SOUNDS OF DISTINCTION: ANALYZING SOCIOACOUSTICS TO MAP THE COMBINATORIAL LOGIC OF STATUS AND CLASS

By

James C. Roebuck

A Dissertation Submitted to the Faculty of the

DEPARTMENT OF SOCIOLOGY

In Partial Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

In the Graduate College of

THE UNIVERSITY OF ARIZONA

2008

APPROVAL FORM

THE UNIVERSITY OF ARIZONA

GRADUATE COLLEGE

As members of the Dissertation Committee, we certify that we have read the dissertation prepared by James C. Roebuck

entitled SOUNDS OF DISTINCTION: ANALYZING SOCIOACOUSTICS TO MAP THE COMBINATORIAL LOGIC OF STATUS AND CLASS

and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy

_____Date: 11/05/08

Charles C. Ragin

_____Date: 11/05/08

Ronald L. Breiger

_____Date: 11/05/08

Celestino Fernández

Final approval and acceptance of this dissertation is contingent upon the candidate's submission of the final copies of the dissertation to the Graduate College.
I hereby certify that I have read this dissertation prepared under my direction and recommend that it be accepted as fulfilling the dissertation requirement.

_____Date: 11/05/08
Dissertation Director: Charles C. Ragin

STATEMENT BY AUTHOR

This dissertation has been submitted in partial fulfillment of requirements for an advanced degree at the University of Arizona and is deposited in the University Library to be made available to borrowers under rules of the Library.

SIGNED: James C. Roebuck

ACKNOWLEDGEMENTS

I owe a special debt of thanks to Charles Ragin, my dissertation committee chair, for advice, encouragement, and insights throughout this project. Celestino Fernández and Ron Breiger provided helpful comments and much needed support. In addition to my committee I thank all the fellow graduate students and professors at the University of Arizona and the University of California, Riverside who helped build my sociological tool-kit. I thank Jason Owen-Smith for spurring me on to consider the possibility of a sociology of sound and John Sonnett for being a true friend and intellectual colleague. I thank Mari Wilhelm and Sherry Betts for their support.

Finally, I thank my family for supporting this research. I thank my children, Nikolas and Hannah Roebuck, for sacrificing time away from me so that I could work on my dissertation. I especially thankful for my wife, Kim Beth Roebuck, for her editorial skills and invaluable support.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

Music has been studied in numerous ways. Yet, there is no research which examines the link between acoustic properties of music and social processes. Three frameworks guide my research. The Homology thesis which states that elites prefer elite culture (Bourdieu, 1984); the Omnivore thesis which argues that elites are omnivores and prefer many different types of cultural objects as compared to univores (Peterson and Simkus, 1992), and the reconciliation thesis which states that elites prefer many different types of cultural objects, but they do so in ways that are patterned (Bryson, 1996). Representative samples of songs from 18 music genres form the General Social Survey are collected and acoustic features are extracted. Sixty-one percent (61%) of the songs were correctly classified into their respective genres. The misclassifications of genres represent genres which share acoustic information in meaningful ways. Network analysis reveals a structure with three spaces, popular, elite and folk. Acoustic features are then grouped into three fundamental dimensions: timbre, rhythm, loudness. Crisp genres are grouped according to four dimensions: timbre, rhythm, loudness and genre boundary. Correspondence Analysis is used to plot the musical aversions of genre sets by class and status groups. Findings indicate that respondents with increased levels of economic capital reject genre sets with strong boundaries. This study then develops 3 socioacoustic profiles which represents a respondent's orientation towards sound. I then estimate the effects of education, income, occupational prestige, age, gender, race, religious preference, political identity, racial intolerance, political intolerance, being an omnivore and being a univore on each socioacoustic fuzzy set. Results indicate that socioacoustic

profiles sets associated with elite spaces are associated with high occupational prestige, increased age, being female, not being Black, not being a univore, being politically tolerant and being racially intolerant. Contrary to the omnivore thesis, being an omnivore was not a strong predictor in each profile set. Findings support the reconciliation thesis and highlight how moving beyond class evidences differing bases of cultural structuration.

CHAPTER 1.

INTRODUCTION: SOUNDS OF DISTINCTION

> "Music is the 'pure' art par excellence. It says nothing and has nothing to say. Never really having an expressive function, it is opposed to drama, which even in its most refined forms still bears a social message…." (Bourdieu, 1984, pg 19)

Connections between musical preferences and social processes are evidenced at various levels and in numerous ways with different social groups preferring different types of music. For instance, those attending an opera at the Hollywood Bowl in California most likely have little in common, in terms of social class, age, and education, with those attending a Hip Hop or Heavy Metal concert. The fact that different social groups prefer different forms of culture says something significant about the ways that social and cultural processes interact and influence one another. Some of the most interesting analyses in the sociology of culture examine how cultural preferences and forms are shaped by social processes. Bernstein's analysis of linguistic codes demonstrates how class-based experiences influence the ways in which people talk and communicate (1971), and Barthes has shown how class codes are written into clothing and systems of fashion (1972). Social forces such as class are thus a key influence on the manner in which social actors construct cultural objects; music is not outside this process. Sociologists have long studied the ways that musical forms are influenced by larger social forces.

In *The Rational and Social Foundations of Music*, Weber argues that tonal systems of music have progressed through technological developments and processes of

rationalization in the West. Factors such as the manufacture of the piano and organ, and the increased efficacy of the techniques of musical notation, all had an influence on the sound of music. Theodor Adorno, coming from a Marxist perspective, examines the influence of political economy on music. As a commodity, music is standardized and alienated from artistic processes, and reduced to a mere function to distract and entertain a public desiring distractions from work life.

Lomax utilizes what he termed, Cantometrics, which is a method of studying music and social structure. Specifically, Cantometrics, takes into account such musicological variables as melody, rhythm, harmony, interval size, etc., but analyzes these categories in the context of social structure, the role of leadership, and the type of integration of the music-making group. Because musical forms mirror the social context within which they were constructed, they are an excellent method to gain insights into how societies are structured. For example, in *Song Structure and Social Structure* (1962), Lomax argues that the high degree of social integration and cooperation of the Pygmy-Bushman is expressed in the "complex, perfectly blended, contrapuntal" singing styles of the group, a task which would take a Western choir extensive hours of rehearsal to achieve.

Similar to the work of Lomax, Bergesen (1979) examined how levels of social solidarity of African American groups influenced the formal characteristics of musical genres, such as Spirituals, Jazz, and Blues. Using the framework of Bernstein's (1971) elaborated and restricted codes, Bergesen notes that when the degree of social solidarity is high, the stylistic features of a musical genre formed during this time are characterized

by more group singing, more harmonies, tighter rhythms, etc. In contrast, when social solidarity is low, the cultural code becomes elaborated, becoming increasingly "spelled out" because commonalities in language and taken-for-granted assumptions are lessened. Thus, characteristics of genres founded during times of low solidarity are evidenced by wider melodic structures and more individualistic singings styles.

Karen Cerulo (1989), in her work on national anthems, examined how musical syntax is affected by social forces. Similar to the work of Bergesen, Cerulo argues that musical syntax exists on a continuum that ranges from *basic* to *embellished*. Basic syntax is characterized as highly stable, constant and fixed; while embellished syntax is a distortion of the basic syntax; erratic and wandering. Examining 154 national anthems, her work demonstrates that when a country adopts an anthem that is characterized by basic or embellished musical syntax depends upon historical and social forces which affect the composer and the ruling elites which adopt the anthems. What is important in the above research is the idea that by studying musical structure, syntax, and content we can gain new insights into how the social world operates. The formal properties of music thus provide analytical leverage into patterns of social action and beliefs.

Building on these ideas, this project examines patterns of musical preferences by focusing on the formal *socioacoustic*[1] properties of music. By radically deconstructing music to its formal acoustic properties we gain insight into the ways which music is implicated in arenas of social classification. Far from having nothing to say,

---

[1] The term, *socioacoustic*, rather than psychoacoustic is used to indicate the socially constructed nature of music (Becker, 1982).

socioacoustic properties have a signifying presence as evidenced in the ways that various social groupings relate to aspects of sound, such as rhythm, timbre or loudness.

Borrowing techniques from the field of *Music Information Retrieval* (MIR) (Downie, 2003; Fingerhut 2004), this study examines socioacoustic properties of music for eighteen musical genres as found in the General Social Survey (GSS). Socioacoustic properties represent empirical properties which relate to the 'sound' of the music which can thus be represented numerically, thereby facilitating computer-based analyses. This approach is novel in the field of sociology, in that the focus is on the formal properties of the *sound* itself and argues that music can be represented by its acoustic properties, such as timbre, loudness, or rhythm.

Research Questions

In this project, I examine three broad questions. First, are musical genres merely nominal categories of perception or do they have intrinsic properties which can be measured? On the one hand, it is possible that genres represent cultural categories used to delineate among a universe of musical objects which have no formal, acoustic differences. Music is music, and the markers or labels we apply to music are mere conveniences which help to categorize a vast array of musical objects. Still, genres and the boundaries between the categories we associate with them may have some foundation in the realm of acoustics. Certainly, there are aspects of genres, such as Country music – in terms of rhythm, harmony and instrumentation – which share much with contemporary popular music, or even rock music. Perhaps there is something distinctive about a genre

which can be discovered by deconstructing the features of its musical forms into its formal properties of sound. Even granting spillover influences from other genres, e.g., Rock music with elements of Classical instrumentation, the question becomes whether there is something essential, in terms of acoustic properties, to each genre which gives it its unique characteristic. Are there islands of sound which exist, distinct from one another, or are genres merely convenient labels developed over time through social action, but which have no real correspondence in terms of acoustics? It is also possible that some genres are more distinctive and, hence, more *island-like* than other genres. Research has shown how cultural objects can be arrayed along a semantic equation (Bergesen, 1984). On one side of the equation are those art objects which are clearly defined, while on the other side of the equation, are art objects which need more interpretation, or cultural work, to reveal their meaning. One can think of the difference between paintings in the Realist genre compared to those considered Conceptual art to note how cultural objects can vary according to the level at which the forms of the objects present themselves to a viewer in ways that are readily definable. This line of thinking raises the possibility of a third way of viewing this question, namely, that genres may be arrayed along a continuum that stretches from the linguistic label to one rooted in the realm of acoustics. Thus, the first research question examines the degree to which genres are nominal categories.

The second question examines whether differences in formal, acoustic properties of genres correspond to differences among class and status-based groups. This study explores whether measures of genre properties locate class/status groups in social space.

If it is true that there are *islands of sound*, which can be identified by measuring and locating genres via their acoustic properties, are there *social* islands which correspond to those of sound? If so, what are the key social islands which discriminate and distinguish between them? Research has shown how cultural tastes in music correspond to the volume and type of capital (Bourdieu, 1984). Specifically, several studies have shown correspondences between status groups and the forms of culture they prefer (Bourdieu, 1984; Peterson and Simkus, 1992; Van Eijck, 2002; Bryson, 1993; Sonnett 2004), yet, no study has related these processes to those of acoustics. Perhaps Bourdieu is correct and music really has "nothing to say." If this is the case then acoustics should have no bearing or relationship to how status groups distinguish themselves from one another. Which raises the question, do elite groups prefer audio signals that are distinct from those of lower status groups? Do locations within the social field have a particular 'sound?' By examining whether intrinsic properties of audio signals correspond to how survey researchers define and distinguish between them, we gain analytical leverage as to whether clusters of genres correspond to specific status groups and are either based upon perception or upon the characteristics of sound. The second research question, thus, examines how the *contents* of musical genres, via acoustic properties, are implicated within the field of class and status. The analysis in this chapter is relational. I use both Qualitative Comparative Analysis (Ragin, 1987; Ragin, 2000) and Correspondence Analysis (Breiger, 2000; Greenacre, 1984) to map musical aversions (dislike very much) according to acoustic-based genre sets and types and volumes of both cultural and economic capital.

The third question examines the relationship between the homology thesis, the omnivore thesis and the reconciliation thesis. The homology thesis stems from the work of Bourdieu (1984). In *Distinction* (1984), Bourdieu argues that elites apprehend culture through a type of distancing. Specifically, status groups with high levels of cultural capital hold an aesthetic gaze towards cultural objects that allows one to appreciate and decipher the cultural codings and webs of meaning which surround the object in question. Bourdieu places the ability to decode cultural objects in a class-based upbringing. A social actor's upbringing and class location produce a type of habitus for elites. The elite-based distancing which affords one with the ability to decode and *appreciate* cultural objects is one which shies away from objects which are profane, as well as the vulgar and the immediate. As Bourdieu states, "A work of art only has meaning and interest only for those who possesses the cultural competence, that is, the code, into which it is encoded" (1984). Broadly stated, elites prefer legitimated cultural works, thus they prefer elite forms of music, and, hence, elite acoustical spaces.

The omnivore thesis (Peterson and Simkus, 1992) argues that trends in Western society, such as social mobility, have increased cultural tolerance for musical forms. This thesis provides a counterpoint to the homology thesis because it sees elites as having a greater number of preferences for all types of cultural objects, including music. Non-elites, on the other hand, are considered to be univores and like very few musical genres comparatively. Thus, instead of a correspondence between elite status groups and elite tastes in musical forms, there is a greater tolerance or liking for all types of musical genres as elite status increases.

The reconciliation thesis attempts to include both the homology and omnivore thesis. Bryson's (1996) research is an exemplar approach to this line of thinking. In examining the question of musical tolerance she found that it was true that increased levels of education led to a greater tolerance for musical genres, but that the tolerance was patterned in certain ways. Specifically, she found that elites tended to dislike musical genres which were disproportionately liked by non-elite groups. Factors such as political intolerance and racist attitudes were thus key factors for highlighting the patterns of tolerance found in her work. This work reconciles the homology and omnivore thesis because it shows how omnivores still confer illegitimate status upon musical genres liked by non-elite groups. Thus, the third question examines whether the homology thesis, the omnivore thesis, or the reconciliation thesis best describes tastes for musical forms in terms of their acoustic properties.

To address these questions, this study develops, the *socioacoustic profile*. The socioacoustic profile is an actor's stance towards the realm of acoustics. It goes beyond noting whether status groups prefer this or that musical genre, and attempts to discover how an individual's location in social space is related to their general orientation towards sound. Once the socioacoustic profile is constructed for each individual this study examines how one's orientation towards sound affects the number of genres preferred, in the context of the sociodemographic space.

Using data from the 1993 General Social Survey (GSS), in which respondents were asked about their musical preferences for 18 musical genres; Big Band/Swing, Classical music-symphony and chamber, Folk music, Gospel music, Jazz, Opera, Reggae,

Blues or Rhythm and Blues, Bluegrass, Country/Western, Broadway musicals/show tunes, Latin/Mariachi/Salsa, Mood/Easy listening, New Age/Space music, Rap music, Contemporary pop/rock, Oldies rock, and Heavy metal; representative samples were collected for each of the 18 genres and a set of acoustic features were extracted from each song sample. Once the features are collected, this study then examines how the formal features of sound group together, and what they say about social taste and social structure.

Structural Approach to Cultural Analysis

This dissertation takes a structural approach to mapping and measuring meaning. As Mohr (1998) notes, this type of analysis springs from projects found in Europe during the 1960's, such as semiotics, structuralism and poststructuralism, movements that owe a debt to the work of Ferdinand de Saussure's (1966) structuralist linguistics. Saussure argued that meaning was constituted through and by distinctions between linguistic elements, such as words, sounds, or signs. Meaning is thus analyzed by examining the system of relations between elements of a cultural system with an aim of finding the underlying deep structure of complex patterns.

Mohr (1998) notes how Karen Cerulo's (1988, 1995) research on national anthems is a direct extension to this type of analysis. In her analysis, she deconstructs national anthems to an array of cultural codes, e.g., melody, phrases, forms, dynamism, rhythm, etc. The raw data, or elements of the system, are thus musical notes which then form a relational system which constitutes the structural meaning of the cultural space.

The meaning of national anthems in Cerulo's analysis is thus derived from how sets of basic musical elements combine in patterned ways.

One might imagine a similar analysis with regard to preferences for food. This type of analysis would deconstruct food into its fundamental properties, e.g., fattiness, sweetness, caloric content, etc. In *Distinction*, Bourdieu (1984) notes how status groups differ in the types of food preferred. Elites tend to prefer food that is light, bland, and lean compared to the popular taste which is characterized by foods which are heavy, fatty, and strong. In *The Condition of the Working-Class in England in 1844*, Engels (1892) makes a somewhat related point when he notes how the working class consumed food that was wilted and tough, compared to upper classes. The point being that there is a correspondence between an actor's location within social space and types of objects consumed. The properties of food could thus be combined to form a system of relations which might shed analytical light on the cultural meaning of food.

The methodology used in this dissertation is similar; I broadly follow Mohr's prescription for conducting a structural analysis of meaning. Specifically, Mohr (1998) examined Cerulo's work to highlight the core principles of structural analysis:

(a) basic elements within a cultural system are identified;

(b) the pattern of relations between these elements is recorded;

(c) a structural organization is identified by applying a pattern-preserving set of reductive principles to the system of relations; and

(d) the resulting structure (which now can be used as a representation for the meaning embedded in the cultural system) is reconnected to the institutional context that is being investigated.

This is done by first identifying the basic acoustic elements of music, features extracted using methodologies developed by researchers working in the field of Music Information Retrieval (MIR) (step a). The next step in this study was to record in matrix form the pattern of relations by using a Machine Learning Algorithm (step b). Third, Qualitative Comparative Analysis (QCA), and correspondence analysis (CA) were used to identify the structural organization of the musical space of relations (step c). Finally, the resulting structure of relations were reconnected back to the "social world" in two ways (step d); first, by relating musical preferences from the General Social Survey to the acoustic genre sets identified by QCA (Ragin, 1987; Ragin, 2000), and plotting the preferences according to volume and type of capital, economic and cultural (Bourdieu, 1984); and second, by constructing a socioacoustic profile for each respondent in the 1993 GSS; which measures an actor's overall orientation towards sound. Once the socioacoustic profiles are developed, fuzzy sets were created which represent the degree to which respondents are members in eight logically possible configurations based upon three dimensions of sound; timbre, rhythm and loudness. In this way the system of properties in connected back to the social world by examining patterns of musical tolerance.

Overview of the Chapters

Chapter 2 provides an overview of the related literature and builds the conceptual framework for the dissertation. Specifically, chapter 2 begins with a discussion of previous efforts to examine music and sound. I examine the meaning of sound and whether sound has effects on health and reducing education efficacy. Next, music preferences are examined and related to social structure. Specifically, I argue that there are three frameworks. The first, the homology thesis, stems from the work of Bourdieu (1984) and argues that social status and class are intimately related to cultural preferences and occurs in a way that is relatively uniform and in such a way that the higher status one is, the higher the legitimate status of music that they will listen to and prefer, for instance, elites like elite music, etc. The second broad framework is the omnivore/univore thesis. This framework argues that the higher class one is a member of, the greater number of genres one will profess to prefer (Peterson and Simkus, 1992). The third framework is what I term, the reconciliation thesis. This framework represents an attempt to fuse the homology and omnivore theses. Research (Bryson, 1996) has shown that cultural consumption is actually a mixture of the two; elites prefer elite music, this is true, and they certainly prefer a greater number of musical genres, but the pattern of musical genres that they prefer reveals certain patterns of tolerance. The patterned tolerance is evidence of symbolic exclusion and helps to reinforce and maintain symbolic boundaries between status groups (Sonnet, 2002; Lamont, 2004; Bryson, 1996). Thus the relationship between musical tastes and preferences of the social structure is one that is very revealing of patterns of exclusion and inclusion.

Chapter 3 describes the process whereby the current dataset is constructed and developed. Specifically, using the 18 musical genres found the General Social Survey (1993), representative musical works are collected. Low-level acoustic features are then extracted using a software program called, jAudio (McEnnis, McKay & Fujinaga, 2006; McEnnis, et al, 2005). Next, using a Naïve Bayesian Classification routine, genres are predicted using a maximum likelihood estimator to assess how well the songs fit into genre classifications. The results provide a success/failure rate, which, I argue, is a measure of the degree to which a genre's boundaries are fuzzy or crisp. Chapter 3 then concludes with a discussion of the accuracy or success of the classification of the datasets. Misclassifications of genres, far from illustrating how poorly the feature extraction process is, reveal something fundamental about the nature of musical genres. Namely, musical genres are not isolated islands of sound, which are easily identifiable. Rather, genres borrow elements from one another, and some genres borrow from others more than others do. Using this insight I then produce a sociogram of the misclassifications of genres in order to make the case that the errors found in the system provide interesting insights into the cultural structure of musical genres.

Next, using the dataset constructed and described in the previous chapter, Chapter 4 deconstructs the musical genres and groups them into a genre space using Qualitative Comparative Analysis (QCA) (Ragin, 1987; Ragin, 2000). QCA uses Boolean algebra to compare combinations of causal conditions. Using QCA allows one to find configurations of membership using the constituent aspects of the dataset. By calibrating a musical genre's membership in acoustic domains, e.g., timbre, rhythm, loudness, and

genre boundary; pathways, or causal configurations, which lead to a particular outcome, e.g., musical preferences of status and class-based groups can be discovered. Using the truthtable constructed via QCA, I relate musical preferences for acoustic properties to status and class-based groups. In *Distinction*, Bourdieu (1984) develops a classification of the field of cultural preferences which hinges on the distinction between different volumes of capital, economic and cultural. Using this framework, I first construct genre sets which rely on acoustic properties and genre boundaries, and then construct the four class/status groups identified by Bourdieu (1984). I then map this matrix using correspondence analysis (Breiger, 2000; Greenacre, 1984) to provide a visual representation of the field of musical preferences. Chapter 4 concludes with a discussion of how the realm of acoustics informs the field of cultural preferences.

Chapter 5 examines the relationship of other aspects of the social world that research has shown to be related to musical preferences, e.g., race, gender, religious preference, and racial and political intolerance. I construct a socioacoustic profile for each respondent in the General Social Survey (NORC, 1993). The socioacoustic profile is a weighted average of their preferences for three dimensions of sound; timbre, rhythm and loudness. The socioacoustic profile represents a respondent's orientation towards sound. I then construct fuzzy set membership scores (Ragin, 2000) for configurations of three dimensions of sound; timbre, loudness and rhythm. I estimate the effects of a broad range of variables on membership within each acoustic set to examine three frameworks, the homology thesis, the omnivore thesis and the reconciliation thesis.

After discussing the results and implications of the current dissertation, Chapter 6 provides an overview of the findings of the dissertation and discusses the importance of moving beyond class to consider other bases of cultural structuration. Discussions of future directions of the current study are also highlighted in this final chapter.

CHAPTER 2.

FEATURES OF SOUND AND MUSIC

Because music has been studied in many different ways, the sociological question of music may seem like a straightforward question, however, it is not. Music is a complex social and personal phenomenon that includes aspects of fashion, industry, talent, and other cultural aspects and dimensions.

Music has been studied in terms of the opportunities and constraints faced by musicians themselves (Clawson, 1999; Dowd & Blyler, 2002). Researchers have examined how conflict affects organizational dynamics within orchestras (Glynn, 2000; Murnignhan & Conlon, 1991). Production of culture efforts have analyzed the degree to which records companies are truly "independent," and how creativity is managed within the U.S. recording industry (Lee, 1995; Negus, 1998). Analysts have shown how musical formats on commercial radio (Ahlkvist & Faulkner, 2002) and musical retailing sre related to the composition of consumers (du Gay & Negus, 1994). Dowd (2003) has researched the relationship between structural power and the construction of consumer markets for Rhythm and Blues, while Lont (1992) has researched music markets which focus on women. Music and the role of technology have received attention with Anand and Peterson's (2000) research which looked at how market information constitutes sense-making in the commercial musical industry. Harggitati (2000) has examined the relationship between radio and the internet, and related to this is McCourt and Burkhart's (2003) article on the role of Napster in structuring on-line music distribution. Regarding

the contents of music, Titon (1994) has examined how Blues developed and how the forces of commercialization affected the content of the music. Walser's (1993) ethnographic study on Heavy Metal focused on how power, gender and madness influence the genre.

Music is also intimately linked to issues of identity. Curran (1996) focuses on the creation of identity in the world of drumming, while Keyes (2002) looks at the links between street consciousness and Rap music. Related to issues of identity, as well, is the topic of authenticity in music. Peterson's (1997) book on Country music examines how authenticity is constructed through cultural and commercial efforts. Several studies have also examined how elite forms of music have been constructed. DeNora's (1991) article on musical patronage in Beethoven's Vienna is an example of changes in musical patronage and how "serious" music reinforced legitimated cultural boundaries. Weber (2001) examines how trends towards homogeneity in concert programming influenced how we think of Classical, or "serious" music today. Moving beyond Classical music, Lena (2004) examines the role of social networks on musical dimensions of Rap music, while Danaher & Roscigno (2004) turned their attention to the relationship between textile mills in the South and the production of Hillbilly music. Additionally, music has been examined in terms of the role of active listeners, specifically, Hennion (2001) shows how a taste for music can been seen as a form of performance, while DeNora (2000) demonstrated how music is a key component for social agency.

One aspect of music that has not received much attention in the sociology of culture is "music as sound" - which is rather odd given that music, at its core, is a

socioacoustic phenomenon. In this study I argue that music can be studied as social *sound*. Music is not only represented by aspects of identity, fashion and systems of production, but is part of a larger phenomenon of "sound". Sound includes everything in nature, from industrial noises to the chirping of birds, anything that is audible to humans. Music, on the other hand, is a specialized aspect of sound. It is an organized activity, socially constructed by human beings acting in ways to create forms of expression. Music is intentional activity that is performed by almost everyone, from professional musicians to individuals singing in the shower or in their automobiles. Music is found in religious activities, in political contexts, at graduation ceremonies and funerals, everywhere there is human activity there is some form of organized sound occurring.

As intentional expressive action, musical performance is constructed through social and/or individual activity. When it is performed in social settings, music has the power to transform social situations, either through rhythm or tempo. Music can be characterized by many different variables; tempo, timbre, rhythm, pitch, harmony, time signature, key, etc. The key is to find a parsimonious way to measure and represent music. As we shall see below, new technologies have afforded methods to extract information from music, and thus represent music as a socioacoustic phenomenon amenable to analysis. Before treating music as sound, however, it is important to note whether sound, in the larger sense, holds meaning for social actors, and if so, what type of meaning.

The Meaning of Sound

Researchers studying the relationship between social status and socioacoustic phenomena argue that visual cues are less important than the voice in determining degrees of dominance (Burgoon et al, 1996). This is due to the fact the voice is a signal that is innately used and recognized (Burgoon et al 1996). In their research on nonverbal persuasive behaviors, the authors cite the quality of increased variety and intonation as a crucial factor in achieving social persuasion. Gregory and Webster (1996) support this finding by examining the fundamental frequencies of celebrity voices. Specifically, they note that celebrities with the larger degree of variation in intonation (such as Elvis Presley and Frank Sinatra), defined by variations in amplitude between frequencies within the fundamental frequency (F0) band, evidenced higher levels of social status and power than celebrities with less variation in intonation in the socioacoustic characteristics of their voices.

In further research related to acoustic signals and social power, Gregory et al (1997) had subjects rate various types of conversations. The acoustic properties of these conversations were filtered, some eliminated the fundamental frequency leaving the remainder of the spectrum above the .5 kHz level, while others included the fundamental frequency plus another .5 kHz without any filtering applied. The results demonstrated that the presence of the F0 band, the fundamental frequency, was significant for conveying a social power signal.

In 2000, Gregory et al., demonstrated how acoustic properties of the human voice were more significant for conveying social status and power by altering conversations

sonically. The research demonstrated the importance of the .5 kHz band for social power. Using the Fast Fourier Transform acoustic analysis, Gregory and Gallagher (2002), examined variations in the fundamental frequency of presidential candidates' voices from 19 televised debates from 8 elections in 1960. Their results supported the previous research which showed the importance of nonverbal, acoustic properties for conveying social dominance. Overall, this research demonstrates how nonverbal, acoustic, formal properties of sound, in this case the human voice, conveys power and social status. By using spectral analysis of fundamental frequencies, studies have been successful in providing new insights into how social status can be measured through formal properties of sound

Sound Effects

Other studies have examined the effects of "noise" and increased sound levels on human health, such as hearing loss, hypertension, heart disease and decreased school performance. In an interesting study (Rosen & Olin, 1965), researchers tracked Maaban tribesman who, compared to the U.S. population, had less exposure to industrial noise. Their findings demonstrated how exposure to noise was a significant predictor of hearing loss. Edmonds, et al (1984) demonstrated how levels of classroom noise had a detrimental effect on student performance. Acoustic environment was shown to interact and influence the learning context in Kindergarten by impeding the efforts of teachers to effectively communicate with their students (Kalekin-Fishman. 1991). Exposure to constant noise has been shown to impact children in many ways, including increased

aggression, learned helplessness, reductions in sociability and helping behavior (Cohen and Spacpan 1984; Glass and Singer 1972; Jones 1984; Kryter 1970).

What the above literatures suggests is that sound has *effects*, both in terms of health, power and meaning. Acoustic characteristics of the human voice (whether speaking or singing) convey power and social status, phonemes hold meaning (Heise, 1965), and noise effects the capacity of educational institutions to be effective. Given that acoustic properties do have significant effects on social processes, and since music is, fundamentally, *sound*, it makes sense then to examine the acoustic properties of music. By relating the sound of music to social structure we gain analytical leverage and insight into how sound may be implicated in these social processes.

Musical Tastes and Social Structure

As we have seen, music has been studied in many different ways. Although people have access to an enormous diversity of music, they only have a limited amount of time to listen to it (Mark, 1998), thus the choices that people make with regard to certain types of music define their personal tastes. Extending this to socioacoustic properties, people make choices based on the characteristics of music such as tempo, timbre, and loudness. Preferences for these aspects of music are related to social processes, such as symbolic exclusion (Bryson, 1996). Given that there is little to no research on the link between acoustics and musical tastes, it is important to examine the literature on musical tastes and social structure to provide a framework for how an analysis of socioacoustics might be considered.

Research in the sociology of culture often assumes that cultural tastes mark symbolic boundaries among persons and status groups (Sonnett, 2002), that they function as cultural capital (Bourdieu, 1984), and that they provide a socio-logic that creates homologies between consumption and class by locating people according to their tastes. Findings differ, however, as to the specific ways that tastes influence and shape class and status. For instance, studies from the European-based distinction perspective (Bourdieu 1984) argue that cultural tastes operate as strategies of distinction informed by one's habitus and used by elites as forms of social closure (Parkin, 1979; Weber, 1968) around valued resources; while studies in the U.S. have shown that elites tend to prefer a wide array of musical genres, compared to non-elites.

According to Gans (1974) taste publics represent actors who share tastes for particular cultural objects thereby constituting a taste culture. Gans related the idea of the taste public to social class to indicate a social group made up of fans of a particular type of music; while a taste culture refers to the set of aesthetic stances that a group of people may share (Russell, 1997). With this in mind, it is then possible to construct a typology of taste publics and cultures in terms of stances toward musical or, by extension, socioacoustic properties. The configurations of taste publics could then be shown to be made up of socio-demographic variables such as social class, age, gender and ethnicity. Seen in a relational manner, elite tastes are thought to reflect and reinforce elite status groups and class by making sure that those who do not know the code are effectively unable to strategize their way around particular social spaces. Cultural tastes thus help reproduce the class structure by facilitating both communication and mobility across

social networks (Bourdieu, 1984). Demarcations between cultural objects can occur within or between genres. For instance, individuals from different strata may hold varying degrees of affection and knowledge for different individual songs from the classical music genre. Cultural preference is thus related to a person's social status. In this dissertation I focus on three basic arguments for how tastes and stratification and cultural consumption are labeled: the homology thesis, the omnivore thesis, and the reconciliation thesis.

The Homology Thesis

The first school of thought, the homology argument, is informed by Bourdieu's (1984) work in *Distinction*. This thesis argues that culture and class are intimately linked to one another. Through class conditioning and shared experiences, a classification schema, termed habitus, is developed which ensures durability to the class structure. The habitus refers to a system of dispositions or orientations towards the social and cultural world; one that is linked to locations within social space. While Bourdieu grants that culture is not the mere reflection of class, but has some explanatory power, groups found within the class field are not simply free to choose and construct a life project through the unique combination of cultural codes and objects. Rather the reproduction of the class structure occurs precisely because of the durability of the cultural schemas formed early and continuing through the life course. Elite culture is elite precisely because it is legitimate and it serves a function to maintain elite dominance over dominated fractions

of the class and status order. The reproduction of elite lifestyles occurs through forms of symbolic violence, which represent efforts to keep elite and mass culture separate.

According to Bourdieu, cultural capital refers to the possession of increased knowledge of cultural codes, knowledge and appreciation for elite culture. Bourdieu's model includes the idea of a "homology" between the configuration of the cultural field and the social field. Thus, according to this model, persons with higher levels of economic and cultural capital also evidence higher levels of attendance at elite cultural events, such as operas, the theatre, and art museums. Subsequent research has tended to support this model. For instance DiMaggio & Mohr (1985) demonstrate how persons of higher-status groups are more likely to attend museums. De Graaf & De Graaf (1988) have shown that levels of education and family background are strong predictors for participation in elite culture.

The homology between the cultural and social fields has come under criticism. Holt (1997) argues that Bourdieu's definition of cultural capital is influenced by the time and the place of his own empirical research. While some of this criticism is fair, the characterization of Bourdieu's model as fixed and intimately linked to French culture is somewhat unfair. Bourdieu argued that cultural social fields are constantly being renegotiated, with legitimate definitions of culture implicated in realms of social struggle and conflict, not an image that is stagnant and static. Thus, depending upon the context and time of a society, what is considered "elite" music, may change definition, depending upon who is being served by declaring and defending the definitions of what is legitimate culture. DiMaggio (1982) makes a similar point when he argues that culture is a realm of

struggle, for instance, when cultural capitalists attempt to institute high culture through the establishment of legitimated cultural institutions, such as museums and symphony orchestras.

The Omnivore Thesis

The second school of thought is termed the *omnivore thesis* (Peterson and Simkus, 1992). This thesis grants that there is a homology between class and status, but argues for a certain degree of freedom afforded to elite groups in their ability to fashion an identity according to preferences for cultural objects; while groups in lower-status positions are not as free, which shows up as a narrow band of cultural preferences, or being a *univore*. The degree of freedom afforded to elite groups stems from higher levels of education and increased social mobility, in which a breadth of knowledge of cultural codes is developed, thus creating the ideal typical *omnivore*. Omnivores consume a greater number of cultural objects and hold a greater knowledge of cultural codes, as compared to groups in lower-status positions. The metaphor which illustrates the omnivore/univore divide is the reverse pyramid. The pyramid represents the volume of cultural objects which social actors prefer. At the bottom of the pyramid are the univores, in which there are very few tastes, while at the broad base at the top of the pyramid, elites have many more choices and tastes. The key point is that elites not only consume high-brow culture, but that they consume many types of culture, including middle and low brow. The omnivore can be contrasted with the snob, which represents an elite individual

who only prefers elite culture, and perhaps only one form of such culture such as the theatre.

The Reconciliation Thesis

The third framework is the reconciliation thesis. Since there are many differences in the ways that tastes are measured, operationalized and theorized across these two broad perspectives, it appears difficult to reconcile the two theoretical perspectives. The reconciliation thesis rests on the idea that there are numerous sources of inequality (Hall, 1992). Researchers have examined what effects the likelihood of being an omnivore and found that younger age and higher occupational status are strongly associated with omnivorous cultural preferences (Sullivan, Oriel, Tally Katz-Gerro, 2007; Warde et al., 1999; Van Eijck, 2001; Lopez Sintas and Garcia Alvarez, 2002; Holbrook et al., 2002; Emmison, 2003). Others have noted the importance of gender for consumption of high-brow culture (Lizardo, 2006; Bihagen, 1999; Bihagen and Katz-Gerro, 2000; DiMaggio and Mohr, 1985; Katz-Gerro and Sullivan, 2004; Tepper, 2000; DiMaggio, 2003; McCall, 1992). Erickson (1996) found the importance of social networks for cultural consumption and argues that we must look beyond class to tell the whole story. Bryson (1996) examined musical tastes and found that it was true that elites preferred a greater number of musical genres, which supports the omnivore thesis; but that they did so in patterns that revealed distinctions, which supported the homology thesis. While elites tended to show broad symbolic tolerance, they displayed dislike for non-elite musical genres. As Bryson (1996) has shown, cultural consumption is related to patterns of

tolerance, what she terms; *multicultural capital*. Specifically, her work provides a way to reconcile the homology and omnivore theses by demonstrating that the tolerance of elites is still informed by what is legitimate and what is not. Thus, her research reconciles both the homology thesis and the omnivore thesis by including factors such as race, racial intolerance and politically based symbolic exclusion.

A recent study (van Eijck, 2001) argues that another way to reconcile these two perspectives is to grant that elites "collect" cultural objects, but that they do it in a way that has a certain "combinatorial logic." In other words, it is not so much the sheer number of musical genres that elites consume, rather it matters which specific genres they choose. It is here that Van Eijck (van Eijck 2001) argues for the importance of the *contents* of cultural objects, not just the number collected. Arguing for a combinatorial logic means that we need to look not only at the nominal properties of musical genres but that we must find ways to measure the formal, intrinsic properties of genres as well. In this dissertation I argue that there is indeed a combinatorial logic at work. I argue for a homology between the higher/lower classes and the higher/lower forms of culture, yet, the homology is patterned in specific ways, especially with regards to acoustics.

In this chapter I have shown that music is a complex social phenomenon that has been studied in a myriad of ways. I have argued that music is a subset of a larger domain of *sound.* I have shown how sound has effects upon areas such as health and education. Thus, I argue that it is reasonable to assume that music can be fruitfully studied by examining it as an acoustic phenomenon. Since there is little research in the field of sociology which examines music and its acoustic features, I have examined how current

research treats musical preferences and stratification. Specifically, there are three main arguments for this relationship, the homology thesis (Bourdieu, 1984), the omnivore thesis (Peterson and Simkus, 1992), and the reconciliation thesis (Bryson, 1996; van Eijck, 2001). These perspectives provide insights into how cultural consumption and stratification operate. They do this by examining the specific *contents* of culture, which can be considered as configurations of cultural objects. Constructing cultural objects as configurations thus affords the opportunity to note how preferences are patterned in specific ways.

CHAPTER 3.

CLASSIFYING GENRES

Music genre classification based on content is a key feature of music information retrieval systems and with the emergence of vast libraries of digital music it has been gaining in popularity. Since the beginning of the 21st century, there has been a dramatic growth in the amount of digital music information available. Efforts to create an efficient and accurate way to process musical information have also increased. For the purposes of extracting musical information, music has been classified by its style or genre. Yet, the problems associated with classifying these styles come down to issues of organizing, categorizing, and describing music contents. Oftentimes, as is found on many on-line musical databases, such as iTunes, musical styles are categorized by genres that are specified by humans. This labeling process can be extremely time-consuming. Beyond being time-consuming, hence, costly, for an organization to label musical contents by hand, it is also subject to error since genre classification is done through the filter of human perception. These difficulties are also related to the fact that music, as art, is a constantly evolving cultural object that often relies on novelty to become successful. Efforts to create novelty may also create a situation where musical works may locate between established genre distinctions or be consciously opposed to established genres.

These problems have prompted many to seek ways to classify music which does not have these limitations; a method that is free of human perception and which relies on the physical, formal properties of the audio signals themselves. Successful efforts to

create such a system of musical information retrieval move beyond hand-based categorization of musical works. Until recently, with advances in computing power and digitization of musical works, it was nigh impossible to measure large collections of audio samples with ease. Recent work in the field of computer science has allowed software designers to create programs that can extract feature vectors of audio signals. Spurred on by the need to find ways to search through extremely large collections of on-line musical libraries and stores, many researchers are attempting to create ways to search music using the music itself.

Known as Musical Information Retrieval (MIR), researchers from this field have identified key features of audio signals which may help distinguish among genres (Downie, 2003; Fingerhut 2004). For this dissertation I use techniques developed in the field of MIR to extract acoustic-based features from the songs; specifically timbre, rhythm, and loudness. Each of these dimensions has a corresponding vector of features that can then be entered into a statistical software package for further analysis. Researchers in MIR have developed tools to analyze the formal properties of sound and music. They have developed algorithms that can classify sounds and songs into genres.

Music Information Retrieval

With the rise of large digitized databases of musical objects, and computers which are able to process large amounts of information, the task of analyzing the acoustics of music are within reach. With the increased number of musical recordings available, the need to have an effective method of automatically classifying musical recording by genre

prompted software engineers and researchers to search for adequate methodologies for automatic classification. The utility of developing software which is capable of automatically sorting and classifying music would be particularly useful for online music stores which house enormous quantities of music and that currently use manual methods of classification. Manual classification of musical genres is also complicated by the fact that different people may classify genres differently which can then lead to inconsistencies in the way that online music databases store music. There have been many efforts to classify music using advanced computer techniques. One such area that has received much attention and has garnered adequate success rates in the classification of music genre schemas is the area of research that uses low-level acoustic features to classify music genres known as Music Information Retrieval (MIR) (Tzanetakis et al, 2001 ; Pye, 2000 ; Deshpande, Nam and Singh, 2001; Jiang et al, 2002; Kosina, 2002; Grimaldi, Kokaram and Cunningham, 2003; Xu et al, 2003; McKinney and Breebaart, 2003; McKay and Fujinaga, 2004; McEnnis, et al., 2005).

While high-level features of music, such as lyrics and melody, etc. have met with some success in their efforts for musical classification; low-level acoustic features have proven more amenable to computerized methods of automatic classification. The success of low-level feature extraction depends heavily on the type of acoustic features chosen to extract. The possible universe of potential audio features available for extraction from musical objects is quite huge, and the use of too many features can sometimes overwhelm classifiers by providing too much information (McKay & Fujinaga, 2004).

While there are many possible empirical dimensions of sound which can be measured, this project focuses on three: timbre, rhythm and loudness (Yi et al, 2007). Timbre is a complex dimension that is a composite of several features. It may be described as the *musical surface*. It is composed of a sound's brightness, its noisiness, the relative degree of change and dynamics that occur with a window. One way to think of differences in timbre is to think of two different musical instruments playing the same note. The difference is sound and texture that a fuzzed-out electric guitar and a soft violin produce when both playing middle C is a difference in timbre. While both instruments are playing the same frequency of sound, one is fuzzy and brittle sounding, while the other is softer and less noisy. In addition to timbre, rhythm is another important dimension significant for the study of sound. The strength and importance of the beat is key for distinguishing between musical genres. Some genres, such as Rap music, are known for the importance of the beat, while a genre such as Classical music place less importance on the beat.

Another dimension of sound is acoustic intensity or "loudness." Genres vary according to how loud they are perceived to be, e.g., Heavy Metal compared to Folk. Differences between genres along these three dimensions are primarily due to the typical instrumentation which characterizes each genre. For instance, Heavy Metal is often performed with loud amplifiers, electric guitars and drums. Folk, on the other hand, is a quieter genre, and one which is typically associated with acoustic guitars. Classical music is typically performed with a large array of instrumentation, such as violins, cellos, etc. The point being that given the diverse array of instrumentation used to make the sounds

of each genre; we expect differences in the acoustics to co-occur. Thus, the three broad aspects of the sound of music, timbre, rhythm and loudness, provide a way to distinguish between genres. Before presenting the features extracted which represent each dimension of sound, I describe the methodology for collecting representative musical samples for the genres under consideration in this dissertation.

Sample Selection

Building on the work from the MIR literature, acoustic features were extracted from a representative sampling of songs for each of the 18 musical genres from the 1993 General Social Survey. Respondents in the 1993 GSS were asked their opinions regarding 18 different musical genres. The 18 musical genres include: Big Band/Swing, Bluegrass, Blues or Rhythm and Blues, Broadway Musicals -Show Tunes, Classical music-symphony and chamber, Contemporary Pop/rock, Country Western, Folk music, Gospel music, Heavy Metal, Jazz, Latin Mariachi/Salsa, Mood/Easy listening, New Age/Space music, Oldies Rock, Opera, Rap music, Reggae. I collected a representative set of musical works for each of the 18 genres through the online music store iTunes. On the iTunes store there are genre-based collections of music entitled "iTunes essentials." Each "Essentials" collection is intended to give an uninitiated listener a brief introduction to the essential songs from each genre. Thus, there is an essentials collection for Jazz, Folk, etc. The collection of songs is intended to provide a very broad sense of what constitutes a particular musical genre at the most generic level. For each of the 18 genres,

an "Essentials" collection was located and collected (see Appendix A for a complete list of the songs collected for each genre)[2].

There is no doubt that determining a suitable sampling frame for this project can be problematic. There were basically two paths to collect the musical samples. First, the researcher could decide which songs constituted each genre; or second, let popular culture, *writ large*, make the decision as to what are fair representations of each musical genre. I chose the latter and felt that, given the popularity of iTunes, it was a fair method for selecting songs used to represent each musical genre. Also, the songs comprising each essentials collection seemed a valid representation of the broad, *generic*, aspects of each genre. Further, since I am relating responses from a large national survey to the songs that represent each genre, and then analyzing each song to extract features to arrive at average scores relating to timbre, rhythm and loudness, I reasoned that getting a "generic" sense of each genre was an adequate way to represent each musical genre. Since this project is exploratory, in the sense of determining whether it makes sense to extract acoustic features from songs, and since one of the main guiding questions driving this dissertation is whether genres exists beyond the merely cultural, and/or nominal levels, analyzing the current sample and determining whether the genres tend to cluster will act as a way to check whether the songs chosen really are representative of each musical genre. I certainly invite the reader to examine Appendix A for the songs chosen. With this in mind, I am aware of the limitations of two things. First, there are many more

---

[2] For Mariachi there was no "essentials" collection. Thus, a mariachi greatest hits album was used to sample songs for this genre.

than 18 musical genres existent in the world of music. There are literally thousands of genres and subgenres to which music can be classified; still, the ones selected are among the most popular and well-known in the U.S. Second, the “essentials” collections are chosen by individuals employed by iTunes and thus the potential biases of the selection process may be evidenced in the musical samples collected to represent each genre; still, presumably these individuals were interested in making appropriate allocations to the categories.

To acquaint the reader to the types of musical data collected, below is a sampling of the works chosen for each of the 18 musical genres (see Appendix A for a complete listing of the works included in the analyses). The Classical music genre includes works such as, "Adagio in G Minor for Strings and Organ," "Brandenberg Concerto," and "String Quartet in G Minor." The sample includes works by Bach, Mozart, Beethoven, and several other known composers. The samples in the Jazz genre include artists such as Miles Davis, Dave Brubeck, Billie Holiday, Charles Mingus, Art Tatum, and Thelonious Monk. There is no doubt that the Jazz genre includes much, much more than what is represented here, as any true Jazz aficionado would attest; still, these artists are highly known. The Blues genre includes artists such as Robert Johnson, T-Bone Walker, Howlin' Wolf, and Stevie Ray Vaughn. Artists collected in the Folk genre include Bob Dylan, Pete Seeger, Joni Mitchell and Judy Collins, among others. Reggae is represented by artists such as Bob Marley, Jimmy Cliff, Peter Tosh and Toots & the Mayals. The Gospel music genre includes works by the Staple Singers, Kirk Franklin, Hezekiah Walker & The Love Fellowship Choir, and the Soul Stirrers. Songs from the Big

Band/Swing genre include those from Benny Goodman, Glenn Miller, Can Calloway, and the Andrew Sisters. The Opera genre includes works by both male and female singers, including “La Traviata” and “La Boheme”. Bluegrass is represented by such artists as Earl Scruggs, Osborne Brothers, and Bill Monroe. Country and Western contains samples from both "old -time" country as well as contemporary works. Artists include Hank Williams Jr., Tanya Tucker, Loretta Lynn, Waylon Jennings, The Carter Family, and Jimmie Rodgers. Musicals include tunes from "Singing in the Rain," "The Trolley Song" and "There's no Business like Show Business." Works which represent Latin/Mariachi/Salsa include titles such as, "La Cucaracha," "La Raspa," "Plastico" and "El Malo." Artists in the sample include Willie Colon, Ruben Blades, and Tito Puente. Mood and Easy Listening includes works from America, The Carpenters, Carly Simon, and Cat Stevens. Works in the Heavy Metal genre include songs from bands such as Alice Cooper, Deep Purple, Black Sabbath, and Quiet Riot. New Age/Space Music includes works from Vengelis, Mark Isham, and Secret Garden. Songs for Contemporary Pop/Rock were chosen with regard to the fact that the GSS dataset was given in 1993. Attempts were made to reflect what respondents would be aware of during this time. Artists in the "pop" side of the genre include Michael Jackson, Madonna, Prince, Duran Duran and the Police. Contemporary rock is represented by bands such as Guns N' Roses, U2, Journey, and Bruce Springsteen. Rap music is represented by songs from artists such as Ice-T,N.W.W., Cypress Hill, 2pac, and Queen Latifah. The Oldies genre includes works from the 1950's and the 1960's. Artists include The Drifters, Carl Perkins, Chuck Berry, The Jimi Hendrix Experience, The Doors, and The Rolling Stones.

There is no doubt that categorizing the vast array of music found into a few musical genres is somewhat problematic. There are potentially thousands of genres and subgenres which music could be classified, yet research that has worked within the limitations of a small number of genres has produced significant and interesting results (Bryson, 1996; Sonnett, 2004; Mark, 1998). Many studies have reduced the 18 genres into a few exemplar genres, reducing the number of genres even further. While research with a limited array of genres is possible, for the purposes of this dissertation I wish to include all 18 music genres in my analyses in an effort to include as much variance as possible. I also aim to develop instruments that measure an overall orientation towards sound. One of the advantages of deconstructing musical genres into their respective acoustic *contents* is that all genres can be considered at once which might otherwise be limited if only including a few exemplar genres. I now describe the musical dataset that I collected.

The Music Dataset

A 30-second digital sample of each song was collected (.wav, 44.1 Hz, mono, normalized -0.3dB) and stored on a computer. There were a total of 643 songs collected to create the musical database. Once the songs were collected, each one was given a number and entered into a database. Along with the unique identifier, the artist and title of the songs was stored in the database (see Appendix A). Table 3.1 provides frequencies for each musical genre. I attempted to collect songs released before 1993, when the General Social Survey was administered. For some genres in the 1993 GSS, the genres

consisted of more than one genre, for instance, “Latin/Mariachi/Salsa” which consists of 3 musical genres, and Country/Western contains two genres, Country and Western. When there appeared to be “compound” genres, an attempt was made to collect songs or each part of the genre, and thus, as shown in Table 3.1, some genres have more songs collected than others.

Table 3.1. Frequencies for Songs in the Dataset

	Frequency	Percent
Big Band/Swing	25	3.9
Bluegrass	25	3.9
Blues or Rhythm and Blues	25	3.9
Broadway musicals/Show tunes	30	4.7
Classical music-symphony and chamber	80	12.4
Contemporary pop/rock	49	7.6
Country/Western	50	7.8
Folk music	25	3.9
Gospel music	25	3.9
Heavy Metal	25	3.9
Jazz	24	3.7
Latin/Mariachi/Salsa	40	6.2
Mood Easy listening	25	3.9
New Age/Space music	24	3.7
Oldies Rock	46	7.2
Opera	50	7.8
Rap music	50	7.8
Reggae	25	3.9
Total	*643*	*100.0*

Other times there were limitations to the Essentials collections. For example, the genre Opera had separate collections, one for male singers and one for female singers. In such cases I attempted to collect samples from each one so as to be inclusive of different

singing styles. Though I relied on iTunes to provide the music samples as provided by their essentials collections, there was still some input on the part of this researcher to select which "essentials" collections provided a fair representation for each genre.

Extracting Acoustic Features

MIR, or Musical Information Retrieval, is a burgeoning field in computer science that takes advantage of recent developments in computer speed and technology to develop ways to search large online databases of music in order to find novel ways to categorize, classify, and find music. As more and more songs become available online, the process of hand-coding songs into genres becomes extremely onerous. Researchers working within the field of MIR are attempting to find ways to use the formal properties of music itself to automate the genre classification process. According to literature, features useful for extraction from the music can be grouped into three broad dimensions: timbre, rhythm, and loudness (Yi et al, 2007). The features above group as follows:

Timbre:

- Spectral Centroid
- Spectral Rolloff Point
- Spectral Flux
- Zero Crossing rate
- Mel-Frequency Cepstrum Coefficients
- Linear Prediction Coefficients
- Strongest Frequency Via FFT
- Compactness
- Spectral Variability
- Strongest Frequency Via Spectral Centroid
- Strongest Frequency Via Zero Crossings

Rhythm

- Strongest Beat Overall
- Beat Sum Overall Average
- Strength of Strongest Beat

Loudness

- Root Mean Square
- FoLE (Fraction of Low Energy Fames)

Musical features were extracted using the program jAudio. jAudio (McEnnis et al, 2005) is a Java-based software package designed to extract features from audio files. The software takes a sequence of audio files as its input. The graphical user interface lets users select the features that will be extracted. Using jAudio, 643 song samples were submitted to the software program and the resulting acoustic features were extracted.

Results of Genre Classification

The features from each song were then submitted to a software program called WEKA (Waikato Environment for Knowledge Analysis). WEKA is a machine learning software written in Java, developed at the University of Waikato (Whiten et al, 1999). Within the field of Music Information Retrieval (MIR), it is commonplace to classify songs into genres using the WEKA machine learning routines. The primary learning method used in this project is the Naive Bayes Classifier; the Naive Bayes is one of the most effective and efficient classification algorithms (Zhan and Su, 2004). The machine learner attempts to develop a classifier from an array of training examples with a classification label. The Naive Bayes classifier is based on the conditional independence

assumption, which states that all of the attributes are independent given the value of the classification variable, in our case, music genre. Of course, total independence is rarely true in the real world. Nevertheless, the Naive Bayes Classifier has been shown to be quite robust in the field of MIR as a way to classify music into genres (Zhan and Su, 2004).

Table 3.2. Confusion Matrix for Musical Genres by Extracted Acoustic Features

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
a = Classical	62	0	0	0	0	0	1	4	3	1	2	0	1	0	6	0	0	0
b = Jazz	3	15	0	1	1	0	3	0	0	0	0	0	0	0	0	0	0	1
c = Blues	0	0	9	5	1	1	0	2	1	1	0	1	1	1	1	0	0	1
d = Folk	0	0	0	18	2	1	0	1	1	1	0	0	1	0	0	0	0	0
e = Reggae	0	0	0	2	19	1	0	0	1	0	0	0	1	0	0	0	0	1
f = Gospel	0	1	0	3	1	12	0	1	0	0	4	0	0	0	0	2	0	1
g = Big Band	4	5	0	2	1	0	8	1	0	2	1	0	0	0	0	0	0	1
h = Opera	3	0	0	0	0	0	0	44	0	0	3	0	0	0	0	0	0	0
i = Bluegrass	0	0	0	4	1	0	0	0	16	3	0	0	0	0	1	0	0	0
j = Country	1	1	0	10	5	0	1	0	2	24	1	2	1	0	1	0	0	1
k = Musicals	2	0	0	3	3	0	2	0	0	3	14	1	1	0	1	0	0	0
l = Latin	0	2	1	1	4	1	0	0	1	2	0	19	5	0	0	0	2	2
m = Mood	0	0	0	1	0	0	0	0	0	0	0	2	21	0	0	1	0	0
n = Heavy Metal	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0	2	0	0
o = New Age	6	1	0	0	0	0	0	0	0	0	0	0	3	1	12	0	0	1
p = Pop/rock	0	0	0	1	0	1	0	0	0	0	0	1	3	13	1	21	6	2
q = Rap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	46	0
r = Oldies Rock	0	1	1	2	8	2	0	0	0	3	1	3	3	0	0	5	2	15

The results of the analysis provided by WEKA produced a confusion matrix (see Table 3.2). The confusion matrix represents both the correctly and incorrectly classified songs into their respective genres. The cells in the diagonal represent frequencies for music genres which were correctly classified by their respective genre. For instance, there were 62 Classical songs which were correctly classified as Classical according to their

acoustic properties. There were 15 Oldies songs which were correctly classified as Oldies. The frequency counts in the cells along the diagonal in the matrix in Table 3.2 show that most songs (61%) were correctly classified into their respective genres. The off-axis cells depict the numbers of songs which were not correctly classified, and into which genre the machine learning classifier misclassified them. For instance, looking at row 2, column 1; there were 3 Jazz songs which were misclassified as Classical music. Since the misclassifications are provided by row, conversely, there were 0 Classical songs which were misclassified as Jazz (top row, cell 2).

Further, looking across row 1 for the results for Classical music, there was 1 song misclassified as Big Band (row 1, column g), 4 as Opera (row 1, column h), 3 as Bluegrass (row 1, column i), 1 as Country (row 1, column j), 2 as Musicals (row 1, column k), 1 as Mood (row 1, column 1), and 6 as New Age (row1, column o). Examining the matrix by column, there were 3 Jazz songs misclassified as Classical (column 1, row b), 4 Big Band songs misclassified as Classical (column 1, row g), 3 Opera songs misclassified as Classical (column 1, row h), 1 Country/Western song misclassified as Classical (column 1, row j), 2 Musicals misclassified as Classical (column1, row k), and 6 New Age songs misclassified as Classical (column 1, row o). The important point to note is the matrix is not symmetrical. It is structured by the rows and while a Classical song may be misclassified as belonging to the Jazz genre, for example, the converse is not necessarily true.

Examining the results in the confusion matrix in Table 3.2 provides some very interesting results in the patterns of misclassifications. There are genres which are simply

not connected acoustically. Classical music, for instance, does not misclassify as Rap music. Yet, Classical music does misclassify as Big Band, Opera, Bluegrass, Musicals, and New Age. Interestingly, the Classical music samples that do misclassify as Bluegrass are from Bach, where harpsichords play similar lines to busy banjo lines characteristic of Bluegrass. Nevertheless, intuitively we can recognize the genres that Classical music misclassifies as, e.g., Big Band or Musicals. The genres have similar instrumentation and thus have similar acoustic properties. What the misclassifications indicate is that music genres can share acoustic properties with one another. In contrast to Classical, there were 46 songs which were correctly classified as Rap, and 4 misclassified as Contemporary pop/rock music. Here the extraction system is telling us that there is something about the genres of Rap and Pop/Rock that is similar acoustically.

Table 3.3. Classification Results Comparison with Previous Studies

Study	Number of genres	Percent Correct
Pye (2000)	6	92%
Deshpande, Name and Singh (2001)	3	75%
Jiang et al (2002)	5	91%
Grimaldi, Kokaram & Cunningham (2003)	5	73%
Xu et al (2003)	4	93%
McKinney & Breebaart (2003)	7	74%
Roebuck (Current)	18	61%

Overall, the results from the machine learning analysis results in a 62% accuracy rate of correctly classified songs (n=643) while 38% were incorrectly classified. Nearly two-thirds of the total number of songs were correctly classified. Table 3.3 depicts

previous studies' classification results. As shown in Table 3.3, previous results obtained a greater percentage of correctly classified songs, however, the number of genres in which they were attempting to classify those songs was much less than the current study. Specifically, the current dissertation attempts to classify songs into 18 genres, which is quite high when compared to other studies within the field of MIR. Note that as the number of genres increases the accuracy rate decreases. For instance McKinney & Breebaart (2003) attempted 7 genres with an accuracy rate of 74%, while Jiang et al (2002) attempted 5 genres with an accuracy rate of 91%. Thus, it would appear that the machine learning results are dependent upon the number of genres one is attempting to automatically classify.

On the Usefulness of Misclassifications

One of the most interesting results is the way that misclassified songs are patterned in ways that make *sense*. To better visualize the way that the musical genres from the GSS are connected in acoustic space, a sociogram is created form a dichotomized matrix (Table 3.4). Genres with two or fewer misclassifications were considered trivial, and the matrix was dichotomized with a cut-point of greater than two misclassifications. The dichotomized matrix was submitted to NetDraw to provide a visual representation of the relationships found in the dichotomized confusion matrix (see Figure 3.1).

There are 18 nodes in the network with 306 possible ties (k*(k-1)). The network is asymmetric with a density of 0.1046 (sd=0.3060). Table 3.5 depicts the out-degree and

in-degree centrality measures for the network (Freeman 1977, 1979). Out-degree centrality represents the degree to which a genre borrows acoustic information from other genres. In terms of the rows and columns in Table 3.4, out-degree centrality is a measure of the rows. In-degree centrality represents the level at which genres have acoustic information that is borrowed from other genres, also a measure of acoustic influence; represented by the columns in Table 3.4.

Table 3.4. Dichotomized Confusion Matrix for Musical Genres by Extracted Acoustic Features

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
a = Classical	1	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0
b = Jazz	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
c = Blues	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
d = Folk	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
e = Reggae	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
f = Gospel	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0
g = Big Band	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
h = Opera	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
i = Bluegrass	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0
j = Country	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0
k = Musicals	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0
l = Latin	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0
m = Mood	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
n = Heavy Metal	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
o = New Age	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
p = Pop/rock	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0
q = Rap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
r = Oldies Rock	0	0	0	0	1	0	0	0	0	1	0	1	1	0	0	1	0	1

Oldies is clearly the highest with an in-degree centrality score of 5. This indicates that Oldies is a genre which borrows or misclassifies from other genres most often.

Interestingly, Oldies has the lowest score for in-degree centrality (0). The low score indicates that Oldies is a genre which is a mixture of other genres, as we might expect; but it is not a genre with which other genres share acoustic properties. This confirms how we typically define Oldies. It is a genre that is based on temporal aspects, rather than acoustic dimensions, per se. Oldies is a genre that can change over time depending what is defined as "old". For instance, what comprises Oldies to someone living in the 1950's would be very different than for someone living in the 1990's. In fact, one measure of aging is to see the songs one enjoyed during high school now being defined as "Oldies."

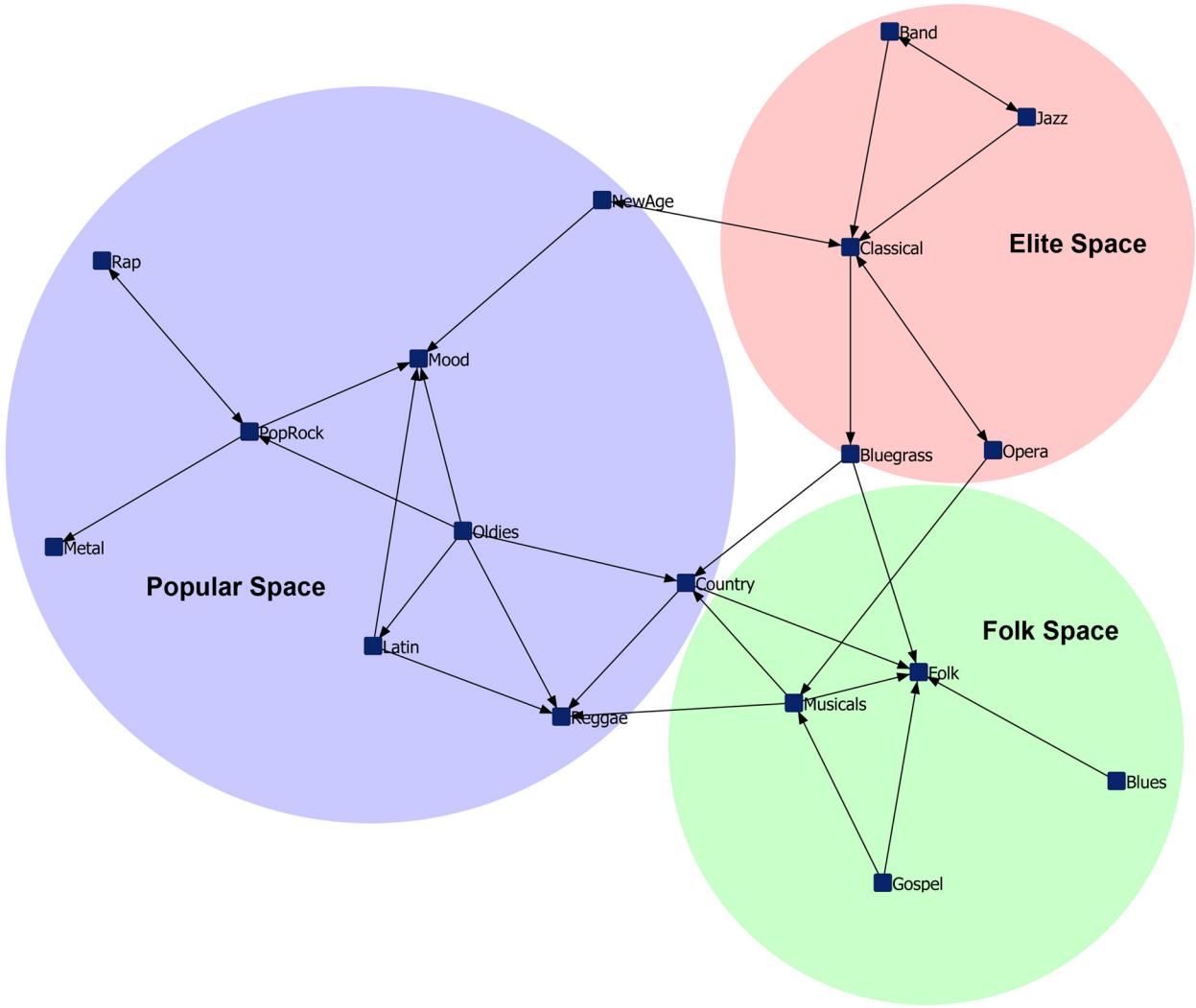
Table 3.5. Degree Centrality Measures for the Dichotomized Matrix of Misclassifications.

	Degree Centrality Measures			
	Out Degree	In Degree	Nrm Out Deg	Nrm In Deg
Classical	3	4	17.647	23.529
Jazz	2	1	11.765	5.882
Blues	1	0	5.882	0
Folk	0	5	0	29.412
Reggae	0	4	0	23.529
Gospel	2	0	11.765	0
Band	2	1	11.765	5.882
Opera	2	1	11.765	5.882
Bluegrass	2	1	11.765	5.882
Country	2	3	11.765	17.647
Musicals	3	2	17.647	11.765
Latin	2	1	11.765	5.882
Mood	0	4	0	23.529
Metal	0	1	0	5.882
NewAge	2	1	11.765	5.882
PopRock	3	2	17.647	11.765
Rap	1	1	5.882	5.882
Oldies	5	0	29.412	0

In-degree centrality was highest for the genres, Folk (5), Reggae (4), Mood/Easy Listening (4) and Classical (4). These genres are the most influential genres in the network. They have acoustic properties which are most often borrowed from other genres. This result is displayed in Figure 3.1. As shown, the circles are descriptive devices to illustrate how the genres cluster together according to different types of spaces. The three spaces are popular, folk and elite. The genre with the highest in-degree centrality is Folk, which is located in the center of the folk space. Similarly, Classical music, which had a high in-degree centrality score is at the center of the elite space, while both Mood/Easy Listening and Reggae are located in the center of the popular space. The genres with high in-degree centrality measures are well represented within the center of each space within the network. These genres appear to be the most influential in terms of whether other genres in those spaces misclassify, or are tied, with those genres.

The genres Rap, Pop/Rock and Heavy Metal are located on the left side of the network in Figure 3.1. These genres appear as quasi-isolates in comparison to the rest of the network. Rap and Heavy Metal, in particular, only appear to operate through Pop/Rock; Rap and Metal are not directly connected to many other genres in the network. The songs used to classify these genres tend to not display many misclassifications; these genres tend to have genre boundaries which are crisp and well-defined. Compared to others, these genres do not appear to borrow from other genres' acoustic dimensions and are more "island-like" than other genres.

Figure 3.1. Sociogram of the Misclassification of Musical Genres



Conversely, on the right top side of the network are the genres, Big Band, Jazz, Classical and Opera. Clearly, this cluster of genres is related, not only in an acoustic sense, but in a cultural sense as well. Big Band, Classical music and Opera all tend to share similar instrumentation; they also tend to be thought of as "elite" or "art" music. Interestingly, Big Band and Jazz both misclassify, or share acoustic properties with one another, as noted by the double arrows. Both of these genres then are connected through the Classical music genre. The Classical genre is, in turn connected to Opera and Bluegrass. It is through Bluegrass particularly that we see how Classical music is related to the realm of folk tastes. The genres in the elite musical space, such as Classical, Opera, Big Band, and Jazz tend to cluster together and share acoustic properties with one another.

The bottom right-hand side of the network contains genres which constitute a folk sensibility. Here, the genre, Folk, is at the center of this space, with Country, Bluegrass, Blues, Gospel and Musicals all sharing acoustic properties with Folk. Within the center of the network, we see genres which share more acoustic ties with other genres, such as Oldies and Country/Western music. These genres are not as defined as other genres, their boundaries are fuzzier. The songs which constitute these genres tend to be misclassified as other genres at greater rates compared to other genres. This is not surprising, given that a genre such as "Oldies" may contain any number of influences and connections to other genres, depending upon the time-frame of the songs which constitute the Oldies genre. In some sense, the defining characteristics of a genre such as Oldies denotes less a genre, in terms of its acoustic properties, and is typically defined more in terms of the era or time

period with which it springs. The oldies genre is also interesting because while Oldies misclassifies with many other genres (see row r in Table 3.2), there are no genres which misclassify as Oldies. In other words, Oldies borrows or shares many acoustic properties with many other genres, but genres, such as Classical or Jazz, do not share with Oldies.

In sum, the network diagram in Figure 3.1 provides a visual representation of the degree to which musical genres are isolated from other genres in terms of their acoustic properties, or whether genres share many acoustic characteristics with other genres. The above research suggests that success rate depends not only on the feature set selected, but also on the number of genres one is attempting to classify; as the number of genres increases the success rate appears to decrease. The current array of misclassifications suggest that the classification systems are adequately classifying musical works while the error rates illustrate the fact that musical genres are by nature messy, or fuzzy, classifications to begin with. There will always be some level of "noise" in the boundaries of musical genres, as all musical works are produced in a cultural context where influences are not mutually exclusive. Genres share instrumentation thus, in acoustic terms, it is not surprising to find connections between and among genres. The success rates of the research in the field of Music Information Retrieval (MIR) suggests that it is possible to classify musical objects into genres in a way that one can utilize for computer-related routines and further analyses. Further, some genres appear to be more “omnivorous” than other genres with respect to the acoustic characteristics found in other genres. Not surprisingly, a genre such as Oldies has misclassifications which spread across the spectrum of genres. This is not unexpected because Oldies, as a genre, is not a

very descriptive genre and denotes a time-period rather than a particular set of instrumentation or style.

Table 3.6. Machine Learning Classification Results

TP Rate	Genre
0.92	Heavy Metal
0.92	Rap music
0.88	Opera
0.84	Mood/Easy listening
0.78	Classical music-symphony and chamber
0.76	Reggae
0.72	Folk music
0.64	Bluegrass
0.63	Jazz
0.50	New Age/Space music
0.48	Gospel music
0.48	Country Western
0.48	Latin Mariachi Salsa
0.47	Broadway musicals/Show tunes
0.43	Contemporary pop/rock
0.36	Blues/ Rhythm and Blues
0.33	Oldies Rock
0.32	Big Band/Swing

Genre Boundaries

When examining the overall success rate of the classification procedures by musical genres, some genres are correctly classified at a greater rate compared to other genres. Table 3.6 depicts the accuracy rates by musical genre. As shown in Table 3.6, the genres that had the highest accuracy rates were Heavy Metal and Rap. The lowest accuracy rates

were Big Band/Swing and Oldies Rock. The greater the accuracy rates the lower the misclassifications which resulted from the machine learning classification routine. The TP Rate refers to the True Positive Rate and reflects the degree to which songs initially classified as being from that genre are actually classified as being in the genre given the acoustic properties of all the other songs. We may think of the TP Rate as the degree to which each genre has a boundary that is crisp or fuzzy. The higher the TP Rate the more defined the genre is, while the lower the TP Rate the fuzzier the boundary of that particular genre, with regards to acoustic properties.

The crisp/fuzzy nature of genre boundaries suggests that musical genres are not the same in terms of their precision. This result may make it problematic to design research around questions of genre likes/dislikes without taking into account the nature of musical genres. As we shall see, the degree to which a genre's boundaries are either crisp or fuzzy is often related to the degree to which respondents in a large national survey report disliking musical genres. Further, by including the nature of genre boundaries by the degree to which they are crisp or fuzzy, we gain an additional dimension of each genre. It is important to note, however, the genre boundary dimension does not measure how a genre *sounds*, rather it represents a measure of how connected or isolated a genre is in comparison to other genres.

Conclusion

In this chapter, a sample of songs from the 18 genres found in the 1993 General Social Survey was collected. Low-level acoustic features were extracted and submitted to

a classification routine to determine how well the songs could be classified into the 18 musical genres. The results demonstrated that songs could be grouped into genres, but the groupings ranged from genres with crisp, well-defined boundaries, to those with fuzzy ill-defined boundaries. Songs which were misclassified produced patterns which helped show that the system of extracting acoustic features "makes sense." It makes sense because the misclassifications patterned in particular ways, as shown in Figure 3.1. To answer the first guiding question of whether genres are cultural conventions, linguistic markers with no referent to the formal world, the results suggest that musical genres do appear to cluster according to their acoustic properties. The degree to which connections between cultural markers, labels given to groups of musical works, and acoustic properties such as timbre, rhythm and loudness ranges from genres which have crisp/well-defined boundaries to those which exist in relative isolation from other genres and to those with fuzzy boundaries. Genres with fuzzy boundaries are "well-connected" in the sense that the songs found within certain genres borrow acoustically from other genres.

While collecting representative samples of music for each genre may be problematic, the results of this chapter tend to support the face validity of the approach. Specifically, since the misclassifications *make sense* the extraction system appears to work. However, with regard to the issue of using the extraction system on a large database of songs, which could theoretically be categorized into thousands of musical genres and sub-genres, it seems unlikely that the features extraction system could ever be used for this particular purpose. Yet, given the purpose of this dissertation, and given the

small number of genres (18), the features extracted appear to adequately represent the musical genres.

In the next chapter I bring in the social world by analyzing musical aversions with respect to class and status. Following Bourdieu (1984), I examine frequencies of musical tastes with respect to genre sets constructed using the methodology of QCA (Ragin, 2000). Crisp sets are constructed using the acoustic criteria developed in this chapter and then analyzed in terms of class and status as measured by volume and type of capital.

CHAPTER 4.

STATUS GROUPS AND ACOUSTIC PREFERNCES

In the seminal study on cultural tastes, Peterson and Simkus (1992) found that persons from higher occupational status groups preferred more musical genres than lower-status groups. Using the reverse pyramid as an analogy, the authors argued that the number of genres appreciated increased as one moved to higher levels of occupational prestige. They saw a shift occurring that directly contradicted the idea that there was a split between elite and mass culture. Rather they saw contemporary societies moving towards a structure in which higher status groups were "omnivores" and lower status groups were "univores." The term, omnivore, refers to the fact that higher status groups tend to consume many different types of cultural practices, including musical forms, or genres; while lower status groups tend to consume fewer types of cultural practices, including music. Furthering this research, Peterson and Kern (1996) demonstrated that during the decade spanning from 1982 to 1992, respondents who held preferences for classical music tended to prefer more middlebrow and lowbrow musical genres. These results point to a changing trend in the way that musical preferences are structured. The argument for why this trend occurs is linked to the idea that persons from higher status groups, at the aggregate level, tend to have broader social networks and thus have a need for learning and being conversant in an increased variety of cultural codes, which is translated to appreciating more musical genres, a sort of multicultural capital (Bryson, 1993).

The omnivore argument is typically countered with Bourdieu's so-called "homology" argument as put forth in *Distinction* (1984). Instead of the image of the reverse pyramid, the image is one in which there is a correspondence between status groups and cultural preferences. As Bourdieu states, "taste classifies and it classifies the classifier" (1984). Elites like elite cultural forms, and non elites prefer non elite forms. Bourdieu argued that there were roughly four areas of the field of cultural preferences. The two axes were structured by the volume of two types of capital, economic and culture. The key questions for both the omnivore thesis and the homology thesis are related to the links and relationships between status groups and cultural preferences.

As Van Eijck (2002) points out, the patterns of musical tastes, the way that the specific contents of culture are combined is often overlooked. It is one thing to note that high status occupational groups like a greater number of musical genres; it is another to point out that there is a combinatorial logic at work in the way that specific elements of culture are pieced together. By examining how culture in combined, rather than just looking at the sheer number of objects, we gain insight into how occupational status may be linked to cultural preferences. One major goal of this dissertation is to examine the way that acoustic elements of musical genres are linked to actual taste patterns. If Van Eijck (2002) built upon Peterson's analysis one step further by "linking the question who likes how many genres to who likes which genres," I take it one step further by asking which social groups prefer which types of acoustic properties of which genres.

Van Eijck (2002) identifies an occupational status group, the New Middle Class, as being a section of those labeled as omnivores by Peterson. The new middle class tend

to prefer popular culture and highbrow, while maintaining some distance from other more "common" types of culture, such as folk (Schulze, 1995). The new middle class is an occupational group that may be low on economic capital, but high on cultural capital. Van Eijck (2002) demonstrates that members of higher status groups do prefer a greater number of genres, which confirms the omnivore thesis. However, when looking at specific patterns of taste, the author found four musical factors which correspond to occupational status groups. The first factor reflects genres which reflect a "folk" scheme and is associated with those with the lowest degree of prestige and education. The second factor reflects preferences for genres in the traditional highbrow frame, such as classical music and opera and is liked by the cultural snobs. The third factor reflects a pop sensibility, and this group is composed of those with little education and young in age. The final factor is loaded on genres which reflect a certain tolerance or openness to musical genres. Van Eijck (2002) labeled this group the new omnivore. The new omnivore tends towards genres in which authenticity is important (blues, rock and folk) and instrumental talent is valued (jazz, symphonic music and chamber music).

Relating these four factors to Bourdieu's representation of the cultural field, with low-brows (factor 1), dominant (factor 2), dominated (factor 4), and commercial pop culture (factor 3). The highly educated respondents in Van Eijck's study tended to be associated with two cultures. One cluster represented preferences for legitimate musical genres, such as classical music; in Bourdieu’s terms, the dominant fraction of the dominant class. While the second cluster of the highly educated, the dominated fraction of the dominant class or the new middle class, tended to prefer jazz and blues. Thus,

status groups which were high on cultural capital but low on economic capital tended to prefer genes based around authenticity.

Method

Qualitative Comparative Analysis (QCA) (Ragin, 1987; 2000) has been shown to be quite powerful in analyzing musical tastes (Sonnett, 2004). Qualitative Comparative Analysis is a framework developed by Charles Ragin (1987) as an analytical technique which uses Boolean logic to construct and analyze membership sets. The framework inherent in QCA is that of membership in sets. This contrasts with analyses such as Ordinary Least Squares, which rely on correlations among variables to isolate the variance explained by individual variables. Instead, QCA examines the degree to which genres/respondents are members of a particular set. This type of analysis allows for one to find causal configurations that lead to a particular outcome within the context of the other causal conditions. In the following analyses I use the thinking and framework of QCA to construct a truthtable, which I then submit to Correspondence Analysis to construct a visual mapping of the relationships within the truth-table.

Sonnett (2004) studied boundary forms which corresponded to taste publics. Boundary forms were membership sets which corresponded to whether respondents from a large national survey were members of taste groups, such as omnivores, univores, or those with mixed feelings. By using QCA and then mapping the configurations of musical tastes in Correspondence Analysis (CA), Sonnett produced the image of the parabola, instead of the reverse pyramid, as more commonly found in the omnivore

literature. The parabola imagery indicated that the taste patterns were much more complex than originally conceived. The key point is that through the use of QCA the author developed new insights into the nature musical tastes.

In this chapter I propose that musical genres are more than tastes for labels or conventions. Rather, tastes for musical genres are really tastes for sounds and can be represented along three acoustic dimensions, timbre, rhythm, and loudness; and one structural dimension, genre boundary. Using QCA I construct genre sets, which are configurations of these dimensions which group the 18 genres from the GSS, which correspond to the way that they sound. I also include the nature of the genre boundary as developed in the previous chapter. As I have argued throughout this dissertation, the sound of musical genres matters for how people express their preferences for musical objects. If people express a preference for musical genres which score along certain aspects of acoustic dimensions (e.g., they are quiet and well-defined), then they will tend to like genres also characterized in such a manner. Bourdieu (1984) makes a similar point when discussing the correspondence between food and status groups. Elites tend to prefer food that is light, bland and subtle; while popular tastes are defined by foods constituted by being spicy and heavy, for example. The point is that cultural preferences display patterns, thus, it is reasonable to assume that acoustic preferences may follow similar patterns.

The Importance of Musical Aversions

Music both signifies and is a signifier. While research may focus on cultural preferences, or what people like to consume, some research has shown the importance of

examining cultural aversions (Bryson, 1996). Specifically, expressing disgust or dislike toward a particular genre identifies the person making the expression and locates that person in social space, affirming membership within a community of others who dislike that particular genre. Much research in the sociology of music and taste has focused on what people prefer or like, the numbers of these likes. However, as Bryson (1996) has shown, how and what one chooses to dislike culturally often says more sociologically than what one likes or prefers. Bourdieu (1984) makes a similar point when he argues that what one is repulsed or disgusted by when it comes to cultural objects reveals more about the social actor making the classifications than expressions of preference. As Bourdieu argues in *Distinction*, cultural tastes are an "affirmation of an inevitable difference" (1984, p. 56). When tastes must be defended or justified, it is through the negation or refusal of "other tastes." Thus, for Bourdieu, "tastes are first and foremost distastes, disgust provoked by horror or visceral intolerance of the tastes of others." Bryson's research affirmed this view when she found that dislike of musical genres, such as Heavy Metal or Rap, revealed patterns of intolerance. Thus, it is easier to like something than it is to hate something. Hate toward cultural objects takes more energy and thus appears to be a better measure of taste because hate draws symbolic boundaries in a way that requires a firmer stance toward another "other" object. In this chapter, the number of musical dislikes (dislike to dislike very much) represents the outcome variable.

Constructing Genre Sets

Musical genres are composed of four dimensions: genre boundary, timbre, rhythm and loudness. Regarding genre boundary, the measure of the true positive rate (TP Rate) from the previous chapter is used to measure the nature of a musical genre's boundary, which ranges from a crisp to a fuzzy boundary. The TP rate is a measure of the accuracy rate at which songs were correctly classified according to the Native Bayesian Classifier. The higher the TP rate, the more defined and crisp is the genre boundary. Crisp genre boundaries are those which are well-defined and which do not share acoustic attributes with many other genres. Fuzzy boundaries are characterized by genres which share many acoustic features with many other genres.

Table 4.1. Descriptive Statistics for 3 Acoustic Scales

	Alpha	Minimum	Maximum	Mean	Std. Deviation
Timbre	.773	-34.63	39.16	1.18	11.09
Rhythm	.552	-16.33	5.21	2.68	2.18
Loudness	.837	-2.84	7.84	3.51	1.85
Valid N	*643*				

Acoustic Dimensions

Three acoustic scales are constructed. The three scales correspond to three dimensions of sound; timbre, rhythm and loudness. In constructing the scales, only those features which had an eta-square above the benchmark of .149 were included. Descriptive statistics are shown in Table 4.1.

The timbre scale consisted of 31 items and had a reliability score of .773, rhythm consisted of 3 items and had a reliability score of .552, while loudness was a 2-item scale and had a reliability score of .837. Rhythm had the lowest reliability as compared to the other two scales[3]. While the low alpha of the rhythm is problematic, I chose to use the scale because I wanted to maintain the multi-dimensionality of the rhythm dimension. Analyses were performed using single indicators of rhythm, e.g., beat sum overall average or the strength of the strongest beat, and both of these indicators were significant in their own right, however, each indicator represented a different aspect of rhythm. Given that both timbre and loudness were composed of multiple dimensions, a multi-dimensional measure, even given the low reliability, was preferable to using a single indicator. Table 4.2 displays descriptive statistics for each musical genre by each of the three scales. The mean-scores depict the overall average level for each dimension for each genre. The standard deviation provides a picture of the spread within each genre for each dimension.

Genre Boundary

Genre boundaries represent the degree to which genres share acoustic information with one another. The dimension is measured by the True Positive Rate (TP Rate) which is the accuracy rate at which the genres were classified (see Table 3.6). Heavy Metal and Rap music had the strongest boundaries (.92) followed by Opera (.88), Mood/Easy

---

[3] One is struck by the similarity of the three acoustic dimensions (timbre, loudness and rhythm) with Osgood's (1957) semantic differential. The semantic differential is a distillation of three fundamental dimensions of cultural meaning: evaluation, potency and activity. Further, like the rhythm dimension, activity also had a relatively low alpha.

Listening (.84). The weakest boundary belonged to Big Band/Swing (.32) and Oldies (.33).

Timbre

Timbre is a composite score constituted by spectral brightness, change, and noisiness. Of the 18 genres, Rap (17.42) had the highest average degree of timbre, or musical surface, while Reggae (5.87) had the second highest degree of timbre, on average. The genres with the lowest degree of timbre include Country/Western (-6.98) and Folk Music (-6.11). The musical genres with the greatest variance across the timbre dimension were New Age/Space Music (13.38), Classical Music (12.78), Rap music (10.99), and Jazz (10.66). The genres in which there was little within-variance across the timbre dimension include Heavy Metal (5.75) and Latin/Mariachi/Salsa (6.88).

Rhythm

Rhythm is a dimension which measures the strength and importance of the beat within a song. The genres which had the strongest and most steady beat were Heavy Metal (1.31), Rap (1.30), Reggae (1.13), and Latin/Mariachi/Salsa (1.00). These genres are typically characterized by the presence of a strong beat. Genres which had the lowest mean-scores on the rhythm dimension include Opera (-3.21), Classical (-1.64) and Gospel (-0.33). Regarding the variance for the rhythm dimension, the genres with the highest standard deviation are Opera (3.18) and Classical (2.94). The genres with the lowest variance along the rhythm dimension are Latin/Mariachi/Salsa (0.77) and Mood/Easy Listening (0.88).

Table 4.2. Descriptive statistics for each scale by each musical genre.

Genre		Timbre	Rhythm	Loudness
Big Band_Swing	Mean	-3.3329	.1917	-.8935
	SD	9.4798	1.1615	.6977
Bluegrass	Mean	1.8563	.3564	-.7870
	SD	10.0085	.9258	.8067
Blues or Rhythm and Blues	Mean	-1.3107	.1930	-.7695
	SD	8.3147	1.5591	.6855
Broadway musicals_show tunes	Mean	-2.7202	-.00427	-.7921
	SD	6.8596	1.5513	.8297
Classical music-symphony and chamber	Mean	-4.6879	-1.6374	-1.3120
	SD	12.7823	2.9372	.5195
Contemporary pop/rock	Mean	2.1706	.6379	1.4897
	SD	9.2797	2.0095	1.6312
Country_Western	Mean	-6.9754	.5936	-.7736
	SD	7.8739	.9580	.8672
Folk music	Mean	-6.1085	.4262	-.8098
	SD	7.2668	.8169	.5657
Gospel music	Mean	3.8367	-.3260	-.2911
	SD	8.2709	1.3300	.8166
HeavyMetal	Mean	-3.1826	1.3060	2.1677
	SD	5.7454	1.1161	1.1828
Jazz	Mean	-3.5373	.5517	-1.0125
	SD	10.6642	1.1199	.5902
Latin_Mariachi_Salsa	Mean	1.8116	1.0043	.4252
	SD	6.8803	.7707	1.5155
Mood_Easy listening	Mean	-5.2319	.6948	-.3109
	SD	7.0865	.8817	.9511
New Age_Space music	Mean	-3.9626	-.3557	-.4088
	SD	13.3843	1.7626	.9863
Oldies Rock	Mean	.3399	.4969	.4292
	SD	7.3222	1.1316	1.3287
Opera	Mean	2.2047	-3.2106	-1.4001
	SD	8.8439	3.1830	.7671
Rap music	Mean	17.4177	1.2979	4.1674
	SD	10.9935	1.5512	1.7245
Reggae	Mean	5.8669	1.1276	-.1696
	SD	7.2127	1.1117	.8093

Loudness

Loudness is based upon the relative amplitude of a song. Of the genres analyzed, Rap (4.17), Heavy Metal (2.17) and Latin/Mariachi/Salsa (1.52) were among the loudest. Conversely, the quietest genres included Classical (-1.31), Opera (-1.40) and Jazz (-1.01). Overall, the distribution across genres for the 3 dimensions (timbre, rhythm and loudness) appear to makes sense. Genres such as Rap and Heavy Metal represent loud genres with a strong beat, as compared to Classical and Opera which are characterized by a softer acoustic approach. The genres which had a great deal of variance across the loudness dimension include Rap (1.73) and Contemporary Pop/Rock (1.63). Genres with low standard deviations along the loudness dimension include Classical (0.52) and Folk Music (0.57).

Constructing the Truth-Table

A truth-table is a representation of the configurations of conditions. Constructing the truthtable in order to create membership sets for musical genres based upon their acoustic properties is useful because it helps clarify the relationships among differing dimensions. In the truth-table for the current analysis, the four dimensions used are whether a genre has crisp or fuzzy boundaries, high or low timbre, high or low rhythm, and high or low loudness. A genre's boundary characteristic is a measure derived from the true positive rate (TP Rate) from the machine learning results. The true positive rate is a measure of the number of songs that were correctly classified as being a member of that

genre, according to the acoustic features that were extracted. Genres were calibrated as having a strong boundary if there TP Rate was greater than the mean (.608).

Calibrating membership for each dimension is both a quantitative and a qualitative exercise. Quantitatively, I began by coding genres as being "fully in" the crisp set of membership for each dimension if their scores on each dimension fell within the top twenty-five percent. For the acoustic dimensions (timbre, rhythm and loudness), I listened to the tracks to gauge whether samples of the genre fell within this set. I then constructed a truthtable in order to specify the membership sets for the four dimensions. The results indicate that the 18 genres from the General Social Survey grouped into 10 sets. The fact that there were only 10 sets out of the possible 16 illustrates the concept of "limited diversity" (Ragin, 2004). Limited diversity refers to the situation one often encounters while dealing with real data during a QCA analysis, that of finding only a limited array of cases that actually occur, although there may be many more logically possible configurations.

Genres which are members of the set of crisp, well-defined genres include: Jazz, Folk, Classical, Opera, Mood, Metal, Reggae, and Rap. Genres which are included in the membership set of "timbre" include genres which have a large degree of spectral dynamics, spectral brightness, and, in general, have a lot of "musical surface." Genres coded as being in the timbre set include: PopRock, Latin, Opera, Gospel, Bluegrass, Oldies, Reggae, and Rap. The "rhythm" membership set includes genres which have a strong beat and where the importance of the beat helps define the genre; genres in this set include: PopRock, Latin, Mood, Metal, Reggae, and Rap. The final set, "loudness,"

represents a dimension which contains genres which have a high degree of RMS power or amplitude. Genres in the loudness set include: PopRock, Latin, Oldies, Metal, and Rap. The 10 sets are represented in Table 4.3.

Table 4.3. Key to Genre Sets

Set	Set No.	Genres
gtrl	Set 1	Band, Blues, Country, Musicals, NewAge
Gtrl	Set 2	Jazz, Folk, Classical
gTRL	Set 3	PopRock, Latin
GTrl	Set 4	Opera
gTrl	Set 5	Gospel, Bluegrass
gTrL	Set 6	Oldies
GtRl	Set 7	Mood
GtRL	Set 8	Metal
GTRl	Set 9	Reggae
GTRL	Set 10	Rap

*G=Strong genre boundary, g=Weak genre boundary; T=Strong timbre, t=weak timbre; R=Strong rhythm, r=Weak rhythm; L=Loud, l=not loud.

Set 1 includes genres which have low membership on each of the four dimensions and are represented by lower-case letters (gtrl). There were five genres (Big Band, Blues, Country, Musicals, and New Age) which had ill-defined boundary genres, low timbre, weak beat, and were not loud. The second set included the genres Jazz, Folk and Classical music. The second set represents the configuration of strong genre boundaries, but low on the dimensions of timbre, rhythm and loudness. Set 3 is a configuration of genres which have fuzzy genre boundaries, high degree of timbre, strong rhythm, and are loud, and include Contemporary Pop/Rock and Latin/Mariarchi/Salsa. The fourth set is Opera and is characterized by a well-defined genre boundary, high timbre, low rhythm and is not loud. The fifth set includes Gospel and Bluegrass and is characterized by the

configuration of weak genre boundaries, strong timbre, and weak rhythm and loudness. Oldies make up the sixth set and this set is characterized by a weak genre boundary, strong timbre, weak rhythm, but is relatively loud. Mood/Easy Listening is the seventh set and has a strong genre boundary, weak timbre, strong rhythm, and is not loud. Heavy Metal is the eighth set. It is characterized by a strong genre boundary, weak timbre, strong beat and is loud. Reggae, set nine, has a crisp genre boundary, high timbre, strong beat, but is not loud. Finally, Rap music is the tenth set and is strong on all dimensions: strong boundary, high timbre, strong beat and is loud. The genre sets thus represent configurations of sound and represent crisp membership sets along the four dimensions used in the analysis. Before describing the distribution of musical dislikes by genre sets, I turn to defining the dimensions of class and status used in the analysis.

Mapping Class/Status Groups

In *Distinction* (Bourdieu, 1984), class and status groups were analyzed according to the respondent's preferences for cultural objects. The correspondence analysis plot revealed the relationship between forms of capital and cultural preferences. To test whether this relationship holds when accounting for the *contents* of cultural objects, in this case, acoustic properties of musical genres, a relational matrix is constructed which maps respondent preferences, in terms of occupational groupings, for each genre set.

In *Distinction*, Bourdieu (1984) structured occupations and class along two dimensions: the volume and composition of capital. As Wacquaqnt (2006) notes, the space of social positions is structured by two principles of distinction: economic capital

and cultural capital. Volume refers to a division between high and low degrees of capital, while composition refers to the contents of capital and is arrayed along an axis of economic and cultural capital. The distinction between volume and composition creates four possible class groupings. Group one is composed of those with a high volume of both economic and cultural capital. The second group corresponds to those with a high volume of cultural capital and a low volume of economic capital. Group three are those with a high volume of economic capital and a low volume of cultural capital. The final group is composed of those with a low volume of both cultural and economic capital. Economic capital was measured by those earning income $25,000 or greater. Cultural capital was measured by those having a college degree or more education. The following summarizes the class/status configurations:

Class 1. High volume of both cultural and economic capital (the dominant fraction of the dominant class; lawyers, doctors, engineers, etc.).

Class 2. High volume of cultural capital and low volume of economic capital (teachers, artists, college professors, etc. ‘‘the dominated fraction of the dominant class’’).

Class 3. High volume of economic capital and a low volume of cultural capital (skilled manual workers and supervisors ‘‘the dominant fraction of the dominated class’’).

Class 4. Low volume of both economic and cultural capital (low skill labor and working poor, or the dominated class for short).

Genre Sets by Class/Status Groups

Table 4.5 depicts the frequencies and column proportions of respondents from the General Social Survey (1993) by the genre sets ("disliked very much") by the 4 class/status groupings as defined by volume and type of capital (Bourdieu, 1984).

Table 4.5. Frequencies of Musical Genre Sets Disliked Very Much by Occupational Status Classes (Source: GSS 1993)*

Genre Sets	Class 1 (n=775)	Class 2 (n=124)	Class 3 (n=263)	Class 4 (n=355)
gtrl	226 (29.2)	28 (22.6)	84 (31.9)	99 (27.9)
Gtrl	87 (11.2)	6 (4.8)	52 (19.8)	57 (16.1)
gTRL	123 (15.9)	17 (13.7)	43 (16.3)	58 (16.3)
GTrl	137 (17.7)	13 (10.5)	58 (22.1)	76 (21.4)
gTrl	60 (7.7)	10 (8.1)	15 (5.7)	21 (5.9)
gTrL	29 (3.7)	4 (3.2)	14 (5.3)	22 (6.2)
GtRl	24 (3.1)	2 (1.6)	11 (4.2)	8 (2.3)
GtRL	386 (49.8)	66 (53.2)	131 (49.8)	145 (40.8)
GTRl	98 (12.6)	11 (8.9)	44 (16.7)	51 (14.4)
GTRL	313 (40.4)	45 (36.3)	104 (39.5)	127 (35.8)
Total	*1483*	*202*	*556*	*664*

** Note: Column proportions are in parentheses*

The results in Table 4.5 reveal some interesting patterns. First, the most disliked genre set across all class and status groups is that with strong boundaries, and high levels of rhythm and loudness, and either strong or weak timbre, as exemplified by Rap and Heavy Metal music. Class 1, those with high levels of economic and cultural capital

appear to dislike Rap the most (40.4%); while Class 2 members, those with high cultural capital but low economic capital appear to dislike Heavy Metal the most (53.2%). In fact, the degree of dislike for Heavy Metal evidenced by Class 2 members is the highest proportion across all class and genre sets. Class 3, those with high economic capital but low cultural capital, tend to dislike genres with weak boundaries and low dimensionality of timbre, rhythm and loudness (31.9%) as exemplified by Big Band, Blues, Country, Musicals and New Age music. Similarly, members of Class 4, those low in volume on both cultural and economic capital, display a similar pattern as with Class 3. Regarding the least disliked, it appears that Mood/Easy Listening is the least disliked across all class typologies.

Mapping Class/Status and Acoustics

To provide a relational representation of these results, correspondence analysis (Breiger, 2000; Greenacre, 1984) of the matrix of frequencies for class/status group categories by genre configurations was computed (see Figure 4.1). The first factor accounted for 65.4% of the chi-square variation along the vertical y-axis (economic capital), while factor two accounted for 21.0% of the chi-square variation along the horizontal x-axis (cultural capital). The first two factors produce a pseudo-R2 of .85, which accounts for more than 80% of the variation of the matrix.

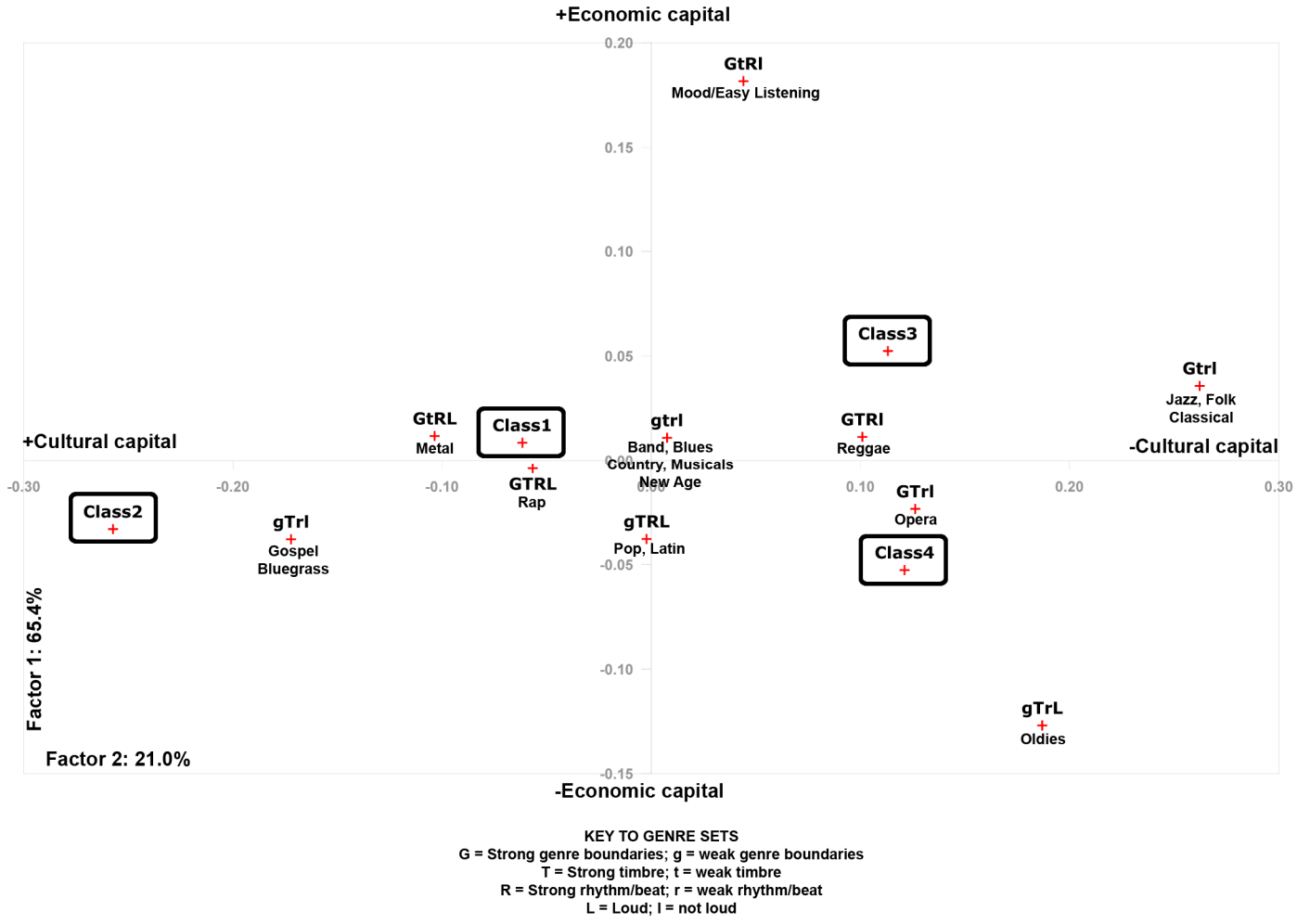
The plot in Figure 4.1 contains genre sets constructed from the crisp-set analysis in QCA and represents a space of musical aversions (dislike very much). Each genre set is represented by upper and lower case letters; an upper-case G stands for genres with

strong gender boundaries; while a lower-case g represents weak boundaries. An upper-case T represents genres with a strong aspect of timbre, while a lower-case t stands for genres with weak timbre. Regarding rhythm, an upper-case R represents strong rhythm and a lower-case r represents weak rhythm. Similarly with loudness, a capital L stands for genres with loud characteristics, while a lower-case l stands for genres that are quieter.

Reading from left to right of the plot, we see Class 2 (Low Economic/High Cultural Capital) on the left. The right-hand side of the plot contains both Class 3 (High Economic/Low Cultural Capital) and Class 4 (Low Economic/High Cultural Capital), although Class 3 is on the top part of the plot, while Class 4 is on the bottom. Class 3 shares the top part of the plot with Class 1 (High Economic/High Cultural Capital), yet Class 1 is close to the horizontal axis. Thus, it would appear that cultural capital structures the horizontal space, while economic capital structures the vertical space.

Reading from left to right, Class 2, the new middle class, dislikes genres such as Gospel and Bluegrass, both of which share socioacoustic characteristics of weak boundaries, rhythm and loudness, but are high in timbre. On the right side of the plot, where cultural capital is weak, dislike of genres with strong boundaries, but weak on all three acoustic dimensions, as represented by Jazz, Folk and Classical music, can be found. Class 4, non-elites, also appears in this space; a space of aversions associated with disliking such genres as Opera and Oldies.

Figure 4.1. The Space of Musical Aversions: Class/Status Groups by Genre Sets Disliked Very Much



KEY TO GENRE SETS
G = Strong genre boundaries; g = weak genre boundaries
T = Strong timbre; t = weak timbre
R = Strong rhythm/beat; r = weak rhythm/beat
L = Loud; l = not loud

Members of Class 1, the dominant fraction of the dominant class, dislike genres which have strong boundaries and strong rhythm and loudness, such as Rap and Heavy Metal. Timbre does not appear to be a distinguishing aspect of genres for Class 1. Class 3 represents respondents who are high on economic capital but have little cultural capital. As with Class 1, which is also high on the economic dimension, there is an emphasis on boundaries being maintained between genres. In fact, with regard to Class 3, all genre sets near their space have strong genre boundaries. Thus Class 3 members dislike genres which have strong boundaries. Class 3 members also dislike genres that are loud, as indicated by the presence of genre sets located near them in this spatial plot. With regard to non-elites, Class 4, who are low on both economic and cultural capital, it appears that genre boundaries are not as salient compared to those with high levels of economic capital as many genre sets with weak genre boundaries are on the bottom dimension of the plot, indicating low volumes of economic capital. Class 2, similarly, those low on economic capital but high in cultural capital, appear to associate with weak genre boundaries. Thus, the plot of musical aversions in Figure 4.1 reveals that as economic levels of capital increase, reading from bottom to top, there appears to be an emphasis on the salience of genre boundaries for musical aversion which also increases. Genre sets with weak boundaries appear in the lower half, while genres with strong boundaries appear in the upper half of the plot. Thus, with increases in economic capital there is a greater likelihood that one will dislike genres with strong boundaries.

Further analysis was performed to explore the relationship with strong boundaries and education and income. A dummy variable was computed for disliking genres sets

with strong boundaries. Correlations were performed between each of the four classes and genre sets with strong boundaries. Class 1 had a trend-level positive association with disliking strong boundaries (.047, $p < .10$) while Class 4 had a negative association (-.075, $p < .05$). The correlations for both Class 2 and Class 3 were non-significant. These results suggests that as economic levels increase so do tolerance for musical spaces which are open to sharing acoustically. Conversely, with decreased levels of economic capital aversion to genres with strong boundaries suggests that members of non-elite status groups prefer genres which are strongly defined and which do not share acoustic elements which each other, a type of acoustic intolerance. Genre boundaries do not seem to be a salient discriminator for cultural capital.

Conclusion

In this chapter, I have shown that acoustic features of musical genres can be grouped into four basic dimensions: genre boundary, timbre, rhythm and loudness. Further, I have shown how one can measure the nature of a genre's boundaries, and thus provide a metric of the degree to which a genre is well-defined or has a fuzzy nature. Genres not only have cultural markers which separate them from other genres, they also have formal properties which can be measured and linked to the social world. Through the discovery and quantification of three socioacoustic dimensions and one boundary dimension, genre sets were created with the aid of Qualitative Comparative Analysis (QCA) (Ragin, 1987).

The results suggest that genre sets which are structured by levels of economic capital evidence differences in acoustic tolerance, thereby supporting the omnivore thesis along the economic dimension. The greater the level of economic capital, in terms of income, the greater the likelihood that genre boundaries will become salient features of genres, when it comes to disliking music genres. This suggests that there is a form of boundary work when considering economic elites and acoustic sets (Sonnett, 2004; Lamont, 1992). Economic elites thus tend to dislike music genres where boundaries are strictly defined. Non-economic elites, conversely, tend to dislike genres where genres have fuzzy boundaries, and which share information across genres. Thus, it would appear that there are increased levels of acoustic tolerance as levels of economic capital increase.

Regarding the cultural capital dimension, the results mirror those found in Bryson (1996). Her research found that tolerant individuals, those with high educational level, tended to reject Country and Gospel the most, while they were the least likely to reject Latin, Jazz and Blues. This indicates the correspondence analysis is reproducing the results in Bryson's research when it comes to the dimension of cultural capital. In terms, of acoustic properties, the results are mixed as no clear patterns emerged, as found in genre sets. Thus, the results suggest that we need to move "beyond class" (Hall, 1992; Erickson, 1996); to get a clearer picture of how this dimension operates, we need to focus on variables not included in the analysis presented in this chapter.

Researchers have noted the importance of age and occupational prestige (Sullivan, Oriel, Tally Katz-Gerro, 2007; Warde et al., 1999; Van Eijck, 2001; Lopez Sintas and Garcia Alvarez, 2002; Holbrook et al., 2002; Emmison, 2003). Bryson (1996;

Sonnett, 2004) has noted the importance of racism and political intolerance for cultural preferences. Gender has also been shown to be an important factor for high-brow consumption (Lizardo, 2006; Bihagen, 1999; Bihagen and Katz-Gerro, 2000; DiMaggio and Mohr, 1985; Katz-Gerro and Sullivan, 2004; Tepper, 2000; DiMaggio, 2003; McCall, 1992). Thus, the results in this chapter suggest that it makes sense to explore how factors such as race, gender, age, racial and political attitudes shape musical tastes. In the next chapter, I explore these variables in order to understand the space of acoustic preferences.

CHAPTER 5.

THE SOCIOACOUSTIC PROFILE

Research strongly suggests that music and sound can have significant effects on social actors. Bryson (1996) found that patterns of dislikes for certain musical genres were related to configurations of tolerance. Cerulo (1989) examined national anthems and demonstrated the role that melodic complexity had on sociopolitical control. North et al. (1996) found complexity of musical works to be a significant factor in determining musical preferences. Kellaris (1992) investigated the effects of tempo on musical preferences and found that music with moderate tempo was applauded longer than the same pieces of music played with a faster or slower tempo. Studies such as these suggest that formal properties of music, such as tempo and melodic structure, hold significance as cultural markers and classifying processes.

Researchers looking at the relationship between status and cultural preferences have generally concluded that a person's social status is related to his/her cultural preferences. Bourdieu (1984), for example, argues that higher-status persons possess increased amounts of cultural capital as compared to lower-status persons. Key to Bourdieu's conception is the notion that there is a homology or correspondence between the structure of the social field and that of the cultural field, evidenced by the empirical observation that increased levels of educational attainment correspond to higher levels of cultural activity, i.e., appreciation and knowledge of legitimate cultural events and objects, such as music.

Another key concept found in Bourdieu's work is the idea of aesthetic stance. An aesthetic stance, or orientation, towards cultural objects is one in which those with adequate education are able to decode and appreciate, compared to those who consume cultural objects in a more immediate and profane manner. The difference between art genres such as realism and conceptualism is a case in point (Bergesen, 1984). Conceptual art demands knowledge to decode and appreciate the theoretical webs of meaning that surrounds the art, while realism is more direct; the figures it represents do not demand as much cultural capital to appreciate. Similarly with music, one may suppose that there are orientations towards sound which vary according to the distance one places one's self form the immediacy of the socioacoustic dimensions, and that it may surface as tastes for genres which are characterized by certain types of acoustic properties, e.g., those with high timbre, rhythm and are extremely loud by nature. While Bourdieu does not appear to grant music, per se, with "saying anything," his ideas do provide a way for understanding how status groups and acoustics may be related. Specifically, we may expect that elite groups practice a type of socioacoustic distancing when it comes to musical appreciation. Not only are these aesthetic stances classifications and classifying practices, they are also legitimating processes which act to create and reify symbolic boundaries (Lamont, 1984; Sonnett, 2004), which may then influence access to various forms of capital. Persons in positions of power, and hence in possession of legitimate and legitimizing cultural codes, can use these codes and symbols of worth as ways to maintain and increase their capital and social position and thus insure the reproduction of the social and economic order.

Bourdieu, however, appears to limit the range of objects that play a part in this classifying process by suggesting that music is "pure art" and thus resides outside these classifying and signifying processes. Since music "has nothing to say," it opposes the signification processes found in cultural forms and milieus such as those that might be found in areas such as drama, food, or sports. Yet, as we shall see, the sound of music does have something to say; in fact, it has much to say.

Using Bourdieu's ideas as a starting point, I examine the relationship between a person's social standing and his/her cultural preferences. Since many studies have examined the relationship between reported tastes of musical genres and class standing, this project extends this research with the addition of new methodologies for measuring and representing music. I do this by examining an aspect of music that is often elided in much research on music, namely, that of the "sound" itself. By analyzing music *as sound,* we gain a parsimonious way of representing music and thus begin to develop the field of the *sociology of sound*. Bourdieu (1984)states, "The 'eye' is a product of history reproduced by education". This dissertation extends this notion by examining whether the "ear" is also a product of history.

Another line of thinking argues that with greater levels of educational attainment, there are greater levels of "tolerance" for cultural forms. Educated persons are seen as being able to appreciate and tolerate a wider array for musical forms (Bryson, 1996). Thus, we expect higher educational attainment to be associated with persons who profess tastes for a greater degree of musical forms. In her study, Bryson showed that the reality, at least in the U.S., was more complex than either of these arguments. She found that it

was true that higher education led to greater tolerance, or less symbolic exclusion, but that it was patterned in a certain way. It wasn't that educational elites had tastes for more forms of any music, rather their tastes fell along certain patterns, something she termed "multicultural capital". Specifically, her work demonstrated how elites who had few dislikes were musically tolerant, and tended to disliked music which was liked by non-elites. Thus, Bryson's work revealed how tolerance was patterned in ways and thus supported the argument from the omnivore thesis, which argues that higher levels of education increase tolerance for all types of music; while supporting the homology thesis which argues that elites confer legitimate status upon cultural forms, such as music. Her work is an attempt to move beyond class (Hall, 1992; Erickson, 1996) and focus on reconciling the homology and omnivore theses, by noting the numerous bases of inequality that may structure musical preferences. Factors such as age and occupational prestige (Sullivan, Oriel, Tally Katz-Gerro, 2007; Warde et al., 1999; Van Eijck, 2001; Lopez Sintas and Garcia Alvarez, 2002; Holbrook et al., 2002; Emmison, 2003); racial and poltical attitudes (Bryson, 1996) and gender (Lizardo, 2006; Bihagen, 1999; Bihagen and Katz-Gerro, 2000; DiMaggio and Mohr, 1985; Katz-Gerro and Sullivan, 2004; Tepper, 2000; DiMaggio, 2003; McCall, 1992) have all seem to be important factors for structuring cultural preference. Thus, the results in this chapter, suggest that in order to adequately model acoustic preferences we must explore how these additional factors shape musical tastes. In the next chapter, I explore these variables in order to understand the space of acoustic preferences. To do this I develop an actor's general orientation towards sound and examine how such orientations effect acoustic preferences.

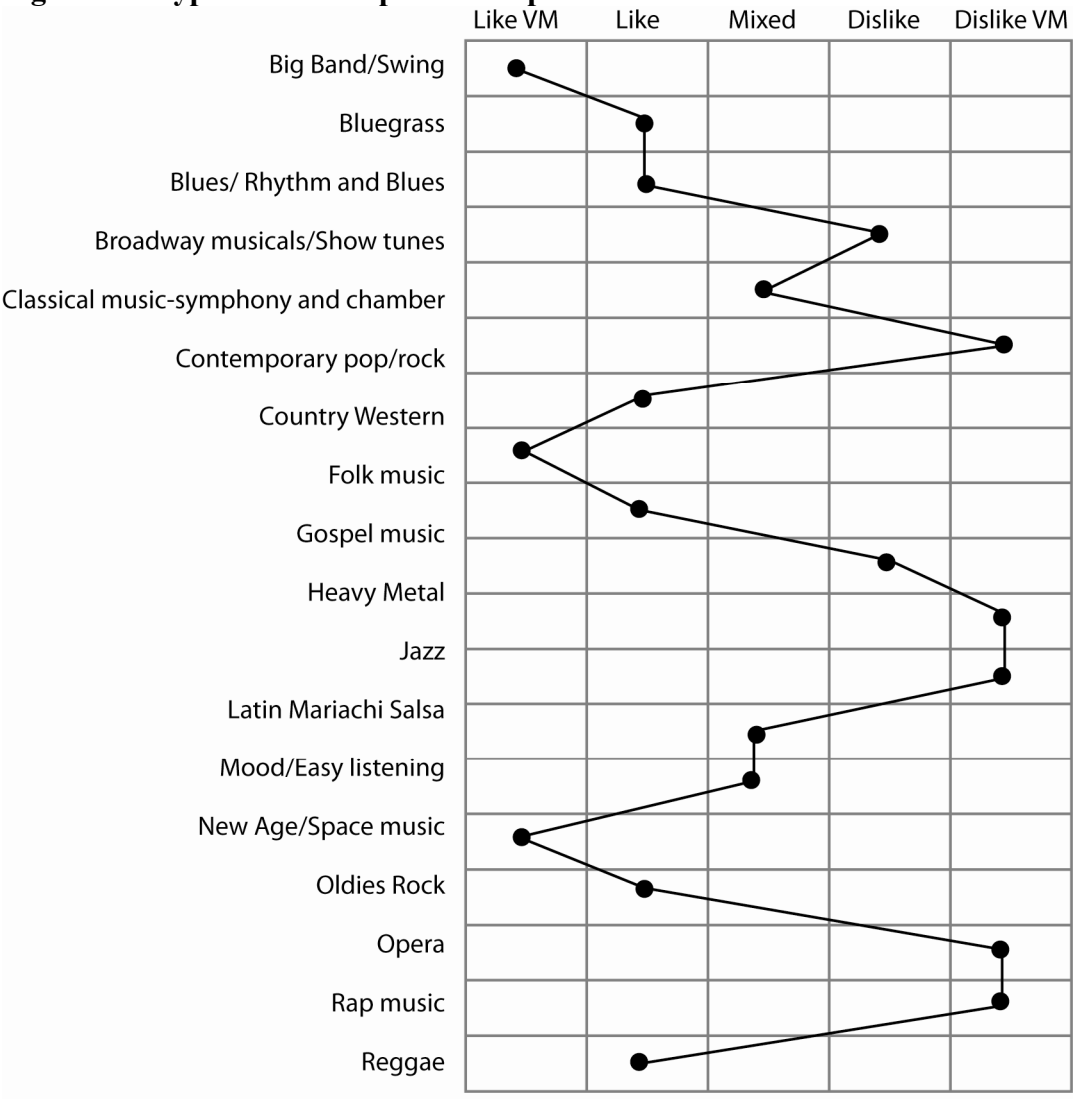
Constructing the Socioacoustic Profile

In order to construct the "ear" we need a way to measure an actor's overall orientation towards sound. This instrument should go beyond noting the personal preferences between genres and measure all of the genres as a way to examine how individuals profess tastes for acoustic dimensions, such as timbre, rhythm and loudness. To do this I construct what I term, the socioacoustic profile (SP). The socioacoustic profile is an averaged score for each of three dimensions of timbre, rhythm and loudness. Within the GSS dataset, each respondent provides his or her preferences for each of 18 genres. I weight each mean score for each of the 3 acoustic dimensions by each respondent's taste/preference array. Each respondent indicated their preference for each of the 18 genres in the GSS. The response categories were: like very much, like, mixed feelings, dislike, dislike very much, and don't know (n=1593). If a respondent said they didn't know, they were counted as missing and thus not included (see Sonnet 2004 for an analysis of the importance of "don't knows"). The illustration in Figure 5.1 provides a visual representation for how socioacoustic profiles were calculated.

Along the left-side of the figure are the musical genres. Across the top of the figure are the response categories included in the socioacoustic profile. The responses range from *like very much* to *dislike very much*. Each respondent indicated his/her preferences for each musical genre. The socioacoustic profile is based upon the totality of responses for all of the 18 genres included in the GSS. There are three socioacoustic profiles corresponding to the dimensions of sound: timbre, loudness and rhythm. Each

mean score for each dimension for each musical genre is weighted by a respondent's preference for each musical genre (see Table 4.2 for the mean scores for each musical genre by the three dimensions of sound).

Figure 5.1 Hypothetical Map for a Respondent's Socioacoustic Profile



The socioacoustic profile includes both likes and dislikes; thus, a higher socioacoustic profile score indicates a greater likelihood for preferring the particular

dimension, while dislikes are represented by negative values. Once the musical preferences for each genre were recoded, each genre preference was weighted by the mean scores for timbre, rhythm and loudness, which resulted in 54 new variables for each respondent. There were 18 new variables for timbre, 18 for rhythm and 18 for loudness. The average score for each of the three musical dimensions (timbre, rhythm and loudness) was then calculated for each respondent, such that each respondent in the dataset had a score for each of the 3 acoustic dimensions. The formula for calculating each socioacoustic profile can be summarized as follows:

> Socioacoustic Profile(r) = Sum(Genre Preference(i) * Mean(Acoustic Dimension(g)))/Total Number of Genres

As shown in the formula, each respondent's genre preference (i) is multiplied by the mean score for each musical genre (g). Next, a final mean score was calculated resulting in mean scores for timbre, loudness and rhythm for each respondent. The socioacoustic profile thus represents an array of preferences which represents an overall orientation for each dimension of sound[4].

Socioacoustic Profiles in Social Space

To better visualize the space of socioacoustic orientations in light of sociodemographic variables, I utilized Fuzzy Set Qualitative Comparative Analysis

---

[4] Note: genre boundary was not included in the sonic profiles because it is hypothesized that when respondents state preferences for musical genres, they are not stating preferences for boundaries, but rather for the acoustic properties for each genre.

(fsQCA) to develop fuzzy set scores for each respondent's membership within the three acoustic dimensions. The fuzzy scores were calibrated by marking a respondent as being "fully in" the acoustic dimension if they were in the top fifteen percent of the dimension. The mean score for each dimension was used for the middle point, neither fully in nor fully out; while those in the bottom fifteen percent were considered not in the membership set of the each acoustic dimension: timbre, rhythm and loudness. Because the socioacoustic profiles are constructed by considering likes, mixed feelings and dislikes for the 18 genres, each fuzzy set thus represents a composite of likes and dislikes for each acoustic grouping. The three acoustic dimensions (timbre, loudness, and rhythm) thus produce eight logically possible "corners" of an acoustic space. Each corner is thus a configuration of conditions which correspond to the absence or presence of each individual acoustic dimension: timbre (T=present, t=absent), loudness (L=present, l=absent), and rhythm (R=present, r=absent). The eight configurations are:

- fs111 = fuzzy set(T, L, R)
- fs110 = fuzzy set (T, L, r)
- fs100 = fuzzy set(T, l, r)
- fs101 = fuzzy set(T, l. R)
- fs011 = fuzzy set(t, L, R)
- fs001 = fuzzy set(t, l, R)
- fs010 = fuzzy set(t, L, r)
- fs000 = fuzzy set(t, l, r)

Estimating each corner of the acoustic space thus entails estimating eight regression equations. Each model estimates the likelihood of being a member, in fuzzy-set terms, of the particular configuration. Each fuzzy set is estimated by a series of variables. First, education is measured as the highest grade of school completed. The

second independent variable is income which is a 12-item measure with ranges from less than $1,000 to $25,000 or more. Third, occupational prestige is measured using the U.S. Bureau of the Census 3-digit occupation and industries codes for 1980 and 2-digit 1989 GSS/NORC prestige score. Age is measured in number of years. Female is a dummy variable coded as 1=female and 0=male. Black is a dummy variable coded 1=Black and 0=else. Race (other) is a dummy variable coded 1 if the respondent self-identified as not White or Black, 0 if else. To control for religious preferences, Protestant is a dummy variable coded 1 if protestant, while No Religion is a dummy variable coded 1 if the respondent indicated no religious preference. Turning to political views, Conservative is coded as a dummy variable which is 1=Conservative, 0=else. The political intolerance and racism scales are reproduced from Bryson (1996). Political intolerance is a count of responses to 15 questions, such as "allow a person from five groups to make a speech in your community, teach in a college, have a book in library." Thus, the higher the score, the greater the degree of political intolerance. The second variable, the Racism scale, is calculated from responses to 5 questions, "would you yourself have any objection to sending your child to a school where more than half black," "do you favor or oppose busing of black," "on average black and white school children xxx?, on average blacks have worse jobs," "because most blacks don't have the chance for education to rise out of poverty, because most blacks lack motivation." The higher the score, the greater the degree of racist attitudes (see Bryson, 1996 for a complete description of the scales). The final two variables are Omnivore and Univore. These two variables were calculated by measuring the number of musical genres liked or liked very much (mean=7.52, sd=3.41).

Omnivore is coded as 1 if the number of musical genres is the mean plus one standard deviation (11 or more genres). Univore is measured as the mean minus one standard deviation (4 or less). Using the results of the estimated regression equation, I then construct a visual representation of the acoustic space, what I term; the socioacoustic cube. The full model used to estimate each fuzzy set configuration follows:

Fuzzy set (i) = education + income + occupational prestige + age + female + black + race (other) + protestant + no religious preference + conservative + political intolerance + racial intolerance + omnivore + univores

Guiding Hypotheses for the Analysis

There are three basic arguments structuring the analyses that follow. First, the homology thesis argues that elite status groups will like elite acoustic spaces. Elite acoustic spaces represent fuzzy acoustic sets, which is where elite musical forms such as Classical music and Opera tend to cluster. According to the homology thesis, I expect education and income to significantly predict elite corners of the socioacoustic cube.

The second argument is the omnivore thesis. This argument states that with increases in education there is an increase in musical tolerance. Using the reverse pyramid as an analogy, omnivores, those with many likes, are more likely to like all types of music, regardless of acoustic characteristic. Thus, if this argument is true, I expect omnivores to be a significant predictor for each corner. Univores, on the other hand, are

hypothesized to like a small portion of musical genres. Thus, I expect univores to be located in specific areas of the socioacoustic cube.

The third argument is what I term the reconciliation thesis. This is the argument found in Bryson (1996) and states that it is true that higher levels of education increase musical tolerance, but that they do so in specific patterns. Bryson found political intolerance and racist attitudes to be significant predictors of liking particular musical genres. Her work also found that elites tended to dislike musical genres which are disproportionately liked by non-elite groups. Thus, her findings reconcile the homology and omnivore theses because she found that elites, while being broadly tolerant, still evidenced musical tastes which conferred illegitimate status upon certain genres. Thus, according to the reconciliation thesis, I expect particular corners of the acoustic space (socioacoustic cube) to cluster according to whether non-elite corners are disliked by omnivores and those with higher educational attainment. I also predict variables other than class to be significant predictors of each fuzzy set.

Results

Ordinary Least Squares (OLS) was performed which regressed the above model on each of the 8 possible corners of acoustics space, as represented by a respondent's degree of fuzzy membership within each acoustic configuration. Table 5.1 reports the results from each of the eight regressions which estimated each fuzzy set.

Table 5.1. Standardized OLS Regression Coefficients for Fuzzy Set Corners of the Socioacoustic Profiles

	Fuzzy Sets (Timbre, Loudness, Rhythm)							
	Model 1 fs111	Model 2 fs110	Model 3 fs100	Model 4 fs101	Model 5 fs011	Model 6 fs001	Model 7 fs010	Model 8 fs000
Highest Year Of School Completed	-.041	.060	.093**	.055	-.034	-.020	.015	.048
Total Family Income	.059	.026	-.038	.019	.035	.005	.003	-.032
Occupational Prestige (1980)	-.130***	-.035	.015	-.007	-.024	.030	.030	.133***
Age	-.367***	-.032	.253***	.068	-.160***	.106**	-.024	.349***
Female	-.022	.038	.130***	-.027	-.129***	-.088**	-.007	.070**
Black	.107***	.052	.055	.004	-.158***	-.118**	-.114**	-.068**
Other race	-.014	.073**	-.005	-.050	-.024	-.048	.010	-.013
Protestant	.028	-.011	-.029	-.029	-.008	-.033	-.030	.034
No Religion Preference	-.011	-.033	-.105**	-.094**	.064	-.020	.015	.009
Conservative	.004	.015	.044	-.058	-.071**	-.063	.008	.023
Political Intolerance	.052	.025	.047	.036	-.048	-.021	-.044	-.082**
Racial Intolerance	-.083*	-.076*	-.034	-.029	.025	.027	.010	.106**
Omnivores	.015	-.064	.058	.144***	-.107***	-.024	-.110**	.014
Univores	.043	.324***	.047	-.037	-.013	-.122***	.181***	-.112***
Constant	.862***	.210***	-.011	.119**	.331***	.169**	.116**	-.3111***
R^2	.200	.138	.111	.049	.100	.059	.076	.210
Adjusted R^2	.187	.124	.097	.033	.086	.043	.061	.197
F	15.240***	9.766***	7.653***	3.118***	6.810***	3.789***	5.030***	16.219***

*p<.05 **p<.01 ***p<.001 (two-tailed tests)

Model 1 estimates the fuzzy set (fs111) which includes socioacoustic profiles which have high membership for timbre, loudness, and rhythm. Genres typically associated with this fuzzy set are Rap, Latin, and Contemporary Pop and Rock. The model was significant (Adjusted $R^2 = .187^{***}$). Age was the largest predictor ($\beta=-.367^{***}$) indicating that younger respondents had preferences for genres high on all three dimensions. There is a negative significant effect for occupational prestige ($\beta=-.130^{***}$). Thus, with decreases in occupational prestige there is a significant decrease in the likelihood of being within this set. Being Black is positive and significant ($\beta=.107^{**}$), while holding racist attitudes is significantly negative ($\beta=-.083^{*}$), although the effect is mild. Thus, the social profile of respondents which predict membership for preferences for acoustics which are high among all three dimensions are those with low occupational prestige, younger rather than older, Black and who are racially tolerant (even when controlling for education, income, religious preference, and political views), and being either an omnivore or a univore.

The second model predicts the effects of the full model on the fuzzy set which is high on timbre and loudness, but low on rhythm (fs110). The exemplar genre for this fuzzy set is Oldies. The model was significant (Adjusted $R^2 = .124^{***}$). Again we see being racially tolerant to be a significant predictor ($\beta=-.073^{*}$), although the effect is moderate. Respondents who self-identify as being neither White nor Black was a significant positive predictor for this fuzzy set ($\beta=.073^{**}$). Being a univore, liking 4 or fewer genres, is significantly positive ($\beta=.324^{***}$), and has the largest positive effect. Thus, respondents who have a small degree of musical tastes, in terms of the sheer

number of musical genres, tend to prefer a genre, such as Oldies, which is one of the most "omnivorous" musical genres, in terms of sharing acoustic information across genres.

Model 3 estimates the variance of fuzzy membership for the socioacoustic profile set that is high in timbre, but low on loudness and rhythm (fs100). The model was significant (Adjusted $R^2 = .097^{***}$). Exemplar genres for this set include Opera, Bluegrass and Gospel. Older respondents are significantly more likely to belong to this set ($\beta=.253^{***}$), as well as being female ($\beta=.130^{***}$). Those with no religious preference are less likely to belong to this set ($\beta=-.105^{*}$), which is not surprising given that Gospel is one of the exemplar genres of this set. Education is also a significant positive predictor of liking genres with high timbre, and low rhythm and loudness ($\beta=.093^{**}$). Thus, typical respondent profiles for this acoustic set are older, educated, females with some type of religious preference (not Protestant).

The next model estimates fuzzy membership for genres which are high in timbre, low in loudness and high in rhythm (fs101). The model was significant (Adjusted $R^2 = .033^{***}$). The exemplar genre for this set is Reggae. Again we see respondents who hold no type of religious preference to be a negative significant predictor ($\beta=-.094^{**}$). Model 4 is the first time that being an omnivore is a significant predictor ($\beta=.144^{***}$). Thus, it would appear that omnivores and those who hold some type of religious preference (e.g., not Protestant) are more likely to be members of this socioacoustic profile set. At first, it may appear odd that genre sets which include Reggae as the exemplar genre as being associated with being an omnivore (liking more than 11 musical genres). Yet, preceding the year 1993, the time of the General Social Survey, Reggae was a genre that was

becoming legitimate. In the mid 1980's the Grammys instituted a category for best Reggae album. Moreover, Figure 3.1 indicated that Reggae was a network star, alongside Mood/Easy Listening for the 'popular space.' Perhaps, the results illustrate the rise of a "New Omnivore" in the United States. One who appreciates music which has a strong beat and has high levels of musical surface, but which is not loud. Moreover, Reggae, as a genre, may represent a type of genre which is a safe "other" as compared to Rap and Latin/Mariachi/Salsa. The new omnivore in this study thus may be someone who indicates status by not only liking many genres, but one who prefers genres which have some ethnic and spiritual credibility.

Model 5 estimates fuzzy membership in socioacoustic profiles which are low in timbre, but high on both rhythm and loudness (fs011). The exemplar genre is Heavy Metal, which is typically one of the most disliked genres. The model was significant (Adjusted $R^2 = .086^{***}$). Significant predictors for this fuzzy set include being younger in age ($\beta=-.160^{***}$), not being female ($\beta=-.129^{***}$), not being Black ($\beta=-.158^{***}$), not being Conservative ($\beta=-.071^{**}$) and not being an omnivore ($\beta=-.108^{***}$). Thus regarding fuzzy membership in this socioacoustic profile set include young, male, non-Black, non-conservative respondents who are also not omnivores. The profile of those who prefer acoustic sets such as that exemplified with Heavy Metal tend to fit the general stereotype of the metal-head.

The next model estimates fuzzy membership in the socioacoustic profile set with genres which are low on both timbre and loudness, but high in rhythm (fs001). Mood/Easy Listening is an exemplar genre for this set. Overall, the model was significant

(Adjusted $R^2 = .043^{***}$). Age ($\beta=.106^{**}$) is a positive predictor, while both female ($\beta=-.088^{*}$), and Black ($\beta=-.118^{**}$), are negative predictors. The results appear to contrast with Heavy Metal, except that respondents are older, yet male and not Black. Moreover, being a univore is negatively significant ($\beta=-.122^{***}$), in fact, it is the strongest predictor of the model.

Model 7 is an odd socioacoustic profile set. It is comprised of genres which are low in timbre, high in loudness, and low in rhythm. There are no exemplar genres which represent this particular fuzzy set. This set is logically possible through the construction of the fuzzy sets. Thus, at least for the 18 genres from the GSS, it does not makes sense to have a genre with a socioacoustic profile set in which it is loud but low in either timbre or rhythm. Loudness thus does not appear to exist on its own, it must coexist wth a strong rhythm or strong timbre. The model was significant (Adjusted $R^2 = .061^{***}$). Being Black is a negative predictor ($\beta=-.114^{**}$), while being an omnivore ($\beta=-.110^{**}$) is significantly negative.

The final model estimates socioacoustic profiles sets which are low on timbre, loudness and rhythm. This is the corner in which most elite genres are located. Exemplar genres for this set include genres such as Classical, Jazz, and Folk. The model was significant (Adjusted $R^2 = .197^{***}$). Significant positive predictors include occupational prestige ($\beta=.133^{***}$), age ($\beta=.349^{***}$), being female ($\beta=.070^{**}$), and being racially intolerant ($\beta=.106^{**}$). Negative significant predictors include being Black ($\beta=-.068^{**}$), being politically intolerant ($\beta=-.082^{**}$) and being a univore ($\beta=-.112^{***}$); note that being an omnivore was not significant. Since this set includes elite musical genres, it is

somewhat surprising that income was not significant, nor was education. In fact, education and income were not significant across all models, except for Model 3. The results in the final model (fs000) suggest that the effects of high occupational prestige, being Female, being older, and not being Black predict membership in this set. What is interesting is that while being racially intolerant is important, being politically tolerant is also important.

The following summarizes the statistically significant net effects ($p < .05$) for each of the above models (note: a tilde is used to denote negative coefficients):

- fs111 ~prestige, ~age, black, ~racial intolerance
- fs110 race(other), ~racial intolerance, univore
- fs100 educ, age, female, ~no religion
- fs101 ~no religion, omnivore
- fs011 ~age, ~female, ~black, ~conservative, ~omnivore
- fs001 age, ~female, ~black, ~univore
- fs010 ~black, ~omnivore, univore
- fs000 prestige, age, female, ~black, ~political intolerance, racial intolerance, ~univore

Mapping the Sociologic of Social and Acoustic Space

In order to visualize the preceding results, a diagram with eight possible sides is created, thus producing a cube. Each corner is a different fuzzy set. The corners are arranged so that corresponding planes of the cube represent different levels of each of the three dimensions of sound: timbre, loudness and rhythm. Each regression equation is thus predicting a corner of acoustic space. Figure 5.2 depicts the structure of respondents' fuzzy set membership in socioacoustic profile sets. Only significant net effects for each regression equation are shown in the figure. The resulting cultural structure is represented

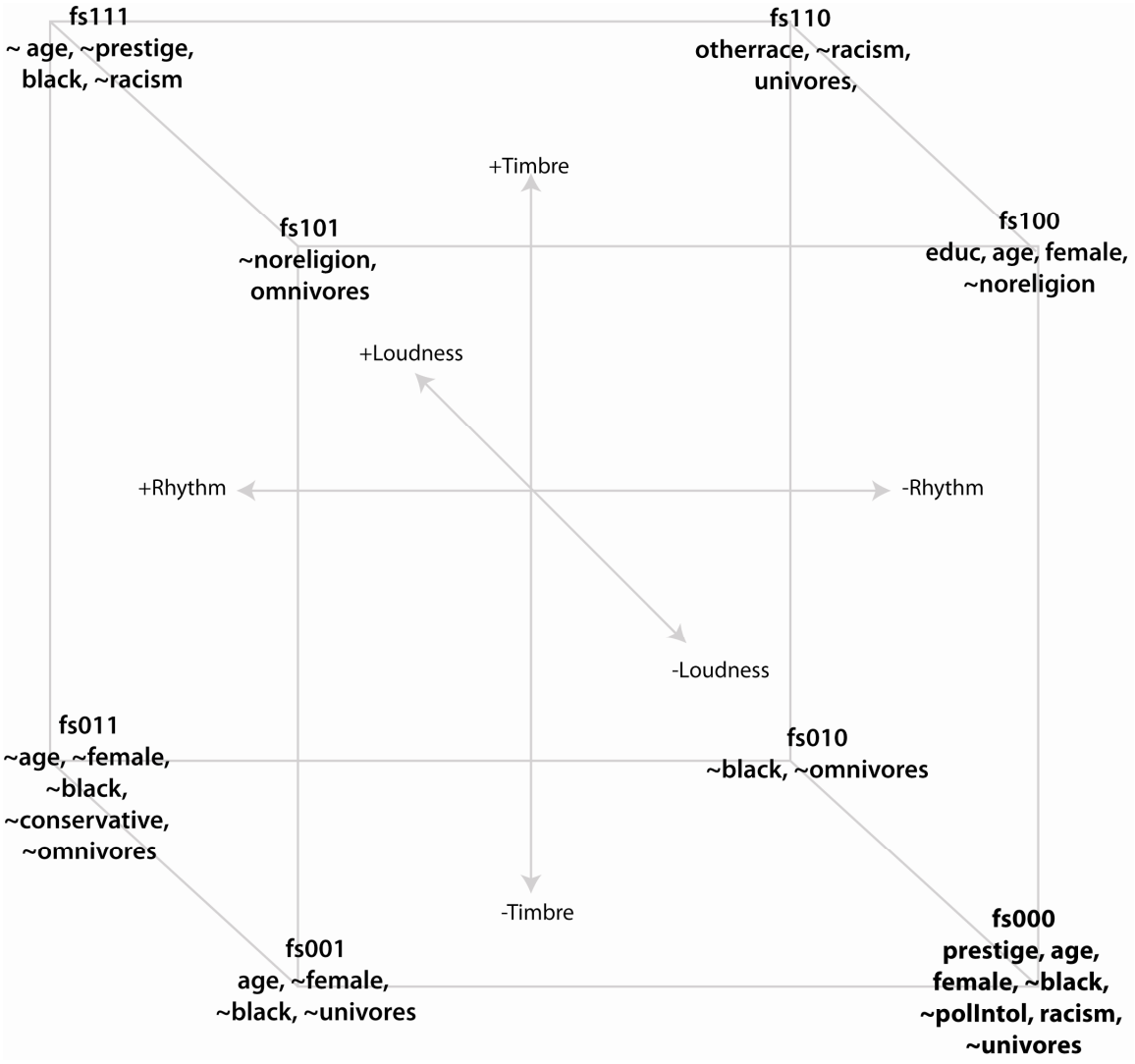
by a cube, with each corner representing each possible configuration of the three acoustic dimensions. A tilde (~) is used to denote a negative coefficient. The upper and bottom planes of the cube represent the timbre dimension. The top plane indicates a high degree of fuzzy membership within this dimension, while the bottom place indicates low membership on timbre. The left and right planes indicate membership in the rhythm dimension. The left plane indicates high membership in rhythm, while the right plane indicates low membership in this dimension. The front and back planes depict the loudness dimension, with the back plane indicating membership that is high along the loudness dimension, and the front plane indicating low membership.

Several aspects of the cube in Figure 5.2 are interesting. Regarding race, it would appear that respondents who self-identified as Black or another race (not Black or White) are located in clusters on the top and front, right parts of the cube. These areas of the space tend to be louder in acoustic intensity and higher in timbre. Compare this to areas which are indicated by those which were not Black (~Black). These areas tend to be at the bottom of the cube, which is low in timbre, and on both sides of the loudness and rhythm spectrum. Obviously, race is a significant aspect of sociodemographic space (just as race is important in cultural and social space) which structures the acoustic space, and the visual representation provided in the above figure supports this.

One of the most striking distinctions found in the cube of acoustics is that between the fuzzy sets fs111 and fs000. The fs111 corner is structured by low occupational prestige, being Black and not holding racist attitudes; while the fs000 corner is structured by high occupational prestige, not being Black and holding racist attitudes.

Thus, three of the main structuring dimensions of the socioacoustic cube appear to be race, racial attitudes and occupational prestige. Regarding being racially tolerant, the only two corners where it is a significant predictor is on the top back aspect of the cube, a dimension represented by increased loudness and high timbre.

Figure 5.2. The Socio-Acoustic Space of Acoustic Preferences



Regarding age, it appears to correspond to the likelihood of being female. For fs011, both age and female are negative predictors of the corner, while for both fs100 and fs000 they are both positive predictors of the respective particular corners. The disjunction between age and being female appears to occur in the corner fs001. It should be remembered that the exemplar genre for this particular socioacoustic profile corner is Mood and Easy Listening music. Thus, this appears to be the only corner where older males coexist.

Religious preference appears to be typically represented, not as being Protestant, but as having some type of religious preference besides being Protestant. Given that two of the corners are represented by Reggae and Gospel, it is not surprising that religious preference shows up as a significant predictor for these spaces, as both genres have roots in religious practice.

Regarding being either an omnivore or a univore, it was hypothesized that if the omnivore thesis is correct then we would expect for univores to be clustered in few corners of the acoustic cube. Omnivores, conversely, should be located throughout the cube. The reasoning is that omnivores, who are musically tolerant, should be acoustically tolerant as well. While if univores were musically intolerant, they should also be acoustically intolerant. The results indicate that there is only one corner in which being an omnivore is positively and significantly related to fuzzy membership within a particular socioacoustic profile set, that of fs101. Being an omnivore is not significantly associated with any other corner in a positive manner, although it is negatively associated with Model 5 and Model 7. Thus, it would appear that in terms of acoustic preferences,

being an omnivore is not a significant factor in determining membership in one's orientation towards sound across acoustic spaces. Thus, the omnivore thesis does not appear to be supported as omnivores are not found as significant predictors in all or most of the corners of the socioacoustic cube.

The socioacoustic sets which contain genres with strong boundaries are: fs101, fs011, and fs001. The other sets either contain a mixture of genres with strong and weak boundaries or are completely represented by weak boundaries. For the set fs101, we note that being an omnivore is a significant predictor of this corner. Thus being an omnivore is positively associated with strong boundaries. The set, fs011, finds omnivore negatively associated with strong boundaries, while fs001 being a univore is negatively associated with being a member of that set. Subsequent analysis were performed which created a variable for moderate omnivores, those who like 5 to 10 musical genres. Regression results demonstrate that moderate omnivores are significant positive predictors for these spaces (fs011, β=.073**; fs001, β=.091**). The results indicate that strong boundaries and being a cultural omnivore have a positive association. Specifically, strong acoustic boundaries are positively associated with preferring an increased number of genres. Thus, culturally tolerant respondents prefer musical genres which are clearly defined. This result is contrary to previous results in the preceding chapter which showed economic elites rejecting strong boundaries in favor of musical forms which share acoustic information. The difference is that the preceding analysis examined economic elites, while this analysis examines the sheer volume of the number of musical types preferred. The fact that neither income nor education are significantly related to these corners

indicates that these factors are not predictive of strong boundaries. One will note that each of these three sets is located where rhythm is high. The results suggest that what determines whether omnivores and moderate omnivores prefer these corners is determinant on a strong rhythm being present in a genre set, rather than boundary.

Concurrent with a modified version of the reconciliation thesis, it would appear that tolerance for acoustics co-occurs with tolerance for race and politics. Omnivores are located near acoustic locations where not holding racist attitudes is essential. Located within the elite acoustic space (fs000), there appears to be a two-fold aspect of tolerance operating. First, racial intolerance plays a key role, while political tolerance co-occurs in the same corner. This result suggests that for older, non-Black, females who are not univores, there is a two fold aspect of tolerance which helps structure the elite space of acoustics; racial intolerance and political tolerance. The effect of political tolerance suggests that the elite space is structured by liberal attitudes towards politics, though the variable conservative was not significant. Holding liberal political attitudes, regardless of political identity, is one factor for elites in this space.

Conclusion

The analyses in this chapter explored the concept of the socioacoustic profile. The socioacoustic profile represents a respondent's general orientation towards sound. Each respondent has an array of cultural preferences, in this case, sound. Using the acoustic feature sets extracted from representative musical samples from each of the 18 musical genres found in the General Social Survey, I constructed a cultural preference structure

which corresponds to the space of acoustic properties. In essence, I have disregarded individual preferences for particular musical genres and have taken preferences in total and used this to construct a cultural and social space. Once the socioacoustic profile was calculated, I then created socioacoustic profile sets based upon eight possible configurations. Additionally, I used sociodemographic variables to predict and construct an acoustic space, which is characterized by a cube. Each corner represents a socioacoustic profile characterized by fuzzy membership in each of three acoustic dimensions: timbre, loudness and rhythm.

In terms of acoustic properties, which structure genre sets according to how they *sound* relative to one another, it was found that education and income did not seem to matter for predicting membership within each socioacoustic profile set. However, occupational prestige did appear to structure the space of acoustics. Thus, in terms of occupationally-based status groups, there is a structuring mechanism for determining tastes for acoustic properties. The fact that distinctions between occupational status groups co-occurs with racial and political tolerance (although not with musical tolerance), lends support to the reconciliation thesis. The reconciliation thesis stems from the work of Bryson (1996) and argues that elites are musically tolerant, but it is a type of tolerance that is mediated in important ways. As was found in Bryson's (1996) research, political and racial tolerance play critical roles for determining acoustic tolerance. The omnivore thesis received little support, as there was no direct link between liking many types of genres and preferring many corners or socioacoustic profile sets. In terms of the acoustic space, omnivores were only positively associated with one corner. Thus, the results

suggest that when seeking significant factors for determining factors which lead to symbolic exclusion, we must take into account more than volume and type of capital; we must consider racial identities, age, gender, and types of racial and political intolerance as well. Overall, the results highlight the fact that there are multiple bases of inequality which structure acoustic preferences (Hall, 1992).

CHAPTER 6.

CONCLUSION AND FUTURE DIRECTIONS

This dissertation began with a quote from Bourdieu that stated, in essence: music, unlike drama and other forms of culture, has "nothing to say." My aim in this dissertation was to explore whether, in fact, music, as *sound*, has something to say. I began by focusing on developing a methodology for examining the "contents" of culture, specifically, musical genres. Building on the work from the field of Music Information Retrieval (MIR), the method extracted acoustic features from a set of genres. Songs were collected using a popular on-line music store which identified "essential" samples for each genre. Genres were chosen from a large national survey, the General Social Survey. Once the acoustic features were extracted from a database of song samples, machine learning techniques were used to measure the degree to which the acoustical properties could be used to define and classify the songs into their respective genres. Measures of fit, in the form of the True Positive Rate (TP Rate) were then defined as a measure of a musical genre's boundary. Boundaries ranged from crisp to fuzzy and represented the degree to which genres shared acoustic characteristics with other genres in the dataset. Further, using the literature as a guide, I grouped the acoustic features which were extracted into three broad dimensions of sound: timbre, rhythm and loudness.

One interesting result of the machine learning routines was the patterns of misclassifications which occurred. I argued that the misclassifications of genres, far from indicating that the feature extraction is inherently flawed, actually indicated something

important about the nature of musical genres; specifically, that the space of musical genes is messy, in the sense that genres, for all practical purposes share and borrow elements from one another. The resulting sociogram of the misclassifications provides a visual representation of the structure of the 18 musical genres used in this dissertation. The visual representation of the network of the misclassifications of acoustic properties created a structure which produced three spaces: popular, folk and elite. The results suggested that genres can be distinguished in terms of their acoustic properties, and that genres can be usefully measured through dimensions such as timbre, rhythm and loudness. The results suggest that it is useful to think of genres as omnivorous in their own right, with some genres sharing acoustic elements. The degree to which genres stand alone, as "islands of sound," thus is a variable which can be measured through the degree to which musical genres share acoustic information with one another.

Using Qualitative Comparative Analysis (QCA) I developed genre sets based upon the nature of their acoustic properties. The genres sets were composed of the degree to which musical genres held membership within dimensions of sound: timbre, rhythm and loudness. Also included in the genre sets was the measure of genre boundary, which consisted of the degree to which genres share acoustic properties with one another. I then recreated the space of lifestyles found in Bourdieu's *Distinction* (1984). The space of occupations was constructed by identifying and measuring the volume (high/low) and types (economic/cultural) of capital for each respondent from the General Social Survey (1993). Using correspondence analysis, I then related the acoustic space with the cultural and economic space. The results demonstrated that economic capital appeared to

distinguish between musical genre sets better than cultural capital. Increases in economic capital corresponded to a rejection of genres with strong boundaries. The moderate effects of cultural capital on structuring and locating genre sets suggested that other factors not included in the model should be considered.

With this in mind, I then created a *socioacoustic profile* for each respondent in the GSS. The socioacoustic profile represents an overall orientation towards sound. I used each respondent's array of preferences for 18 musical genres from the General Social Survey as an indicator of his/her respective tastes for dimensions of sound. In effect, the socioacoustic profile examines not one or two particular preferences for individual music genres; rather, it provides an overall score of how each respondent is orientated towards sound. Given that there are three socioacoustic profiles which correspond to three dimensions of sound (timbre, loudness and rhythm), eight possible configurations or membership sets are logically possible. Using the framework of fuzzy-set Qualitative Comparative Analysis, I calibrated respondent's degree of fuzzy membership within each of the fuzzy sets. Using OLS regression I predicted the likelihood of belonging to each fuzzy socioacoustic profile set.

Next, I analyzed the socioacoustic profile sets according to a set of variables from the General Social Survey (1993). Three guiding frameworks offer different pictures on how symbolic exclusion (Bryson, 1996) operates. The first framework, the homology thesis, states that elites prefer elite forms of culture, which may become legitimated by conferring aesthetic status upon them. Symbolic exclusion, defining what is legitimate to study in educational settings, thus may set the agenda for what are the proper types of

culture to consume. The omnivore thesis, on the other hand, argues that symbolic exclusion lessens with increased education, which thereby increases musical tolerance for all types of music. Efforts to reconcile the two frameworks center on the argument that education may lessen the effects of symbolic exclusion, but that it does so in patterned ways. The types of patterned tolerance are also linked to racial and political tolerance. The results offered moderate support for the homology thesis, little to no support for the omnivore thesis, and support for the reconciliation thesis.

The results in this dissertation suggest another way to measure musical preferences, via their acoustic properties. By deconstructing musical genres into their constituent formal properties of sound, we are in a position to combine musical genres in novel ways by finding links through acoustic space. In a sense, the structures of acoustic spaces, and the preferences associated with them, are not necessarily linked to any particular genre. Acoustic spaces can *house* any genre and thus may transform a genre into whatever the respective expectations of the audience may be. In other words, by moving away from genre labels, and moving towards constituent properties, one is able to delineate spaces less amenable to the dynamics of changing tastes.

The Dynamics of Acoustic Spaces

A test of this proposition is to measure acoustic properties of genres which are performed or transfunctionalized (Gottdeiner, 1985) into different lifestyle spaces. For instance, a performance of Heavy Metal at a venue traditionally associated with persons holding high levels of cultural capital, such as the Hollywood Bowl. According to the

proposition stated above, we would expect Heavy Metal to be transformed into a form with low levels of timbre, loudness and rhythm. The transformation would occur so as to fit with the acoustic expectations of an elite space. Conversely, a Classical Music piece performed at a rock concert, where audience members expect high volumes and strong rhythms, would be expected to change so that levels of timbre, loudness and rhythm would be accentuated. Here, genres would be transformed into the type of acoustic aspects associated with the orientations and lifestyles of the particular space of lifestyles, complete with the correlations of economic and cultural capital that are associated with that corner of the respective acoustic dimension. In other words, if the proposition is correct, we would expect genres to be transformed acoustically to fit the expectations of the particular class-based audience where it is performed. This prediction highlights something fundamental about genres and cultural objects in general. Namely, that cultural objects, and what constitutes their level of legitimacy, are open to struggle. The link between any particular cultural object and what is deemed to have elite status is an arbitrary relationship. Elites can define any cultural or musical object as legitimate, depending upon historical context and the given historical trajectory of a given society. There is no reason, per se, that Classical music and Opera are associated with elites. What are associated with elite spaces are the characteristics of the fundamental acoustics of the genres in question. These appear to be linked to the degree of immediacy and practically, what Bourdieu (1984) would argue, are those aspects that make any particular object tightly connected to the world of work and or leisure. Thus, by taking genres out of context and re-embedding them into new contexts, we should not only expect the acoustic

characteristics of the genre to change, but it should also highlight the contextual, and oft-changing, nature of what constitutes a legitimate cultural object.

Moving Beyond Class

The results also highlight that when we move beyond class (Hall, 1992; Erickson, 1996) and include other sources of inequality, such as race, age, gender, and racial and political attitudes, we find significant factors which structure the acoustic space. Specifically, race was found important for structuring acoustic spaces. Genres with characteristics low in timbre, loudness and rhythm were shown to be significant related to whether respondents self-identified as being African-American or not; the significance of race for determining the symbolic rejection of certain types of acoustic spaces. In a discussion of food types and classes, Bourdieu (1984) notes how elites prefer foods that are bland, light and subtle. Extending this to acoustic spaces, I found a distinction between acoustics which were soft, subtle and relatively bland and differences between social groups characterized by race, occupational prestige and racist attitudes. Individuals with strong feelings about the inferiority inherent in minority status, who were not Black, but who had high levels of occupational prestige tended to prefer the bland acoustic spaces. However, I did not find a significant relationship between these spaces and factors such as education or income. The results suggest that once we venture past class as the organizing principle of acoustic preferences, we note the importance of race as an organizing principle of the space of acoustic preferences.

Gender, as a source of acoustic preferences, was also shown to be a significant predictor. In terms of cultural consumption, research has considered gender to be a puzzle (Lizardo, 2006; Bihagen, 1999; Bihagen and Katz-Gerro, 2000; DiMaggio and Mohr, 1985; Katz-Gerro and Sullivan, 2004; Tepper, 2000; DiMaggio, 2003; McCall, 1992). Gender is strongly correlated with high-brow consumption. The results of my study support these previous findings. Gender was shown to be associated with acoustic spaces significantly related to elite acoustic spaces. Thus, gender is an important factor for structuring acoustic preferences. Moving beyond considerations of economic and cultural capital thus provides a more complex picture of acoustic preferences. As Hall (1992, pg. 278) notes, "In the postindustrial/postmodern/post-Cold War era, we have to be struck by the salience of multiple boundaries, many of them based on nonclass axes of difference." The results provided herein highlight the multiplicity of nonclass axes of difference, such as race and gender.

Future Directions

Overall, the aim of this dissertation was to develop a methodology to measure and analyze sociology *of sound*. Given increases in computing power and the rise of large digitized musical databases, this methodology has become practical. Since there is little to no work within the field of sociology that examines the acoustical contents of musical genres, the work in this dissertation is somewhat exploratory. Thus, there are several ways that the work in this dissertation could be expanded.

Solidarity and Acoustics

Bergesen's (1979) analysis of solidarity and music forms could be re-examined in light of the preceding acoustic analysis. Bergesen analyzed musical genres in terms of their syntactical elements. Building on the work of Basil Bernstein (1971), this research examines the role of solidarity in affecting whether musical syntax can be characterized as elaborate or restricted. The elaborated dimension indicates low solidarity and thus requires or cultural work to communicate across social space; while the restricted dimension indicates a high degree of solidarity because there is a greater degree of common stocks of knowledge, thus less cultural work is needed to communicate. This type of analysis could be expanded using acoustics by exploring whether solidarity is related to variances in timbre, rhythm and loudness. For example, the musical group, The Beatles, started their career together as a tightly bound unit characterized by high levels of group solidarity. This is evidenced by them dressing alike, having similar hair styles, and performing together constantly. In Durkheimian (1893) terms, we may think of this as mechanical solidarity. By the end of their career, they no longer dressed alike, their hairstyles and clothing were different, and they began to pursue solo careers. Whether this was a move towards a form of organic solidarity is unclear. However, the band's move certainly suggests a change in the form of their solidarity. Using acoustic analysis of their music, it may be possible to detect changes in timbre, rhythm and loudness by analyzing changes in their songs as they progressed from the beginning to the end of their musical career as a band, and thus providing an acoustic measure of solidarity.

The Socioacoustic Profile and the Semantic Differential

One cannot help but be struck by the correspondence between the dimensions of the semantic differential (Osgood, 1957) and the three acoustic dimensions used in this dissertation. The semantic differential is a three-dimensional measure of cultural meaning (cite), which has also been used in social psychology in the form of Affect Control Theory (Smith-Lovin & Heise, 1988; MacKinnon, 1994; Heise, 2007). The three dimensions are Good/Bad (Evaluation), Strong/Weak (Potency), and Active/not-active (Activity). Note how timbre (bright/dull) suggests the good/bad dimension, how the potency dimension is related to the loudness dimensions, and the activity dimension suggests the rhythm dimension. Osgood was attempting to distill fundamental aspects of cultural meaning by delineating, through statistical procedures, basic dimensions of culture. He did this by performing factor analysis on semantic differential scales. Osgood found three fundamental ways that individuals describe and evaluate words: evaluation, potency and activity. Evaluation is related to the distinction between good and bad; potency is distinguished between strong and weak; and activity is related to the distinction between active and passive. Certainly the correspondence between the socioacoustic profiles and the semantic differential beg the question of whether there is an analytical link between the two approaches to measuring culture.

Cross-cultural Comparisons

Finally, the preceding analyses beg for cross-cultural comparison. Lamont (1992) has shown how differences between France and the United States produced different implications for the framework found in Bourdieu's work. In this dissertation we saw

how one's location within social space was related to aspects of sound, e.g., elites preferring music low in timbre, rhythm and loudness. A cross-cultural analysis would provide a way to analyze whether orientations towards sound are culture specific, or whether there are universal stances towards sound which are related to one's location in social space.

Summary

In sum, cultural tastes are important because they can mirror and affect patterns of social and economic inequality. High status groups may view non-elite cultural objects, such as music, as less than desirable. Cultural objects can not only serve as markers of status (Weber, 1968), but they may also serve as forms of symbolic exclusion (Bryson, 1996). Symbolic exclusion refers to boundary work (Lamont, 1992) and represents a process where cultural tastes help reproduce attitudes towards cultural objects which help define which objects are legitimate and which are not. As Bryson (1996) notes, "individuals use cultural taste to reinforce symbolic boundaries between themselves and categories of people they dislike." Thus, examining patterns of cultural taste, in terms of inclusion and exclusion, reveals important processes of how boundaries between social groups are reinforced. By extending these processes to the realm of acoustics we find social processes operating in unexpected ways. Thus, not only does music have something to say, it does so in ways that demand to be heard.

APPENDIX A.

SONGS INCLUDED IN THE ANALYSIS

Table A.1. Songs Used in the Analyses

Song Title	Artist	Genre
Adagio in G Minor for Strings and Organ	Baroque Chamber Orchestra & Ettore Stratta	Classical music-symphony and chamber
Aria Mit 30 Veränderungen, BWV 988 "Goldberg Variations": Aria	Wilhelm Kempff	Classical music-symphony and chamber
The Art of Fugue, BWV1080: Contrapunctus I	Emerson String Quartet	Classical music-symphony and chamber
Brandenberg Con No.3 in G, BWV 1048: I. Allergo	Philharmonia Virtuosi & Richard Kapp	Classical music-symphony and chamber
Canon and Gigue in D Major	Academy of Ancient Music & Christopher Hogwood	Classical music-symphony and chamber
Concerto for 2 Violins in D Minor, BWV 1043: I. Vivace	Hilary Hahn, Jeffrey Kahane, Los Angeles Chamber Orchestra & Margaret Batjer	Classical music-symphony and chamber
Concerto Grosso Op. 6, No. 3 in C Minor: III. Allegro	Academy of St. Martin in the Fields & Sir Neville Marriner	Classical music-symphony and chamber
Concerto No. 1 in D Minor for One Harpsichord, BWV 1052: I. Allegro	Anton Heiller, Antonio Janigro & I Solisti di Zagreb	Classical music-symphony and chamber
Concerto No.2 in F Major, BWV1047, I. Allegro	Orchestra of The Age of Enlightenment	Classical music-symphony and chamber
Music for the Funeral of Queen Mary 1695: Drum Recessional	Choir Of King's College, Cambridge & Stephen Cleobury	Classical music-symphony and chamber
Gloria in D: I. Gloria in Excelsis Deo	Academy of Ancient Music, Choir Of King's College, Cambridge & Stephen Cleobury	Classical music-symphony and chamber
Hail, Bright Cecilia!, Z. 328 Ode for St. Cecilia's Day: Hail, Bright Cecilia, Hail to Thee!	Charles Daniels, Florian Deuter, Gabrieli Consort, Gabrieli Players, Julian Podger, Paul McCreesh, Peter Harvey & Timothy Wilson	Classical music-symphony and chamber
Jesu, Joy of Man's Desiring	Leon Fleisher	Classical music-symphony and chamber
The Messiah: Behold, I Tell You a Mystery... The Trumpet Shall Sound	Scholars Baroque Ensemble	Classical music-symphony and chamber
The Messiah: Hallelujah!	Scholars Baroque Ensemble	Classical music-symphony and chamber

Song Title	Artist	Genre
Music for the Royal Fireworks, HWV351 (1749): La Réjouissance	English Concert & Trevor Pinnock	Classical music-symphony and chamber
Sinfonia - The Arrival of the Queen of Sheba	Edition Monastery Maulbronn	Classical music-symphony and chamber
Suite for Solo Cello No. 1 in G Major, BWV 1007: I. Prélude	Yo-Yo Ma	Classical music-symphony and chamber
Suite No. 3 in D, BWV 1068: II. Air	Academy of St. Martin in the Fields, Sir Neville Marriner & Thurston Dart	Classical music-symphony and chamber
Te Deum for Soloists, Chorus and Orchestra, H 146: Prélude. Rondeau	Les Musiciens du Louvre-Grenoble & Marc Minkowski	Classical music-symphony and chamber
Toccata and Fugue in D Minor, BWV 565: I. Toccata	Simon Preston	Classical music-symphony and chamber
Trumpet Tune in D	London Festival Orchestra & Tutti Camarata	Classical music-symphony and chamber
Violin Concerto, Op. 8, No. 4, RV 297 "Winter": II. Largo	Academy of Ancient Music, Catherine Mackintosh, Christopher Hogwood & Nigel North	Classical music-symphony and chamber
Water Music Suite No.2 in D, HWV 349: 12. Alla Hornpipe	English Baroque Soloists & John Eliot Gardiner	Classical music-symphony and chamber
The Well-Tempered Clavier, Book II: Prelude and Fugue in F-Sharp, BWV 882	András Schiff	Classical music-symphony and chamber
So What	Miles Davis	Jazz
Take Five	Dave Brubeck	Jazz
God Bless the Child	Billie Holiday	Jazz
Take the 'A' Train	Various Artists	Jazz
Koko	Charlie Parker	Jazz
Goodbye Pork Pie Hat	Charles Mingus	Jazz
Impressions	John Coltrane	Jazz
Heebie Jeebies	Louis Armstrong	Jazz
My Funny Valentine	Chet Baker	Jazz
Straight, No Chaser	Thelonious Monk	Jazz
Desafinado (Off Key)	Charlie Byrd & Stan Getz	Jazz
Body and Soul	Coleman Hawkins & Billy Byers and His Orchestra	Jazz
Sing, Sing, Sing	Benny Goodman & His Orchestra	Jazz

Song Title	Artist	Genre
Jumpin' at the Woodside (1938 Version)	Count Basie & Quincy Jones & His Orchestra	Jazz
Flying Home	Charlie Christian & Benny Goodman Sextet	Jazz
A Night in Tunisia	Dizzy Gillespie & Dizzy Gillespie & His Orchestra	Jazz
How High the Moon (1st Take)	Ella Fitzgerald	Jazz
Waltz for Debby	Bill Evans Quartet	Jazz
Honeysuckle Rose	Django Reinhardt & Stéphane Grappelli	Jazz
Lester Leaps In	Count Basie	Jazz
Bouncing With Bud	Bud Powell Trio	Jazz
Tiger Rag	Art Tatum	Jazz
Sweet Lorraine	The Nat "King" Cole Trio	Jazz
Three O'Clock in the Morning	Dexter Gordon	Jazz
The Thrill Is Gone (1969 Single Version)	B.B. King	Blues or Rhythm and Blues
Cross Road Blues	Robert Johnson	Blues or Rhythm and Blues
Stormy Monday Blues	T-Bone Walker	Blues or Rhythm and Blues
Boogie Chillen	John Lee Hooker	Blues or Rhythm and Blues
Dust My Blues	Elmore James	Blues or Rhythm and Blues
Shake Rattle and Roll	Big Joe Turner	Blues or Rhythm and Blues
St. Louis Blues (78rpm Version)	Bessie Smith	Blues or Rhythm and Blues
Born Under a Bad Sign	Albert King	Blues or Rhythm and Blues
I Asked for Water (She Gave Me Gasoline)	Howlin' Wolf	Blues or Rhythm and Blues
Texas Flood	Stevie Ray Vaughan & Double Trouble	Blues or Rhythm and Blues
Ball n' Chain	Big Mama Thornton	Blues or Rhythm and Blues
Smoking Gun	Robert Cray	Blues or Rhythm and Blues
Bad to the Bone	George Thorogood & The Destroyers	Blues or Rhythm and Blues
Women Be Wise	Sippie Wallace	Blues or Rhythm and Blues
Crazy Dream	Los Lonely Boys	Blues or Rhythm and Blues
Wang Dang Doodle (Single Version)	Koko Taylor	Blues or Rhythm and Blues
Devil Got My Woman	Skip James	Blues or Rhythm and Blues

Song Title	Artist	Genre
Nobody Knows You When You're Down and Out	Eric Clapton	Blues or Rhythm and Blues
Lie to Me	Jonny Lang	Blues or Rhythm and Blues
I Pity the Fool	Bobby "Blue" Bland	Blues or Rhythm and Blues
Damn Right, I've Got the Blues	Buddy Guy	Blues or Rhythm and Blues
Love Me Like a Man	Bonnie Raitt	Blues or Rhythm and Blues
Who Do You Love?	Bo Diddley	Blues or Rhythm and Blues
I Believe I'll Dust My Broom	Robert Johnson	Blues or Rhythm and Blues
My Babe (Single)	Little Walter	Blues or Rhythm and Blues
This Land Is Your Land	Woody Guthrie	Folk music
The Times They Are A-Changin'	Bob Dylan	Folk music
Blowin' in the Wind	Peter, Paul And Mary	Folk music
We Shall Overcome	Pete Seeger	Folk music
Big Yellow Taxi	Joni Mitchell	Folk music
Tom Dooley	The Kingston Trio	Folk music
If I Had a Hammer	Trini Lopez	Folk music
Michael	Michael	Folk music
I Ain't Marching Anymore	Phil Ochs	Folk music
Goodnight Irene	The Weavers	Folk music
Talkin' Bout a Revolution	Tracy Chapman	Folk music
Reason to Believe	Tim Hardin	Folk music
The Sound of Silence	Simon & Garfunkel	Folk music
Follow	Richie Havens	Folk music
Pick a Bale of Cotton	Leadbelly	Folk music
Me and Bobby McGee	Kris Kristofferson	Folk music
Wreck of the Edmund Fitzgerald	Gordon Lightfoot	Folk music
Puff (The Magic Dragon)	Peter, Paul And Mary	Folk music
Where Have All the Flowers Gone?	The Kingston Trio	Folk music
Both Sides Now	Judy Collins	Folk music
Walk Right In	Rooftop Singers	Folk music
The City of New Orleans	Arlo Guthrie	Folk music
Suzanne	Leonard Cohen	Folk music
Pink Moon	Nick Drake	Folk music
If I Were a Carpenter	Tim Hardin	Folk music
Get Up, Stand Up	Bob Marley	Reggae

Song Title	Artist	Genre
Redemption Song	Bob Marley	Reggae
The Harder They Come	Jimmy Cliff	Reggae
Legalize It	Peter Tosh	Reggae
Red Red Wine	UB40	Reggae
Is This Love	Bob Marley	Reggae
Bad Boys	Inner Circle	Reggae
Many Rivers to Cross	Jimmy Cliff	Reggae
I Shot the Sheriff	Bob Marley	Reggae
Tomorrow People	Ziggy Marley & The Melody Makers	Reggae
Israelites	Desmond Dekker	Reggae
Here Comes the Hotstepper (Heartical Mix)	Ini Kamoze	Reggae
One Love / People Get Ready	Bob Marley	Reggae
Ring the Alarm	Tenor Saw	Reggae
Guess Who's Coming to Dinner (12" Version)	Black Uhuru	Reggae
Oh Carolina	Shaggy	Reggae
The Tide Is High	John Holt & The Paragons	Reggae
You Don't Love Me (No No No)	Dawn Penn	Reggae
No Woman, No Cry (Live Version)	Bob Marley	Reggae
I Can See Clearly Now	Johnny Nash	Reggae
54-46 (That's My Number)	Toots & The Maytals	Reggae
Get Busy	Sean Paul	Reggae
Murder She Wrote	Chaka Demus & Pliers	Reggae
Electric Boogie (Radio Mix)	Marcia Griffiths	Reggae
Marcus Garvey	Burning Spear	Reggae
Yeah	Yolanda Adams	Gospel music
Encourage Yourself	Donald Lawrence	Gospel music
I'm So Glad (Trouble Don't Last Always)	Sam Cooke & The Soul Stirrers	Gospel music
I'll Take You There	The Staple Singers	Gospel music
Imagine Me	Kirk Franklin	Gospel music
Total Praise	Richard Smallwood & Vision	Gospel music
Let the Praise Begin (Live)	Fred Hammond & Radical for Christ	Gospel music

Song Title	Artist	Genre
In the Upper Room	Mahalia Jackson	Gospel music
Let's Dance (Remix)	Hezekiah Walker & The Love Fellowship Choir	Gospel music
Oh Happy Day	The Edwin Hawkins Singers	Gospel music
Hush	The Blind Boys Of Alabama	Gospel music
Tomorrow	The Winans	Gospel music
Nobody Knows the Trouble I See	The Dixie Hummingbirds	Gospel music
Swing Low, Sweet Chariot	The Mighty Clouds of Joy	Gospel music
No Charge	Shirley Caeser	Gospel music
Get Right Church	Rev. James Cleveland & The Voices of Tabernacle	Gospel music
Revolution	Kirk Franklin	Gospel music
Optimistic	Sounds of Blackness	Gospel music
Everything's Gonna Be Alright	Al Green	Gospel music
We Fall Down	Donnie McClurkin	Gospel music
Shackles (Praise You)	Mary Mary	Gospel music
Amazing Grace	Mahalia Jackson	Gospel music
Amen	The Soul Stirrers	Gospel music
I L-O-V-E U	Take 6	Gospel music
When the Saints Go Marching In	Clara Ward & The Clara Ward Singers	Gospel music
The Woods so Wild, Variations for Keyboard, MB 85	Julian Bream	Classical music-symphony and chamber
Pavan, Lachrimae Antiquae	Fretwork	Classical music-symphony and chamber
L'affligee	John Kitchen	Classical music-symphony and chamber
Violin Partita No. 3 in E Major, BWV1006, I. Prld	Lucy van Dael	Classical music-symphony and chamber
Suite for Solo Cello No. 1 in G Major, BWV 1007: I. Prélude	Yo-Yo Ma	Classical music-symphony and chamber
Goldberg Variations, BWV988, Aria	Canadian Brass, Charles Daellenbach, Christopher Cooper, Eugene Watts, Jens Lindemann & Ronald Romm	Classical music-symphony and chamber
Chromatic Fantasy In D Minor, BWV 903	Glenn Gould	Classical music-symphony and chamber
Solo Sonata No. 2 in D Minor, RV 12: III. Gavotta: Presto	Nigel Kennedy & Berliner Philharmoniker	Classical music-symphony and chamber

Song Title	Artist	Genre
Quintet in C Major, Op. 25: I. Larghetto	Europa Galante	Classical music-symphony and chamber
String Quartet in G Minor, Op. 74, No. 3 "The Horseman": I. Allegro	Emerson String Quartet	Classical music-symphony and chamber
Quartet in F Major for Oboe and Strings, K. 370: II. Adagio	Felix Galimir, Fortunato Africo, Harold Gomberg & Samuel Rhodes	Classical music-symphony and chamber
Sonata in A Minor, K. 330: I. Allegro maestoso	Alfred Brendel	Classical music-symphony and chamber
Sonata No. 17 in D Minor, Op. 31, No. 2, "The Tempest," I. Largo, Allegro	Bruce Hungerford	Classical music-symphony and chamber
String Quartet No. 12 in E Flat, Op. 127: I. Maestoso - Allegro	Emerson String Quartet	Classical music-symphony and chamber
Piano Trio No.5 in D, Op.70 No.1 - "Geistertrio": 1. Allegro Vivace E Con Brio	Beaux Arts Trio, Bernard Greenhouse, Daniel Guilet & Menahem Pressler	Classical music-symphony and chamber
Eine kleine Nachtmusik, Serenade in G Major, K. 525: I. Allegro	Academy of St. Martin in the Fields & Sir Neville Marriner	Classical music-symphony and chamber
Symphony No.5 in C Minor: I. Allegro con brio	Orchestre Révolutionnaire et Romantique & John Eliot Gardiner	Classical music-symphony and chamber
Sonata in C Major, K. 279: I. Allegro	Daniel Barenboim	Classical music-symphony and chamber
Quintet in A Minor, Op. 25: Minuetto	Europa Galante	Classical music-symphony and chamber
Die Zauberflöte, K. 620: Overture	Ferenc Fricsay & Radio Symphony Orchestra of Berlin	Classical music-symphony and chamber
Piano Sonata No. 14 in C Sharp Minor, Op. 27, No. 2, "Moonlight": I. Adagio sostenuto	Alfred Brendel	Classical music-symphony and chamber
Clarinet Quintet in A Major, K. 622: II. Larghetto	Gervase De Peyer & Melos Ensemble Of London	Classical music-symphony and chamber
Requiem, K. 626: I. Introitus - Requiem	Arnold Schoenberg Chor, Concentus Musicus Wien & Nikolaus Harnoncourt	Classical music-symphony and chamber
Symphony No. 6 in F, Op. 68 "Pastoral": III. Lustiges Zusammensein Der Landleute (Allegro)	Berliner Philharmoniker & Herbert von Karajan	Classical music-symphony and chamber
Symphony No. 40 in G Minor, K. 550: I. Molto allegro	Günter Wand & NDR Sinfonieorchester	Classical music-symphony and chamber

Song Title	Artist	Genre
Egmont - Overture for Orchestra, Op. 84	London Symphony Orchestra & Wyn Morris	Classical music-symphony and chamber
Horn Concerto No.4 in E Flat, K.495: 3. Rondo (Allegro Vivace)	Academy of Ancient Music, Anthony Halstead & Christopher Hogwood	Classical music-symphony and chamber
Le Nozze Di Figaro, K.492: "Voi Che Sapete"	Magdalena Kozená, Michel Swierczewski & Prague Philharmonia	Classical music-symphony and chamber
Concerto in C, Hob. VIIb/1: III. Allegro molto	Daniel Barenboim, English Chamber Orchestra & Jacqueline Du Pre	Classical music-symphony and chamber
Violin Concerto in D, Op. 61: II. Larghetto	Jascha Heifetz, Boston Symphony Orchestra & Charles Munch	Classical music-symphony and chamber
Fanfare for the Common Man	Aaron Copland & London Symphony Orchestra	Classical music-symphony and chamber
Adagio for Strings from the String Quartet, Op. 11	Leonard Bernstein & New York Philharmonic	Classical music-symphony and chamber
Carmina Burana: I. O Fortuna - Coro	Berliner Philharmoniker & Sir Simon Rattle	Classical music-symphony and chamber
Piano Concerto In F Major: III. Allegro Agitato	Howard Shelley & Philharmonia Orchestra	Classical music-symphony and chamber
Concierto de Aranjuez: II. Adagio	Chamber Orchestra Of Europe, John Eliot Gardiner & Julian Bream	Classical music-symphony and chamber
Trois Gymnopedies: I. Lent Et Douloureux	Aldo Ciccolini	Classical music-symphony and chamber
Short Ride in a Fast Machine	City of Birmingham Symphony Orchestra & Sir Simon Rattle	Classical music-symphony and chamber
The Planets, Op. 32: IV. Jupiter, the Bringer of Jollity	London Symphony Orchestra & Sir Colin Davis	Classical music-symphony and chamber
The Unanswered Question	Michael Tilson Thomas & San Francisco Symphony	Classical music-symphony and chamber
Rodeo: IV. Hoe-Down	Michael Tilson Thomas & San Francisco Symphony	Classical music-symphony and chamber
Festive Overture, Op. 96	Christopher Lyndon-Gee & New Zealand Symphony Orchestra	Classical music-symphony and chamber
Symphony No. 1 in D Major, Op. 25 - "Classical": I. Allegro con brio	St. Petersburg Philharmonic Orchestra & Yuri Temirkanov	Classical music-symphony and chamber
Young Person's Guide to the Orchestra, Fugue: Full Orchestra (Allegro Molto)	Eugene Ormandy & Philadelphia Orchestra	Classical music-symphony and chamber

Song Title	Artist	Genre
Moritat von Mackie Messer, (Mack the Knife) [From The Threepenny Opera]	John Mauceri, RIAS Kammerchor, Berlin & Ute Lemper	Classical music-symphony and chamber
Candide Overture	Leonard Slatkin & National Philharmonic Orchestra	Classical music-symphony and chamber
The Lamb	The Sixteen	Classical music-symphony and chamber
Somewhere from "West Side Story" Symphonic Dances	Leonard Bernstein & Los Angeles Philharmonic	Classical music-symphony and chamber
Electric Counterpoint: III. Fast	David Tanenbaum	Classical music-symphony and chamber
Symphony No. 5 in D minor, Op. 47: II. Allegretto	London Symphony Orchestra & Mstislav Rostropovich	Classical music-symphony and chamber
Finlandia	London Philharmonic Orchestra & Sir Adrian Boult	Classical music-symphony and chamber
Sinfonietta: I. Allegretto-Allegro-Maestoso	Deutsches-Symphonie Orchester Berlin & Eliahu Inbal	Classical music-symphony and chamber
The Firebird: Finale	Alexander Rahbari & Belgian Radio and Television Philharmonic Orchestra	Classical music-symphony and chamber
Peter Grimes: Act II. Interlude 3	London Symphony Orchestra & Sir Colin Davis	Classical music-symphony and chamber
Naxos Quartet No. 3: IV. Fugue	Maggini Quartet	Classical music-symphony and chamber
Le Marteau Sans Maître: Commentaire i de "Bourreaux de Solitude"	Ensemble InterContemporain, Hilary Summers & Pierre Boulez	Classical music-symphony and chamber
In the Mood	Glenn Miller & Glenn Miller and His Orchestra	Big Band_Swing
Sing, Sing, Sing	Benny Goodman & His Orchestra	Big Band_Swing
Take the a Train	Billy Strayhorn	Big Band_Swing
Jumpin' at the Woodside (1938 Version)	Count Basie & Quincy Jones & His Orchestra	Big Band_Swing
Minnie the Moocher (Theme Song)	Cab Calloway	Big Band_Swing
Body and Soul	Coleman Hawkins & Billy Byers and His Orchestra	Big Band_Swing
Begin the Beguine (From the Musical Comedy "Jubilee")	Artie Shaw & Artie Shaw & His Orchestra	Big Band_Swing
All Of Me	Billie Holiday	Big Band_Swing
Lester Leaps In	Count Basie	Big Band_Swing

Song Title	Artist	Genre
King Porter Stomp	Fletcher Henderson	Big Band_Swing
Solo Flight	Charlie Christian	Big Band_Swing
How High the Moon (1st Take)	Ella Fitzgerald	Big Band_Swing
Flying Home (Single Version)	Illinois Jacquet, Lionel Hampton & Quincy Jones & His Orchestra	Big Band_Swing
Boogie Woogie Bugle Boy (Single)	The Andrews Sisters	Big Band_Swing
Honeysuckle Rose	Django Reinhardt & Stéphane Grappelli	Big Band_Swing
Choo Choo Ch'Boogie (1946 Single Version)	Louis Jordan & His Tympany Five	Big Band_Swing
Jump, Jive An' Wail	Louis Prima, Keely Smith, Sam Butera & The Witnesses	Big Band_Swing
It Don't Mean a Thing (If It Ain't Got That Swing)	Duke Ellington	Big Band_Swing
God Bless the Child	Billie Holiday	Big Band_Swing
Caravan	Duke Ellington & Duke Ellington & His Famous Orchestra	Big Band_Swing
Blue Skies	Frank Sinatra & Tommy Dorsey & His Orchestra	Big Band_Swing
Sweet Lorraine	The Nat "King" Cole Trio	Big Band_Swing
Artistry In Rhythm	Stan Kenton	Big Band_Swing
I'm Getting Sentimental Over You	Tommy Dorsey & Tommy Dorsey & His Orchestra	Big Band_Swing
Four Brothers	Woody Herman & His Orchestra	Big Band_Swing
Tosca, Act I: "Tre sbirri, una carrozza"	Angelo Mercuriali, Coro del Teatro alla Scala di Milano, Orchestra del Teatro alla Scala di Milano, Tito Gobbi & Victor De Sabata	Opera
Tosca, Act III: "E lucevan le stelle"	Coro del Teatro alla Scala di Milano, Orchestra del Teatro alla Scala di Milano & Victor De Sabata	Opera
Act I, Der Vogelfänger Bin Ich Ja	Walter Berry	Opera
Act I, Wie Stark Ist Nicht Dein Zauberton	Nicolai Gedda	Opera
Rigoletto, Act II, Parmi Veder Le Lagrime	Giuseppe di Stefano, Maria Callas & Tito Gobbi	Opera

Song Title	Artist	Genre
Tosca: "E lucevan le stelle"	Chorus of the Royal Opera House, Covent Garden, Luciano Pavarotti & Sir Edward Downes	Opera
Tosca: "E Lucevan Le Stelle"	Giuseppe Sinopoli, Philharmonia Orchestra & Plácido Domingo	Opera
Werther: "Pourquoi Me Réveiller, Ô Souffle Du Printemps?"	Chorus of the Royal Opera House, Covent Garden, José Carreras & Sir Colin Davis	Opera
Die Walküre: "Winterstürme Wichen Dem Wonnemond"	Erich Leinsdorf, Jon Vickers & London Symphony Orchestra	Opera
Romeo et Juliette: "Allons ! Jeunes Gens ! Allons! Belles Dames !"	Michel Plasson & Orchestre National du Capitole de Toulouse	Opera
Macbeth, Act IV, Perfidi! All'anglo contro me... Pieta, rispetto, amore	Thomas Hampson	Opera
La Bohème: "Che gelida manina"	Carlo Bergonzi, Orchestra dell'Accademia Nazionale di Santa Cecilia & Tullio Serafin	Opera
Mefistofele: "Son Lo Spirito Che Nega Sempre Tutto"	Julius Rudel, Münchner Rundfunkorchester & Samuel Ramey	Opera
Macbeth: Ah, la paterna mano	Ramón Vargas	Opera
Don Giovanni, K. 527: "Fin ch'han dal vino"	Gerald Moore, Ferenc Fricsay & Radio Symphony Orchestra of Berlin	Opera
The Valkyrie, Feuerzaube 'Magic Fire Music'	James Morris	Opera
Act II, En Fermant Les Yeux, Je Vois La-Bas	Angela Gheorghiu & Roberto Alagna	Opera
Don Giovanni, Ossia Il Dissoluto Punito, K.527: "Fin Ch'han Dal Vino"	Bryn Terfel, London Philharmonic Orchestra & Sir Georg Solti	Opera
Encore: Nessun dorma	José Carreras, Luciano Pavarotti, Orchestra del Maggio Musicale Fiorentino, Orchestra del Teatro dell'Opera di Roma, Plácido Domingo & Zubin Mehta	Opera
La Traviata: "Di Provenza Il Mar, Il Suol"	John Pritchard, Orchestra del Maggio Musicale Fiorentino & Robert Merrill	Opera
Tosca: Act I, Recondita armonia	Andrea Bocelli	Opera

Song Title	Artist	Genre
Tosca: "E lucevan le stelle"	Francesco Molinari-Pradelli, Mario del Monaco & Orchestra dell'Accademia di Santa Cecilia	Opera
Le nozze di Figaro, K. 492: "Non più andrai"	Hermann Prey, Karl Böhm & Orchester der Deutschen Oper Berlin	Opera
La Bohème, Act I, Che gelida manina	Jussi Björling	Opera
La Bohème: Act I, "Che gelida manina"	Berliner Philharmoniker, Herbert Von Karajan & Luciano Pavarotti	Opera
Les Nuits d'été: III. Sur les lagunes	Dame Janet Baker, New Philharmonia Orchestra & Sir John Barbirolli	Opera
Tosca: Act II, "Vissi d'arte"	Angela Gheorghiu	Opera
Ariadne Auf Naxos: Opera: "Es Gibt Ein Reich, Wo Alles Rein Ist" (Ariadne)	Herbert Von Karajan & Philharmonia Orchestra	Opera
Un bel dì vedremo from Madama Butterfly	Kiri Te Kanawa, London Philharmonic Orchestra & Sir John Pritchard	Opera
Il Trovatore: "Soli or Siamo"..."Condotta Ell'era In Ceppi"	Franco Corelli, Giulietta Simionato, Herbert Von Karajan & Wiener Philharmoniker	Opera
Rodelinda, HWV 19: Ritorna, oh caro	Renée Fleming, Orchestra of the Age of Enlightenment & Harry Bicket	Opera
Le nozze di Figaro, K. 492: "Non So Più Cosa Son, Cosa Faccio"	Frederica von Stade, Herbert Von Karajan & Wiener Philharmoniker	Opera
Les Contes d'Hoffmann, Act IV: Venus Dit A Fortune	Jessye Norman	Opera
Aïda: Act 1, Scene 1: Ritorna Vincitor!	Chorus of the Royal Opera House, Covent Garden, Fiorenza Cossotto, Luigi Roni, Montserrat Caballé, New Philharmonia Orchestra, Nicolai Ghiaurov, Piero Cappuccilli & Plácido Domingo	Opera
Norma: Act I, "Casta Diva"	Maria Callas & Orchestra del Teatro alla Scala di Milano	Opera
Act II, Vissi D'arte	Renata Scotto	Opera
Act I, Scene 2, Una Voce Poco Fa	Beverly Sills	Opera
Twilight of the Gods, Grane, Mein Ross	Eva Marton	Opera

Song Title	Artist	Genre
Gianni Schicchi: "Oh! Mio Babbino Caro"	Lamberto Gardelli, Orchestra del Maggio Musicale Fiorentino & Renata Tebaldi	Opera
Die Walküre: Du Bist Der Lenz	Hans Knappertsbusch, Kirsten Flagstad & Wiener Philharmoniker	Opera
Die Walküre: Du Bist Der Lenz	Hans Knappertsbusch, Kirsten Flagstad & Wiener Philharmoniker	Opera
Tristan und Isolde: "Mild und leise wie er lächelt" (Isoldes Liebestod)	Birgit Nilsson, Karl Böhm & Orchester der Bayreuther Festspiele	Opera
Madama Butterfly, Act II, Piangi? Perchè? Un bel dì vedremo	Leontyne Price & Oliviero de Fabritiis	Opera
Don Giovanni, K. 527: "Vedrai, Carino"	Berliner Philharmoniker, Herbert Von Karajan & Kathleen Battle	Opera
Carmen: "L'amour est un oiseau rebelle" (Havanaise)	Henry Lewis, Marilyn Horne & Wiener Opernorchester	Opera
Don Giovanni, K. 527: "Vedrai, Carino"	Cecilia Bartoli, György Fischer & Wiener Kammerorchester	Opera
Luisa Miller: Lo Vidi, e'l Primo Palpito	Anna Moffo & Giuseppe Verdi	Opera
Tristan und Isolde: Act I, Scene 4, Herrn Tristan Bringe Meinen Gruss	Berliner Philharmoniker & Christa Ludwig, Walter Berry, Helga Dernesch	Opera
Madama Butterfly: Act II, "Un bel dì vedremo"	Herbert Von Karajan, Mirella Freni & Wiener Philharmoniker	Opera
Carmen: "L'amour est un oiseau rebelle" (Havanaise)	John Alldis Choir, London Philharmonic Orchestra, Sir Georg Solti & Tatiana Troyanos	Opera
Don't Get Above Your Raising	Lester Flatt & Earl Scruggs And The Stanley Brothers	Bluegrass
Carry Me Across the Mountain	Dan Tyminski	Bluegrass
Could You Love Me (One More Time)	The Clinch Mountain Boys & The Stanley Brothers	Bluegrass
Rocky Road Blues (1971)	Bill Monroe	Bluegrass
Kentucky Waltz	Bill Monroe & His Bluegrass Boys	Bluegrass
Hallelujah I'm Ready	Ricky Skaggs	Bluegrass
Tortured, Tangled Hearts	Dixie Chicks	Bluegrass
The Ballad of Jed Clampett	Flatt & Scruggs	Bluegrass

Song Title	Artist	Genre
I’m a Man of Constant Sorrow	Carter Stanley, Ralph Stanley & The Stanley Brothers	Bluegrass
Foggy Mountain Breakdown	Earl Scruggs, Lester Flatt & The Foggy Mountain Boys	Bluegrass
Roll In My Sweet Baby's Arms	Earl Scruggs, Lester Flatt & The Foggy Mountain Boys	Bluegrass
Little Sparrow	Dolly Parton	Bluegrass
I'll Fly Away	Alison Krauss & Gillian Welch	Bluegrass
O Death	Ralph Stanley	Bluegrass
Angel Band	The Stanley Brothers	Bluegrass
The Lighthouse's Tale	Nickel Creek	Bluegrass
Blue Moon of Kentucky (1954 Single Version)	Bill Monroe & His Bluegrass Boys	Bluegrass
Uncle Pen (1950 Single Version)	Bill Monroe & His Bluegrass Boys	Bluegrass
New Mule Skinner Blues	Bill Monroe & His Bluegrass Boys	Bluegrass
Ruby (Are You Mad at Your Man)	Osborne Brothers	Bluegrass
Country Boy	Ricky Skaggs	Bluegrass
Don't Let Your Deal Go Down	Flatt & Scruggs	Bluegrass
Rocky Top (Single Version)	Osborne Brothers	Bluegrass
Everytime You Say Goodbye	Alison Krauss & Union Station	Bluegrass
Sunny Side of the Mountain	Jimmy Martin & The Sunny Mountain Boys	Bluegrass
Family Tradition	Hank Williams, Jr.	Country_Western
Rose Garden (Single Version)	Lynn Anderson	Country_Western
Delta Dawn (Single Version)	Tanya Tucker	Country_Western
Luckenbach, Texas (Back to the Basics of Love)	Waylon Jennings	Country_Western
Daydream About Night Things	Ronnie Milsap	Country_Western
The Fightin' Side of Me	Merle Haggard	Country_Western
Here You Come Again (Single)	Dolly Parton	Country_Western
Coal Miner's Daughter	Loretta Lynn	Country_Western
Help Me Make It Through the Night (Re-Recorded Version)	Sammi Smith	Country_Western
Take This Job and Shove It (Re-Recorded)	Johnny Paycheck	Country_Western

Song Title	Artist	Genre
For the Good Times (Re-Recorded)	Ray Price	Country_Western
Don't It Make My Brown Eyes Blue	Crystal Gayle	Country_Western
Hello Darlin' (Single)	Conway Twitty	Country_Western
Rhinestone Cowboy	Glen Campbell	Country_Western
Mammas, Don't Let Your Babies Grow Up to Be Cowboys	Waylon Jennings & Willie Nelson	Country_Western
Good Hearted Woman	Waylon Jennings & Willie Nelson	Country_Western
Kiss an Angel Good Morning	Charley Pride	Country_Western
Behind Closed Doors	Charlie Rich	Country_Western
East Bound and Down (From the Motion Picture "Smokey and the Bandit")	Jerry Reed	Country_Western
Convoy	C.W. McCall	Country_Western
The Gambler	Kenny Rogers	Country_Western
Lucille	Kenny Rogers	Country_Western
Whiskey River (Live)	Willie Nelson	Country_Western
Tulsa Time	Don Williams	Country_Western
If I Said You Had a Beautiful Body Would You Hold It Against Me	The Bellamy Brothers	Country_Western
White House Blues	Charlie Poole and The North Carolina Ramblers	Country_Western
That Silver-Haired Daddy of Mine	Gene Autry	Country_Western
Don't Let Your Deal Go Down Blues	Charlie Poole & The North Carolina Ramblers	Country_Western
Orange Blossom Special	Roy Hall and His Blue Ridge Entertainers	Country_Western
Arkansas Traveler	Various Artists	Country_Western
Barnyard Serenade	Various Artists	Country_Western
New Lost Train Blues	Various Artists	Country_Western
Wildwood Flower	The Carter Family	Country_Western
Keep on the Sunny Side	The Carter Family	Country_Western
Worried Man Blues	The Carter Family	Country_Western
Blue Yodel No. 1 (T for Texas)	Jimmie Rodgers	Country_Western
Blue Yodel No. 8 (Mule Skinner Blues)	Jimmie Rodgers	Country_Western
When the Train Comes Along	Uncle Dave Macon	Country_Western
You Are My Sunshine	Jimmie Davis	Country_Western

Song Title	Artist	Genre
When My Blue Moon Turns to Gold Again	Wiley Walker & Gene Sullivan	Country_Western
On the Banks of the Ohio	Bill Monroe & The Monroe Brothers	Country_Western
New River Train	Bill Monroe & The Monroe Brothers	Country_Western
Waiting for a Train	Jimmie Rodgers	Country_Western
In the Jailhouse Now	Jimmie Rodgers	Country_Western
Can the Circle Be Unbroken	The Carter Family	Country_Western
You'll Miss Me When I'm Gone(Just Because)	Cliff Carlisle	Country_Western
Footprints In the Snow	Cliff Carlisle	Country_Western
I Want to Be a Cowboy's Sweetheart (78rpm Version)	Patsy Montana & The Prairie Ramblers	Country_Western
Great Speckle Bird	Roy Acuff	Country_Western
Soldier's Joy	Gid Tanner & The Skillet Lickers	Country_Western
Oklahoma! (Oklahoma)	The West End Orchestra And Chorus	Broadway musicals_show tunes
I Enjoy Being a Girl	The London Studio Orchestra & Singers	Broadway musicals_show tunes
Beauty & the Beast	The London Studio Orchestra & Singers	Broadway musicals_show tunes
Day By Day (Godspell)	The West End Orchestra And Chorus	Broadway musicals_show tunes
You'll Never Walk Alone	The London Studio Orchestra & Singers	Broadway musicals_show tunes
Fame (Fame)	The West End Orchestra And Chorus	Broadway musicals_show tunes
Jesus Christ Superstar	The London Theatre Orchestra & Singers	Broadway musicals_show tunes
One More Angel In Heaven	The London Theatre Orchestra & Singers	Broadway musicals_show tunes
Anything You Can Do	The London Theatre Orchestra & Singers	Broadway musicals_show tunes
Tell Me It's Not True (From "Blood Brothers")	Mary Carewe, Nick Davies & Royal Philharmonic Orchestra	Broadway musicals_show tunes
Oh! What a Beautiful Mornin' (From "Oklahoma!")	Michael Maguire, Skitch Henderson & The New York Pops	Broadway musicals_show tunes
Edelweiss (From "The Sound of Music")	Mary Carewe & Paul Bateman & His Orchestra	Broadway musicals_show tunes

Song Title	Artist	Genre
The Music of the Night (The Phantom of the Opera)	Michael McGuire, Skitch Henderson & The New York Pops	Broadway musicals_show tunes
All That Jazz (Chicago)	Marti Webb, Matthew Freeman & The West End Theatre Orchestra	Broadway musicals_show tunes
Memory (Cats)	David Firman & His Orchestra & Mary Carewe	Broadway musicals_show tunes
If Ever I Would Leave You (Camelot)	Michael McGuire, Skitch Henderson & The New York Pops	Broadway musicals_show tunes
Maria (West Side Story)	Michael McGuire, Skitch Henderson & The New York Pops	Broadway musicals_show tunes
That's Entertainment (From "The Band Wagon")	Fred Astaire	Broadway musicals_show tunes
Get Happy (From "Summer Stock")	Judy Garland	Broadway musicals_show tunes
From This Moment On (From "Kiss Me Kate") [Stereo Version]	Ann Miller, Bob Fosse, Bobby Van & Tommy Rall	Broadway musicals_show tunes
Over the Rainbow (From "Wizard of Oz")	Judy Garland	Broadway musicals_show tunes
Ol' Man River (Stereo Version)	William Warfield	Broadway musicals_show tunes
Singin' In the Rain	Gene Kelly	Broadway musicals_show tunes
The Trolley Song (From "Meet Me In St. Louis") [Soundtrack Version #2]	Judy Garland	Broadway musicals_show tunes
The Varsity Drag (From "Good News")	June Allyson & Peter Lawford	Broadway musicals_show tunes
Easter Parade (From "Easter Parade") (Version With Fred Astaire)	Fred Astaire & Judy Garland	Broadway musicals_show tunes
Honeysuckle Rose (From "Thousands Cheer") [Stereo Version]	Lena Horne	Broadway musicals_show tunes
They Can't Take That Away from Me (From "The Barkleys of Broadway")	Fred Astaire	Broadway musicals_show tunes
Hallelujah! (From "Hit the Deck") [Stereo Version]	Ann Miller, Clark Burroughs, Debbie Reynolds, Jane Powell, Kay Armen, Tony Martin & Vic Damone	Broadway musicals_show tunes
There's No Business Like Show Business (From "Annie Get Your Gun") [Version #2]	Betty Hutton, Howard Keel, Keenan Wynn & Louis Calhern	Broadway musicals_show tunes

Song Title	Artist	Genre
La Bamba	Various Artists - Azzurra Music	Latin_Mariachi_Salsa
La Cucaracha	Various Artists - Azzurra Music	Latin_Mariachi_Salsa
Linda	Various Artists - Azzurra Music	Latin_Mariachi_Salsa
La Adelita	Various Artists - Azzurra Music	Latin_Mariachi_Salsa
La Raspa	Various Artists - Azzurra Music	Latin_Mariachi_Salsa
Cielito Lindo	Various Artists - Azzurra Music	Latin_Mariachi_Salsa
La Arana	Various Artists - Azzurra Music	Latin_Mariachi_Salsa
El San Lorenzo	Various Artists - Azzurra Music	Latin_Mariachi_Salsa
El Toro Requesón	Various Artists - Azzurra Music	Latin_Mariachi_Salsa
Muñequita de Paris	Various Artists - Azzurra Music	Latin_Mariachi_Salsa
El Cuervo	Various Artists - Azzurra Music	Latin_Mariachi_Salsa
Dices	Various Artists - Azzurra Music	Latin_Mariachi_Salsa
Jesus Garcia	Various Artists - Azzurra Music	Latin_Mariachi_Salsa
Las Islas Marias	Various Artists - Azzurra Music	Latin_Mariachi_Salsa
Jesusita	Various Artists - Azzurra Music	Latin_Mariachi_Salsa
Plastico	Willie Colón	Latin_Mariachi_Salsa
Mi Gente	Héctor Lavoe	Latin_Mariachi_Salsa
Calle Luna, Calle Sol	Willie Colón	Latin_Mariachi_Salsa
Quimbara	Celia Cruz & Johnny Pacheco	Latin_Mariachi_Salsa
Buscando Guayaba	Willie Colón	Latin_Mariachi_Salsa
Pablo Pueblo	Rubén Blades	Latin_Mariachi_Salsa
El Malo	Willie Colón	Latin_Mariachi_Salsa
Usted Abuso	La Matancera Sound	Latin_Mariachi_Salsa
Todos Vuelven	Rubén Blades	Latin_Mariachi_Salsa
Puerto Rico	Eddie Palmieri, Ismael Quintana & Lalo Rodríguez	Latin_Mariachi_Salsa
Pedro Navaja	Willie Colón	Latin_Mariachi_Salsa
Decisiones	Rubén Blades	Latin_Mariachi_Salsa
Justicia	Eddie Palmieri	Latin_Mariachi_Salsa
Salsa y Sabor	Tito Puente	Latin_Mariachi_Salsa
El Todopoderoso	Héctor Lavoe	Latin_Mariachi_Salsa
El Preso	Fruko y Sus Tesos	Latin_Mariachi_Salsa
El Nuevo Barretto	Ray Barretto	Latin_Mariachi_Salsa
Toro Mata	Celia Cruz & Johnny Pacheco	Latin_Mariachi_Salsa
Cucala	Cortijo Y Su Combo Con Ismael	Latin_Mariachi_Salsa

Song Title	Artist	Genre
	Rivera	
Adoracion	Eddie Palmieri, Ismael Quintana & Lalo Rodríguez	Latin_Mariachi_Salsa
Fuego en el 23	Sonora Ponceña	Latin_Mariachi_Salsa
Anacaona	Cheo Feliciano	Latin_Mariachi_Salsa
Indestructible	Ray Barretto	Latin_Mariachi_Salsa
Paraiso de Dulzura	Héctor Lavoe	Latin_Mariachi_Salsa
Que Se Sepa	Roberto Roena	Latin_Mariachi_Salsa
You've Got a Friend	James Taylor	Mood_Easy listening
If	Bread	Mood_Easy listening
Rainy Days and Mondays	Carpenters	Mood_Easy listening
A Horse with No Name	America	Mood_Easy listening
Daniel	Elton John	Mood_Easy listening
The First Time Ever I Saw Your Face	Roberta Flack	Mood_Easy listening
Where Is the Love	Donny Hathaway & Roberta Flack	Mood_Easy listening
Heart of Gold	Neil Young	Mood_Easy listening
Wild World	Cat Stevens	Mood_Easy listening
Anticipation	Carly Simon	Mood_Easy listening
Sailing	Christopher Cross	Mood_Easy listening
Lonely People	America	Mood_Easy listening
Sunshine on My Shoulders	John Denver	Mood_Easy listening
Killing Me Softly with His Song	Roberta Flack	Mood_Easy listening
You Are So Beautiful	Joe Cocker	Mood_Easy listening
Sundown	Gordon Lightfoot	Mood_Easy listening
Garden Party	Ricky Nelson	Mood_Easy listening
Hurting Each Other	Carpenters	Mood_Easy listening
She's Always a Woman	Billy Joel	Mood_Easy listening
Summer Breeze	Seals & Crofts	Mood_Easy listening
Against All Odds	Phil Collins	Mood_Easy listening
Your Song	Elton John	Mood_Easy listening
Make It with You	Bread	Mood_Easy listening
This Masquerade	George Benson	Mood_Easy listening
You're the Inspiration	Chicago	Mood_Easy listening
Runnin' with the Devil	Van Halen	HeavyMetal

Song Title	Artist	Genre
Shout at the Devil	Mötley Crüe	HeavyMetal
Welcome to the Jungle	Guns N' Roses	HeavyMetal
Under My Wheels	Alice Cooper	HeavyMetal
Smoke on the Water (Live)	Deep Purple	HeavyMetal
Crazy Train	Ozzy Osbourne	HeavyMetal
Dude (Looks Like a Lady)	Aerosmith	HeavyMetal
You Give Love a Bad Name	Bon Jovi	HeavyMetal
Man on the Silver Mountain	Rainbow	HeavyMetal
Cat Scratch Fever	Ted Nugent	HeavyMetal
Paranoid (Live)	Black Sabbath	HeavyMetal
Breaking the Law	Judas Priest	HeavyMetal
Rock 'n' Roll All Nite ("Alive" Version)	Kiss	HeavyMetal
Yankee Rose	David Lee Roth	HeavyMetal
Bang Your Head (Metal Health)	Quiet Riot	HeavyMetal
Ace of Spades	Motörhead	HeavyMetal
Cowboys from Hell	Pantera	HeavyMetal
Talk Dirty to Me	Poison	HeavyMetal
Still of the Night	Whitesnake	HeavyMetal
Youth Gone Wild	Skid Row	HeavyMetal
Peace Sells	Megadeth	HeavyMetal
Rock You Like a Hurricane	Scorpions	HeavyMetal
I Wanna Rock	Twisted Sister	HeavyMetal
Run to the Hills	Iron Maiden	HeavyMetal
Mississippi Queen	Mountain	HeavyMetal
The Fairy Queen	Clannad	New Age_Space music
Om Mani Padme Hum	Deva Premal	New Age_Space music
The True Spirit of Mom & Dad	Ray Lynch	New Age_Space music
Anthem	A Windham Hill Collection	New Age_Space music
Rainsong (Fortune's Lullaby)	George Winston	New Age_Space music
Tubular Bells (Opening Theme)	Mike Oldfield	New Age_Space music
Cailleach's Whisper	David Arkenstone	New Age_Space music
Song from a Secret Garden	Secret Garden	New Age_Space music
2nd Chakra: Keynote D	Steven Halpern	New Age_Space music
The Bricklayer's Beautiful Daughter	William Ackerman	New Age_Space music

Song Title	Artist	Genre
Tibet, Pt. 2	Mark Isham	New Age_Space music
Chariots Of Fire	Vangelis	New Age_Space music
Tingri Maiden (from Tingri)	Jonn Serrie	New Age_Space music
Bensusan	Michael Hedges	New Age_Space music
Caribbean Blue	Enya	New Age_Space music
Earth and Sky	Terry Oldfield	New Age_Space music
Merry Christmas Mr. Lawrence	Ryuichi Sakamoto	New Age_Space music
Haunting and Heartbreaking	Angelo Badalamenti	New Age_Space music
Virtue	Jesse Cook	New Age_Space music
Silence	Delerium	New Age_Space music
Shadow Dancer	Eric Tingstad & Nancy Rumbel	New Age_Space music
The Games	John Tesh	New Age_Space music
In the Morning Light	Yanni	New Age_Space music
The Alchemist	Acoustic Alchemy	New Age_Space music
Billie Jean (Single Version)	Michael Jackson	Contemporary pop/rock
Like a Virgin	Madonna	Contemporary pop/rock
Dancing In the Dark	Bruce Springsteen	Contemporary pop/rock
When Doves Cry	Prince & The Revolution	Contemporary pop/rock
Girls Just Want to Have Fun	Cyndi Lauper	Contemporary pop/rock
Do You Really Want to Hurt Me	Boy George And Culture Club	Contemporary pop/rock
Down Under	Men At Work	Contemporary pop/rock
The Way It Is	Bruce Hornsby	Contemporary pop/rock
You Might Think	The Cars	Contemporary pop/rock
Physical	Olivia Newton-John	Contemporary pop/rock
Maneater	Daryl Hall & John Oates	Contemporary pop/rock
Whip It	Devo	Contemporary pop/rock
Sailing	Christopher Cross	Contemporary pop/rock
Hungry Like the Wolf	Duran Duran	Contemporary pop/rock
Every Breath You Take	The Police	Contemporary pop/rock
Sweet Dreams (Are Made of This)	Eurythmics	Contemporary pop/rock
When I Think of You	Janet Jackson	Contemporary pop/rock
I Want a New Drug	Huey Lewis & The News	Contemporary pop/rock
Faith	George Michael	Contemporary pop/rock
We Got the Beat	The Go-Go's	Contemporary pop/rock

Song Title	Artist	Genre
West End Girls	Pet Shop Boys	Contemporary pop/rock
Footloose	Kenny Loggins	Contemporary pop/rock
Jump	Van Halen	Contemporary pop/rock
Jack & Diane	John Mellencamp	Contemporary pop/rock
California Love (Remix)	2pac, Dr. Dre & Roger Troutman	Rap music
Nuthin' but a "G" Thang	Dr. Dre	Rap music
Colors	Ice-T	Rap music
Straight Outta Compton	N.W.A.	Rap music
Gin and Juice	Snoop Dogg & Dat Nigga Daz	Rap music
It Was a Good Day	Ice Cube	Rap music
How We Do	The Game	Rap music
P.S.K. What Does It Mean?	Schoolly D	Rap music
6 'N the Mornin'	Ice-T	Rap music
Eazy-Er Said Than Dunn	Eazy-e	Rap music
Gangsta's Paradise	Coolio featuring L.V.	Rap music
How I Could Just Kill a Man	Cypress Hill	Rap music
2 of Amerikaz Most Wanted	2pac & Snoop Dogg	Rap music
My Mind Playin' Tricks On Me	Geto Boys	Rap music
Shook Ones, Pt. 2	Mobb Deep	Rap music
F--- Tha Police	N.W.A.	Rap music
Born and Raised In Compton	DJ Quik	Rap music
Boyz-N-The Hood	N.W.A. And The Posse	Rap music
Gangsta Nation	Westside Connection & Nate Dogg	Rap music
Many Men (Wish Death)	50 Cent	Rap music
What's Beef	The Notorious B.I.G.	Rap music
Ridin' Dirty	UGK	Rap music
Trigga Gots No Heart	Spice 1	Rap music
The Next Episode	Dr. Dre & Snoop Dogg	Rap music
Hood Took Me Under	Compton's Most Wanted	Rap music
Jesus Walks	Kanye West	Rap music
Juicy	The Notorious B.I.G.	Rap music
I'll Be Missing You (Featuring Faith Evans & 112)	Puff Daddy & The Family featuring Faith Evans & 112	Rap music
It Was a Good Day	Ice Cube	Rap music

Song Title	Artist	Genre
I Can	Nas	Rap music
Thugz Mansion (7" Remix)	2pac	Rap music
Lose Yourself	Eminem	Rap music
Where Is the Love?	Black Eyed Peas & Justin Timberlake	Rap music
Hope (Twista featuring Faith Evans)	Twista	Rap music
Fantastic Voyage	Coolio	Rap music
Faithful	Common	Rap music
Mockingbird	Eminem	Rap music
U.N.I.T.Y.	Queen Latifah	Rap music
Just the Two of Us	Will Smith	Rap music
Hey Young World	Slick Rick	Rap music
The World Is Yours	Nas	Rap music
You Must Love Me	Jay-Z	Rap music
Back in the Day (Remix)	Ahmad	Rap music
Back in the Day	Missy Elliott	Rap music
Freedom	Grandmaster Flash & The Furious Five	Rap music
Summertime	DJ Jazzy Jeff & The Fresh Prince	Rap music
Music	Erick Sermon & Marvin Gaye	Rap music
Ladies First	Queen Latifah	Rap music
Stop the Violence	Boogie Down Productions	Rap music
Jesus Walks (Remix)	Common, Kanye West & Mase	Rap music
Rock Around the Clock	Bill Haley & His Comets	Oldies Rock
Shake, Rattle and Roll	Joe Turner	Oldies Rock
Money Honey	The Drifters with Clyde McPhatter	Oldies Rock
Mama He Treats Your Daughter Mean	Ruth Brown	Oldies Rock
Gee	The Crows	Oldies Rock
The Great Pretender	The Platters	Oldies Rock
Pledging My Love	Johnny Ace	Oldies Rock
Blue Suede Shoes	Carl Perkins	Oldies Rock
Get Rhythm - Original	Johnny Cash	Oldies Rock
Bo Diddley (Single Version)	Bo Diddley	Oldies Rock
I'm Walkin'	Fats Domino	Oldies Rock
I Got a Woman	Ray Charles	Oldies Rock

Song Title	Artist	Genre
You Send Me	Sam Cooke	Oldies Rock
Why Do Fools Fall In Love (LP Version)	Frankie Lymon and The Teenagers	Oldies Rock
Yakety Yak	The Coasters	Oldies Rock
I Put a Spell On You	Screamin' Jay Hawkins	Oldies Rock
Be-Bop-a-Lula	Gene Vincent	Oldies Rock
Tutti Frutti	Little Richard	Oldies Rock
Johnny B. Goode	Chuck Berry	Oldies Rock
That'll Be the Day	The Crickets	Oldies Rock
La Bamba (Recorded at Gold Star-the B-side of "Donna")	Ritchie Valens	Oldies Rock
I Still Haven't Found What I'm Looking For	U2	Contemporary pop/rock
Don't Stop Believin'	Journey	Contemporary pop/rock
Jack & Diane	John Mellencamp	Contemporary pop/rock
Dancing In the Dark	Bruce Springsteen	Contemporary pop/rock
Free Fallin'	Tom Petty & The Heartbreakers	Contemporary pop/rock
In the Air Tonight	Phil Collins	Contemporary pop/rock
Every Little Thing She Does Is Magic	The Police	Contemporary pop/rock
Sweet Child O' Mine	Guns N' Roses	Contemporary pop/rock
Panama	Van Halen	Contemporary pop/rock
Livin' on a Prayer	Bon Jovi	Contemporary pop/rock
Summer of '69	Bryan Adams	Contemporary pop/rock
When Doves Cry (Edit)	Prince	Contemporary pop/rock
Take It On the Run	REO Speedwagon	Contemporary pop/rock
Dude (Looks Like a Lady)	Aerosmith	Contemporary pop/rock
Another Brick In the Wall (Part 2)	Pink Floyd	Contemporary pop/rock
Brass in Pocket	The Pretenders	Contemporary pop/rock
Hit Me With Your Best Shot	Pat Benatar	Contemporary pop/rock
Start Me Up	The Rolling Stones	Contemporary pop/rock
I Love Rock 'N Roll	Joan Jett & The Blackhearts	Contemporary pop/rock
Money for Nothing	Dire Straits	Contemporary pop/rock
White Wedding, Pt. 1	Billy Idol	Contemporary pop/rock
Crazy Train	Ozzy Osbourne	Contemporary pop/rock
Sharp Dressed Man	ZZ Top	Contemporary pop/rock

Song Title	Artist	Genre
Rock the Casbah	The Clash	Contemporary pop/rock
Tom Sawyer	Rush	Contemporary pop/rock
Purple Haze	The Jimi Hendrix Experience	Oldies Rock
Mr. Tambourine Man	The Byrds	Oldies Rock
Like a Rolling Stone	Bob Dylan	Oldies Rock
My Generation	The Who	Oldies Rock
Light My Fire	The Doors	Oldies Rock
The Weight	The Band	Oldies Rock
Magic Carpet Ride	Steppenwolf	Oldies Rock
For What It's Worth	Buffalo Springfield	Oldies Rock
With a Little Help from My Friends	Joe Cocker	Oldies Rock
California Dreamin'	The Mamas and the Papas	Oldies Rock
Sunshine Superman	Donovan	Oldies Rock
The Sound of Silence	Simon & Garfunkel	Oldies Rock
A Whiter Shade of Pale	Procol Harum	Oldies Rock
Somebody to Love	Jefferson Airplane	Oldies Rock
Paint It Black	The Rolling Stones	Oldies Rock
Wild Thing	The Troggs	Oldies Rock
Get Together	The Youngbloods	Oldies Rock
White Room	Cream	Oldies Rock
Brown Eyed Girl (Single Version)	Van Morrison	Oldies Rock
Wooly Bully	Sam the Sham & The Pharaohs	Oldies Rock
People Got to Be Free	The Rascals	Oldies Rock
I Fought the Law	Bobby Fuller Four	Oldies Rock
Summer In the City	The Lovin' Spoonful	Oldies Rock
In-A-Gadda-Da-Vida	Iron Butterfly	Oldies Rock
Time of the Season	The Zombies	Oldies Rock

APPENDIX B.

FACTOR LOADINGS FOR TIMBRE

Factor analysis of the timbre dimension revealed several dimensions. Specifically, using a Varimax rotation, the 57 items which make up the timbre scale (alpha .874) were submitted to factor analysis (see Table 29). The results indicate that there were 5 factor loadings with eigenvalues over 1.0. The largest factor accounted for 46.75% of the variance and had an eigenvalue of 26.65. Factor loading 2 accounted for 33.5% of the variance with an eigenvalue of 19.11. The third factor accounted for 10.66% of the variance and its corresponding eigenvalue was 6.07. The remaining factors with eigenvalues over 1 had eigenvalues which ranged from 1.25 to 3.16. The combined variance explained by these factors was 7.73%. Thus, while the overall reliability of the scale was adequate, the results of the factor analysis indicate that timbre is multidimensional with 3 main factor loadings. The first factor is represented by the *Mel-frequency* cepstral coefficients (*MFCCs*). MFCC's are widely used in speech-recognition and is instrumental for determining the timbre of speech. The second factor has to do with the spectral centroid and represents the spectral brightness of the signal. The third factor includes the method of moments, which describes the shape of the spectrograph and the spectral centroid, suggesting another dimension (see McEnnis et al. 2005 for more). Given the multidimensional nature of timbre, these results warrant further investigation for research.

Table A.2. Factor Loadings of the Timbre Dimension

Component	Factor Loading on the Timbre Dimension Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization		
	Total	% of Variance	Cumulative %
1	26.645	46.745	46.745
2	19.107	33.522	80.267
3	6.074	10.656	90.923
4	3.161	5.546	96.469
5	1.247	2.187	98.656

REFERENCES

Abeles, H.F. (1980). Responses to music, in Handbook of music psychology (Ed. D. A. Hodges). National Association for Music Therapy, KS.

Adorno, T. W. (1941). On popular music. Zeitschrift fur Sozialforschunhg, 9, 17-49.

Ahlkvist , Jarl A. and Robert Faulkner. (2002). "'Will This Record Work for Us?': Managing Music Formats in Commercial Radio." Qualitative Sociology 25: 189-215.

Anand, Narasimhan and Richard A. Peterson. (2000). "When Market Information Constitutes Fields: Sensemaking of Markets in the Commercial Music Industry." Organization Science 11: 270-284.

Aucouturier, J. J., and F. Pachet. (2003). Representing musical genre: A state of the art. Journal of New Music Research 32 (1): 1–12.

Barthes, R. (1972), Mythologies. Hill and Wang:New York.

Becker, Howard S. (1982). Art Worlds. Berkeley: University of California Press.

Bergesen, Albert J. (1979). Spirituals, Jazz, Blues, and Soul Music: The Role of Elaborated and Restricted Codes in the Maintenance of Social Solidarity. In R. Wuthnow (Ed.), New Directions in the Empirical Study of Religion. New York: Academic Press,333-350.

Bergesen, Albert J. . (1984). The Semantic Equation: A Theory of the Social Origin of Art Styles. In R. Collins (Ed.) Sociological Theory 1984. San Francisco: Jossey-Bass, 187-221.

Bernstein, B. (1971) *Class, Codes and Control vol 1* London; Paladin.

Bihagen, Erik, 1999. Cultural participation and social stratification: leisure activities, musical tastes, and social location. Sociological Perspectives 42, 627–646.

Bihagen, Erik, Katz-Gerro, Tally, 2000. Culture participation in sweden: the stability of gender differences. Poetics 27, 327–349.

Blackburn, Simon (2005). Truth: A Guide. Oxford University Press, Inc.

Bourdieu, P. (1984). Distinction : A Social Critique of the Judgment of Taste. Cambridge, Mass., Harvard University Press.

Breiger, Ronald Breiger. (1974). The Duality of Persons and Groups. Social Forces 53(1974):181-90

Breiger, Ronald L., (2000). A tool kit for practice theory. Poetics 27, pp. 91–115.

Brieger, Ronald L. (In Press). Handbook of Case Study Methods. Volume edited by Charles Ragin and David Byrne. London: Sage.

Bryson, Bethany, (1996). “Anything but heavy metal.” American Sociological Review 61, 884-899.

Bryson, Bethany, (1997). What about the univores?. Poetics 25, pp. 141–156

Burgoon, Judee K., David B. Buller, and W. Gill Woodall. (1996). Nonverbal Communication: The Unspoken Dialogue. New York: McGraw-Hill.

Cerulo, Karen, A. (1989). Variations in Musical Syntax: Patterns of Usage and Methods of Measurement. Communication Research, Vol. 16, No. 2, 204-235.

Cerulo, Karen, A. (1989). Sociolopolitical Control and the Structure of National Symbols: An Empircal Analysis of National Anthems. Social Forces, Vol 68, No 1, (Sept), 76-99.

Chai, W., and B. Vercoe. (2001). Folk music classification using hidden Markov models. Proceedings of the International Conference on Artificial Intelligence.

Chan, Tak Wing and John H. Goldthorpe. (2006). Social Stratification and Cultural Consumption: Music in England. European Sociological Review, 23(1) 1-19.

Clawson, Mary Ann. (1999). “When Women Play the Bass: Instrument Specialization and Gender Interpretation in Alternative Rock Music.” Gender & Society 13: 193-210.

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.

Cohen, S. and S. Spacapan. (1984). "The Social Psychology of Noise." Pp. 221-46 in Noise and Society, edited by D. M. Jones and A. J. Chapman. New York: John Wiley & Sons.

Coulangeon, P., 2005. Social stratification of musical tastes: questioning the cultural legitimacy model. Revue franc¸aise de sociologie, supplement 123–154.

Curran, Geoffrey M. (1996). “From ‘Swinging Hard’ to ‘Rocking Out’: Classification of Style and the Creation of Identity in the World of Drumming.” Symbolic Interaction 19: 37-60.

Danaher, William F. and Vincent J. Roscigno. (2004). “Cultural Production, Media, and Meaning: Hillbilly Music and the Southern Textile Mills.” Poetics 32:51-71.

Davis, James A., Tom W. Smith, and Peter V. Marsden. GENERAL SOCIAL SURVEYS, 1972-2006 [CUMULATIVE FILE] [Computer file]. ICPSR04697-v2. Chicago, IL: National Opinion Research Center [producer], 2007. Storrs, CT: Roper Center for Public Opinion Research, University of Connecticut/Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributors], 2007-09-10.

DeNora, Tia. (1991). “Musical Patronage and Social Change in Beethoven’s Vienna.” American Journal of Sociology 97: 310-346.

DeNora, Tia. (2000). Music in Everyday Life. Cambridge: Cambridge University Press.

Deshpande, H., U. Nam, and R. Singh. (2001). Classification of music signals in the visual domain. Proceedings of the Digital Audio Effects Workshop.

Diserens, C. M. (1926). The influence of music on behavior. Oxford, England : Princeton Univ. Press.

DiMaggio Paul. (1982). Cultural entrepreneurship in nineteenth-century Boston. Media Cult. Soc. 4:33-50, 303-21

DiMaggio, Paul, (1997). Culture and cognition. Annual Review of Sociology 23, 263-287.

DiMaggio, P. and Useem, M. (1978). Social class and art consumption: the origins and consequences of class differences in exposure to the arts in America. Theory and Society, 5, 141-61.

DiMaggio, Paul, Mohr, John, 1985. Cultural capital, educational attainment, and marital selection. American Journal of Sociology 90, 1231–1261.

Dowd, Timothy. Worlds of Music: A Review Essay. (2005). Qualitative Sociology, Volume 28, Number 1, March, pp. 123-129(7).

Dowd, Timothy J. and Maureen Blyler. (2002). "Charting Race: The Success of Black Performers in the Mainstream Recording Market, 1940 to 1990." Poetics 30: 87-110.

Dowd, Timothy J. (2003). "Structural Power and the Construction of Markets: The Case of Rhythm and Blues." Comparative Social Research 21: 147-201.

Dowd, Timothy J. Kathleen Liddle, Kim Lupo, and Anne Borden. (2002). "Organizing the Musical Canon: The Repertoires of Major U.S. Symphony Orchestras, 1824 to 1969." Poetics 30: 87-110.

Downie, J. Stephen. (2003). "Music Information Retrieval", Annual Review of Information Science and Technology 37: 295-340.

du Gay, Paul and Keith Negus. (1994). "The Changing Sites of Sound: Music Retailing and the Composition of Consumers." Media, Culture & Society 16: 395-413.

Durkheim, Émile (1893). The Division of Labour in Society.

Edmonds, Ed M., Lyle R. smith (1984). The Effects of Classroom Noise on Student Performance. Paper presented at the Annual Meeting of the American Educational Research Association (New Orleans, LA, April 23-27).

Emmison, M. (2003). Social Class and Cultural Mobility- Reconfiguring the Cultural Omnivore Thesis. Journal of Sociology, 39(3), 211-230.

Engels, Friedrich . (1892). The Condition of the Working-Class in England in 1844. London: Swan Sonnenschein & Co.

Erickson, Bonnie H. (1996). Culture, Class, and Connections. The American Journal of Sociology, Vol. 102, No. 1. (1996), pp. 217-251.

Fabbri, F. (1982). What kind of music? Popular Music 2: 131–43.

Fingerhut, Michael. (2004). "Music Information Retrieval, or how to search for (and maybe find) music and do away with incipits", IAML-IASA Congress, Oslo (Norway), August 8-13, 2004.

Freeman, L. C. (1977), "Centrality in Social Networks: Conceptual Clarification," SocialNetworks 1: 215-239.

Freeman, L. C. (1979), "A Set of Measures of Centrality Based Upon Betweenness," Sociometry 40: 35-41.

Frith, Simon. (1990). What is good music? Canadian University Music Review 12, 92-102.

Frith, S. (1983). Sound effects: youth, leisure, and the politics of rock. Constable, London.

Fujinaga, I. (1996). Exemplar-based learning in adaptive optical music recognition system. Proceedings of the International Computer Music Conference. 55–6.

Gans, H. J. (1974). Popular culture and high culture: an analysis and evaluation of taste. Basic Books, New York.

Glass, D. D. and J. E. Singer. (1972). Urban Stress: Experiments on Noise and Social Stressors. New York; Academic Press.

Glynn, Mary Ann. (2000). "When Cymbals Become Symbols: Conflict over Organizational Identity within a Symphony Orchestra." Organization Science 11: 285-298.

Gosling, Samuel D. (2007). The content and validity of music-genre stereotypes among college students. Pyschology of Music, vo l 35(2): 306-326

Gottdiener, Mark. (1985). Hegemony and Mass Culture: A Semiotic Approach. The American Journal of Sociology, Vol. 90, No. 5 (Mar), pp. 979-1001

Greenacre, M. J., (1984). Theory and applications of correspondence analysis. Academic Press, London.

Gregory, Stanford W., Jr. (1986). "Social Psychological Implications of Voice Frequency Correlations: Analyzing Conversation Partner Adaptation by Computer." Social Psychology Quarterly 49:237–46.

Gregory, Stanford W., Jr. (1994). "Sounds of Power and Deference: Acoustic Analysis of Macro Social Constraints on Micro Interaction." Sociological Perspectives 37:497–526.

Gregory, Stanford W., Jr., Kelly Dagan, and Stephen Webster. (1997). "Evaluating the Relation of Vocal Accommodation in Conversation Partners' Fundamental

Frequencies to Perceptions of Communication Quality." Journal of Nonverbal Behavior 21:23–43.

Gregory, Stanford W., Jr., Brian E. Green, Robert M. Carrothers,Kelly A. Dagan, and Stephen Webster. (2000). "Verifying the Primacy of Voice Fundamental Frequency in Social Status Accommodation." Language and Communication 21:37–60.

Gregory, Stanford W., Jr. and Stephen Webster. (1996). "A Nonverbal Signal in Voices of Interview Partners Effectively Predicts Communication Accommodation and Social Status Perceptions." Journal of Personality and Social Psychology 70:1231–40.

Gregory, Stanford W., Jr., Stephen Webster, and Gary Huang. (1993). "Voice Pitch and Amplitude Convergence as a Metric of Quality in Dyadic Interviews." Language and Communication 13:195–217.

Grimaldi, M., A. Kokaram, and P. Cunningham. (2003). Classifying music by genre using a discrete wavelet transform and a roundrobin ensemble. Work Report. Trinity College, University of Dublin, Ireland.

Hall, John R. (1992). The Capital(s) of Cultures: A nonholistic approach to status situations, Class, Gender and Ethnicity. pg. 257-85 in Cultivating Differences: Symbolic boundaries and the making of inequality, edited by Michele Lamont and Marcel Fournier. Chicago: University of Chicago Press.

Hall, Stuart. (1976). Resistance Through Rituals: Youth Subcultures in Postwar Britain. London: Routlegde.

Han, Shin-Kap. (2003). Unraveling the brow. Sociological Perspectives 46, 435-459.

Hargreaves, D. & North, A. (1997). The social psychology of music. Oxford: Oxford University Press.

Harggitai, Eszther. (2000). "Radio's Lessons for the Internet." Communications of the ACM 43: 51-57.

Hebdige, Dick. (1979). Subculture: The Meaning of Style. London: Methuen.

Heise, D.R. (1965). Sound-meaning correlation among 1000 English words, Psychological Monographs 79 (8), pp. 1–31.

Heise, David (2007), *Expressive Order: Confirming Sentiments in Social Actions*, New York: Springer.

Hennion, Antoine. (2001). "Music Lovers: Taste as Performance." Theory, Culture & Society 18: 1-22.

Holbrook, M. B., Weiss, M. J. and Habich, J. (2002). Disentangling Effacement, Omnivore, and Distinction Effects on the Consumption of Cultural Activities: An Illustration. Marketing Letters, 13(4), 345.

Holt, Douglas B. (1997). Distinction in America? Poetics 25, 93-120.

Hussein, F., R. Ward, and N. Kharma. (2001). Genetic algorithms for feature selection and weighting, a review and study. International Conference on Document Analysis and Recognition. 1240-4.

Johnstone, John and Elihu Katz. (1957). Youth and popular music: A study of the sociology of taste. American Journal of Sociology 62, 1957, 563-568.

Jones, D. M. (1984). "Performance Effects." Pp. 155-84 in Noise and Society, edited by D. M. Jones and A. J. Chapman. New York: John Wiley & Sons.

Jiang, D. N., L. Lu, H. J. Zhang, J. H. Tao, and L. H. Cai. (2002). Music type classification by spectral contrast feature. Proceedings of Intelligent Computation in Manufacturing Engineering. 113-6.

Kalekin-Fishman, Devorah. (1991). Latent Messages: The Acoustical Environments of Kindergartens in Israel and West Germany. Sociology of Education, Vol. 64, No. 3. (Jul., 1991), pp. 209-222.

Katz-Gerro, Tally, (1999). Cultural consumption and social stratification. Sociological Perspectives 42, 627-646.

Katz-Gerro, Tally, Oriel Sullivan, 2004. Leisure, tastes and gender in Britain: Changes from the 1960s to the 1990s. Forthcoming in Sociologie et Societes.

Katz-Gerro, Tally(2004). Cultural consumption research: review of methodology, theory, and consequence',International Review of Sociology,14:1,11 — 29.

Kellaris, J. J. (1992). Consume esthetics outside the the lab: preliminary report on a musical field study. Advances in Consumer Research, 19, 730-4.

Keyes, Cheryl L.. (2002). Rap Music and Street Consciousness. Urbana, IL: University of Illinois Press. Chapter 5. October 7

Kosina, K. (2002). Music genre recognition. Diploma thesis. Technical College of Hagenberg, Austria.

Kryter, K.D. (1970). The Effects of Noise on Man. New York: Academic Press. Lamont, Michele, 1992. Money, Morals, and Manners. University of Chicago Press, Chicago.

Lamont, Michèle, (1992). Money, Morals, and Manners. University of Chicago Press, Chicago.

Lamont, Michèle and Aksartova, Sada, (2002). Ordinary cosmopolitanisms. Theory, Culture, and Society 19, pp. 1–26.

Lee, Stephen. (1995). “Re-Examining the Concept of the ‘Independent’ Record Company: The Case of Wax Trax! Records.” Popular Music 14:13-31.

Lena, Jennifer. (2004). “Sonic Networks: Economic, Stylistic, and Expressive Dimensions of Rap Music, 1979-1995.” Poetics 32: 297-310.

Lévi-Strauss C. (1963). Structural Anthropology. New York: Basic Books.

Lizardo, Omar. (2006). The puzzle of women's "highbrow" culture consumption: Integrating gender and work into Bourdieu's class theory of taste. Poetics.

Lomax, Alan (1962). Song Structure and Social Structure. Ethnology, Vol. 1, No. 4 (Oct., 1962), pp. 425-451.

Lomax, A. (1968). Folk song style and culture. Washington, D.C.: American Association for the Advancement of Science.

Lont, Cynthia M. (1992). "Women's Music: No Longer a Small Private Party." Pages 241-253 in Rockin' the Boat: Mass Music and Mass Movements, edited by Reebee Garofalo. Boston: South End Press.

Lopez Sintas, J. and Garcia Advarez, E. (2002). Omnivores Show up Again: The Segmentation ofCultural Consumers in Spanish Social Space. European Sociological Revieiv, 18(3), 353-368.

MacKinnon, Neil (1994), *Symbolic Interactionism as Affect Control*, Albany, NY: State University of New York Press.

Mark, Noah, (1998). Birds of a feather sing together. Social Forces 77, 453-485.

Martin, J. L. (2000). "What Do Animals Do All Day?: The Division of Labor, Class Bodies, and Totemic Thinking in the Popular Imagination." Poetics 27: 195-231.

Margolis, Diane R. (1992). Backyard soundings: An exploration of boundaries. Humboldt Journal of Social Relations Special Issue: The sociology of emotions Vol 18(2), 1992, 85-100.

Meyer, Heinz-Dieter. (2000). Taste formation in pluralistic societies. International Sociology 15, 33-56.

McCourt, Tom and Patrick Burkhart. (2003). "When Creators, Corporations, and Consumers Collide: Napster and the Development of On-Line Music Distribution." Media, Culture & Society 25: 335-350.

McKay, C. (In press). Automatic genre classification of MIDI recordings. Master's thesis. McGill University, Canada.

McKay, Cory and Ichiro Fujinaga. (2004). Automatic Genre Classification Using Large High-Level Musical Feature Sets. Proceedings of the International Conference on Music Information Retrieval.

McEnnis, D., C. McKay, and I. Fujinaga. (2006). jAudio: Additions and improvements. Proceedings of the International Conference on Music Information Retrieval. 385–6.

McEnnis, D., C. McKay, and I. Fujinaga. (2006). Overview of OMEN. Proceedings of the International Conference on Music Information Retrieval. 7–12.

McEnnis, D., C. McKay, I. Fujinaga, and P. Depalle. (2005). jAudio: A feature extraction library. Proceedings of the International Conference on Music Information Retrieval. 600–3.

McKinney, M. F., and J. Breebaart. (2003). Features for audio and music classification. Proceedings of the International Symposium on Music Information Retrieval. 151–8.

Mill, J. S., (1872). An Examination of William Hamilton's Philosophy, 4th ed., Chapter XVII.

Mohr, John W. (1998). Measuring meaning structures. Annual Review of Sociology 24, 345-370.

Murninghan, J. Keith and Donald E. Conlon. (1991). "The Dynamics of Intense Work Groups: A Study of British String Quartets." Administrative Science Quarterly 36: 165-186.

Negus, Keith. (1998). "Cultural Production and the Corporation: Musical Genres and the Strategic Management of Creativity in the US Recording Industry." Media, Culture & Society 20: 359-379.

North, Adrian. C. and Hargreaves David. J. (1996). Responses to music in a dining area. Journal of Applied Social Psychology, 26, 491-501.

North, A. C., and D. J. Hargreaves. (1997). Liking for musical styles. Music Scientae 1: 109–28.

Osgood, C.E., Suci, G., & Tannenbaum, P. (1957) *The measurement of meaning.* Urbana, IL: University of Illinois Press

Parkin, Frank. (1979). Marxism: A Bourgeois Critique. New York: Columbia University Press.

Pachet, F., and D. Cazaly. (2000). A taxonomy of musical genres. Proceedings of the Content- Based Multimedia Information Access Conference.

Perrott, D., and R. O. Gjerdingen. (1999). Scanning the dial: An exploration of factors in the identification of musical style. Research Notes. Department of Music, Northwestern University, Illinois, USA.

Peterson, R. A. and N. Anand (2004). "The Production of Culture Perspective." Annual Review of Sociology 30: 311-34.

Peterson, R. A. and D. G. Berger (1975). "Cycles in Symbol Production: The Case of Popular Music." American Sociological Review 40(April): 158-173.

Peterson, Richard A. (1992). Understanding audience segmentation. Poetics 21, 243-258. Peterson, Richard A., 1997. The rise and fall of highbrow snobbery as a status marker. Poetics 25, 75-92.

Peterson, Richard A., Simkus, Albert. (1992). How musical tastes mark occupational status groups. In: Lamont, Michele, Fournier, Marcel (Eds.), Cultivating Differences. University of Chicago Press, Chicago, pp. 152-186.

Peterson, Richard A., Kern, Roger M. (1996). Changing highbrow taste. American Sociological Review 61, 900-907.

Peterson, Richard A., Roger M. Kern. (1996). Changing Highbrow Taste: From Snob to Omnivore. American Sociological Review, Vol. 61, No. 5. (Oct., 1996), pp. 900-907.

Peterson, Richard A. (1997). Creating Country Music: Fabricating Authenticity. Chicago: University of Chicago Press.

Pye, D. (2000). Content-based methods for the management of digital music. Proceedings of the International Conference on Acoustics, Speech, and Signal Processing. 2437–2440.

Radway, Janice. (1987). "Reading Reading the Romance." In Studies in Culture: An Introductory Reader, ed. Ann Gray and Jim McGuigan. London: Arnold.

Ragin, Charles C. (1987). The Comparative Method. University of California Press, Berkeley, CA.

Ragin, Charles C. (2000). Fuzzy-Set Social Science. University of Chicago Press, Chicago.

Ragin, C.C. (2004)."Between Complexity and Parsimony: Limited Diversity, Counterfactual Cases, and Comparative Analysis." (September 23). Department of Sociology, UCLA. Theory and Research in Comparative Social Analysis. Paper 17.

Relish, M., 1997. It's not all education: network measures as sources of cultural competency. Poetics 25, 121–139.

S. Rosen and P. Olin. (1965). Hearing Loss and Coronary Heart Disease, Archives of Otolaryngology, 82:236

Russell, Phillip A. (1997). "Musical tastes and society" edited by Hargreaves, D. & North, A. The social psychology of music. Oxford: Oxford University Press.

Saussure, Ferdinand de. (1996). Course in General Linguistics. Edited by Charles Bally and Albert Sechehaye, in collaboration with Albert Riedlinger. Translated by Wade Baskin. New York: McGraw-Hill Book Company.

Shan, M. K., and F. F. Kuo. (2003). Music style mining and classification by melody. IEICE Transactions on Information and Systems E86-D (3): 655–69.

Smith-Lovin, Lynn & Heise, David (1988), *Analyzing Social Interaction: Advances in Affect Control Theory*, New York: Gordon and Breach.

Sonnett, John. (2004). Musical boundaries: intersections of form and content, *Poetics* 32(3), pp. 247–264.

Stam, Robert. (2000). Film Theory. Oxford: Blackwell.

Sullivan, Oriel, Tally Katz-Gerro. (2007). The Omnivore Thesis Revisited: Voracious Cultural Consumers. Eurpoean Sociological Review, Vol 23, No. 2, pg. 123-137.

Tagg, P. (1982). Analysing popular music: Theory, method and practice. Popular Music 2: 37–67.

Tally Katz-Gerro. (2002). Highbrow Cultural Consumption and Class Distinction in Italy, Israel, West Germany, Sweden, and the United States. Social Forces, Vol. 81, No. 1 (Sep., 2002), pp. 207-229

Tepper, Steven J., 2000. Fiction reading in america: explaining the gender gap. Poetics 27, 255–275.

Titon, Jeff Todd. (1994). Early Downhome Blues: A Musical & Cultural Analysis. Chapel Hill, NC: University of North Carolina Press.

Tzanetakis, G. and Cook, P. (2000). MARSYAS: a framework for audio analysis. Organised Sound 2000. 4(3).

Tzanetakis, G., and P. Cook. (2002). Musical genre classification of audio signals. IEEE Transactions on Speech and Audio Processing 10 (5): 293–302.

Tzanetakis, G., G. Essl, and P. Cook. (2001). Automatic musical genre classification of audio signals. Proceedings of the International Symposium on Music Information Retrieval. 205–10.

Van Eijck, Koen, (2000). Richard A. Peterson and the culture of consumption. Poetics 28, 207-224.

Van Eijck, Koen, (2001). Social differentiation in musical taste patterns. Social Forces 79, 1163-1184.

Van Rees, K., Vermunt, J.K., Verboord, M., 1999. Cultural classifications under discussion: latent class analysis of highbrow and lowbrow reading. Poetics 26, 349–365.

Veblen, T. (1926). The theory of the leisure class : an economic study of institutions. New York, Vanguard Press.

Wacquant, Louis. (2006). Pierre Boudieu. Forthcoming in Rob Stones (ed.), Key Contemporary Thinkers (London and New York: Macmillan, new edition, 2006).

Walser, Robert. (1993). Running with the Devil: Power, Gender, and Madness in Heavy Metal Music. Hanover, NH: Wesleyan University Press.

Warde, A., Martens, L. and Olsen, W. (1999). Consumption and the Problem of Variety. Culture Omnivorousness, Social Distinction and Dining Out. Sociology, 33, 105-127.

Weber, Max. (1968 [1978]). In Economy and Society, ed. Guenther Roth and Claus Wittich. Berkeley: University of California Press.

Weber, M. (1974). The Theory of Social and Economic Organization. In Parsons, T. and Henderson, A. M. (Eds and trans). New York: Oxford University Press.

Weber, William. (2001). “From Miscellany to Homogeneity in Concert Programming.” Poetics 29: 125-134.

Witten, E. Franck, L. Trigg, M. Hall, G. Holmes and S.J. Cunningham. (1999). Weka: Practical machine learning tools and techniques with Java implementations, Proceedings of ANNES'99 International Workshop on emerging Engineering and Connectionnist-based Information Systems, pp. 192–196.

Whitman, B., and P. Smaragdis. (2002). Combining musical and cultural features for intelligent style detection. Proceedings of the International Symposium on Music Information Retrieval. 47–52.

Xu, C., N. C. Maddage, X. Shao, F. Cao, and Q. Tian. (2003). Musical genre classification using support vector machines. Proceedings of the International Conference on Acoustics, Speech and Signal Processing. V 429–32.

Yi Liu, Jieping Xu, Lei Wei, Yun Tian. (2007). The Study of the Classification of Chinese Folk Songs by Regional Style. Semantic Computing. ICSC 2007. International Conference on 2007, pp. 657-662.

Zhang, H and Jiang Su. (2004). Naive Bayesian Classifiers for Ranking. Lecture Notes in Computer Science, Vol 3201. Machine Learning: ECML 2004.