e plazer.

²⁶⁵ . . . e tornarla ya, en manera de locura.

reactions to a text, there is a surprisingly aseptic presentation of those reactions that rarely reflects the highly embodied, disorganized nature of such experiences, and the intense responses that they produce in readers and listeners. Doing this implies the loss of the radically methexic character of literary cultural production, manifested in ways as varied as outward gestures and reactions, from crying to laughter, to extreme mental states, to purely somatic changes in heartbeat, breathing, sweat, tremors, goosebumps, sexual arousal, euphoria or pain. The practice of the law is probably one of the human activities where the chaotic nature of affect is more evident, where its effects are the very subject of lengthy judicial processes and theoretical dissection, and where its power reveals its more frightening side.

Fear is perhaps the most important emotion for the exercise of the law. Its pervasiveness guarantees very similar effects regardless of the characteristics of individual subjects, and, contrary to positive affective reactions, which have varying degrees of relation to brain reward systems, fear is deeply ingrained in the most ancient fight-or-flight mechanisms.²⁶⁶ Fear also has the advantage of manifesting in ways that affect the body and which can be perceived in the bodies of others, especially through hearing and vision. Perhaps hearing takes the upper hand in effectiveness, because it can still arouse fear even in the absence of visual or other stimuli. Hearing a scream in the middle of the night will instantly generate this response even before there is time to wake up or turn on the lights. Its effectiveness is enhanced when multimodality is involved, and most experiences of fear involve several senses acting simultaneously.²⁶⁷ The legislation of fear is, thus, of primary importance. There needs to be a monopoly of fear just as much as there needs to be a monopoly of violence, and it has to be part of the literary cultural

²⁶⁶ See p. 63, note 61.

²⁶⁷ Regarding multimodality see p. 30, note 31.

production of the law. While in the case of violence the main focus of the law is punitive and procedural, as is the case with torture, fear covers a greater part of the judicial process, from the individual stages like interrogatories and confessions, to the public ones like trials and executions, and even into their aftermath as part of the legal archive and collective memory. In the public sphere, its power is multiplied in the way Foucault described so eloquently:

Furthermore, torture forms part of a ritual. It is an element in the liturgy of punishment and meets two demands. It must mark the victim: it is intended, either by the scar it leaves on the body, or by the spectacle that accompanies it, to brand the victim with infamy; even if its function is to 'purge' the crime, torture does not reconcile; it traces around or, rather, on the very body of the condemned man signs that must not be effaced; in any case, men will remember public exhibition, the pillory, torture and pain. . . the fact that the guilty man should moan and cry out under the blows is not a shameful side-effect, it is the very ceremonial of justice being expressed in all its force. (34)

Infamy, as will be discussed below, is of primary importance in the practice of the law. Fear and violence are the most extreme negative manifestations of *methexis*, and public judicial events of torture and execution capitalize on them to ensure the maximum diffusion of the voice of power and authority in its most terrifying expression.

As previously argued, one of the consequences of the distance between the theory and the reality of auditory perception is that the subjects of the legislation end up divided in two groups: compliant and noncompliant. For the second group, fear and punishment are the legal strategies of choice. Auditory perception is fundamental for the functionality of punishment in the *Partidas*, and it is part of a framework that takes advantage of the power of affect to influence memory and expectation, and which is outlined in the introduction of the *Septima Partida*:

Forgetfulness and boldness are two things which cause men to err greatly, for forgetfulness induces them not to remember the evil which can come upon them on account of the offenses which they commit, and boldness gives them daring to do those things which they should not. In this way they practice evil so that it becomes natural to them, and they receive pleasure from it. And for the reason that acts of this kind which are committed with pride should be severely punished, in order that those who are guilty of them may receive the penalty which they deserve, and that those who hear it may be stricken with fear and take warning so as to avoid doing anything for which they may receive the same treatment. . . .²⁶⁸

Communication allows the deterring effect of the law to reach the largest amount possible of subjects, beyond those who were physically present during the enactment of punishment. But this dissemination is subject to auditory expectation, because aside from infusing terror in those who hear about the event, affecting their auditory expectation, it will have an impact in the way they interpret the facts and relay them to others. Auditory expectation turns the chain of communication into something akin to the children's game telephone: the initial message is clear, but there is no way of knowing what message will come out at the end of the game.

The affective aspects of communication, and the problems they generate, also receive considerable attention in the legislation. A case in point is infamy, a form of punishment which is predicated upon the transmission of information that permanently damages the reputation of the

²⁶⁸ Olvidança e atrevimiento son dos cosas que fazen a los omes errar mucho. Ca el olvido los aduze, que non se acuerden, del mal que les puede venir por el yerro, que fizieren. E el atrevimiento les da osadia, para acometer lo que non deven, e desta guisa usan el mal demanera que se les torna como en natura rescibiendo en ello placer. E por que tales fechos como estos que sefazen con sobervia, deven ser escarmentados crudame(n)te, porque los fazedores resciban la pena que merescen, e los que lo oyeren se espa(n)ten, e tomen ende escarmiento, porque se guarde(n) de fazer cosa, porque non resciban otro tal.

criminal. *Partidas* 7.6.6 distinguishes between evil-repute and infamy; while the former is the result of an individual's own misdeeds, the latter occurs without guilt. In both cases, nonetheless, "after the tongues of men have given any one a bad name, he never loses it, although he may not have deserved it."²⁶⁹ In the case of infamy, the law may provide remedy through a royal pardon, successful appeal, or the imposition of corporal punishment where monetary fines are available. The flipside of this situation is the actual crime of defamation, which appears throughout the *Partidas*, in both oral and written form. The legislation addresses the consequences of defamation early on, comparing them to a wound that never heals (1.5.55). *Partidas* 2.13.4 goes even further: "there are two offenses which are equally serious, to kill a man, or to accuse him of infamy, because after a man has been rendered infamous, although he may not be guilty, he is, as it were, dead to the good and honor of this world; and, in addition to this, his defamation may be so great that he would be better dead than alive."²⁷⁰ Once lost, good reputation is irretrievably lost, making infamy a kind of death. But while death represents the end of *methexis*, infamy, does not; it simply represents the most extreme negative form of participation in society: being in the mouth of everyone without hope of redress. This particular law refers to the death of the good name of the king when his subjects speak ill of him, which requires a punishment proportional to the effects of the crime: death and loss of property. The legislation reiterates this strategy by attempting an aesthetics of punishment, where the type of violence exacted upon the condemned makes present to the senses the very actions that led to its implementation, in those cases where clemency is granted and the culprits escape death: "he should cut out the tongues with which

²⁶⁹ . . . q(ue) despues q(ue) las lenguas de los omes ha(n) puesto mala nombradia sobre alguno no(n) la pierde jamas maguer no(n)la meresciesse.

²⁷⁰ . . . dos yerros son, como yguales, matar al ome, o enfamar lo de mal, por q(ue) el ome, despues q(ue) es enfamado: maguer no(n) aya culpa, muerto es qua(n)to al bien, e a la ho(n)rra deste mundo, e demas.tal podria ser el enfamamiento, que mejor le seriala muerte, que la vida.

they committed the offense, so that they can never again make use of them to speak.”²⁷¹ This only an attempt at an aesthetics of punishment because it follows what had already been legislated in *Partidas* 2.1.5 and 2.13.1, where those who wish to see the king death should have their eyes gouged out. However, the strategy fails to maintain its aesthetic character in *Partidas* 2.13.2, where the law is at a loss regarding the punishment for those who want to hear anything that threatens the wellbeing of the king. Cutting their ears is not contemplated, and it would not constitute a severe enough punishment. The solution is to revert to proportionality: given that the desire to hear ill of the king is similar to wishing for his death, the penalties must be, again, death and loss of property. This proportionality continues in regard to smell and touch (2.13.3 and 6).

The proportionality of punishment is also indicative of the mirror-like mechanisms that underlie the ability to put oneself in the place of others, either to feel their pain or to understand and predict at a somatosensory level the potential consequences of tarnishing their good name. The strategy of making present the consequences of a crime in the punishment imposed is not exclusive of cases where the victim is the king. Defamation can also affect his subjects. *Partidas* 7.6.8 states that those who falsely accuse another of a crime punishable by death or banishment should themselves be sentenced to capital punishment or banished. This proportionality rests on another instance of legal fiction: the need to assume the victim was already judged and found guilty of the false charge, in order to impose the corresponding punishment to the slanderer. Such fictions are effective precisely because they appeal to the brain mechanisms that enable methexis in the form of empathy. The same fiction reappears in the context of a written form of defamation, the *famosus libellus*, which the law considers even more serious “because if not lost

²⁷¹ . . . deve(n) le cortar la lengua, con q(ue) lo dixo, de manera, que nunca con ella fable.

the remembrance thereof endures forever” (7.9.3).²⁷² The same proportionality of punishment applies here, but it covers the entire chain of textual production and transmission: authors, scribes, readers, listeners, and those who orally perform them, either by reading or singing.²⁷³ The common denominator in this chain is auditory expectation, as mentioned in the example of the game of telephone: people not only repeat what they hear, but also distort it, embellish it, add to it, mix it with other auditory events, and they go as far as to turn it into a cultural product, like an artistic performance as song or declamation, engraving it more permanently in the collective memory. That is why the legislation seeks a retribution that may leave, through fear, an even deeper imprint in the minds of its subjects through the use of exemplary punishments that can be disseminated through the same channels as the libelous text.

The problem of the libelous texts is not so much that they speak ill of others, but that they do so outside of the legislated channels: “Whoever decides to speak ill of anyone should accuse him before a judge of a crime or offense which he has committed, as the laws of this our book direct; and where he proves it he is liable to no penalty on this account, and the party whom he accuses is rendered infamous, as he should be” (*Partidas* 7.9.3).²⁷⁴ Even when its contents are true, the libelous text is an attempt to supplant the voice of power and authority, and to bypass the procedural structure established to regulate authorized voice within the jurisdiction. What is at stake, then, is not only the reputation of the victims, but also the integrity of the most important spaces within the jurisdiction, where the texts could be performed outside of the accepted

²⁷² . . . porq(ue) dura la remembrança dello para siempre, si la escritura non se pierde: . . .

²⁷³ The same penalties were already established in the *Corpus Iuris Civilis*. See *Las Siete Partidas*, ed. Burns, Vol. 5, p. 1352, note 1.

²⁷⁴ Mas quien quiere dezir mal de alguno acuselo del mal, o del yerro, q(ue) fiziere delante del judgador, assi como mandan las leyes de aqueste nuestro libro. E provandolo, non caera en pena porende, e fincara infamado aquel que acusa en la manera que deve.

parameters: the church, the court and the public square. The imposition of extremely severe forms of punishment for these crimes also rests on their classification within the typology of crimes of dishonor that occupies *Partidas* 7.9, which go from simple insults to defamation and tomb desecration. The written forms of libel discussed above “are called, in Latin, *atroces*, which means cruel and grievous in Castilian,”²⁷⁵ as opposed to those of little significance (7.9.20). One of the parameters of classification is the type of consequence the victim suffers after being defamed, which in grievous crimes can include maiming, wounding, or degrading bodily injuries. Other important aspects are the part of the body that suffers injury, as well as the place and the rank of the persons present during the crime. Another aggravating factor is the relationship between the victim and the perpetrator, and the differences in their authority or the type of familial relation between them. All of these factors support the proportionality of punishment, which correlates directly with the level of fear that must be produced in order for it to achieve not only the reparation of the offense by the general dissuasion of potential offenders. Aside from corporal punishment, the law imposes other penalties that seek to exclude offenders from the social sphere in different ways. Even when they are spared from death or banishment, they lose their own reputations, which precludes them from receiving honors and excludes them from the court (7.6.7). They lose the right to be witnesses of testaments, which includes them in the varied group of individuals that are considered incompetent before the law: crooks, apostates, profligates, serfs, mutes, the deaf, women and minors (6.1.9). They also lose the right to make their own testament, which implies the loss of the status of legal person, something that only happens to hostages, serfs and heretics (6.1.16). The law seeks to do more than just punish; it

²⁷⁵ . . . a que dize(n) en latin atroces, q(ue) quiere ta(n)to dezir en romance, como crueles, e graves.

seeks to erase as legal persons the agents of production and dissemination of unauthorized voice, in order to protect the jurisdictional space, where the only voice that should sound is the voice of power and authority as legislated in the code. This type of exclusion is a form of negative *methexis*, of radical separation from participation in society made possible by the use of fear and punishment, and in itself a source of fear for all subjects.

Whereas the uses of fear just discussed are all related to the public sphere, the law also has a private sphere where fear fulfills, at least in theory, a different purpose: eliciting the truth. This is the case of interrogations, where the use of fear and torture is part of the procedural structure to elicit a special kind of voice: the confession (*Partidas* 3.13.3). In this context, the utterance of voice is as important as its absence; silence is a destabilizing factor within the private space of interrogation, in part because its affective characteristics, namely individual intentions, are not readily discernable. The silence of the accused represents a radical break in the question and answer scheme that controls the process of eliciting the truth, and, as a result, it is immediately interpreted as a sign of rebelliousness. It is interpreted thus because it interrupts and alters the order of the proceedings; it is an act of defiance and it is punished as such: “Where anyone is interrogated by a judge. . . and he proves contumacious, and refuses to answer the question; his obstinacy in not being willing to answer, will be of as great disadvantage to him as if he had admitted the matter concerning which the interrogatory was put.”²⁷⁶ But even when the defendant decides to comply with the expectations of his interrogators and answer all their questions, there is an additional problem. Any attempt to fill the space that his silence would have left, must be in accordance with the standards of what the law assumes to be a correct

²⁷⁶ . . . seyendo alguno preguntado del judgador. . . , si fuere rebelde, non queriendo responder ala pregunta: que tanto le empece aquella rebeldia, de no(n) querer responder, como si otorgasse aquella cosa, sobre que le preguntaron.

answer, and where his guilt is not a possibility but a given fact. From this perspective, any answer of the accused is interpreted as inherently suspicious. Peter Brooks has shown the pervasiveness of these criteria in modern manuals for interrogators, underscoring the ease with which the question and answer system leads the defendant to affirm that which he seeks to deny (40). In the face of this possibility, silence seems to be the only reasonable alternative; however, in the practice of interrogation it will still be interpreted as a tacit admission of guilt (23, 31). This is the result of a preconceived narrative structure built on the basis of the defendant's presumed guilt (30). Any answer that falls outside this narrative will be immediately construed by the interrogator as evasive, not as indicative of innocence. The law echoes this position when it cautions that the same admission of guilt applies to any person "who answers equivocally, so that from his answer what is asked cannot possibly be ascertained" (*Partidas* 3.13.3).²⁷⁷

This reflects the connection that Brooks sees between modern police interrogatories and the confessional and inquisitorial model established after the Fourth Lateran Council (93).²⁷⁸ Brooks offers as an example Paolo Segneri's manual for confessors (1685), where the confessor passes from listener of sins to interrogator, due to the ineptitude, malice and ignorance that make the confessant hide his sins (99). This mentality fits perfectly into a conception of human perception as independent from cognition, where the latter does not always take place, and which the reality of a largely illiterate population must have made quite appealing. This conception is also present in manuals for confessors chronologically much closer to the time of the Council and of the production of the *Partidas*. At the beginning of the fourteenth century, Martín Pérez cautions in his manual that "the sinner can never confess properly the first time, either due to

²⁷⁷ . . . si respondiере escuramente, de guisa que non puedan ser ciertos de su respuesta, de aquello que le preguntan.

²⁷⁸ The Fourth Lateran Council took place 1215.

fear, either due to the shame that overwhelms him, or because he does not know how to differentiate properly between sins” [“apenas el pecador nunca se bien puede confesar de la primera vegada, que por miedo, que por verguença que el embarga, o porque non sabe los pecados conoçer bien....”] (my trans.; 15). Affect and ignorance are presented here as the basis for the need to pass from confession to interrogation: fear, shame, or confusion, prevent the truth from coming out. It is the task of the confessor to go beyond the initial attempt into a full inquiry. The manual proceeds to provide a very detailed description of the sins the confessor should inquire about, which constitute a kind of taxonomy, classified according to the different members of society. Whatever the social status, age, education level, or occupation of the sinner, it is assumed that there is something hidden that the confessor needs to discover.

While the manuals for confessors assume incompetence in the confessant, the inquisitorial model of questioning sees the heretic as sly and capable of all manner of evasion and subterfuge, bringing him closer to the defendant as presented in modern interrogation manuals, as well as to the accused portrayed as equivocal in the *Partidas*. In the middle of the fourteenth century, Nicolau Eymerich presents the following portrayal: “Heretics are very sly in concealing their errors, they feign holiness, and they shed phony tears. . . an inquisitor must arm himself against these tricks, and always assume they want to deceive him” [“Los herejes son muy astutos para disimular sus errores, afectan santidad, y vierten fingidas lágrimas. . . un inquisidor se debe armar contra todas estas mañas, suponiendo siempre que le quieren engañar”] (my trans.; 17). Affect assumes here a more sinister aura: it is only an act, a theatrical performance by a very skilled actor. The manual proceeds to describe ten such schemes in a way that guarantees that virtually every question will seem suspicious. A category that results particularly troubling is what Eymerich classifies as ambiguities and mental restrictions, where,

after an answer that appears to be correct, inside their mind, heretics are answering something different: “if they are asked, *is this the body of Jesus Christ?* They answer *yes*, meaning by *this* their own bodies, or a stone close by, insofar as all the bodies that exist in the world belong to God, and thus to Jesus Christ, who is God” [“si les preguntan *¿es esto el cuerpo de Jesucristo?* dicen *sí*, significando por *esto* su propio cuerpo, o una piedra inmediata, en cuanto todos los cuerpos que el mundo contiene son de Dios, y por tanto de Jesucristo, que es Dios”] (my trans.). If the answer indicates ignorance or modesty, these are also assumed to be feigned (19). Any somatic reaction, like fainting or having a headache, or any outward signs of mental illness, are to be interpreted as delaying tactics.

Around the same period, Bernard Gui describes these same tactics in his manual for inquisitors, but he classifies them according to the religious sect to which the heretic supposedly belongs, although all of the tricks he describes share the common goal of allowing the heretic to avoid confessing his trespasses (30). It is interesting that these manuals do not address the subject of silence, perhaps never a real alternative taking into account the violent means of coercion at the disposal of inquisitors. If the space left by silence was not filled with evasive and equivocal answers, the effects of torture would fill it with untrustworthy confessions. This is echoed in the *Partidas*: “Men sometimes influenced by torture, or wounds, or the fear of death, or by the disgrace which they desire to inflict upon others, confess things, which they would not, of their own accord, acknowledge. For which reason we decree that a confession made in any of these ways, shall not be valid, or be a hindrance to any one who makes it” (3.13.5).²⁷⁹ In order

²⁷⁹ Por premia de tormentos, o de feridas: o por miedo de muerte, o de desonrra q(ue) quiere(n) fazer alos omes, conocen a las vegadas algunas cosas q(ue) de su grado no(n) las conoceria(n). E pore(n)de dezimos, que la conoce(n)cia que fuere fecha en alguna destas maneras, que non deve valer, nin empece al que la faze.

for a confession under torture to be valid, the law requires that it be repeated afterwards, without the threat or use of violence. Although this gesture of the legislator seems incredibly progressive for the historical context in which it is made, it is unlikely that it had any meaningful effect. Keeping in mind that traumatic events like torture and extreme fear leave lasting marks in the brain, including mirror-like aversive reactions and maladaptive plastic changes, it is easy to see that the immediate absence of the threat would not have caused an affective change equivalent to the absence of fear, and that most corroborating testimony obtained at a later time would be made under levels of fear very similar to the ones experienced under torture.²⁸⁰ The private space of the interrogatory prolongs itself through memory, including somatosensory mirror-like experiences, and it follows the subject into daily life. The fear of the law becomes a bodily experience that the mind carries around and has the potential of being felt even when not actually experienced. This is not simple remembering, but mirror-like embodied methexis. Given that the space of the interrogatory has become movable, it is now part of the internal conceptualization of the jurisdiction, and in this its effects are similar to those of a public execution. The jurisdictional space thus not only completely surrounds but also invades the bodies of its subjects, creating in the process a real rule of law, one that has access to the deepest recesses of the mind. It is the mental state that John Milton masterfully recreates in *Paradise Lost*, in Satan's soliloquy after he flees from hell: "Me miserable! which way shall I fly / Infinite wrath, and infinite despair? / Which way I fly is Hell; myself am Hell;" (4.73-5).

²⁸⁰ See pp. 76-7 and Depperman et al.

Jurisdiction and Relative Positioning

The creation of a jurisdictional space is essential for the enforcement of legislation. Aside from the establishment of geographical and administrative boundaries, or the definition of a scope according to demographic and hierarchical principles, there is the accepted reach of the rule of law. Different from the first two areas, the rule of law is not only a theoretical concept, made possible by rational legal arguments, but it is also a sensory space, able to submit the will of its subjects through their bodies by virtue of its affective power. In this sense, it is also a methexic space, where the law attempts to regulate the types and levels of participation of individuals, and to define their relative positioning according to specific parameters. Otherwise, there would be no real effect of authority. There is a need for strong affective motivations, like fear, love, loyalty, hatred, just to name a few, in order to make the individual feel as a participant in the act of submitting to the law. Modern concepts like patriotism share this same aesthetic substrate, which entails the existence of deep emotional attachments to a complex series of ideals and subjective notions of origin, belonging, homeland, duty, loyalty, among others, to complement the already existing attachments to immediate family and friends. In the Middle Ages, these attachments work in structures of patronage and feudal regimes, where the land is a moveable space, constantly changing due to incessant war and shifting borders. There are also two partially overlapping hierarchies: the Church and the nobility. In the case of the Iberian Peninsula at the time of the writing of the *Partidas*, there were dozens of *fueros* and other forms of custom law, with limited scopes that overlapped frequently, leading to confusion and jurisdictional vacuums caused by conflicting practices. Under such conditions, the enforcement of the law depended greatly on the power of local lords. The king's power was limited and constantly threatened by the changing allegiances of the nobility. That is why the establishment

of a jurisdiction involved more than just the definition of a geographical space, and its legislation reflects an awareness of this fact in the way it uses various strategies to help expand as much as possible its own scope and the physical limits of the jurisdiction. One such strategy is related to interpersonal exchanges and the different ways in which the law regulates them.

In the *Quinta Partida*, the validity of contracts is based, from a material standpoint, on an inversely proportional relation between voice and writing, where utterances fill the gaps caused by the absence of documentation within the contractual space. This inverse proportionality is necessary to restore and safeguard the stability of the human interactions that are germane to every transaction, given the possibility of “inconveniences and serious disputes”²⁸¹ arising from the changes in opinion of the interested parties (“Introduction”). The contract is a space where a link is voluntarily established by both parties either by agreement or litigation; therefore, it is pure methexis. It is a space because in it transactions take place that are defined in terms of the changes and movement of bodies and objects, within a specific location system. The parties are bodies, either the bodies of the individuals entering into the contractual relationship or those of their representatives; the transaction between these bodies implies some manner of displacement or transformation of things, and thus implies participation. The possibility of change is a permanent threat to the stability of a contract, because what begins as a mutual agreement ends in conflict due to the fact that people “change their minds.”²⁸² Movements within the contractual space are causal in nature, something that the legislation had already defined in the *Tercera Partida* in the context of trials: “The energy of action, according to natural laws, is the first thing that attracts others to itself” (3.2).²⁸³ The original actually does not talk about energy but

²⁸¹ . . . enxecos, e grandes co(n)tiendas. . . .

²⁸² . . . que se mudan despues las voluntades. . . .

²⁸³ Movimiento de los fechos, segund razon natural, es la primera cosa, que tira las otras assi.

movement, that is, change. This movement is inchoative, as it occurs when a plaintiff demands justice: the voice uttered by the plaintiff causes movement or change when it demands justice, and his claim is predicated upon a prior movement, that which led to the contract that sets forth the conditions for things to move or change. In order to establish a contractual space, the wishes of the parties must be expressed either orally or in writing. The instability of the oral agreement is always in tension with the relative stability of a transaction memorialized in writing. Inasmuch as writing may be either absent or incomplete, the oral must increase to fill the entire contractual space, in order to try to avoid that it may be partially or completely invalidated.

In the case of sales and purchases, the legislation enacts a division in terms of voice and writing, where the contract can be performed with or without a letter (*Partidas* 5.5.6). When there is a letter, writing becomes the guarantee of the transaction, making the sale binding even before there is an actual exchange of things or monies between the parties. In the absence of a letter, the sale is only finalized with the exchange of goods and monies, which necessitates the presence of bodies to confirm the act through the enunciation of words. The importance of voice is confirmed when the law describes the exchanges, using as examples situations when there is no promise or concession: “as where one of them says: ‘I wish to exchange such-and-such property with you;’ and the other answers that he is willing, and the exchange is made by words of this kind or others like them, although the property exchanged is not at hand, nor passes into possession of either of the parties” (*Partidas* 5.6.1).²⁸⁴ The presence or absence of the things to be exchanged is irrelevant. It is the words that produce their presence and their movement from one party to the other. Mutual agreement is a prerequisite, but it does not replace the formulae

²⁸⁴ . . . mas diziendo assi quiero cambiar tal cosa co(n) vos: e el otro respo(n)die(n)do que le plaze por tales palabras, o otras semejantes dellas, se faze el ca(m)bio, maguer las cosas que cambio, no(n) sean presentes nin passadas, a poder de ninguna de las partes.

because, in the absence of the legislated words, at least one of the goods must change hands in order for the exchange to be valid. The case of promises, which, as was discussed, rely mainly on the repetition of formulae,²⁸⁵ also exhibits this inverse proportionality, where the presence of voice in the transaction is greater than the presence of written documents:

A promise is the consent verbally given by some men to others with the intention of binding themselves when they come to an agreement with regard to some certain thing. . . and when this is done justly and reasonably it is a great benefit to the people, for men make one another assured that they will do what they agree to, and they are bound to keep their promises. (*Partidas* 5.11.1)²⁸⁶

This law shows full awareness of the higher likelihood of confusions in the oral context, absent clear regulation of the exchanges between the parties, a problem that it solves through the use of codified formulae, in the same manner it had outlined in *Partidas* 3.18. The difference resides in that, recognizing the greater versatility of the spoken word, the legislation explains that the formulae do not need to be repeated verbatim. It is the intelligibility of enunciation of the parties that guarantees their mutual understanding and the stability of the contractual space. That is why *Partidas* 5.11.2 takes the additional step of explicitly excluding from the authorized verbal exchange any unnecessary words or gestures. Silence, if it occurs, should always be interpreted as negation, in sharp contrast to its interpretation in the context of the interrogatory.

Contrary to most types of transactions described in the *Partidas*, testaments surpass the physical and temporal space of the jurisdiction, as they perpetuate the presence of the testator

²⁸⁵ See pp. 186-7.

²⁸⁶ Promission es otorgamiento q(ue) fazen los omes unos con otros: por palabras: e con entencion de obligarse, aviniendose sobre alguna cosa cierta. . . . E tiene gra(n)d pro, alas ge(n)tes, qua(n)do es fecha derechame(n)te, e co(n) razon. Ca assegura(n) los omes los unos a los otros, lo q(ue) promete(n), e son tenudos delo guardar.

after his death by means of the authorized articulation of his will. The authorized form of expression attempts to predetermine the future movement and change of persons and things by keeping an oral or written record of the voice that can fill the void left by the absent body of the testator. This production of presence is needed to validate the expression of the will in a way that conforms to the jurisdictional space, allowing the testator to participate even when permanently absent. In order to become a literary cultural product that is the repository of the authorized voice for the entire jurisdiction, the legal code needs to be structured as a sphere of action, the jurisdictional space, where the sound of power and authority propagates in an omnidirectional fashion, with the king as its epicenter. This is a tridimensional space, where the presence of justice is manifested in the practice of the letter of the law, defined by three axes: conditional, hierarchical, and transactional. The conditional axis covers all the conditions that must be fulfilled for litigation to be valid. The hierarchical axis determines the position the subject occupies in the stratified social order at the precise moment he comes in contact with the law. The transactional axis encompasses all types of authorized transactions, either between individuals, or between an individual and the law. These axes make it possible to determine the exact position of the subject inside the jurisdictional sphere by virtue of a complex equation where the transactional factor, insofar as it is a codified precept, functions as the constant value, while the hierarchical and conditional axes work as variables: the former as a simple variable and the latter as a complex one, given that it is determined by more than one factor. This results in each individual falling into a specific place inside this tridimensional space. The difference in positions amongst subjects is what is referred to in this thesis as relative positioning. This positioning is what determines the specific rights and duties of each individual, so that the law may be applied correctly in their different interactions. Only part of the jurisdictional space is

methexic, and that part can only be occupied by those subjects whom the law deems competent. Testaments are part of this participative portion of the jurisdictional space, insofar as they are a transaction initially originated by a living body. They occupy the place that the absent body of the testator can no longer occupy within this sphere in order for his voice to be performed at the moment the testament is to become effective.

Contrary to other kinds of transactions described in the legal code, the expression of a subject's last will and testament is a unidirectional act that precludes the possibility of amendment: "because if they should die after they have made their wills they cannot return to correct them, or to draw them up anew" (*Partidas* 6.1).²⁸⁷ Given that death represents a break between the body and the will, it is necessary to establish the requirements for the expression of the will to be valid, so that the future movements of persons and things that it will produce are consistent with the dynamics of the jurisdictional space. The importance of the three aforementioned axes for determining the validity of a testament is clearly expressed in *Partidas* 6.1.18. In this law, the change in position of the testator, caused by displacements along the hierarchical and conditional axes, impairs his ability to perpetuate his presence through the expression of will. The act of drawing up a will functions as the constant value in the transactional axis, enacting an internal division inside the jurisdictional space, which traces a methexic transactional space, a sub-sphere of action that can only be occupied by those who are competent to be testators. The law describes three cases of displacement along the hierarchical and conditional axes which lead to the exclusion of the testator from the transactional sphere,

²⁸⁷ . . . porque despues que los han fecho, si se murieren, non pueden tornar otra vez a endereçar los, nin a fazer los de cabo.

inhibiting the production of his presence and, as a consequence, invalidating the testament. The first case covers the most radical displacements:

First, when a party who makes a will, is sentenced to some punishment for life; for a party of this kind cannot afterwards live in any other place, but that where he is to endure the penalty, and he becomes the same as a slave, and subsequently doesn't have his children under his control, as he formerly did. The same rule applies where a person who was emancipated is again reduced to slavery, because he was ungrateful to his master who enfranchised him, or lost his freedom for some other reason; and this change is called, in Latin, *maxima capitis diminutio*, which means the greatest change of condition which can happen to a man, for by means of it he loses his liberty, his home, and his family. (6.1.18)²⁸⁸

The permanent loss of freedom, a displacement along the conditional axis, causes in turn another displacement along the hierarchical axis. These changes lead to both a geographical movement, from the place where the subject lived to his permanent place of confinement, and to a change in his relative positioning inside the jurisdiction, caused by the loss of power over his children. The displacement along the hierarchical axis caused by the loss of freedom leads to the exclusion of the subject from the transactional space where the testament is valid. In addition, the legislation considers life imprisonment as the first type of “civil death,” which results in loss of parental authority and the right to make a will (4.18.2). This is another example of legal fiction, where

²⁸⁸ La primera es, quando aquel que faze el testamento es dañado para siempre a sufrir alguna pena. Ca este atal non osa despues bevir en otro lugar, si non en aquel, o ha de ser penado, e es como siervo, e non ha despues sus fijos en su poder como avia antes. E esso mismo seria, quando alguno que fuesse franqueado, lo tornassen a servidumbre, porque fuera desconosciente a su señor quel aforro, o perdiessse la libertad por otra razon e a este mudamiento dizen en latin *maxima caoitis diminutio*: que quier tanto dezir, como el mayor mudamiento de estado que a ome puede acaescer, porque por ella pierde la libertad, e la cibdad, e su familia.

even though the subject “may not be actually dead, the laws consider that he is so, as far as the honor, the nobility, and the affairs of this world are concerned.”²⁸⁹

The next case of invalidation of testament in *Partidas* 6.1.18 consists on a double displacement along the conditional axis:

The second way is where anyone is perpetually banished, by a judicial sentence to some island so that he can never leave it, whether he is deprived of all his property or not. This is called, in Latin, *media capitis diminutio*, which means, in Castilian, the moderate change of a man’s condition, for by it he loses his residence and his family.²⁹⁰

Although in this case there is no loss of freedom, exclusion occurs because banishment is the other type of “civil death” contemplated in *Partidas* 4.18.2, leading to the same loss of parental authority and the right to make a will. The last case implies a much milder form of displacement:

The third is where a party who is under control of another permits himself to be adopted, and for this reason is placed under the control of the person who adopted him, for he changes his condition. This change is called, in Latin, *minima capitis diminutio*, which means, in Castilian, the least change which a man can endure with respect to his condition, for by means of it he only changes his family, and nothing more. (6.1.18)²⁹¹

²⁸⁹ E como quier que. . . , non sea muerto naturalmente: tienen las leyes, que lo es quanto a la honrra, e a la nobleza e a los fechos deste mundo.

²⁹⁰ La segunda manera es, quando alguno es desterrado para siempre, en alguna ysla, por juyzio, que nunca ha de salir della, quier le sean tomados todos sus bienes o non. E a esta dizen en latin *media capitis diminutio*, que quier tanto dezir en romance, como mediano mudamiento del estado del ome, ca por este pierde la cibdad e la familia.

²⁹¹ La tercera es, como si aquel que non es en poder de otro, se dexe porfijar, e cae porende en poder de aquel q(ue)l porfijo: ca muda su estado. E a este mudamiento dizen en latin *minima capitis diminutio*, que quier tanto dezir en romance, como el menor mudamiento q(ue) ome puede aver en su estado, ca por ella muda la familia tan solame(n)te, e no(n) mas.

The common denominator in these three cases is the loss of the ability to participate, due to the changes in relative positioning caused by the displacements along the hierarchical and conditional axes. Given that the transactional space of the testament is methexic, any subject considered legally incompetent is automatically excluded. The body of the testator disappears by virtue of civil death or loss of power over himself, which are two different legal fictions. But even though they are fictions, the power of the law is evidenced in the fact that the subject will feel unable to access said space, even when no actual obstacle prevents such access. It is the mental state that enacts the separation, and leads the individual to self-segregate from the space or the human group of where he had previously felt he belonged. In this sense, legal fictions are cultural products of great affective power, able to create mental spaces and barriers, and also to elicit feelings of belonging or permanent separation. Contrary to these fictitious forms of death, natural death, the only real and definitive disappearance of the subject, is the one that enables the production of presence of the testator by means of a written or oral record of the expression of his will. In doing so, the transactional space opens up to scrutiny with the oral performance of the will of an absent body, taking the voice out into the public sphere.

The private jurisdictional space, as seen in the foregoing examples, is not permanently closed, and there is always the potential for voice to overflow into the public sphere. Thus, the legislation takes a different approach to voice depending on what spaces it covers, either private or public, or in between; on the extent to which writing is present in said spaces; and, finally, on the kinds of movements and changes that may take place inside them. In order to better appreciate this contrast, it is important to look at the way the law approaches the dynamics of two spaces that are neither fully private, nor fully public, where the voice of power and authority resonates: the court and the palace. Although both words may be used to describe actual physical

structures, their functions often exceed the limits of a building or architectural structure, to open into the public sphere. For instance, medieval courts were itinerant; the kings and their retinues traveled often throughout the kingdom. Most of these travels were related to administrative, judicial, and military duties. Alfonso the Wise traveled often for all those purposes.²⁹² He was at war with neighboring realms, and achieved important military victories throughout his reign.²⁹³ He also visited cities and towns, and he held *Cortes*, which were administrative and judicial proceedings, in different parts of his kingdom.²⁹⁴ There were also public punishments and executions that resulted from these proceedings, carried out in the name of the king and often in his presence. This ability to expand beyond the limits of structures and geographical boundaries meant that both institutional bodies could fill their jurisdictional limits by means of displays of power and authority where sound, and especially voice, were key elements.

Partidas 2.9 contains four laws related to the court and the palace, which include their definitions and their specific functions, as well as the activities that may be carried out inside them. These laws are incredibly invested in a spatial conception consistent with a methexic approach to jurisdiction and relative positioning. *Partidas* 2.9.27 begins with the court:

The place where the king, his vassals, and his officers, whose duty it is daily to advise and serve him, and where the men of the kingdom gather, either for his honor, or to obtain justice or dispense it, or to transact other business, which they are required to

²⁹² For a detailed account of Alfonso the Wise's itinerant court see Ballesteros Beretta.

²⁹³ For the military achievements of Alfonso the Wise see Doubleday.

²⁹⁴ For the history of the Castilian *Cortes* during the time of Alfonso the Wise see Joseph O'Callaghan.

communicate to him, is called the Court. It takes its name from a Latin word, called *cohors*, which means union of companies. . . .²⁹⁵

The court is identified as a space not by virtue of its geographical location, which does not exist, but of its function as a place of gathering. In this sense, it is consistent with Michel de Certeau's idea that what defines a space is the "animation of these places by the motion of a moving body" (Augé 79). The conditional axis of this moveable place contains values like the type of individuals that it gathers, the functions they perform, and the reasons for their presence there. This law also describes the hierarchical axis of this space, predicated upon another meaning of the word: "It has also another name, in Latin *curia*, which means a place where supervision is exercised over all the acts in the country, for there it must be determined to what each one is entitled, according to his rights and his station."²⁹⁶ Lastly, the definition refers to the transactional axis: "It is called *corte*, in the Spanish language, because there is kept the sword of justice, with which all evil acts in word or deed are punished, as, for instance, the wrongs, violence, and arrogance which men do and say."²⁹⁷ The three axes of the space called court give it consistency in spite of its movability, so the fact that its dimensions may fluctuate does not threaten its stability. They also provide the parameters necessary to determine the relative

²⁹⁵ Corte es llamado el lugar do es el Rey, e sus vasallos, e sus oficiales, co(n) el q(ue) le ha(n) cotidianame(n)te de co(n)sejar, e deservir, e los omes del reyno, q(ue) se llega(n) y, o por ho(n)rra del, o por alca(n)çar derecho, o por fazerlo o por recabdar las otras cosas q(ue) ha(n) de ver co(n) el. E tomo este nome, de una palabra de latin, q(ue) dize(n) cohors, en q(ue) nuestra ta(n)to, como ayuntamie(n)to de co(m)pañas.

²⁹⁶ E otrosi ha nome en lati(n) curia, q(ue) q(ui)ere tanto dezir como lugar do es la cura de todos los fechos de la tierra: ca alli se ha de cater, lo q(ue) cada uno deve aver, segu(n) su derecho, e su estado.

²⁹⁷ Otrosi es dicho corte, segu(n)d le(n)guaje de España, porq(ue) alli es la espada, de la justicia, co(n) q(ue) se ha(n) de cortar todos los malos fechos, tan bie(n) de dicho, como de fecho, assi como los tuertos, e las fuerças, e las sobervias, q(ue) faze(n) los omes, e dize(n). . . .

positioning of all those present in the court at a given time. This helps to offset the permanent threats that the space of the court faces from unauthorized discourses and behaviors.

When considered from the perspective of sound perception, and specifically of voice, the court is faced with the same problems previously analyzed in the context of private spaces. The unpredictability and inexorability of sound and its perception are still at odds with the theoretical considerations of the legal code, and therefore practical approaches to it must be taken.

Rodriguez-Velasco defines the court, as presented in this section of the *Partidas*, as a “space of uncertainty and instability,” due to the constant movement of people that go there seeking justice (71-3). He argues that *Partidas* 2.9 seeks to protect this space through the use of a “rhetoric of irony” based on the concept of “retraer” or “narrate” that was mentioned above (69-77).²⁹⁸ The aim of this rhetoric is to avoid the violence which may arise from verbal conflicts, which result in a disruption of friendship and concord, and to create a “space of certainty” (71). This goal is clearly predicated upon the hierarchical axis: “Friendship is the fundamental value upon which political solidarity in the heart of the court is settled, and, in the case of nobles, it has a historical character that goes beyond mere friendships between persons to being the expression of a friendship, or fraternity of a social class. . .” (78). The hierarchical axis rests upon a series of behavioral norms that set this social class apart, and which consist in avoiding unauthorized conduct and using “words which are proper and well-considered” (2.9.27).²⁹⁹ The subjects who follow these norms are labeled as “good and educated,” and, more importantly, as “courteous.”³⁰⁰ Courtesy is the standard that encompasses all the behavioral requirements of the hierarchical axis, which the king’s subjects can learn by living in the court: “For this reason it

²⁹⁸ See p. 183.

²⁹⁹ . . . palabras buenas, e apuestas. . . .

³⁰⁰ . . . llamaro(n) los buenos, e e(n)señados. E otrosi llamaro(n) los corteses. . . .

was always a custom, in Spain, for men of rank to send their sons to be brought up at the courts of kings, that they might be polite and well-informed, . . . and might acquire good manners in speech as well as in action. . . .”³⁰¹ The court is, then, a space of methexic cultural production insofar it fosters a continuous process of education that depends largely on the imitation of models of behavior and their perpetuation through cultural products like music, literature, games and performances. The law reinforces such behaviors through rewards, while subjects who do not adhere to them are to be banished from the court and punished, with the aim of not only encouraging those who comply to continue with the appropriate behavior, but also deterring potential offenders.

The spatial conception is confirmed through an extended metaphor in the law that follows, where the court is compared to the sea: “as the sea is long, and large, and surrounds the entire earth, and there are fish of many kind in it; . . . the Court of the king should be large enough to contain, accommodate, and receive everything which goes there. . . ; for there great suits must be decided, and important advice taken, and valuable gifts bestowed” (2.9.28).³⁰² The metaphor of the sea also illustrates the ability of the court to resolve all the legal matters that are brought before it, and the varying opinions and mentalities of the parties that litigate them. The transactional axis of this space, contrary to the very limited hierarchical axis, must be not only large, but it must also be able to expand so as to contain all possible cases and claims that subjects bring to the court. The metaphor also uses the contrast between calm and stormy waters

³⁰¹ E pore(n)de fue en España sie(m)pre acostu(m)brado, de los omes ho(n)rrados, de embiar sus fijos, a criar a las cortes, de los Reyes, por que aprisiessen a ser corteses, e enseñados, . . . e se acostumbrassen, bien así de dicho como de fecho. . . .

³⁰² . . . ca bien assi, como la mar es larga, e gra(n)de, e cerca toda la tierra, e ay pescados de muchas naturas, otrosi la corte del Rey, deve ser en espacio, para caber e sofrir, e dar recabdo, a todas las cosas, que a ella vinieren, . . . ca alli se han de librar, los pleytos grandes, e tomarse los grandes con(n)sejos, e darse los grandes dones.

to symbolize what awaits those who go there with just claims and what awaits those who bring forth “unreasonable complaints.”³⁰³ The king and his advisors need to proceed with caution and be unanimous in their opinions, to avoid being led asunder by “extravagant speeches, which men may utter or by the prejudices or envy which they entertain towards one another. . . .”³⁰⁴ The importance of voice is palpable in this passage, where it is at the center of that which threatens the stability of the space of the court. The king and his advisors must all adhere to the standards of courtesy and reason because they are also at risk of falling into the affective trap of unauthorized speech. All of these behavioral mores are presented in metaphorical form, demonstrating once more that when it comes to matters where affect is involved, non-theoretical explanations are more effective and appeal to a larger potential audience.

The following law, *Partidas* 2.9.29, proceeds to describe the place where the court commonly gathers: the palace. Contrary to the modern understanding of it, and although it is a physical structure, the law defines it outside of that fact: “Any place is called a palace where a king publicly associates with men to talk with them.”³⁰⁵ Thus, the palace is halfway between the two different concepts that Michel de Certeau and Marc Augé have called “non-place:” while De Certeau’s non-place is conceptual and based on the negation of itself, Augé’s is the one that does not have enough significance to be considered a place, a space of anonymity (Certeau 197; Augé 43-8).³⁰⁶ The palace in the *Partidas* is decidedly conceptual insofar as it only exists when the

³⁰³ . . . co(n) cosas sin razo(n)

³⁰⁴ . . . por palabras sobejanas, q(ue) los omes dize(n), ni por los desamores, ni por las embidias q(ue) los omes han entresi

³⁰⁵ Palacio es dicho qualq(ui)er lugar do el Rey se ayunta paladinamente, para fablar con los omes.

³⁰⁶ The translator of Augé’s work offers an interesting insight regarding the use of the term: “The expression *non-lieu*... is more commonly used in French in the technical juridical sense of ‘no case to answer’ or ‘no grounds for prosecution’: a recognition that the accused is innocent” (102, note 6). Note that the same is true for the Spanish expression “no ha lugar” in its legal use.

king and court occupy a certain location, but it is also consistent with Augé's definition in the sense that those who occupy it are no longer individuals, but subjects of the law, defined in relation to their predetermined functions within the space of the court. The law specifies three functions: "in deciding suits, in dining, or in audiences" (*Partidas* 2.9.29).³⁰⁷ Thus, the palace as non-place is in sharp contrast with the court as space, but it can only exist because the court brings forth the moving bodies De Certeau speaks about. These bodies enter transactional relationships by virtue of their ability to utter: "Place is completed through word" (Augé 77).

The law stresses this idea stating specific accepted verbal exchanges: "And, since men assemble here rather than elsewhere to converse with the king, it is called a palace, which means a public place, and for this reason it is proper that no other words be spoken there but such as are true, sincere, and polite" (*Partidas* 2.9.29).³⁰⁸ This requirement leads to the successful completion of the different interactions between subjects in the palace; it guarantees a fair outcome in judicial cases; it ensures that entertainment activities remain friendly through the adherence to the norms of courtesy; and, most importantly, it avoids misunderstandings and possible violent engagements by setting specific parameters for verbal exchanges, especially when some kind of narrative is involved. These parameters, which are outlined in the law that follows, are the ones previously analyzed in the context of oral narratives:³⁰⁹ "For this to be done suitably attention should be paid to three things, namely, the time, the place, and the manner" (2.9.30).³¹⁰ Narratives are subject to a series of conditions according to their objective, their

³⁰⁷ . . . o para librar los pleytos, o para comer, o fablar engasajado.

³⁰⁸ E por que en este lugar, se ayuntan los omes, para fablar co(n) el, mas que en otro lugar, por esso lo llaman palacio, que quiere tanto dezir, como lugar paladino. E porende conviene, que se non digan y, otras palabras si non verdaderas e complidas, e apuestas.

³⁰⁹ See pp. 183 and 195.

³¹⁰ E para esto ser fecho como co(n)viene, deve(n) yser catadas tres cosas: tie(m)po: e lugar: e manera.

subject matter, the interlocutors and those who are listening to them. To succeed in telling a story or in rebuking someone's perceived shortcomings, the law requires specific affective qualities, like "cheerfulness," while it precludes "anger or sadness."³¹¹ Those subjects capable of following these precepts correctly fall into a specific classification in the hierarchical axis: "a person who knows how to avoid outrageous and improper words, and employs such as we have mentioned in this law, is called *palanciano*."³¹² The law requires the king to reward them, while those who do the opposite, he should punish and expel. This is an instance of relative positioning taken to its ultimate consequences. The specific use of utterances is the same that regulates the conditional axis of the space of the court, which confirms the centrality of the voice of power and authority for the existence of the moveable space-place, the court and the palace, from which justice emanates and overflows to fill up to the last corner of the jurisdiction.

The case of purely public spaces in the context of the law also reveals the centrality of sound and its perception, and specifically of voice, for the establishment the rights and duties of all subjects through the demarcation of a communal space and the relative positioning of those who inhabit it. Some of these spaces are highly methexic, because the potential for human interaction is greatly enhanced by the proximity and concentration of individuals, making it peremptory to set specific parameters to identify them and set their physical and theoretical boundaries. The importance of the delimitation of spaces for the practice of the law can be seen comparing the approach of the *Partidas* with other important legal texts of the time. In *De insula*, Bartolo da Sassoferrato uses voice as a means to demarcate the boundaries of villages, insofar as they are social units that claim possession of a portion of land. His argument uses as precedent a

³¹¹ . . . con alegría. . . e non consaña, ni con tristeza.

³¹² Onde quien se sabe guardar de palabras sobejanas, e desapuestas, e usa destas q(ue) dicho avemos, en esta ley: es llamado pala(n)ciano.

law in Justinian's *Digest* that addresses the case of a murder that takes place inside a house (29,5,1,27). The *Septima Partida* uses the same precedent, without acknowledging its source, although it remains closer to the original Latin text. In this case, the law uses voice in order to establish the levels of responsibility of those who live inside the domestic sphere. In both this law and Sassoferrato's text, the focus is on a definition of social unit which can be specified depending on the auditory perception of the human voice, making it possible to identify the individuals that belong to the group, to determine their relative positioning, and to calculate the spatial limits of the household. Considering relative positioning within the household in terms of voice enables the law to conceptualize the specific rights and duties of each individual member of a social unit. In *De insula*, Sassoferrato argues that the same geometrical calculations he proposes for determining which part of an island belongs to the properties on the river banks can be used to solve other territorial disputes. His calculations are based on the differences between cities, castles, and towns. The cities are easily defined according to the government officials in charge; castles are even easier, given their structural features and the absence of the government officials present in cities; towns, on the contrary, have no government officials, nor walls, nor any other perceptible characteristic that helps to ascertain their limits, "because the houses are scattered" ["porque las casas están desparramadas..."] (my trans.; 67). Given that, according to Sassoferrato, any measurements should be made beginning in the part of the city, castle, or town, that is closer to the disputed land, in order to calculate the limits of the town it is necessary to determine how far each house can be from the other: "if there is any house that is too far from the others, such house is not considered part of the vicinity, especially if the voice cannot be heard" ["si hay alguna casa que dista mucho de las otras, tal casa no se considera de la vecindad, máxime si no puede oírse la voz"] (my trans.). Hence, being part of the social unit called town

depends on being within earshot of the rest of its inhabitants, a requirement that does not apply in the case of larger population units. Sassoferato does not elaborate further regarding the matter, so it does not seem to have been important for him if one could actually understand the words that the voice is uttering; most probably words were not necessary and vocalizations of any kind were sufficient. This points to a methexic approach based on the perceptive limits of the social unit, which determine the ability of its members to participate at different levels, even when the interactions are not communicative and do not include an intelligible voice.

The idea of being within earshot of the human voice, however, comes from sources even older than those Sassoferato uses. It appears in part three of the third book of Aristotle's *Politics*, where it refers to the size of a city:

It is further asked: when are men, living in the same place, to be regarded as a single city – what is the limit? Certainly not the wall of the city, for you might surround all Peloponnesus with a wall. Like this, we may say, is Babylon, and every city that has the compass of a nation rather than a city; Babylon, they say, had been taken for three days before some part of the inhabitants became aware of the fact. (1276a25-30)

Being within earshot means being able to hear the presence of other human beings, in great measure as a matter of public safety, something that clearly relates to the ability to participate promptly in emergency situations, even when participation means running away from potential dangers. This is developed at the domestic level in the law from the *Digest* which Sassoferato takes as a recourse. In this case, the goal is to ascertain the limits of a household in regard to what exactly can be considered as located under the same roof:

Does this mean within the same walls, or, beyond that, within the same living room or bedroom or the same house or the same park or the whole country house? And Sextus

says that it has often been decided by judges that whoever were in such a position that they could hear a cry are to be punished as having been under the same roof, although some people have stronger voices and others weaker ones and everyone cannot be heard everywhere. (29, 5, 1, 27)

The purpose for delimiting the domestic space in the *Digest* is quite specific, and it is part of a law that addresses cases where a murder is committed within a household. In such cases, slaves who fail to aid the victim are subject to punishment if they were under the same roof. The cries that the slaves may or not hear are an instance of a maximization of the qualities of the human voice of timber and loudness; words are optional. Sassoferrato transposes these criteria to the delimitation of a town, making voice a tool for the defense of the members of a social unit.

The *Septima Partida* takes the idea of voice as a one of the tools for safeguarding the social unit that appears in the *Digest* in a more literal fashion, and divided in two separate laws. The first law establishes the duty serfs have of aiding their lord and his offspring if someone is trying to kill them or if they are attempting to commit suicide (7.8.16). In this instance, it is not the voice of the victim, but that of the serf, that must be uttered: “They should afford them this assistance by protecting them . . . ; or by uttering cries or calling for help when they cannot give them any other aid.”³¹³ The penalty for failing to aid the lord or his family is death. This law presents voice not only as a means of aid but also as potential evidence of cowardice, which can lead also to a death sentence for the serf who, although able to provide help, instead “goes about uttering cries for help.”³¹⁴ In this scenario, voice is also an indicator of relative distances, similar to the function Sassoferrato describes, and such distances point to certain duties in terms of

³¹³ E este acorrimie(n)to les deven fazer amparandolos . . . , o dando bozes, o demandando acorro qua(n)do otra ayuda non les pueden fazer.

³¹⁴ . . . e va dando bozes que acorran.

expected levels of participation. The second law addresses voice perception as manifested in the cries of the victim. *Partidas* 7.30.7 explains the conditions under which it is valid to torture servants and serfs during the investigation of a murder committed within their lord's household: "What we stated in this law is understood to also apply to slaves who live in houses adjacent to that where the master was found dead, or so near to it that they could have heard his cries from the place where they were."³¹⁵ The context here is much closer to the one Sassoferrato presented, and here there is a specific demarcation of the limits of the domestic sphere, similar to that of the villa in the *Digest*, which can consist of several independent houses, which are considered as one roof because the inhabitants are within earshot of each other. The legislated voice is that of the victim, which works as an alarm warning for other members of the social unit, and also as a tool to estimate their relative positions inside the domestic sphere. In this sense, the law goes beyond legislating the duties that serfs owe to their lords only in terms of accepted behaviors and possible punishments; it also establishes a space of action, the domestic sphere, inside of which the relative positioning of individual subjects is presented in terms of expected participation, and it may act as an aggravating or mitigating factor in the context of criminal proceedings. This is all possible because auditory perception enables the identification of said subjects and provides the perceptual evidence of their spatial location within the household.

Back to Methexis

The foregoing discussions of the case study underscore how, both in its written and oral manifestations, the attempts to codify sound and its perception, and specifically voice, reveal that

³¹⁵ E esto q(ue) diximos en esta ley, se entiende de los siervos que moreava(n) en aquella cohita de casas: do fallaron muerto a su Señor o tan acerca della, que podian oyr las bozes del Señor de aq(ue)l logar do estava(n).

the scholars who elaborated the literary cultural product called *Siete Partidas* were keenly aware of the distance that separates the practice of the law from the theoretical discourse of their time regarding auditory perception. While the relatively safe realm of the written word allows the code to be its own guarantor, any instance where sound becomes a factor brings this distance into full view, threatening the integrity of the legislation. That voice Saint Augustine spoke of, which at first glance seems to be devoid of meaning, absent the support of authority, is actually full of messages, open to all kinds of interpretations, resounding inexorably throughout the space of the jurisdiction. The law opposes to this unauthorized voice the voice of the power and authority of the king. What is at stake is not the safety of an individual voice, but of the entire body of the king, the one that utters the voice of power and authority. Faced with a reality that refuses to submit to its precepts, and that theory cannot adequately explain, the *Partidas* goes beyond the simple punitive measures, simultaneously deploying specific literary cultural production strategies that attempt to harness the power of perception and auditory expectation manifested as methexis. The combination of a punitive approach with a sensory education has critical consequences for the definition and relative positioning of the subject before the law. Insofar as there is a hermeneutics of individual acts, a clear distinction is made between those subjects who are good and those who are not, predicated upon the ability to listen to and keep in their memories a specific concept of justice, with all the duties and rights that it entails. All those who inhabit the jurisdictional space and somehow deviate from what is legislated are to be excluded from their participation in the group of the good. From the perspective of the aural-oral, the hermeneutic problem is yet to be explored, because auditory expectation forces one to abandon all certainty regarding concepts like obedience, intention, testimony, confession, among many other fundamental aspects of the permanent process of redefinition of the criminal subject. The

stability of a paradigm that models the subject before the law through the imposition of form, only works in the realm of writing.³¹⁶ In the realm of voice, form is inherently unstable, easily destroyed in processes of oral transmission that the legislation can neither explain nor regulate. This instability threatens the structure predicated upon the extended allegory of the body of the king, which fails to account for the participation in the chain of transmission of members of the population who are not considered competent before the law.

In regard to relative positioning, it is no longer enough to refer to the subject before the law. It is necessary to see the subject as immersed in the law, because in the realm of the aural-oral, the jurisdiction is no longer a theoretical space, but a sphere of action, where the sound waves that carry the voice of power and authority propagate and literally surround the individual. It is essential to adopt this spatial conception of the jurisdiction in order to appreciate the extent to which the subject is not only surrounded but also penetrated by the law in a completely material, somatic sense. The particularities of sound propagation make the waves surround all obstacles, causing them to resonate. The individual perceives material changes in air molecules that can generate movement in everything they strike. Auditory perception implies a resonance of the body that takes place simultaneously with the brain processes of perception and cognition. A conception of the jurisdiction in spatial terms forces one to concede that the rule of law cannot be understood only as theory, because what makes it possible for the law to reach everyone and impose its dominion at all levels inside the jurisdiction is materiality, is the power of everything that is perceptible to the senses. This sensory, material experience of the law, which is the result of processes of cultural production, is the one that reaches most of its subjects, for whom the written code is something foreign, sometimes inaccessible, and completely unrelated to their

³¹⁶ See page 170.

daily lives. This is possible because the legal text is made known through various means and at different levels, reaching all the inhabitants of the jurisdiction: it is promulgated, proclaimed, quoted and mentioned in letters and official documents, cited orally and in writing during judicial proceedings, public executions and in conflict resolution. Through acts such as these, certain passages of the law become part of daily life and even of conventional wisdom.

On the other hand, it is important to recognize that the spatial change is possible because the codification of the law allows the incorporation of the sensory world in a completely different fashion, in the context of a radical change from a legal system based on custom to one based on written legislation. Whereas in the former the relation between the law and the individual is transient and litigious, in the latter, the legal code actively regulates the daily interactions between all its subjects. In this new kind of relationship between the individual and the law, all regulatory functions are deeply intertwined with sound and voice. The legislation advances a sensory education based on specific theoretical assumptions. At the same time, nonetheless, it recognizes the existence of a reality where, more than education, what is necessary is the production of presence of the voice of power and authority so that it can literally resound throughout the entire space of the jurisdiction, invading even the most inner recesses of the minds of its subjects. In taking advantage of precisely that which threatens the integrity of the legal code, the inexorability and permanence of auditory perception, the legislation enacts the violent takeover of a sensory universe that heretofore had been outside of its purview. The invasion of the realm of the sensory means foraying into a fluctuating and conflictive space, where many other voices and auditory expectations compete for dominance, and where ancestral customs and collective memory drive many of the affective engagements and reactions of the subjects of the law and of the different social groups to which they belong. In the writing of the

legal code, literary cultural production becomes a weapon of invasion and control, but it also becomes a driving force for methexis, made possible by sound and its perception. Parallel to the social and political consequences of such changes, the ripple effect of a revolutionary new cultural product reaches far beyond in space and time, impacting cultural production in all its manifestations, and unleashing new creative forces that only become visible after centuries have passed. The effects of the cultural revolution sparked by Alfonso the Wise, of which perhaps the most important piece is the literary cultural product known as the *Siete Partidas*, is one of the best examples of the power of methexis in cultural production. Even though the cultural product itself was quickly disavowed and superseded as legislation, its effects are still visible in centuries of legal tradition, literature, history and scholarship, well beyond the confines of the Iberian Peninsula, and in both sides of the Atlantic.³¹⁷ A lasting testament to a brilliant mind driven by an intense desire to participate in shaping the destiny of humanity.

³¹⁷ For a comprehensive analysis of the lasting effects of the *Partidas* in legal tradition, see Rodríguez-Velasco, “La urgente presencia de *Las Siete Partidas*.”

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