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CULTURE AND COMPETITION: A CRITICAL TEST OF
HOMOPHILY AND DISTINCTION EXPLANATIONS FOR CULTURAL NICHES

by

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As members of the Final Examination Committee, we certify that we have read the dissertation prepared by Noah Mark entitled Culture and Competition: A Critical Test of Homophily and Distinction Explanations for Cultural Niches and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy.

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ABSTRACT

Why do different kinds of people like different kinds of culture? I examine two answers to this question: the homophily model and the distinction model. These models are alternative explanations for the finding that different cultural tastes and practices are concentrated within different sociodemographic segments of society. To determine which model is the preferred explanation, I identify conflicting predictions generated by the models. The models imply different ecological processes. The homophily model predicts that cultural forms compete with each other for people: People are a scarce resource on which cultural forms depend; cultural forms are not a scarce resource for people. The distinction model predicts a dual ecology: Cultural forms compete with each other for people, and people compete with each other for cultural forms. Empirical tests with 1993 General Social Survey data support the homophily model and disconfirm the distinction model.
CHAPTER 1. THE QUESTION

Why do different kinds of people like different kinds of culture? A large body of empirical research shows that different cultural tastes are concentrated within different segments of society with respect to a variety of sociodemographic variables including age (Hughes and Peterson 1983; Peterson and DiMaggio 1975; Smith 1994), region (Marsden, Reed, Kennedy, and Stinson 1982), education (Bourdieu [1979] 1984; Hughes and Peterson 1983; Lynd and Lynd 1929; Marsden et al. 1982; Veblen 1899; Warner and Lunt 1946), and race (DiMaggio and Ostrower 1990). Not only have many studies documented this fact, casual observation provides the same insight. Although I am not the first to attempt to explain this finding (Bourdieu [1979] 1984; DiMaggio 1982b,c,1987; Gans 1974), a reader may wonder why I seek to explain something so obvious. Is knowing this fact not enough? Why not save our explanatory efforts for findings that strike us as strange? The reason I seek to explain an obvious fact is that trying to explain the obvious leads us to consider fundamental issues. A fact would not be obvious if the reason for it was not important. Explanations for obvious facts often have implications concerning other phenomena, obvious and non-obvious. In other words, explanations for obvious facts have the potential to simplify the complexity of the empirical world. Such explanations provide understanding of the complex through knowledge of the simple. In this dissertation, I adopt the strategy of trying to explain the obvious. I construct, analyze, and empirically test two explanations for the finding that different kinds of people like different kinds of culture.
Outline

This section outlines the dissertation. The following section discusses my methodological approach. The third section of Chapter 1 reviews progress made toward explaining sociodemographic patterns of cultural taste. This review clarifies the need for the present study. The fourth section of Chapter 1 presents the concepts of sociodemographic space and the niche. Using these concepts, I translate the research question into theoretical language. The resulting question asks why different cultural forms occupy different niches in sociodemographic space.

Chapter 2 presents two alternative answers to the research question: the homophily model and the distinction model. I argue that these two models differ from each other with respect to two factors. One factor is the similarity bias that a model assumes. The homophily model posits a social structure (i.e. pattern of who interacts with whom) that is biased toward similar people interacting with each other, but assumes that similarity of one person to another has no effect on whether positive social influence occurs, given that the two people interact. The distinction model does not assume homophilous interaction patterns, but argues that positive social influence is more likely to occur between similar people who are interacting with each other than between dissimilar people who are interacting with each other. The other factor is the mechanism by which an individual may lose a cultural taste. The homophily model posits inactive taste loss — the loss of tastes not reinforced by expression in social interaction. The distinction model posits negative social influence -- the rejection of cultural tastes
expressed by one’s interaction partners.

The second section of Chapter 2 formalizes these models. The third section describes an analysis of these models using computer simulation. The analysis demonstrates that both models provide accounts for niches. That is, both models provide answers to the question of why cultural forms occupy niches in social space.

To evaluate the relative merits of these alternative explanations, Chapter 3 identifies conflicting predictions implied by the models. Consideration of sociologists’ arguments concerning culture and competition reveals three different ecologies that are potentially accurate descriptions of cultural processes. Computer simulations reveal that the homophily model implies an ecology in which cultural forms compete with each other for people. The distinction model implies a dual ecology in which cultural forms compete with each other for people and people compete with each other for cultural forms.

Chapter 4 uses 1993 General Social Survey (GSS) data to test these conflicting hypotheses. The results support the homophily model and disconfirm the distinction model. While cultural forms compete with each other for people, people do not compete with each other for cultural forms.

Chapter 5 discusses substantive and methodological accomplishments of the dissertation. This chapter also considers implications for ecological and evolutionary theory.
Positive Science and the Study of Culture

An important and unresolved question for students of culture is whether culture can be fruitfully analyzed from a positivist perspective (Geertz [1973] 1975a, 1983; Griswold 1987a; Wuthnow 1987). The answer to this question depends on what one seeks to accomplish by studying culture. Two broad goals appear in the literature: (1) measurement of variables; (2) identification and explanation of relationships between variables.

Measurement of variables, as opposed to the identification and explanation of relationships between variables, is the goal adopted by interpretivists such as Geertz ([1973] 1975a,b, 1983) and Darnton ([1984] 1991). In particular, these scholars seek to identify (i.e. measure) the meanings people attach to various symbols, events, and acts with which they are involved. While these scholars would not describe their pursuit as crudely as I have, I believe the goal of measurement of variables usefully distinguishes

---

1. Some students of culture usually use the word scientific instead of positivist (Geertz 1983; Griswold 1987a; Wuthnow 1987). For these scholars, there is little question whether a strict positivist approach is adequate for the analysis of culture: it is not. However, I use the term positivist because there is more agreement on what positivist means than on what scientific means. Below I argue that the positivist perspective is better suited to achievement of the goals of many students of culture than these scholars suggest.

2. I do not intend the term “measurement” to imply a formal theory of measurement employed by some positive scientists (Bohmstedt 1983). By measurement, I mean identification of the value of a variable that is defined on an observation. For example, the meaning that a person attributes to a party could be an instance of many friends enjoying each other’s company, a collection of actors networking for personal benefit, or something else. Thus, the meaning a person attributes to a party is a variable. Measurement of that variable is identification of the meaning that the person does attribute to the party.
Other students of culture seek to identify and explain relationships between variables (Bourdieu [1979] 1984; DiMaggio 1982a, 1987; DiMaggio and Mohr 1985; Griswold 1987a, b; Wuthnow 1987: 60-65). An example provided by Griswold (1987a) illustrates this point. Griswold seeks to explain the finding that unlike Western romance novels, a substantial minority of Nigerian romance novels do not end with the protagonists becoming engaged or married. In other words, Griswold seeks to explain the relationship between two variables defined on novels: nationality, which takes the value Nigerian or Western, and type of ending, which takes the value engagement/marriage or no engagement/marriage. This basic goal of identifying and explaining relationships between variables unifies research on culture ranging from work emphasizing interpretation (Griswold 1987a, b; Wuthnow 1987) to studies that are strictly positivist in orientation (Boyd and Richerson 1985; Cavalli-Sforza and Feldman 1973; Cavalli-Sforza, Feldman, Chen, and Dornbusch 1982).

I argue that the positive model of science has little to offer scholars whose ultimate goal is the measurement of variables, but that the positive model of science is potentially useful to scholars who seek to identify and explain relationships between variables. The reason for this difference is that the goal of positive science is different

---

3 Notice that much sociological research not primarily identified as the study of culture seeks to measure values of variables.
from the former and the same as the latter (Jasso 1988; Mayhew 1984a). Positive science offers one set of criteria for evaluating explanations of relationships between variables: explanations should be empirically accurate, parsimonious, and fruitful. Not all students of culture who seek to identify and explain relationships between variables adopt these criteria. Nevertheless, the explanations these scholars construct can be evaluated according to these criteria. These criteria are irrelevant to the meanings identified by Geertz and other interpretive scholars.

That the criteria of positive science can be used to evaluate the explanations developed by students of culture does not imply that applying these criteria will help scholars discover what they want to know about culture. To determine whether application of these criteria is useful, sociologists often start by considering the nature of

4"Observational sciences are concerned to develop and test theories" (Mayhew 1984a:260). Notice the congruence between this statement and the goal of identifying and explaining relationships between variables. Because theories explain and because only theories explain, building a theory and explaining a relationship between variables are the same task. Testing a theory is the task of identifying the empirical relationships among variables and comparing these relationships to those predicted by the theory. Thus, positive science is concerned with much more than the measurement of variables.

5A fruitful explanation explains a large number of relationships between variables.

6Wuthnow (1987) argues that the important difference between the goal of identifying the meanings people attach to symbols, events, and acts and the goal of finding and explaining relationships between (observable) variables is that meanings are not directly observable. I agree that whether a variable is directly observable is of great importance. However, I argue that the difference between seeking to explain and seeking to measure is more important than whether the variables involved are directly observable. Even the measurement of variables that are directly observable (e.g. the weight of an apple) cannot be evaluated according to the criteria of parsimony or fruitfulness. (Notice that empirical accuracy describes a statement of a relationship between variables, not the theoretical validity of a measure (Bohmstedt 1983).)
culture (Griswold 1987a; Wuthnow 1987). They argue that because the important characteristics of cultural objects include the meanings that people attached to them, the criteria of positive science are not adequate (Griswold 1987a; Wuthnow 1987). I advocate a different approach to the question of whether we can study culture usefully with a positivist approach: try it and see if we accomplish anything. I propose that instead of starting by considering the nature of culture we start with empirical findings that non-cultural theories do not explain. In other words, we should start with an unanswered or inadequately answered theoretic question: Why are certain variables related as they are? Before describing this approach in greater detail, I state the definition of explanation that I adopt.

A Definition of Explanation

According to the positive model of science, an explanation of an empirical finding is a set of assumptions that logically imply that finding (Hempel and Oppenheim 1948; Jasso 1988; Mayhew 1984a). Such a set of assumptions is called a theory. Thus, a theory explains what it logically implies, or predicts. A simple example helps to illustrate what explanation is. Suppose we want to explain the positive relationship parents’ income and the income of their adult children. One explanation consists of the following two assumptions: (1) Parents’ income positively affects children’s educational attainment; (2)

---

7Some sociologists disagree with this position (Burke and Reitzes 1981, 1991; Carley 1993; Carley and Palmquist 1992; Robinson and Smith-Lovin 1992).

8According to the positivist approach, to explain and to predict mean the same thing—to logically imply (Hempel and Oppenheim 1948; Mayhew and Levinger 1976).
Children’s educational attainment positively affects children’s income. These two assumptions logically imply that parents’ income positively affects children’s income. Thus, these assumptions constitute an explanation for the relationship between parents’ and children’s income. That the actual processes of income determination are more complex than this explanation is irrelevant to the status of these assumptions as an explanation of this relationship. Explanation is a set of logical relationships, not a description of empirical facts. That a set of assumptions explains an empirically true relationship between two variables does not imply (or depend upon) the truth of the set of assumptions. Nor does the fact that a set of assumptions explains an empirically observable relationship between two variables imply that that set of assumptions is the only (or best) explanation for the relationship (Mayhew 1984a). Different sets of assumptions that logically imply the same relationship constitute alternative explanations for that relationship. For example, the following two assumptions are an alternative explanation for the positive relationship between parents’ income and children’s income: (1) Parents’ income positively affects children’s amount of cultural capital; (2) Children’s amount of cultural capital positively affects children’s income. These alternative explanations are equally parsimonious (number of assumptions is 2), equally fruitful (number of predictions is 1), and equally accurate (they must be since their predictions are identical). Thus, they are of equal merit according to the positivist criteria for evaluating explanations. Since social scientists actually trying to explain the relationship between parents’ and children’s income, rather than trying to illustrate what explanation is, have
developed better explanations than these two examples, the relative merit of these two
two examples is not important. What is important is that the positivist criteria for evaluating
explanations can be used to evaluate the relative merit of any two alternative explanations,
and aside from cases where the alternative explanations are of equal merit, the better of
the two explanations can be selected.

Justification for Cultural Theory

The goal of positive science is to explain the largest number of findings possible
with the smallest number of assumptions (Jasso 1988; Mayhew 1984a). Therefore, the
only justification for increasing the complexity of theory is to explain findings that were
inexplicable under the simpler, initial body of theory. Thus, the justification for cultural
theory rests on the question of whether there are findings that non-cultural theory does
not explain but which cultural theory does. The answer to this question is that there are
findings that non-cultural theory cannot explain that cultural theory potentially can

9Notice that this statement of the goal of positive science simply combines the
goal stated above of identifying and explaining relationships between variables with the
criteria of parsimony and fruitfulness.

10I have not yet stated how I define a cultural theory. I provide a definition below.
At this point in my argument, the definition that I adopt is unimportant. What is
important is that the cultural theory I am referring to is a new theory, a theory that, if
constructed and pursued, will complicate the present body of theory. I call the theory
"cultural" rather than "new" because in this section I am arguing that a cultural theory is
justified and because cultural theories are not really new. Cultural theories are only
"new" in this hypothetical argument I am developing that justifies cultural theory
according to positivist criteria.

11Non-cultural theory is defined as the complement of cultural theory, which is
defined below. Here what is important is that non-cultural theory is theory that has
already been constructed.
explain. To illustrate this point, consider just those findings concerning variation in characteristics across elements of living populations. Genetic theory is the most developed theory for explaining such findings: Which mice have white fur and which have colored fur? Mice whose parents have white fur have white fur, and mice whose parents have colored fur have colored fur. Genetic theory satisfactorily explains the color of mice. If the color of mice was all we wanted to explain, we would not need a cultural theory. However, genetic theory fails to explain which people use the hula hoop. Theories based on direct learning or non-social environmental forces also fail. This failure of biological and all other non-cultural theories to explain some observed forms of human variation is the motivation for the scientific study of culture (Clifton 1968; Lenski, Nolan, and Lenski [1970] 1995). The most promising explanation for which people use the hula hoop is based the process of social learning. By social learning, I mean the direct or indirect acquisition of information by one person from one or more other persons.

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12For the purpose of this illustration, I am ignoring emergent properties of social systems that some sociologists argue should be the focus of our analysis (Coleman 1986; Mayhew 1980). Nevertheless, others argue that explaining variation in characteristics is an important goal of social science. Vayda and Rappaport (1968:477) argue that “one goal [of social science] is to explain why particular traits or congeries of traits exist at particular times and in particular places: why, for example, do some human groups grow crops and keep domesticated animals while others do not?”

13Or mice whose parents have colored fur may have white fur if their parents are hybrids.

14Learning is often defined as “the process by which an organism acquires, through experience, information with behavior-modifying potential” (Lenski et al. [1970] 1995:15). The qualification concerning behavior-modifying potential is not necessary for my purposes in this dissertation.
Therefore, a theory that assumes that some traits of individuals are transmitted by a process of social learning is justified. Such a theory is a cultural theory.

**What is Culture?**

Beginning the analysis of culture by thinking about whether a cultural theory is desirable from a positivist perspective provides a theoretically grounded definition of culture. Culture is the set of characteristics in which cultural theory explains variation.\(^\text{15}\) If cultural theory explains variation in some characteristic of people well, we call that characteristic culturally determined, or cultural.\(^\text{16}\) From the positivist perspective, whether we call a characteristic cultural is not what is really important; what is important is that we can explain variation in this characteristic. If genetic theory explains variation in some characteristic of people well, we call that characteristic genetically determined. If neither genetic factors, cultural factors, nor non-social environmental factors explain

---

\(^\text{15}\)Certainly, we need to be empirically oriented enough that we have an idea from looking at the natural world of a category of phenomena that we are trying to explain with a single theory or theoretical approach. I think students of culture have a good enough idea of the things we consider to be culture to build cultural theories and to start trying to define culture with the aid of theory.

\(^\text{16}\)Some readers may be concerned that my approach to defining culture will leave us with a theory that cannot address differences between different types of culture (e.g., norms, identities, institutions, popular culture) because it is based on a theory of culture that defines any characteristic transmitted through social learning as cultural. I argue that the ability to make different predictions about different types of culture that are observed to behave differently will come with further theoretical refinement. I believe using the same method for defining different types of culture will be beneficial. For example, cultural forms predicted to spread from firms to people not employed by those firms could be defined as popular culture. Empirical tests would reveal whether various culture forms behave as forms of popular culture are predicted to behave.
variation in some characteristic of people well, we may need a new theory.17

This definition of culture has been proposed by Kaplan and Manners (1972: 3).

"Let us just say that culture is a class of phenomena conceptualized by
anthropologists in order to deal with questions they are trying to answer. In other
words, anthropologists are concerned not simply with human behavior, but rather
with traditional or institutionalized human behavior. The nineteenth-century
anthropologists felt a need for some such concept as culture because they had to
have some way of 'explaining' variations in patterns of behavior and societal
institutions that could not be explained biologically."

A theoretically based definition of culture provides a useful alternative to the
empirically based definitions that dominate the social scientific literature on culture. The
method for developing an empirically based definition of culture differs sharply from the
method of developing a theoretically based definition described above. To develop an
empirically based definition, one starts by considering things, assumed to be real18, that
are out there (e.g. symbols, meanings, norms, identities, institutions, attitudes, religions,

17Exchange (Blau 1964; Cook and Emerson 1978) theorists might argue that this
is where a theory of self-interested actors is needed. Which person in an exchange
network receives the most rewards has not been explained genetically or culturally.

18Realism, or essentialism, states that things such as identities and norms exist as
real things that are really different from each other (Mayhew 1981). The existence of
these categories of things is independent of scientific research. The positivist position I
adopt argues that such categories are the constructions of people trying to understand
reality. Positivists claim there is one reality with a single nature that is independent of
observers, but observers cannot know about that reality without constructing
hypothetically real categories and variables (Mayhew 1982).
organizations, money, people, networks) and by deciding (without the explicit aid of a theory) which of these things are culture and which are not. Tylor ([1871] 1889) adopted this approach and defined "culture ... [as] that complex whole which includes knowledge, belief, art, morals, law custom, and any other capabilities and habits acquired by man as a member of society" (p. 1).\textsuperscript{19} While contemporary examples rely less on lists of things referred to as culture and more on the general concepts of symbol and meaning, they still attempt to identify a natural category of real things that are out there. Griswold (1987a:4) defines culture as "shared significance [or meaning] embodied in form." For Wuthnow (1987:4), culture is "the symbolic-expressive aspect of social behavior." Swidler (1986) defines "culture as the publicly available symbolic forms through which people experience and express meaning. ... [Culture includes] beliefs, ritual practices, art forms, and ceremonies, as well as informal cultural practices such as language, gossip, stories, and rituals of daily life." Crane's (1994) argument that the definition of culture should include recorded as well as not recorded culture is an argument for replacing one empirically based definition of culture with another.

Some scholars criticize empirically based definitions (Jepperson and Swidler 1994; Kroeber [1923] 1948; Kroeber and Kluckhohn [1952] 1963). Turning our attention to the process of transmission, the process that I argue is the defining characteristic of a cultural theory, Kroeber ([1923] 1948:253) argues that "how it comes to be is really more distinctive of culture than what it is." Jepperson and Swidler (1994) move us part way

\textsuperscript{19}Kroeber and Kluckhohn ([1952] 1963) argue that many students of culture follow Tylor's descriptive, enumerative approach to defining culture.
toward a theoretically based definition by suggesting that culture is usefully understood by the contrasts it suggests. Culture is contrasted with nature, and culture is contrasted with social structure. Contrasting culture with theoretical concepts helps us to conceptualize culture theoretically.

Notice that the definition I adopt is different from calling culture the characteristics of people that are not genetically determined. This alternative to the definition I adopt is redundant and overly negative. If we want to refer to non-genetically determined characteristics, we should use the phrase “non-genetically determined characteristics.” I think it is desirable for the term culture to refer to a set of empirical phenomena that operate according to the same set of processes—processes explained by a cultural theory. That variation in some characteristics cannot be explained genetically does not imply that variation in these characteristics can be explained

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20 Jepperson and Swidler (1994) use the term natural to refer to exogenous aspects of theories that are not socially constructed, such as rationality of actors in rational choice theories. I consider their choice of the term natural unfortunate. I argue that culture is best understood as having a different relationship to nature: “Culture is a general category of nature. ... As such it is comparable to categories like energy, mass, evolution” (Kroeber and Kluckhohn [1952] 1963:365). (See also Mayhew 1984b.)

21 Kroeber and Kluckhohn ([1952] 1963:139) discuss two such definitions: (1) “Culture consists of all nongenetically produced means of adjustment” (Blumenthal); (2) “culture includes all those ways of feeling, thinking, and acting which are not inevitable as a result of human biological equipment and process and (or) objective external situations” (Kluckhohn and Kelly).

22 Notice that my suggestion that the study of culture begin with the consideration of empirical findings that non-cultural theories do not explain is different from defining culture as the complement of something. My suggestion to start with consideration of empirical findings that non-cultural theories do not explain is a suggestion to save theoretical innovations for topics in need of theoretical advance.
culturally.\(^{23}\)

Other definitions limit culture to characteristics transmitted via symbols (Lenski et al. [1970] 1995). This definition excludes characteristics acquired through simple imitation. For now, I avoid consideration of this issue because cultural theories are not yet sophisticated enough to yield different predictions concerning symbolic communication and imitation. Recognition of this difference and a more precise definition of culture will be appropriate when these complications can be shown to improve the empirical accuracy of theory (Cavalli-Sforza and Feldman 1973).

Viability of a Science of Culture

Wuthnow (1987:1-6,1997) and Crane (1994:1-4) express concern about the peripheral position of the sociology of culture within the discipline of sociology. Some scholars argue that what is needed to increase the influence of the study of culture on the rest of the social sciences is a unifying theory or perspective on culture (Crane 1994:4; Kroeber and Kluckhohn [1952] 1963). I argue that a theory-based definition of culture calls attention to the common aspect of cultural theories.

Although rarely referred to as "social learning", cultural transmission through social learning—the direct or indirect transmission of information between people—is an important characteristic of much theoretical work on culture. Socialization plays an important role in the work of Bourdieu ([1979] 1984) and DiMaggio and Useem (1978). The process of social learning is present in Griswold's (1992) analysis of the Nigerian

\(^{23}\)Again, I suggest the distribution of rewards across actors in an exchange network as a potential example.
village novel. Authors learn to write village novels by reading prominent village novels (p. 719). Social learning also characterizes the process by which readers of village novels develop expectations about the genre (p. 719) and beliefs about village life in African history (p. 721-723). Coercive, mimetic, and normative mechanisms of institutional change involve social learning (DiMaggio and Powell 1983). In proposing greater focus on cultural linkages, Strang and Meyer (1993) consider the relative importance of direct and indirect paths of social learning.

Using a theory that posits the transmission of characteristics through social learning as a basis for defining culture results in a broad definition of culture. The centrality to the social sciences of the characteristics included—language spoken, education, occupation, religion, political affiliation, criminal behavior, fertility—cannot be mistaken. The capacity of humans to create and communicate culture greatly exceeds the cultural capacity of every other species that currently populates the earth. The immense differences observed between human societies and the societies of other species of animal plausibly results from this difference in cultural capacity (Lenski et al. [1970] 1995). Accordingly, sociologists who want to study human society and human social processes can afford to ignore culture if they do not mind completely misunderstanding...

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24 Swidler (1996) states that such an inclusive (small c) definition of culture needs to be understood. However, culture defined inclusively is harder to think about and to organize the study of than is a (big C) concept of culture that is limited to art, music, theater, TV, and film (Swidler 1996). I suggest that a theory-based inclusive definition of culture helps to make culture easier to think about by drawing our attention to the common transmission process. Additionally, the common transmission process provides one link between Swidler's big-C-Culture and small-c-culture.
those aspects of human society that are different from chimpanzee society. Otherwise, cultural theory is necessary. Against this backdrop, it is hard to imagine how the sociology of culture would be peripheral within the field of sociology. If the sociology of culture ever became peripheral, it should be of great concern to all sociologists.

Explaining Cultural Patterns

Having laid this methodological groundwork, I can return to the substantive issue of sociodemographic variation in cultural taste. A formal deductive theory that explains sociodemographic patterns of cultural taste remains to be developed and tested. No formal answer to the question of why different kinds of people like different kinds of culture exists. This section describes the progress that has been made toward explaining sociodemographic patterns of cultural taste and the shortcomings of this work. This description clarifies the value added by this dissertation.

Theories in the sociology of culture fall short of formally explaining sociodemographic patterns of cultural taste in the positive sense. In this dissertation, I consider two theories that appear most promising as explanations for the finding that different kinds of people like different kinds of culture. One is Bourdieu’s ([1979] 1984) influential theory of social reproduction. While Bourdieu’s arguments have generated

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25 Whether societies of all non-human animals can be adequately understood without consideration of cultural processes is debated (Lenski et al. [1970] 1995; Lumsden and Wilson 1981).

26 Beisel (1997) assures us that the sociology of culture is very central presently.
empirical research testing many hypotheses (DiMaggio 1982a; DiMaggio and Mohr 1985; Mohr and DiMaggio 1995; Robinson and Garnier 1985), a clear deductive link from Bourdieu's assumptions, which Bourdieu does not explicitly distinguish from other statements, to testable hypotheses has not been achieved. Although the ideas necessary to explain sociodemographic patterns of cultural taste are present in Bourdieu's work, organization of these ideas as an explanation is lacking. In this sense Bourdieu's work falls short of explaining sociodemographic patterns of cultural taste.

Mark's (forthcoming) ecological theory of cultural taste is an alternative to Bourdieu's arguments. This deductive theory, based on assumptions about the structure of social networks, the transmission of cultural tastes through network ties, and time constraints, offers one explanation for sociodemographic patterns of cultural taste. Because cultural tastes are transmitted through network ties and because network ties tend to connect similar people, different cultural tastes are localized within different sociodemographic segments of society. The informal presentation of the theory leaves room for improvement in the form of increased clarity and logical rigor. Formalization yields new insights.

Other sociologists have made progress toward explaining sociodemographic

\footnote{Demonstration of this fact is one goal of this dissertation.}

\footnote{Bourdieu's theory falls short of a deductive explanation only from the perspective of a person who thinks deductive explanation is good. Bourdieu might argue that his theory successfully avoids the pitfall of a deductive explanation. Bourdieu ([1979] 1984:xiii) attempts to soften the scientific edge of his work by adopting literary methods along with scientific ones.}
patterns of cultural taste; however, this work too falls short of deductive explanation.\footnote{As with Bourdieu, this failure probably has more to do with lack of interest than with any other reason. Rather than strictly following the positive model of science, most sociologists of culture prefer a blending of scientific and humanistic methods (Griswold 1987a).}

While theorists present clear hypotheses, and recognize that hypotheses logically follow from some ideas, they avoid clearly stating those ideas as assumptions (Blau, Blau, and Golden 1985; Bryson 1996; DiMaggio 1987). It is clear that the hypotheses are logically related to the theoretical ideas; it is not clear that the theoretical ideas logically imply the hypotheses.

Formal models of cultural taste have not linked patterns of taste to sociodemographic variables (Axelrod 1995; Boyd and Richerson 1985; Carley 1991; Cavalli-Sforza and Feldman 1973; Mark 1998) despite notable progress in this direction. Cavalli-Sforza and Feldman (1973) explain the variance across social groups of the group mean on a cultural variable. However, because this model is most applicable to a system composed of many small societies (e.g., bands of hunters and gatherers), formal explanation of sociodemographic patterns in a large industrial society remains to be achieved. Although Carley (1991) and Mark (1998) discuss the relationship between cultural taste (i.e., information) and Blau’s (1977a,b) social parameters, neither provides a formal method for distinguishing between cultural differences and sociodemographic differences. Because geographic variables are the only sociodemographic variables Axelrod (1995) considers, his model is not directly applicable to patterns of cultural taste in a modern industrial society. Progress in empirical research is also necessary; only a
portion of these theories have been empirically tested (Carley 1990; Cavalli-Sforza et al. 1982; Soltis, Boyd, and Richerson 1995).

Translating the Research Question into Theoretical Language

Before developing the two answers to the question of why different kinds of people like different kinds of culture that this study examines, it is useful to restate the question in terms that facilitate communication and thought about potential answers. To accomplish this task, I introduce the concepts of sociodemographic space and the niche.

Sociodemographic Space

Sociodemographic variables define a multidimensional social space (Blau 1977a,b,1993; Mark forthcoming; McPherson 1983). People's sociodemographic characteristics determine their positions in social space. For example, the variables age and years of education define a two dimensional social space. People who are about the same age and who have similar levels of education are located near each other within this social space. People of different ages and with different levels of education are far from each other. Thus, the similarity between two people with respect to a set of sociodemographic variables is a negative function of the distance between them in a social space defined by those variables.

The idea of social space helps to illustrate the finding described above that different cultural tastes are concentrated among different sociodemographic segments. The claim that different cultural tastes are concentrated among different
sociodemographic segments means that different cultural tastes are localized in different regions of sociodemographic space. Figure 1 (taken from Mark forthcoming) illustrates such localization. Tastes for rock music are concentrated among young people while tastes for big band music are concentrated among older people.

The Niche

"Just as certain plants and animals are peculiar to certain districts, so it is with such instruments as the Australian boomerang, the Polynesian stick-and-groove for fire-making, the tiny bow and arrow used as a lancet or phleme by tribes about the Isthmus of Panama, and in like manner with many an art, myth, or custom, found isolated in a particular field" (Tylor [1871] 1889).

The region of social space in which a cultural taste is concentrated is the niche of that cultural form (Mark forthcoming; McPherson 1983). Figure 2 (taken from Mark forthcoming) illustrates the niches of three types of music in a social space defined by the dimensions age and education. Figure 2 indicates that people who like heavy metal music tend to be younger than people who like new age music, who are younger than country music fans. People who like new age music tend to have more years of education.

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I follow McPherson and colleagues in defining a niche as a segment in a one-dimensional social space and as the intersection of multiple segments in a multi-dimensional social space. The niche bounds on one dimension are centered about the mean value on that dimension of people who like or practice that cultural form. Previous work (McPherson 1983; McPherson and Ranger-Moore 1991; McPherson and Rotolo 1996) has set these bounds 1.5 standard deviations above and below the mean. This niche width is adopted in Figure 2. In Figure 2, the resulting niches are rectangles in two-dimensional space.
Figure 1. Big Band and Rock Music Preference by Age

Source: General Social Survey (1993)
Figure 2. Niches of Three Types of Music

Source: General Social Survey (1993)
than do fans of heavy metal music or country music.

The Question in Theoretical Language

The concepts of social space and the niche allow restatement of the question that drives the present analysis: Why do different cultural tastes occupy different niches in social space? Or, more simply, Why are there niches?
CHAPTER 2. TWO ANSWERS

This chapter presents two models, homophily and distinction, that constitute alternative answers to the question of why different cultural forms occupy different niches in sociodemographic space. The first section informally outlines the models. The second section formalizes the models. The third section uses computer simulations to demonstrate that both models constitute answers to the question of why cultural forms occupy niches in sociodemographic space.

Homophily and Distinction

The Homophily Model

Borrowing heavily from McPherson’s (1983; McPherson, Popielarz, and Drobnic 1992; McPherson and Ranger-Moore 1991; McPherson and Rotolo 1996) ecological theory of voluntary associations, Mark (forthcoming) combines the principle of homophily with assumptions about network influence, cultural innovation, time constraints, and inactive taste loss to explain cultural niches.

Homophily. The principle of homophily states that people who are similar in sociodemographic characteristics are more likely to interact with each other than are people who are dissimilar. A substantial body of research documents that people who are similar with respect to age, education, race, occupation, social status or other variables are more likely to be friends, associates, or spouses than are dissimilar people (Blau, Blum, and Schwartz 1982; Galton 1883; Marsden 1987,1988; Schiller 1932). Notice that in the
homophily model, the assumption of homophily refers only to similarity with respect to sociodemographic characteristics. For simplicity, similarity with respect to cultural tastes does not influence probabilities of social interaction (see Carley 1991; Kandel 1978; Mark 1998).31

*Cultural tastes and network ties.* Mark (forthcoming) argues that individuals acquire cultural tastes through social interaction with other people who hold those tastes. This idea of network transmission is widely accepted in the literature on culture. Several students of culture focus on the role of family socialization in the transmission of cultural tastes and practices (Bourdieu [1979] 1984; DiMaggio and Useem 1978). Researchers argue that the folk music tradition of central Appalachia (Artis 1975) as well as a wide variety of cultural differences between the South and other regions (Marsden et al. 1982) are maintained through the process of socialization.

Inter-familial network ties also influence cultural taste and practice (Erickson 1996). Jones (1963) argues that different styles of blues music spread through the South as black agricultural labors interacted with each other and other blacks as they traveled in search of work. Students of subcultures argue that musical tastes and styles of dress and speech spread rapidly through the dense networks that link members of a subculture (Fischer 1984; Grinder, cited in Smith 1985).

31While distinguishing sociodemographic characteristics from cultural characteristics runs counter to the broad definition of culture discussed above, I do so for ease of discussion and analysis. Readers uncomfortable with this ad hoc distinction can view the analysis that follows as the ecological analysis of some cultural forms (e.g., musical tastes and leisure activities) in a resource space defined by other cultural forms (e.g., sociodemographic positions).
Cultural innovation. People do not only acquire, maintain, and transmit tastes for established cultural forms; people change, revive, and create cultural forms. Three approaches to cultural innovation are notable. Some students of culture conceptualize cultural innovation as a "bottom-up" process. Symbolic interactionists argue that people create meaning through social interaction (Blumer 1962; Stryker 1980), and social constructionists (Berger and Luckmann 1966; Carley 1991; Mark 1998) build on the foundational claim that "if men define situations as real, they are real in their consequences" (Thomas and Thomas 1928:572). In contrast to this view, mass culture theorists argue that innovation occurs in a unified culture industry; consumers accept the innovations they are offered because the innovation was a response to their taste or because their taste is shaped by the innovations of the industry (see DiMaggio 1977; Peterson and DiMaggio 1975). A third view, the production of culture approach, focuses on the organizational and market setting in which cultural innovation, filtering, and dissemination occurs (DiMaggio 1977; Hirsch [1972] 1991; Peterson and Berger 1975). According to this view, the "bottom-up" and "top-down" processes are special cases of a wide variety of potential market structures. Production of culture theorists focus on the relationships between creative personnel, such as artists and writers, and culture producing organizations, such as record companies and publishers, and on relationships between culture producing organizations and consumers.\(^{32}\)

From the perspective of the homophily model, the important differences among

\(^{32}\)How the latter relationship is mediated gatekeepers, such as disk jockey's and book reviewers, is also of high interest to production of culture theorists.
these approaches are the social location of innovation and the structure of transmission of innovation from its source. Each of these innovation structures is compatible with the homophily model. However, all three are not equally useful for the present analysis. The structure outlined by the production of culture approach is very complex. The mass culture approach, which would also impose an additional structural assumption, is weak empirically (Peterson and Berger 1975; Peterson and DiMaggio 1975) and theoretically (DiMaggio 1977). Therefore, I adopt a "bottom-up" assumption suggested by symbolic interactionists and social constructionists: any person can engage in cultural innovation and communicate that innovation to her network alters.

*Time constraints and inactive taste loss.* There is a wide variety of social activities that produce and reinforce cultural tastes. People attend concerts, visit museums, watch movies, play sports, sing in church, buy paintings, and take music lessons. A person must engage in some activity associated with a particular cultural form, at least occasionally, if that person is to maintain a taste for that cultural form (Mark forthcoming). Therefore, since participation in taste reinforcing activities takes time, time constraints bear on the maintenance of cultural tastes. If a person holds so many tastes that she does not have time to participate in activities associated with all of them, she will lose her tastes that remain inactive.

Sociologists recognize that time constraints limit the number of cultural tastes that a person can maintain. DiMaggio (1982a) argues that a person who participates in two forms of high culture is unlikely to actually practice both forms. Because practicing a
cultural form takes a large amount of time, at least one of the forms of participation is likely to remain at the less time consuming level of an interest. Similarly, Mark (1998) argues that a cultural taste, as well as any other type of information, that a person does not express in social interaction during a certain period of time will be forgotten.

Smith (1994) argues that individuals develop musical tastes in their youth and tend to hold these tastes through life. While this view may appear to be at odds with the assumption of inactive taste loss, the two arguments are not incompatible. According to the assumption of inactive taste loss, a person may maintain a cultural taste through life if she continues to participate in activities associated with the cultural form. The homophily model predicts that such continued participation is likely to occur for a person with a cultural taste that is shared by many other people close to the person in age. A cultural taste most likely to lost through inactivity is one that is atypical for one’s social position. For example, a person 70 years of age who like big band music and heavy metal music is more likely to lose her taste for heavy metal music through inactivity than for big band music because it is likely that more of such a person’s friends like big band music than heavy metal music.

Despite the potential compatibility between these arguments, it is appropriate to consider research on attitude change and the light it sheds on the validity of the inactive taste loss assumption. Two questions are relevant: (1) Does the attitude of a person that changes in response to some stimulus, such as a persuasive message, tend to return to its original value with the passage of time since exposure to the stimulus? (2) Does the
tendency toward attitude change decline with age? Research indicates that the answer to the first question is yes (Sorrentino et al. 1988).

Research addressing the second question suggests that while individuals' susceptibility or openness to attitude change remains steady through life, people's exposure to change inducing stimuli is higher in young adulthood than in later years (Krosnick and Alwin 1989; Tyler and Schuller 1991). Young adults experience more major life transitions, such as leaving high school, moving, entering college, acquiring or changing jobs, and getting married and starting a family, than do older adults. In other words, the most plausible explanation for the finding that the tendency toward attitude change declines with age is sociological rather than psychological. Age differences in the tendency toward attitude change correspond to differences in the social structural positions of people of different ages (Burt 1991). Building structural factors that account for this relationship with age into the homophily model is more than I attempt to accomplish in the present analysis. Nevertheless, I believe starting with a simple assumption about social structure and an assumption of a universal tendency toward inactive taste loss is a useful first step. I choose not to assume away the relationship between age and attitude change as a psychological process. I also take this approach of not assuming variation in the tendency toward inactive taste loss because such an assumption is not necessary to answering the question of why cultural forms occupy niches.

Together, these four assumptions offer an account for the concentration of
different cultural tastes within different sociodemographic segments.

The Distinction Model

The distinction model is based on arguments extracted from the work of Bourdieu ([1973] 1977, [1979] 1984) and from other works heavily influenced by Bourdieu’s ideas. Before presenting the model, a brief discussion of what my purpose in constructing, analyzing, and testing the model is and what my purpose is not is appropriate. My purpose is not to analyze or empirically test Bourdieu’s social reproduction theory. My purpose is to build the most parsimonious explanation for niches that is based on arguments presented by Bourdieu and to evaluate the empirical accuracy of the simple model that I construct. Therefore, many insights of Bourdieu’s work do not appear in the model I present. Regardless of the results of the following theoretical and empirical analyses, it will be impossible to conclude that Bourdieu’s social reproduction theory is false or flawed. Any false prediction implied by the distinction model could result from my exclusion of any one of Bourdieu’s arguments which I exclude. It will be possible to conclude what some predictions of the distinction model I construct are and whether these predictions are supported or disconfirmed by an empirical test. If analysis shows the model to be empirically accurate, we can conclude that a promising formal model can be extracted from Bourdieu’s work. While such a claim is very plausible, this claim has not been demonstrated. Despite the complex relationship between my model and Bourdieu’s social reproduction theory, I call my model distinction both to emphasize the role that culturally discriminating individuals play in the model and to recognize the influence of
Bourdieu's work on the model's development.

While Bourdieu's social reproduction theory has been very influential, that I choose not to evaluate this theory and instead to construct and evaluate a new and much simpler model\textsuperscript{13} does not indicate modest ambition. To the contrary, my approach reflects my intent to move toward a clearer, simpler, more powerful, and more empirically accurate theory of culture than currently exists. Bourdieu's theoretical contribution has been to propose powerful ideas. His contribution has not been to organize these ideas into a simple theory that is easily accessible to other researchers and that has readily apparent logical coherence. If Bourdieu's theoretical arguments are to continue to contribute to the scientific study of culture, some characteristics of these arguments need to change. I believe sociologists need to clarify (DiMaggio 1979; Lamont and Lareau 1988), simplify, and formalize Bourdieu's ideas. I do not claim that the distinction model is the best of all potential formal models that could be built borrowing from Bourdieu. I do claim that building and testing formal models that borrow from Bourdieu is the only way for a positive science of culture to benefit from Bourdieu's ideas. In this study, I construct, analyze, and test one such model. Although many different models could be considered, my choice is guided by my search for a parsimonious answer to the question of why different kinds of culture occupy different niches in social space. The answer I examine, the distinction model, is based on four

\textsuperscript{13}This is a model that most readers of Bourdieu would consider an oversimplified and distorted representation of Bourdieu's social reproduction theory if they were under the mistaken impression that I intended to construct a representation of Bourdieu's theory.
arguments.

Unbiased social structure. The distinction model assumes that all pairs of individuals are equally likely to interact. Of course, no student of culture actually argues that all pairs of individuals are equally likely to interact. However, many students of culture do argue that social structure does not limit people’s exposure to cultural forms as severely as the homophily model suggests (Bourdieu [1979] 1984; Bryson 1996; DiMaggio 1982b,c; Levine 1988). The assumption of an unbiased social structure takes this argument to its logical extreme, drawing a sharp contrast with the homophily model. In the homophily model, we have already seen that a homophilous social structure can be used to explain the presence of niches. In constructing the distinction model, I seek to show that the assumptions which follow provide an account for niches even in the absence of a homophilous social structure. Including the assumption of homophily in the distinction model would not permit me to demonstrate that the following assumptions are a sufficient explanation for cultural niches.

Some readers may be concerned that the assumption of an unbiased social structure is so contrary to fact that the distinction model will be unreasonably disadvantaged in its comparison with the homophily model. In response to this potential concern, I point out that the complementary aspect of the homophily model, which has been implicit and is made explicit below, is also a severe distortion of reality. As discussed below, while the distinction model assumes that the amount of influence that one’s associate has on one’s taste varies across one’s associates, the homophily model
assumes that all of a person’s associates have the same amount of influence on the
person’s tastes. Concerned readers should also note that incorporating a false assumption
into the distinction model does not “stack the cards” against Bourdieu’s social
reproduction theory because the distinction model is not a representation of that theory.

I also remind concerned readers of three related points. First, I construct, analyze,
and test the distinction model to advance theoretical knowledge, not to conclude the
development of theoretical knowledge. Second, the fact that a relationship between two
variables is empirically observable, does not indicate that that relationship should be
assumed. Third, because the models I construct require specification of a social structure,
avoiding assumptions of a biased social structure requires assumption of an unbiased
social structure. In light of these considerations, I suggest that future elaborations of the
distinction model may account for a social structure that is biased with respect
sociodemographic variables without assuming a such a social structure.\(^{34}\) Such an

\(^{34}\)For example, although it is beyond the scope of this study to explore, homophily
itself could arise as a consequence of two processes: aesthetic distancing (see below) and
“cultural homophily.” I use the term cultural homophily to refer to a tendency for people
with similar cultural taste to be more likely to be associates than for people with
dissimilar cultural tastes to be associates. This tendency plays an important role in
Bourdieu’s ([1979] 1984) arguments as well as in some formal models of social structure
(Carley 1991; Mark 1998) which offer potential explanations for homophily (i.e.,
sociodemographic homophily). A model that assumes aesthetic distancing and cultural
homophily could yield empirically accurate predictions concerning sociodemographic
patterns of association in addition to other empirically accurate predictions not generated
by a different model based on an empirically accurate assumption about sociodemographic
patterns of association.

Likewise, the exclusion of an assumption of a biased pattern of social influence in
the homophily model, which leads to an empirically false model in this early stage of
model development, could lead to the construction of a more complex model that
explains a biased pattern of social influence. In a more complex model, an assumption of
elaboration may be more empirically accurate than an alternative that assumes a social structure that is biased with respect to sociodemographic variables. While only future work can resolve these issues, beginning with the analysis of simple models based on few assumptions facilitates movement in this direction.

Aesthetic distancing. Many students of culture argue that people make cultural choices that distinguish themselves from members of other social categories (Bourdieu [1979] 1984; Bryson 1996; DiMaggio 1982b,c; Gans 1974; Goffman 1951; Levine 1988). According to Bourdieu ([1979] 1984), in a process called aesthetic distancing, people reject cultural forms that are liked by members of other social groups. Accordingly, Bryson (1996) argues that people with high levels of education will tend to dislike types of music whose audiences have lower than average levels of education more than they dislike other types of music. Goffman's (1951) discussion of moral restrictions on the misrepresentative use of status symbols also describes the process of aesthetic distancing. According to Goffman, people refrain from displaying symbols associated with an economic class or a religious or ethnic group different from their own.

DiMaggio (1982b,c) describes a process whereby a cultural form may be elevated to the level of high culture. Aesthetic distancing plays a central role in this process in that the high status people laying claim to a genre purge it of elements most appealing to low homophily could be combined with an assumption that positive social influence is more likely to occur between people with similar cultural taste than between people with dissimilar cultural taste. Such a model may explain a biased pattern of social influence and other findings not explained by a model that assumes a biased pattern of social interaction.
status people. Levine's (1988) study of Shakespearean theater in America illustrates this argument. In the latter half of the Nineteenth Century, high status people distanced themselves (and Shakespearean theater) from lower status people by eliminating low-cultural forms that traditionally accompanied performances of Shakespeare's plays. Without farces, singers, jugglers, dancers, and acrobats, low status people were no longer drawn to performances of Shakespeare's plays. Eventually, Shakespearean theater came to be associated with the upper class, and low status people rejected the genre. While DiMaggio and Levine view this process as a characteristic of a historical period which was not observed in the preceding or following periods, I take a different approach. In constructing the distinction model, I assume aesthetic distancing is a general process because I seek a simple explanation for niches. Building a model that assumes the tendency toward aesthetic distancing changes over time is beyond the scope of the present study.

In his description of the mass culture critique, Gans (1974) elaborates on the aesthetic distancing argument. He claims that the strength of the attack that intellectuals levy against popular culture is negatively related to the status of intellectuals. According to Gans, intellectuals seek to maintain a certain social distance between themselves and common people. When the actual distance becomes less than the distance they desire, intellectuals respond by criticizing popular culture more vehemently.

While Bourdieu's emphasis on aesthetic distancing is asymmetric, focusing more on high status people distancing themselves from low status people than vice versa, I
adopt a more general and less restricted assumption of aesthetic distancing in constructing the distinction model. Such an assumption is an appropriate first step in formal model construction given the symmetric nature of the question I seek to answer and given the questionable applicability of Bourdieu's assumption of a unified sociocultural hegemony to a heterogeneous society such as the United States (DiMaggio and Ostrower 1990; Lamont and Lareau 1988).

Aesthetic distancing and an unbiased social structure are highly compatible in a way that aesthetic distancing and homophily are not. In a homophilous social structure, individuals have few if any opportunities to practice aesthetic distancing because individuals rarely encounter people different from themselves. Only when there is communication between people who are different from each other, an outcome that is much more common in an unbiased social structure than in a homophilous social structure, does aesthetic distancing occur.

Cultural tastes and socialization. The process of aesthetic distancing tells us why people tend not to hold tastes associated with social categories to which they do not belong. The question remains how people acquire tastes appropriate for their social position. The answer offered by the distinction model is socialization (Bourdieu [1979] 1984; DiMaggio and Useem 1978). The family is the first and most significant site of socialization. The educational system is the other major locus of socialization; however, the socializing effect that the educational system has on a person depends on the person's family socialization (Bourdieu [1973] 1977). A child born into and socialized by a high
status family will acquire more high-cultural tastes in school than will a child born into a low status family.

The implicit argument in these discussions of socialization is made explicit by Strang and Meyer (1993): A cultural taste is more likely to diffuse from one person to another if both individuals belong to the same socially defined category. I restate this argument as the selective transmission assumption: the transmission of a cultural taste is more likely to occur between similar interaction partners than between dissimilar interaction partners. The argument that socialization helps to account for niches is a special case of the argument that selective transmission helps to account for niches. Socialization helps to generate niches because parents, who are similar to their children in a variety of ways, are especially influential agents of socialization.

*Cultural innovation.* Bourdieu recognizes processes of cultural innovation that occur inside and outside of a market, organizational context. In fields of cultural production, commercial artists innovate to achieve distinction among those in their field of production. Cultural consumers seeking distinction purchase cultural goods reflecting these innovations of artists (Bourdieu [1979] 1984:230-244). However, people outside the field of cultural production also innovate. This innovation involves cultural forms that are not bought or sold. For example, people occasionally adopt new grammatical rules or patterns of breaking grammatical rules. These new cultural forms can spread and increase in popularity (Bourdieu [1979] 1984:255). As with the homophily model, the important difference between these processes is the structure of innovation. Either
structure could be incorporated into the distinction model. However, because it is much
simpler to avoid assumptions about markets and fields of production and because it is less
restrictive to assume that artists are not the only people who innovate, in constructing the
distinction model, I assume any person can engage in cultural innovation.35

Comparing Models: Five Answers to Three Questions

Understanding of how the homophily and distinction models are similar and how
they are different is facilitated by considering the assumptions each model offers to
answer three questions: (1) How do individuals acquire tastes? (2) How do individuals
lose tastes? (3) How are patterns of taste acquisition and/or taste loss structured so that
similar people tend to hold similar tastes and dissimilar people tend to hold different
tastes?

How do individuals acquire tastes? Both models agree that individuals acquire
tastes through social interaction with people who hold those tastes. While the distinction
model explicitly emphasizes the role of network ties to agents of socialization such as
parents and teachers, the importance of these ties is implicit in the homophily model. As
developed in these models, the network ties and socialization arguments are essentially
the same; both models assume that positive social influence does operate through social

35This assumption differs from Bourdieu’s, which emphasizes innovation by high
status individuals. Again, I argue that my symmetric, less restrictive assumption is a
more appropriate first step in formal model construction given the question I seek to
answer and given the heterogeneous nature of the United States.
network ties, at least sometimes.36

*How do individuals lose tastes?* According to the homophily model, individuals lose cultural tastes that are not sufficiently reinforced through social activity. Because people's time is limited and because taste reinforcing activities take time, the number of tastes people can maintain is limited. Acquisition of new tastes and participation in activities associated with these new tastes may crowd out previously acquired tastes which are now lost to inactivity.

According to the distinction model, individuals lose cultural tastes through negative social influence. Suppose persons A and B like country music. According to the distinction model, it is possible for B to have negative influence on A with respect to country music. If this negative influence occurs, A will lose her taste for country music. Negative social influence is one component of the aesthetic distancing argument. The other component, a biased influence structure, answers the next question.

*How are patterns of taste acquisition and/or taste loss structured so that similar people tend to hold similar tastes and dissimilar people tend to hold different tastes?* According to the distinction model, the structure of social influence is biased so that a similar alter is more likely to positively influence ego than is a dissimilar alter. For example, the distinction model argues that a teacher is more likely to have positive influence on a student if the student's parents have high levels of education, as the teacher does, than if the student's parents have low levels of education (Bourdieu [1973] 1977).  

See Erickson (1996) for a discussion of Bourdieu's failure to recognize the importance of network ties to individuals outside of one's family.
This assumption of a biased influence structure is the second component of the aesthetic distancing argument.

According to the homophily model, the similarity between two people positively affects the probability that they will be interaction partners. Homophily implies that dissimilar people will rarely interact with each other. However, unlike the aesthetic distancing model, on those rare occasions where dissimilar people do interact, positive influence is just as likely to occur as when similar people interact.  

Formal Models

This section presents formalizations of the homophily and distinction models. My formalizations of these models borrow heavily from Carley’s (1991) formalization of her constructural model. Since the models seek to explain patterns of cultural taste in sociodemographic space, it is important to say how the models conceptualize people’s positions in sociodemographic space and people’s cultural tastes. A person’s position in

---

37 This discussion points to four assumptions that are employed by one model or the other: (1) a biased social structure (i.e. homophily); (2) a biased influence structure; (3) inactive taste loss; and (4) negative influence. While the present analysis explores two combinations of these assumptions (the homophily model based on a biased social structure and inactive taste loss and the distinction model based on a biased influence structure and negative influence), other combinations of these assumptions identify additional models. Although exploration of these additional models lies beyond the scope of the present analysis, Chapter 5 (“Implications for Future Research”) discusses the additional models in greater detail.

38 The main difference between the present models and Carley’s is that the present models assume social structures that remain fixed through time. According to Carley’s constructural model, social structure can change.
sociodemographic space is indicated by a numerical value on each of one or more sociodemographic dimensions. For example, in a one-dimensional social space, one person could be located at position 1, one person at position 2, one person at position 3, and so on, all the way to position 10. This distribution of persons across positions is illustrated in Figure 3. The top row indicates the person, and the second row indicates the person’s position.

The relationship between a person and a cultural form can take one of two values. The person can like the cultural form, indicated by 1. Or the person does not like the cultural form, indicated by 0. Conceptualizing taste in this way allows us to represent the distribution of tastes across a society as a cultural forms by persons matrix (Carley 1991). Rows three through seven of Figure 3 provide an example of a cultural forms by persons matrix. Person A likes to attend auto races. Person D likes rap music, gardening, and watching television news. Person H likes classical music and watching television news. For simplicity, the dimensions of the cultural forms by persons matrix remains constant for a given society through time.

39In an n-dimensional social space, a person’s position is indicated by n values, one on each of the n dimensions. For simplicity, the illustration is based on a one-dimensional social space. The simulation analysis and the empirical analysis will consider a two-dimensional social space.

40For simplicity, I combine indifference, ignorance, and active disliking into a single category of non-liking. See Bryson (1996) for an analysis that distinguishes between active disliking and other types of non-liking.
Figure 3. Hypothetical Distribution of Tastes in a Society of Ten People.

<table>
<thead>
<tr>
<th>person identifier</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>position on sociodemographic dimension</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>cultural form</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rap music</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>classical music</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
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<tr>
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<td>0</td>
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</tr>
<tr>
<td>watch TV news</td>
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<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*The Social Interaction Round*

According to each model, social interaction is the process that shapes sociodemographic patterns of cultural taste. Each model assumes that social interaction occurs in successive rounds. In each round, each person picks one other person and initiates interaction with that person. For each initiation of interaction, there is one instance of social interaction. Therefore, some individuals, those picked by multiple people, interact more than once in a given round. I assume all interactions that occur in a round are dyadic and simultaneous. According to each model, a round of interaction is composed of five steps.

*Step 1: Partner selection.* In the first step, each person in the system selects an interaction partner. The probability that the ith person will initiate interaction with the jth
person is the similarity of j to i raised to a parameter governing the strength of homophily divided by the sum of every person's similarity to i raised to the homophily parameter.

\[ P_{initiate}(\text{person}_i, \text{person}_j) = \frac{\text{Similarity}(\text{person}_j, \text{person}_i)^{\text{homophily}}}{\sum_{k=1}^{N} (\text{Similarity}(\text{person}_k, \text{person}_i)^{\text{homophily}})} \quad i \neq j, i \neq k \quad [1] \]

and where N is the number of people in the society. This formula is a generalization of the formula Carley (1991) proposes (also see Mark 1998). For Carley's formula, similarity is the number of facts held in common. I argue that this formula can be usefully applied to other forms of similarity as well. A second difference is my introduction of the homophily parameter. In Carley's formula, the homophily parameter is 1. For the purpose of comparing the homophily and distinction models, I find it useful to consider different values of the homophily parameter.\(^4\)

To make sense out of equation [1], we need to define the similarity of the jth person to the ith person, Similarity(\text{person}_j, \text{person}_i).

\[ \text{Similarity}(\text{person}_j, \text{person}_i) = \text{Distance}_{\text{max}}(\text{person}_i) - \text{Distance}(\text{person}_i, \text{person}_j) \quad [2] \]

The distance between the ith person and the jth person is the absolute value of the difference between their positions on the sociodemographic dimension.

\(^4\)An additional difference between the formula adopted here and Carley's is that the present formula includes the restriction that \(i \not\sim j\).
\[ \text{Distance}(\text{person}_i, \text{person}_j) = |\text{Position}(\text{person}_i) - \text{Position}(\text{person}_j)| \]  \[ \text{[3]} \]

Distance_{\text{max}(\text{person}_i)} is the distance between the ith person and the person farthest from the ith person.

\[ \text{Distance}_{\text{max}(\text{person}_i)} = \max_{k=1}^{N}|\text{Position}(\text{person}_i) - \text{Position}(\text{person}_k)| \]  \[ \text{[4]} \]

For the distinction model, the homophily parameter is set to zero, making all pairs of individuals equally likely to interact. Figure 4 illustrates the social structure corresponding to the 10 person society described in Figure 3, according to the distinction model. The value in a cell of Figure 4 is the probability that the person corresponding to the row of that cell will initiate interaction with the person corresponding to the column of that cell.
Figure 4. Social Structure under Distinction Model (homophily=0).

<table>
<thead>
<tr>
<th>initiator</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
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<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
</tr>
<tr>
<td>B</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
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<td>0.11</td>
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</tr>
<tr>
<td>C</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
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<tr>
<td>D</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
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<tr>
<td>E</td>
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<td>F</td>
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<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
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<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
</tr>
<tr>
<td>I</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
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<tr>
<td>J</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
</tr>
</tbody>
</table>

For the homophily model, the homophily parameter is greater than zero. The larger the homophily parameter, the stronger is the bias toward similar interaction partners. Figure 5 illustrates the social structure corresponding to the 10 person society described in Figure 3, when the homophily parameter is 5. The value in a cell of Figure 5 is the probability that the person corresponding to the row of that cell will initiate interaction with the person corresponding to the column of that cell. That the interaction pattern is biased is reflected by larger values near the diagonal and smaller values far from the diagonal; similar people are more likely to interact with each other than are dissimilar people.
Figure 5. Social Structure under Homophily Model (homophily=5).

<table>
<thead>
<tr>
<th>initiator</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
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<td>.13</td>
<td>.05</td>
<td>.02</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>B</td>
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<td>.37</td>
<td>.17</td>
<td>.07</td>
<td>.02</td>
<td>.01</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>C</td>
<td>.14</td>
<td>.34</td>
<td>0</td>
<td>.34</td>
<td>.14</td>
<td>.04</td>
<td>.01</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>D</td>
<td>.03</td>
<td>.12</td>
<td>.35</td>
<td>0</td>
<td>.35</td>
<td>.12</td>
<td>.03</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>E</td>
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<td>.01</td>
<td>.09</td>
<td>.39</td>
<td>0</td>
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<td>.09</td>
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<td>.00</td>
</tr>
<tr>
<td>F</td>
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<td>.01</td>
<td>.09</td>
<td>.39</td>
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<td>.39</td>
<td>.09</td>
<td>.01</td>
<td>.00</td>
</tr>
<tr>
<td>G</td>
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<td>.00</td>
<td>.00</td>
<td>.03</td>
<td>.12</td>
<td>.35</td>
<td>0</td>
<td>.35</td>
<td>.12</td>
<td>.03</td>
</tr>
<tr>
<td>H</td>
<td>0</td>
<td>.00</td>
<td>.00</td>
<td>.01</td>
<td>.04</td>
<td>.14</td>
<td>.34</td>
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</tr>
<tr>
<td>I</td>
<td>0</td>
<td>.00</td>
<td>.00</td>
<td>.01</td>
<td>.02</td>
<td>.07</td>
<td>.17</td>
<td>.37</td>
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<td>.37</td>
</tr>
<tr>
<td>J</td>
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<td>.00</td>
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<td>.05</td>
<td>.13</td>
<td>.27</td>
<td>.53</td>
<td>0</td>
</tr>
</tbody>
</table>

**Step 2: Initiation of interaction by taste expression.** In the second step, each person initiates interaction with the person she selected by telling that person a cultural taste. Usually, the taste the initiator expresses is randomly selected from the set of tastes she already held. Each of the tastes the initiator holds has the same probability of being selected. Each time a person expresses a cultural taste, there is a small probability that cultural innovation will occur—the person will express a taste that she does not currently hold. This taste is selected from a finite pool of potential cultural forms. When cultural innovation occurs, each of the potential tastes the initiator does not hold has the same probability of being acquired and expressed by the initiator. Thus, when a person innovates, she can introduce a taste that no other person holds (i.e., “true innovation”) or
independently re-introduce or re-invent a taste that other people concurrently hold.\textsuperscript{42} This step is the same for each of the models.

**Step 3: Influence determination.** In the third step, whether positive social influence, negative social influence, or no social influence occurs is determined for each of the initiated instances of interaction.\textsuperscript{43} Given that the ith person has initiated interaction with the jth person, the probability that the ith person will positively influence the jth person is given by a formula similar to [1].

\[ P_{\text{positive influence}}(\text{person}_i, \text{person}_j) = \frac{\text{Similarity}(\text{person}_i, \text{person}_j)^{IBP} \cdot (N-1) \cdot PIP}{\sum_{k=1}^{N} \text{Similarity}(\text{person}_i, \text{person}_k)^{IBP}}, \quad i \neq j, \quad k \neq i \quad [5] \]

where \( N \) is the number of people in the society, IBP is the influence bias parameter, and PIP, the positive influence parameter, is a parameter that governs the average tendency to be positively influenced, \( 0 \leq PIP \leq 1 \).\textsuperscript{44} Similarity is defined according to equations [2], [3], [4].

\textsuperscript{42}The relative frequency of these two types of innovation depends on the proportion of all potential cultural forms that no one currently likes. When most potential cultural forms are liked by no one, "true innovation" will dominate. When few if any potential cultural forms are liked by no one, re-introduction will dominate.

\textsuperscript{43}Definitions of positive social influence, negative social influence, and no influence are provided in the description of step 4, taste reception.

\textsuperscript{44}Together, the factors \( N-1 \) and PIP prevent the probabilities of being positively influenced from being unreasonably low. When IBP equals 0, the probability that any person in the system will be positively influenced by a person who initiates interaction with her equals PIP. In some cases, [5] gives probabilities greater than 1 for some pairs of individuals. For such pairs, the probability of positive influence is set to 1.
In the homophily model, the influence bias parameter is zero. If two people interact, the probability that positive influence occurs is unrelated to the similarity of the interactants. In the distinction model, the influence bias parameter is greater than zero. Thus, in the distinction model, positive influence is more likely to occur between similar interactants than between dissimilar interactants.

In the distinction model, if positive social influence does not occur, negative social influence occurs. In the homophily model, if positive influence does not occur, no influence occurs.

**Step 4: Taste reception.** In the fourth step, initiates receive tastes. If positive influence occurs, the initiate acquires the taste if she did not already hold it and keeps the taste if she already held it. If no influence occurs, the initiate continues to not hold the taste if she did not already hold the taste and continues to hold the taste if she already held the taste. If negative influence occurs, the initiate continues not to hold the taste if she did not already hold the taste and loses the taste if she already held the taste. In the distinction model, if multiple initiators express the same taste to the same person, the probability that the person positively receives the taste is equal to the proportion of such initiators exerting positive influence and the probability that the person negatively receives the taste is equal to the proportion of such initiators exerting negative influence. In the homophily model, if multiple initiators express the same taste to the same person, that person positively receives the taste if at least one of the initiators exerts positive
social influence.

**Step 5: Inactive taste loss.** In the fifth step, inactive taste loss occurs in the homophily model. In the homophily model, a taste that a person holds but that the person has not expressed or has not positively received for a certain number of consecutive rounds is lost.

*Cultural Dynamics*

The steps outlined above provide mechanisms by which change in the distribution of tastes across a society occurs. An example based on Figure 3 helps to illustrate these mechanisms. Suppose person E initiates interaction with person F and tells F about rap music and how great it is. Assuming positive influence occurs, person F will acquire a taste for rap music. If person J initiates interaction with person B, negative influence is likely to occur in the distinction model. If J tells B that classical music is good, B will lose her taste for classical music. Figure 6 shows the resulting distribution of tastes. Now, person F likes rap and person B no longer likes classical music.
Simulating Niches

I use computer simulation to demonstrate that the homophily and distinction models imply that cultural forms occupy niches in social space.45

Parameter Settings and Initial Conditions

In selecting parameter settings, my strategy is to construct the simulation to mirror society as reflected in the 1993 GSS where possible. I simulate societies with 156 people. Individuals are distributed across two continuous variables in approximately the same way individuals are distributed across the variables age and education in the 1993 General

45The computer program used to simulate the model is written in Gauss (1992) and is provided in the appendix.
Social Survey (GSS). For each society, the total number of potential cultural forms is 35. In the initial condition for each society, every person in the society likes each cultural form. Thus, in the initial condition, cultural forms do not occupy niches in social space. Adopting an initial condition in which there are no niches ensures that results that show niches are an implication of the model and not an artifact of the initial condition.

In the homophily model, the homophily parameter is set to 10. In the distinction model, the influence bias parameter is set to 10. The positive influence parameter, PIP, is set at .3. In the homophily model, inactive taste loss occurs if a person holds a taste and does not express it or positively receive it for 16 consecutive rounds. When a person tells a taste to her interaction partner, the probability that she will select a taste she currently holds is .99. The probability of cultural innovation—that this person will

---

46 I draw a random sample of observations in the GSS. Each of the 1542 observations (with no missing values on relevant variables) in the GSS had a .1 probability of being included in the sample. The resulting sample contained 156 observations. The pairs of values on the variables age and education in the sample are the positions of individuals in the simulated societies.

47 Thirty-five is the number of cultural forms for which there are data in the GSS.

48 I seek a setting for this parameter that is high enough for the emergence of cultural niches, but low enough that there is some cultural transmission between different social positions.

49 The positive influence and inactive taste loss parameters determine the mean number of tastes individuals hold. I choose values for these parameters that result in a mean number of tastes held that is about the same as that observed in the GSS—8.7 tastes per person.
acquire and express a taste she does not currently hold—is .01.⁵⁰

Simulated Data

For each model, I simulate a society. For each society, I simulate 500 rounds of interaction. I record the resulting distribution of tastes across people after the 500th round of interaction. In other words, after a society has been simulated, the simulation program creates a persons by variables matrix, where each person in the society has a row in the matrix and each cultural form is represented by a variable. Other variables recorded are the positions of individuals on each of the sociodemographic dimensions, identifiers of individuals, and society identifiers. Analysis of the resulting data set indicates whether the homophily and distinction models predict that different kinds of people like different kinds of culture.

Testing for Niches

Methods. This section describes my method for analyzing simulated data to determine whether the models predict that cultural taste varies with sociodemographic characteristics (i.e., that cultural forms occupy niches). For each model, I want to see if people with different sociodemographic characteristics tend to like different types of culture. To test for this variation, I estimate a polytomous response logistic regression model (Hosmer and Lemeshow 1989). The unit of analysis is the taste for a cultural

⁵⁰In setting this parameter, I seek a reasonable middle ground. A probability of cultural innovation that is too high reduces the tendency for cultural forms to occupy niches. For the homophily model, a probability for cultural innovation that is too low results in a decline in the number of different cultural tastes held in a society; the result of this decline is the disappearance of cultural niches.
form. For every person, there is one observation for each cultural form the person likes. The value of the variable cultural form is the cultural form that taste is for. For example, if person A likes three cultural forms, oldies rock, attending sports events, and going to the movies, then there are three observations corresponding to person A. Each of these observations has the same values for the sociodemographic variables age and education. For the variable cultural form, one observation has the value oldies rock; another has the value attending sports events; and the third has the value going to the movies. The dependent variable is the cultural form that the taste is for. Because there are 35 cultural forms in the system, there are 35 unordered values that the variable cultural form can take. The independent variables are the sociodemographic dimensions age and education. Thus, the model has the following form:

\[
\log\left(\frac{p(\text{cultform} = i)}{p(\text{cultform} = 35)}\right) = a_i + b_{\text{age},i} \cdot \text{age} + b_{\text{education},i} \cdot \text{education} \quad [6]
\]

where \( i \) takes integer values from 1 to 34 corresponding to the 34 types of culture that are not the comparison category. Thus, [6] is 34 equations. The intercept and the independent variables can take different values for each of the 34 equations. If the estimated effects of the independent variables are different from each other for the different equations, the log-odds of liking one type of culture to another is different for people in different regions of sociodemographic space.

The model is estimated using a maximum likelihood procedure performed by the CATMOD procedure in SAS. I estimate the model once with the data generated by the
homophily model and once with the data generated by the distinction model. For each estimation, 102 parameters are estimated—the intercept and the effects of age and education for each of 34 log-odds. The values of these parameter estimates are not of substantive importance. Whether the model that includes the effects of age and education fits better than the model that includes the intercepts alone is important and indicates whether the homophily and distinction models imply that different kinds of people like different kinds of culture.

Results. The G statistic, defined as -2 times the natural logarithm of the ratio of the likelihood of the reduced model to the likelihood of the full model, follows a chi-square distribution under the null hypothesis that the effects of age and education are zero (Hosmer and Lemeshow 1989). For the data generated by the homophily model, this statistic is 283. With 68 degrees of freedom, the null hypothesis is rejected at the .001 error level. This result indicates that the homophily model predicts that different kinds of people like different kinds of culture—that cultural forms occupy niches. For the data generated by the distinction model, this statistic is 386. With 68 degrees of freedom, the null hypothesis is rejected at the .001 error level. This result indicates that the

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51 Each of the independent variables significantly improves the fit of the model when added individually. When the model with the intercepts alone is compared with the model including just age and the intercepts, G=185 (d.f.=34; p<.001). When the model with just age and the intercepts is compared with the model including age, education, and the intercepts, G=98 (d.f.=34; p<.001).

52 Each of the independent variables significantly improves the fit of the model when added individually. When the model with the intercepts alone is compared with the model including just age and the intercepts, G=190 (d.f.=34; p<.001). When the model with just age and the intercepts is compared with the model including age, education, and
distinction model predicts that different kinds of people like different kinds of culture.

*Sensitivity Analysis*

I simulated societies with a variety of initial conditions and parameter settings to ensure the implication of the models that cultural forms occupy niches in social space is robust across a reasonable range of initial conditions and parameter settings.

*Stability across time.* I begin by considering whether the simulated societies have reached an equilibrium by end of the 500th round of interaction, the point at which I test the simulated data for niches. Technically, given the parameter values I explore, the model has no equilibrium state: There is no state of the model that a society cannot exit (Fararo 1973). In other words, there is always a non-zero probability that a person will acquire a taste she does not currently hold or lose a taste she currently holds. Therefore, I limit my question to the stability of a particular characteristic of the simulated societies: Is the cultural niche pattern that characterizes a society simulated for 500 rounds typical of predicted sociodemographic patterns of cultural taste across time?

To determine the answer to this question, I simulate 2 additional societies using each of the two models. With the homophily model, I simulate one society for 100 rounds and one society for 1000 rounds. I do the same with the distinction model. I test the intercepts, $G=196$ (d.f.=34; $p<.001$).

53The question of how long a society should be simulated before the characteristics of that society can be considered of robust implication of the model is a question about the sensitivity of the model to its initial condition. Simulating a society for 1000 rounds is similar to simulating a society for 500 and using the state of a society simulated for 500 rounds as the initial condition.
the simulated data for niches at the end of 100th or 1000th round of interaction. As described above, using a polytomous response logit. I regress the cultural form that a taste is for on the age and education of the person holding the taste. Again, the statistic of interest is \( G \), which indicates whether the model including the variables age and education fits better than the intercepts alone. For the homophily model, after 100 rounds of interaction, \( G = 179 \) (d.f.=68; \( p < .001 \)). For the homophily model, after 1000 rounds of interaction, \( G = 248 \) (d.f.=68; \( p < .001 \)). For the distinction model, after 100 rounds of interaction, \( G = 93 \) (d.f.=68; \( p < .05 \)). For the distinction model, after 1000 rounds of interaction, \( G = 328 \) (d.f.=68; \( p < .001 \)). These results suggest that the prediction that

\[54\text{Each of the independent variables significantly improves the fit of the model when added individually. When the model with the intercepts alone is compared with the model including just age and the intercepts, } G = 77 \text{ (d.f.=34; } p < .001 \text{). When the model with just age and the intercepts is compared with the model including age, education, and the intercepts, } G = 102 \text{ (d.f.=34; } p < .001 \text{).}\]

\[55\text{Each of the independent variables significantly improves the fit of the model when added individually. When the model with the intercepts alone is compared with the model including just age and the intercepts, } G = 129 \text{ (d.f.=34; } p < .001 \text{). When the model with just age and the intercepts is compared with the model including age, education, and the intercepts, } G = 119 \text{ (d.f.=34; } p < .001 \text{).}\]

\[56\text{The model including the variable age fits better than the intercepts alone (} G = 52; \text{ d.f.=34; } p < .05 \text{). The model including age and education does not fit significantly better than the model including just age (} G = 41; \text{ d.f.=34; } p > .19 \text{). These findings suggest that by the 100th round of interaction, niches have begun to emerge for the distinction model, but the concentration of liking for different cultural forms into different niches is still increasing.}\]

\[57\text{Each of the independent variables significantly improves the fit of the model when added individually. When the model with the intercepts alone is compared with the model including just age and the intercepts, } G = 216 \text{ (d.f.=34; } p < .001 \text{). When the model with just age and the intercepts is compared with the model including age, education, and the intercepts, } G = 112 \text{ (d.f.=34; } p < .001 \text{).}\]
cultural forms occupy niches in social space is stable across time.

*Initial distribution of tastes.* As I describe above, my strategy for choosing a distribution of cultural tastes in the initial condition is to choose a distribution of tastes that is as different from the outcome I want to explain as possible. Therefore, I chose an initial condition in which every person likes every cultural form. Now, I consider another initial condition in which different cultural forms do not occupy difference niches in social space: no person likes any cultural form. For each model, I simulate a society with this initial condition. After 500 rounds of interaction, there are niches in the data generated by each model. For the homophily model, G=326 (d.f.=68 ; p<.001). For the distinction model, G=316 (d.f.=66 ; p<.001). These results suggest regardless of how many cultural forms people like in the initial condition, both models predict that cultural niches will emerge.

Another result concerning the initial condition is worth noting. The mean number of cultural forms that people like after the 500<sup>th</sup> round of interaction is virtually the same regardless of how many cultural forms people like in the initial condition. In the society

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<sup>58</sup>Each of the independent variables significantly improves the fit of the model when added individually. When the model with the intercepts alone is compared with the model including just age and the intercepts, G=202 (d.f.=34; p<.001). When the model with just age and the intercepts is compared with the model including age, education, and the intercepts, G=124 (d.f.=34; p<.001).

<sup>59</sup>Each of the independent variables significantly improves the fit of the model when added individually. When the model with the intercepts alone is compared with the model including just age and the intercepts, G=233 (d.f.=33; p<.001). When the model with just age and the intercepts is compared with the model including age, education, and the intercepts, G=83 (d.f.=33; p<.001).
simulated by the homophily model and in which each person likes each cultural form in the initial condition, the mean number of cultural forms that a person likes after 500 rounds of interaction is 9.5064103 (sd=2.1114031; n=156). When the initial condition is that no person likes any cultural form, the mean after 500 rounds is 9.0448718 (sd=2.05383205; n=156). While this difference is statistically significant, it is small relative to the difference between the initial conditions. It seems reasonable to suppose that this difference would completely disappear for societies simulated for more rounds.

In the society simulated by the distinction model and in which each person likes each cultural form in the initial condition, the mean number of cultural forms that a person likes after 500 rounds of interaction is 6.3397436 (sd=2.4190022; n=156). When the initial condition is that no person likes any cultural form, the mean after 500 rounds is 6.3141026 (sd=2.5293235; n=156). This difference is not significant at .05 error level (z=1.61; p=.054, one-tailed test).

**Strength of similarity bias.** Now, I turn to parameter settings. First, I consider the strength of the similarity bias—the homophily parameter in the homophily model and the influence bias parameter in the distinction model. Because similarity bias is central to these explanations for niches, we would expect that when the similarity bias is zero, neither model predicts niches. To confirm this expectation, I simulate one society with the homophily model with the homophily parameter, as well as the influence bias parameter, set to zero. After 500 rounds, cultural forms do not occupy different niches in social space (G=41; d.f.=68; p=.9948). I also simulate one society with the distinction
model with the influence bias parameter, as well as the homophily parameter, set to zero. After 500 rounds, cultural forms do not occupy different niches in social space (G=46; d.f.=68; p=.9783). These findings show that a biased social structure is a necessary component of the homophily explanation for niches and that a biased influence structure is a necessary component of the distinction explanation for niches.

Although we know that the similarity bias must be greater than zero for the homophily and distinction models to explain cultural niches, we know little about the range of similarity bias strengths that predicts niches. I simulate one society with the homophily model with the homophily parameter set to 1. After 500 rounds of interaction, there is no statistically significant indication of niches (G=77; d.f.=68; p=.2852). I also simulate one society with the distinction model with the influence bias parameter set to 1. After 500 rounds of interaction, there is no statistically significant indication of niches (G=61; d.f.=68; p=.7157). I simulate one society with the homophily model with the homophily parameter set to 5. After 500 rounds of interaction, cultural forms occupy different niches in social space (G=209; d.f.=68; p<.001). I also simulate one society with the distinction model with the influence bias parameter set to 5. After 500 rounds of interaction, cultural forms occupy different niches in social space (G=129; d.f.=68; p<.001). I also simulate one society with the homophily model with the homophily parameter set to 20. After 500 rounds of interaction, cultural forms occupy different niches in social space (G=353; d.f.=68; p<.001). I also simulate one society with the distinction model with the influence bias parameter set to 20. After 500 rounds of interaction, cultural
forms occupy different niches in social space \((G=557; \text{d.f.}=68; p<.001)\). These results suggest that the homophily and distinction models predict niches across a range of strengths of similarity bias that runs at least from 5 to 20. It seems plausible that niches are predicted for systems with even stronger similarity bias although I provide no evidence of this possibility here.

**Number of potential cultural forms.** In the above analyses, the number of potential cultural forms in a system was set to 35. Now I consider the range in the number of cultural forms across which the homophily and distinction models predict niches. I start by simulating two societies (one with each model) with five cultural forms. With this number of cultural forms, the homophily model does not predict niches \((G=.37; \text{d.f.}=8; p=.9987)\), and the distinction model does predict niches \((G=59; \text{d.f.}=8; p<.001)\). The reason for this difference is that in the homophily model and the distinction model posit different mechanisms of taste loss. The homophily model posits inactive taste loss. If the number of rounds a cultural taste can remain inactive without being lost is large relative to the total number of potential tastes in the system, it is possible for every person to like every cultural form. This was nearly the case in the society simulated by the homophily model; the mean number of tastes held was 4.79, just slightly less than the total possible of 5. Although I do not explore the possibility here, it is reasonable to suspect that the number of consecutive rounds that a person can maintain a taste that remains inactive could be reduced to a level at which the homophily model predicts niches in a system with a total of 5 cultural forms. On the other hand, the distinction
model assumes that taste loss occurs through negative social influence. Negative social influence causes people to lose cultural tastes regardless of the total number of tastes in the society. The result is a lower mean number of tastes held in the society (1.00 in the society simulated by the distinction model), and the prediction that different cultural forms will occupy different niches in sociodemographic space.

I also use each model to simulate one society with 20 cultural forms and one society with 100 cultural forms. In a society with 20 cultural forms, the homophily model predicts niches (G=130; d.f.=38; p<.001), and the distinction model predicts niches (G=157; d.f.=38; p<.001). In a society with 100 cultural forms, the homophily model predicts niches (G=878; d.f.=164; p<.001), and the distinction model predicts niches (G=576; d.f.=198; p<.001). Thus, across a generous range of numbers of potential cultural forms in a society (at least from 20 to 100), both homophily and distinction models predict niches.

**Probability of cultural innovation.** In the above analyses, the probability of cultural innovation during a given instance of interaction is .01. Now, I consider different values of this parameter. Using each model, I simulate one society with the probability of cultural innovation set to zero. After 500 rounds of interaction, the homophily model predicts niches (G=257; d.f.=64; p<.001), and the distinction model predicts niches (G=272; d.f.=68; p<.001). When the probability of cultural innovation is .5, the evidence of niches is weaker. For the homophily model, G=95 (d.f.=68; p<.05); for the distinction model, G=84 (d.f.=68; p<.10). When the probability of cultural innovation is .9, niches
are not predicted by the homophily model (G=75; d.f.=68; p=.2643) or the distinction model (G=31; d.f.=68; p>.99). The reason niches are not predicted for high probabilities of cultural innovation is that cultural innovation tends to disrupt the niche pattern by bringing a cultural taste to a region of social space where it does not presently exist. If that cultural form is popular in one region of social space, innovation involving that cultural form tends to spread out liking for that cultural form in social space and reduce the extent to which the cultural form is localized within a niche. The important result of this analysis is that there is at least weak evidence that both model predict niches across the range of probabilities for cultural innovation from 0 to .5. This range includes all "reasonable" values for this parameter; most instances of communication or cultural participation do not involve innovation.\(^60\)

\(^{60}\)The results of this analysis of the probability of innovation suggests that the assumption of cultural innovation is not a necessary component of the two explanations for niches explored. In the short run, the assumption of cultural innovation is not a necessary component of the homophily or distinction explanation for niches. However, in the long run, cultural innovation is necessary for explaining the persistence of niches because both models predict occasional extinction of cultural forms. That is, a cultural form can come to be liked by nobody in a society. If there is no cultural innovation, a lost cultural form cannot be revived or replaced. In the absence of cultural innovation, the number of cultural forms in a society slowly declines until there are too few cultural forms for cultural tastes to be localized in niches. According to the homophily model, cultural niches disappear when the ratio of the number of consecutive rounds a person can maintain an inactive cultural taste to the number of cultural forms in the society is large enough that every person in the society likes every cultural form. According to the distinction model, cultural niches disappear when every cultural form becomes extinct.

The process by which a cultural form becomes extinct is different according to the two models. According to the homophily model, a cultural form becomes extinct when every person in a society who likes the cultural form (one person or more) loses that taste through inactivity. For a cultural form to become extinct in the distinction model, a very unlikely event must occur: All people who like the cultural form that will become extinct must initiate interaction with each other in a pattern that is a cycle. Each of these people
Discussion

The above analysis shows that both the homophily model and the distinction model predict that different cultural forms occupy different niches in sociodemographic space. This finding sheds light on the explanatory power of parsimonious models. Some readers may have been concerned that the distinction model's assumption of an unbiased social interaction pattern was unreasonable. Readers may have also been concerned that the homophily model's assumption of an unbiased social influence pattern was unreasonable. Despite the incorporation of these false simplifying assumptions, both models explain the finding that different kinds of people like different kinds of culture. With the distinction model, we see that a biased influence structure (in combination with the assumptions about taste acquisition and taste loss) is a sufficient explanation for niches. I could not have demonstrated this result if I had included the assumption of homophily in the distinction model. With the homophily model, we see that a biased interaction pattern (in combination with the assumptions about taste acquisition and taste loss) is a sufficient explanation for niches. I could not have demonstrated this result if I had included the assumption of a biased influence pattern in the homophily model. Although the distinction model is a false description of social interaction patterns and although the homophily model is a false description of social influence patterns, both models are good explanations of niches.

must express that cultural form, and negative social influence must occur in each of these dyads. It is worth noting that if there is no cultural innovation, the decline in the number of cultural forms in a society occurs much more slowly according to the distinction model than according to the homophily model.
CHAPTER 3. COMPETITION:
IDENTIFICATION OF CONFLICTING PREDICTIONS

The above analysis demonstrates that the homophily and distinction models are alternative answers to the question of why different kinds of people like different cultural forms. In other words, while the models are based on different assumptions, they yield the same prediction: Different cultural forms occupy different niches in sociodemographic space. To choose between these models, I seek to identify conflicting predictions implied by the models.\(^\text{61}\) To focus my search for conflicting predictions, I consider the topic of competition, a topic that has received some attention in the sociological literature on culture.

The Lotka-Volterra equations are a useful starting point (Volterra [1928] 1931).\(^\text{62}\) These equations describe the dynamics of a community of populations.\(^\text{63}\) For a community of two populations, these equations take the following form:

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\(^\text{61}\) Parsimony, fruitfulness, and empirical accuracy are three criteria against which a theory may be judged (Jasso 1988). Both models are parsimonious, and a formal analysis of which is more parsimonious is beyond the scope of the present treatment. Because the output of each model, given a set of initial conditions and parameter settings, is a distribution of tastes across a society, the models are equally fruitful. Therefore, the decision of which model is better reduces to the question of which is more empirically accurate (Mayhew 1984a).

\(^\text{62}\) Sociologists have employ these equations to describe competition between populations of organizations (Hannan and Freeman 1977; McPherson 1983).

\(^\text{63}\) The types of elements that can compose such populations are discussed below.
\[
\frac{dM_i}{dt} = r_i M_i \left(1 - \frac{M_i}{K_i} - a_{ij} \left(\frac{M_j}{K_j}\right)\right) \quad [7a]
\]

\[
\frac{dM_j}{dt} = r_j M_j \left(1 - \frac{M_j}{K_j} - a_{ji} \left(\frac{M_i}{K_i}\right)\right) \quad [7b]
\]

where \(M_i\) is the size of the \(i\)th population, \(K_i\) is the carrying capacity for the \(i\)th population, and \(r_i\) is the unrestricted rate of growth of the \(i\)th population. \(dM_i/dt\) is the rate of change in the size of the \(i\)th population. \(a_{ij}\) is the coefficient of competition. If \(a_{ij}\) is greater than zero, the \(j\)th population competes with the \(i\)th population. The Lotka-Volterra equations are useful because they provide this formal definition of competition.

The same definition can be stated differently: Two populations are in competition if the size of one negatively affects the rate of growth of the other. This is the conceptual definition of competition that I adopt in this study; two operational definitions are presented below.

Originally, this definition of competition was applied to populations of biological organisms. A biological population is the set of organisms of a given species in an ecological system\(^{64}\) at a given time. According to the Lotka-Volterra equations, the

\(^{64}\)One task in conducting empirical research on competition is selecting the bounds of an ecological system. When the appropriate choice is not obvious, a researcher must proceed with a plausible guess. Finding the most appropriate set of boundaries is not of ultimate importance. If one finds support for the predictions of one’s theory, then one’s choice of boundaries was not too bad, and there is reason to consider the theory promising. If predictions are not supported, the theory could be flawed, a poor choice for ecosystems boundaries could have been made, or there could be some other problem.
relevant characteristics of a biological population are size (i.e., number of organisms) and rate of growth (i.e., change in size with respect to change in time). Organizational ecologists apply this definition to populations of organizations (Hannan and Freeman 1977; McPherson 1983). An organizational population is a set of organizations of a given type, such as automobile manufacturing firms (Hannan, Carroll, Dundon, and Torres 1995) or church related organizations (McPherson 1983), in an ecological system at a given time. Again, according to the Lotka-Volterra equations, the relevant characteristics of an organizational population are its size and rate of growth. Here, I apply this definition to populations of cultural tastes. A population of cultural tastes is the set of instances of individuals liking or participating in a given cultural form, such as heavy metal music or gardening, in an ecological system at a given time. Two cultural forms compete with each other if the number of people who like one of the cultural forms negatively affects the rate of change in the number of people who like the other cultural form.

The definition of competition describes a hypothetical relationship between variables—the size of one population and the rate of growth of another population. A negative relationship between these variables is defined as competition. This definition can describe a theoretical prediction or an empirical observation. The definition does not

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65 In organizational research, the boundaries of an ecosystem might correspond to state boundaries, national boundaries, or the boundaries of an international market.

66 In this study, I select boundaries for the ecosystem that correspond to the boundaries of the United States.
assume this relationship is true; definitions do not assume anything. The definition does not explain this relationship. The purpose of this definition is to facilitate communication and the cumulation of knowledge (see Cohen 1989). It is easier to speak of “competition” than of “a negative relationship between the size of one population and the rate of growth of another.” While any word could reduce the verbal load as the word “competition” does, using a label adopted by other theorists facilitates the cumulation of knowledge. If the same processes describe biological, organizational, and cultural systems, using terminology that draws our attention to these commonalities is useful.

Culture and Competition

Although using Lotka-Volterra equations to describe cultural processes is new, sociologists do employ a less precisely defined concept of competition in their analysis of culture (Bourdieu [1979] 1984; DiMaggio 1987; Swidler 1986). Recognizing that a competitive process is a component of an ecology clarifies arguments about culture and competition. An ecology is a system in which a set of entities, such as populations of biological species (Hutchinson 1959; MacArthur 1972), populations of organizations

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67Some readers may be concerned that the concept of competition introduces implicit assumptions. In response to this potential concern, I point out that one of the advantages of formal theory is that there are no implicit assumptions. Chapter 2 outlines all the major assumptions of the models, and the simulation programs are provided in the appendix. The simulation programs make all assumptions (major and minor) explicit. We know the hypotheses generated do not depend on implicit assumptions because computers cannot respond to or process the implicit assumptions of researchers.
(Hannan and Freeman 1977; McPherson 1983), or cultural forms (Mark forthcoming), compete with each other for one or more scarce resources. Sociologists’ arguments about culture and competition differ in terms of what entities compete with each other for what resource. Below, I clarify the ecological arguments implicit in the discussions of several sociologists of culture.

**Cultural Forms Compete with Each Other for People**

Mark (forthcoming) argues that cultural forms compete with each other because they depend on the same scarce resource—people. People are a scarce resource for cultural forms because the time and energy people have to devote to the development and maintenance of cultural tastes are limited. This argument does not require an assumption that cultural forms have intentionality or agency. The argument derives from the assumption that people have limited time and energy. While less explicit about ecological processes, other sociologists express essential components of this argument.

Blau (1986, 1988, 1989; Blau et al. 1985) argues that the social structural characteristics of cities, especially population size, affects the supply of culture in those cities. In Blau’s analysis, the people in cities are a crucial resource for cultural forms. The population size of a city is the most important predictor of the number of artists and cultural

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68Surprisingly, Blau (1989) finds that the supply of elite culture and the supply of popular culture respond similarly to some structure characteristics of cities, such as the level of economic inequality. While Blau’s (1989) empirical findings are enlightening, my interest in this literature review is in identifying theoretical arguments, not in evaluating their empirical accuracy.
institutions in the city. Swidler (1986) addresses the issue of competition, arguing that in unsettled cultural periods, different ideologies compete with each other for acceptance.

People Compete with Each Other for Cultural Forms

Following Bourdieu ([1979] 1984), Peterson and Kern (1996) argue that because the value of a taste for a high cultural form is the distinction it provides from lower status people, a highbrow taste that becomes widely held loses its distinctive value. Because the distinctive power of a cultural taste decreases as more people from wider variety of social positions come to hold it, people compete with each other cultural forms. Peterson and Kern (1996) argue that social structural changes have made traditional highbrow cultural forms accessible to a wider range of people. Competition among a large number of people from a wide variety of social positions for traditional highbrow cultural forms has reduced their distinctive power. In response, high status people have turned to omnivorous taste, taste for a wide variety of cultural forms, to distinguish themselves from lower status people.

Dual Ecology: Cultural Forms Compete for People and People Compete for Cultural Forms

Bourdieu ([1979] 1984:230-244) and DiMaggio (1987:450,451) argue that cultural forms compete with each other for people and that people compete with each other for cultural forms. People compete with each other for cultural forms because the

69 As I state above, this argument does not require an assumption that cultural forms have intentionality or agency.
value of a cultural taste is the distinction it provides from people who are different from oneself. As a cultural taste becomes wide spread and as more people acquire it, the taste loses its distinctive power. In other words, the value of a cultural taste, its distinction, is a limited resource that gets used up as more people acquire the taste.

Cultural forms compete with each other for people because commercial producers of cultural goods only produce goods they can sell (Bourdieu [1979] 1984; DiMaggio 1987). According to Bourdieu, people buy cultural goods that provide distinction. Cultural forms that provide some people with the distinction they seek sell, and grow in popularity until their increasing popularity reduces their distinctive power. A cultural form may not successfully compete for one segment of society because it is too different from the preferred identity marker of members of that segment. Yet it may not successfully compete for members of any other segment because it is perceived as too similar to the cultural form associated with the first segment. Such a cultural form does not survive the competitive struggle for people.

These dual ecologies create a paradox (DiMaggio 1987:450). The number of people who like a cultural form is subject to opposing forces. Attempts by producers to increase sales and positive social influence exerted by people who like the cultural form on people who do not like the cultural form tend to increase the popularity of the cultural form. On the other hand, individuals' search for distinction exerts downward pressure on the popularity of the cultural form, and the strength of this downward pressure is positively related to the popularity of the cultural form. Given this paradox, what
happens when dual ecologies operate simultaneously?

According to DiMaggio (1987:450) the mutual opposition between these ecologies has a novel consequence: As producers of cultural goods expand their markets and sell to larger numbers of people, the proportion of people in the targeted market who buy declines. The reason for this result is that while producers attempt to increase sales, consumers seek distinctive cultural goods. To the extent that producers are successful at increasing sales, the distinctive power of the cultural good is reduced, and the probability that a targeted consumer will buy the cultural good declines. Producers attempt to expand the niches of their cultural goods because this expansion increases total sales despite the accompanying reduction in the proportion of targeted consumers who buy the cultural good.

Bourdieu ([1979] 1984:230-244) offers a different answer: Although producers are in competition with each other for consumers of their products, they are not consciously oriented toward this competition. Instead, producers are consciously oriented toward competition with other producers for distinction based on their product. Thus, the diversity of products demanded is harmoniously met by the diversity of products supplied without any intentionality on the part of producers (or consumers). Bourdieu’s “invisible hand” argument views the dual ecology not as a paradox, but as a complex, highly orchestrated reality.
Competitive Processes and Observable Patterns of Cultural Taste

Because the empirical data I use to test the predictions of the homophily and distinction models is cross-sectional, I cannot test dynamic predictions of either model in this study. Unfortunately, the definition of competition offered by the Lotka-Volterra equations is dynamic. Therefore, regardless of whether the homophily or distinction models predict a negative relationship between the number of people who like one cultural form and the rate of change in the number of people who like other cultural forms, I cannot empirically test this prediction. To analyze competition in the present study, it is necessary to identify what patterns of cultural taste that are observable in cross-sectional data indicate the presence or absence of which of the two types of competition—among cultural forms for people and among people for cultural forms. These patterns will be my operational definitions for the two types of competition.

The concept of the niche is useful for identifying competitive processes because the niche indicates which people are most subject to forces of social influence to like certain cultural forms. According to both models, people acquire (and maintain) tastes for cultural forms that are liked by people similar to themselves. People acquire tastes for cultural forms through network ties to similar others who like those cultural forms. Therefore, in the region of social space where tastes for a cultural form are concentrated (i.e., in the niche), people (who like the cultural form or who do not like the cultural form at a particular point in time) have friends who like the cultural form and are subject to forces of social influence to like the cultural form. People who are similar to people
outside the niche tend to be outside the niche themselves, so the (positively) influential alters of people outside the niche of a cultural form tend not to like that cultural form. Therefore, people outside the niche experience much weaker forces of social influence to like the cultural form than do people inside the niche of that cultural form.

\textit{Competition Among Cultural Forms for People}

Here I discuss a pattern in the distribution of cultural tastes across a society that results from competition among cultural forms for people and which is observable in cross-sectional data. To describe this pattern, I use individuals as the unit of analysis. This pattern is indicated by the relationship between two variables—the number of cultural forms with niches that overlap at a person’s position in social space and the proportion of those cultural forms that the person likes.

The number of niches overlapping at a person’s position in social space indicates the number of cultural forms to which a person receives positive social exposure. In other words, the number of niches indicates the number of cultural forms for which a person is subject to forces of social influence toward liking. People who are in many niches experience social influence to like more cultural forms than do people who are in few niches. Figure 2 illustrates variation in the number of niches in which a person is located. Person A and Person B are each in the niche of one cultural form—new age music and country music respectively. On the hand, person C is located in the niches of three cultural forms—new age music, country music, and heavy metal music.

A basic assumption underlying the argument that cultural forms compete with
each other for people is that people are a scarce resource for cultural forms (Mark forthcoming). A person’s time and energy that are involved in acquiring and maintaining cultural tastes can get used up so that it is unlikely that the person will acquire new tastes without losing previously acquired tastes. Therefore, if people are a scarce resource, the number of tastes that a person holds will not be as responsive to the number of tastes to which a person is positively exposed through social interaction than it would be if people were not a scarce resource. If cultural forms compete with each other for people (i.e., if people are a scarce resource for cultural forms), a person who is in the niches of a small number of cultural forms will like a larger proportion of those cultural forms than will a person who is in the niches of a large number of cultural forms. As the number of cultural forms competing for a person’s tastes increases, the proportion of those forms that the person likes decreases. If cultural forms compete with each other for people, we will observe that the number of cultural forms with niches overlapping at a person’s position in social space negatively affects the proportion of those cultural forms that the person likes (see Popielarz and McPherson 1995). This is my operational definition for competition among cultural forms for people: If I observe that the number of cultural forms with niches overlapping at a person’s position in social space negatively affects the proportion of those cultural forms that the person likes, I conclude that cultural forms compete with each other for people. If I observe this relationship in simulated data, I conclude that the model that generated that data predicts that cultural forms compete with each other for people. If I observe this relationship in empirical data, I conclude that
cultural forms compete with each other for people. If I do not observe this relationship, I conclude that cultural forms do not compete with each other for people.

*Competition Among People for Cultural Forms*

Here I discuss a pattern in the distribution of cultural tastes across a society that results from competition among people for cultural forms and which is observable in cross-sectional data. To describe this pattern, I use cultural forms as the unit of analysis. This pattern is indicated by the relationship between two variables—the number of people inside the niche of a cultural form and the proportion of those people who like the cultural form.

The number of people in the niche of a cultural form is the number of people subject to forces of social influence toward liking that cultural form. Some cultural forms have a wide niche and have many people inside their niche. For these cultural forms, many people have similar alters who like that cultural form. Social influence toward liking this cultural form is exerted on a large number of people. Some cultural forms have a narrow niche and have few people inside their niche. For these cultural forms, fewer people have similar alters who like that cultural form. Social influence toward liking this cultural form is exerted on a smaller number of people.

If people compete with each other for cultural forms, more people compete with each other for cultural forms that have niches with many people in them than compete with each other for cultural forms that have niches with few people in them. If a cultural form is a scarce resource, as the argument that people compete with each other for
cultural forms suggests, then the more people there are competing for a cultural form, the lower is probability that a given one of those people will like the cultural form. In other words, if people compete with each other for cultural forms, the number of people in the niche of a cultural form negatively affects the proportion of those people who like the cultural form. This relationship is my operational definition of competition among people for cultural forms.

Simulation Analysis of Competition

I analyze data generated by simulating 10 societies with the homophily model and 10 societies with the distinction model. The parameter settings, initial conditions, and data output for these societies are the same as those described in Chapter 2.

Methods

First, I describe the operational definition of niche that I employ. A precise definition of the niche allows me to determine which individuals, in simulated or empirical data, are in the niche and which individuals are outside the niche for each cultural form. Knowing which individuals are inside and outside of which niches is necessary for measuring the variables on which this analysis of competition is based. Then, I introduce these variables.

Operationalizing the niche. I adopt an operational definition that is a variant of that employed by McPherson (1983) and by Mark (forthcoming). The present analysis considers patterns of cultural taste in a two-dimensional space defined by the variables
age and education. On a single dimension, the niche of a cultural form is defined as a segment of that dimension. In a two-dimensional social space, the niche of a cultural form is defined as the intersection of the corresponding one-dimensional niches. Thus, in two-dimensional space, a niche is a rectangle. The niche of a cultural form on one dimension is centered on the weighted mean position on that dimension; each position on the dimension that is occupied by at least one person is weighted by the proportion of the people in that position who like the corresponding cultural form. The niche bounds on that dimension are set $w$ standard deviations above and below the weighted mean.

Because the niche is conceptually defined as the region in social space where liking for a cultural form is concentrated, I want an operational definition that maximally distinguishes between people who like the cultural form and people who do not like the cultural form. Therefore, I seek a value of $w$ that maximizes the association across individuals and cultural forms between being in the niche of a cultural form and liking that cultural form. Accordingly, the unit across which this association is measured is the intersection of a person and a cultural form. For each person, there are 35 observations, one for each cultural form. Table 1 reports the correlations between being in a niche and

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70 Other work (Mark forthcoming; McPherson 1983; McPherson and Ranger-Moore 1991; McPherson and Rotolo 1996) defines the niche center as the unweighted mean position of individuals who like the cultural form (or belong to the type of organization). This statistic is equivalent to the weighted mean position where each position is weighted by the absolute number of individuals in the position who like the cultural form. The difference is that the definition employed here weights social positions evenly whereas McPherson's definition weights individuals evenly.

71 The standard deviation is weighted accordingly.
liking the corresponding cultural form at different values of \( w \) for the homophily model and for the distinction model. For the homophily model, the association between being in the niche and liking the cultural form peaks near a niche width of 1.7 standard deviations. For the distinction model, the association peaks near a niche width of 1.6 standard deviations. In testing for the models' implications concerning competition, described below, I set niche bounds 1.7 standard deviations above and below the niche center when analyzing data generated by the homophily model, and I set niche bounds 1.6 standard deviations above and below the niche center when analyzing data generated by the distinction model.

Table 1. Pearson Correlation Between Being in the Niche and Liking the Cultural Form at Different Niche Widths for Homophily and Distinction Models.

<table>
<thead>
<tr>
<th>niche width (( w ))</th>
<th>homophily model</th>
<th>distinction model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>.17120</td>
<td>.14530</td>
</tr>
<tr>
<td>1.1</td>
<td>.19390</td>
<td>.15585</td>
</tr>
<tr>
<td>1.2</td>
<td>.21304</td>
<td>.16580</td>
</tr>
<tr>
<td>1.3</td>
<td>.23166</td>
<td>.17513</td>
</tr>
<tr>
<td>1.4</td>
<td>.24941</td>
<td>.18255</td>
</tr>
<tr>
<td>1.5</td>
<td>.25914</td>
<td>.18730</td>
</tr>
<tr>
<td>1.6</td>
<td>.26587</td>
<td>.18991</td>
</tr>
<tr>
<td>1.7</td>
<td>.26737</td>
<td>.18975</td>
</tr>
<tr>
<td>1.8</td>
<td>.26522</td>
<td>.18834</td>
</tr>
<tr>
<td>1.9</td>
<td>.25968</td>
<td>.18062</td>
</tr>
<tr>
<td>2.0</td>
<td>.25099</td>
<td>.17500</td>
</tr>
</tbody>
</table>

a. Niche bounds are set \( w \) standard deviations above and below the niche center. (E.g., if \( w \) is 1.0, the distance from the lower bound to the upper bound is 2.0 standard deviations.)
Testing for competition. As discussed above, the pattern of taste that indicates whether cultural forms compete with each other for people involves the relationship between two variables that are defined on the individual. Therefore, when testing to see if a model predicts that cultural forms compete with each other for people, the unit of analysis is the person.\(^2\) The independent variable is the number of cultural forms with niches overlapping the person's position in social space (NUMBER-FORMS). The dependent variable is the proportion of cultural forms for which a person is in the niche that the person likes (PROPORTION-FORMS). In other words, the dependent variable is the number of cultural forms which the person is in the niche of and which the person likes divided by the number of niches in which the person is located. I regress PROPORTION-FORMS on NUMBER-FORMS using ordinary least squares regression.

As discussed above, the pattern of taste that indicates whether people compete with each other for cultural forms involves the relationship between two variables that are defined on the cultural form. Therefore, when testing to see if a model predicts that people compete with each other for cultural forms, the unit of analysis is the cultural form.\(^3\) The independent variable is the number of people in the niche of the cultural form (NUMBER-PEOPLE). The dependent variable is the proportion of the people in

\(^2\)The claim that cultural forms compete with each other for people is based on an argument about people: a person is a limited resource in that the number of cultural forms a person can like (i.e. support) is limited.

\(^3\)The claim that people compete with each other for cultural forms is based on an argument about cultural forms: a cultural form is a limited resource in that the number of people who can like it (i.e. use/consume it) is limited.
the niche of a cultural form who like that cultural form (PROPORTION-PEOPLE). I regress PROPORTION-PEOPLE on NUMBER-PEOPLE using ordinary least squares regression.

*Results*

Table 2 presents the results of the competition analysis of the simulated data. Number-forms has a negative effect on proportion-forms for both the homophily model (b=-.0081) and the distinction model (b=-.0050). These results indicate that the homophily model and the distinction model both predict that cultural forms compete with each other for people: The number of cultural forms with niches overlapping a person’s position in social space negatively affects the proportion of those cultural forms the person likes.

Table 2 also shows that the distinction model predicts that number-people has a negative effect on proportion-people (b=-.0019). In other words, the distinction model predicts that people compete with each other for cultural forms: The number of people in the niche of a cultural form negatively affects the proportion of those people who like the cultural form. The homophily model predicts that number-people has a positive effect on proportion-people (b=.00060). This result indicates that the homophily model does not predict that people compete with each other for cultural forms. In fact, the opposite prediction is observed: The number of people in the niche of a cultural form positively affects the proportion of those people who like the cultural form. I call this prediction the local bandwagon effect: As the niche of a cultural form expands to include a larger
number of more diverse people, the probability that any person in that niche likes that cultural form increases. Recognizing that the people inside the niche of a cultural form characterize that cultural form provides another approach to describing the local bandwagon effect: The number of people who characterize a cultural form positively affects the proportion of people characterizing the cultural form who like the cultural form. This hypothesis is new, unanticipated in previous theoretical or empirical research.

Table 2. Tests for Competition in Simulated Data: OLS Coefficients.

<table>
<thead>
<tr>
<th>type of competition indicated by a negative coefficient</th>
<th>cultural forms compete for people</th>
<th>people compete for cultural forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>unit of analysis</td>
<td>person</td>
<td>cultural form</td>
</tr>
<tr>
<td>dependent variable</td>
<td>proportion of forms person likes (proportion-forms)</td>
<td>proportion of people who like form (proportion-people)</td>
</tr>
<tr>
<td>model</td>
<td>homophily</td>
<td>distinction</td>
</tr>
<tr>
<td>intercept</td>
<td>.5636***</td>
<td>.3737***</td>
</tr>
<tr>
<td>number-forms</td>
<td>-.0081***</td>
<td>-.0050***</td>
</tr>
<tr>
<td>number-people</td>
<td></td>
<td></td>
</tr>
<tr>
<td>r-square</td>
<td>.2889</td>
<td>.1161</td>
</tr>
<tr>
<td>n</td>
<td>1560</td>
<td>1560</td>
</tr>
</tbody>
</table>

*** p<.001, two-tailed test

This view is a variation of DiMaggio's (1987:441) which states that a cultural form is characterized by the people who like it. I argue that a cultural form is characterized by all people in the sociodemographic positions of the people who like the cultural form.
Discussion

The difference in predictions between the homophily and distinction models concerns competition among people for cultural forms. While the homophily model does not predict competition among people for cultural forms, the distinction model does predict this type of competition. The correspondence between this implication of the distinction model and Bourdieu’s argument about competition for cultural tastes is notable. Bourdieu argues that groups of people compete with each other for cultural forms because a cultural taste that comes to be held by a large number of people occupying a wide range of social positions loses its distinctive power. Bourdieu also argues that individuals practice aesthetic distancing: People reject cultural tastes held by people different from themselves. The present analysis of the distinction model demonstrates that Bourdieu’s argument about competition for cultural forms is the aggregate level consequence of the micro-level assumption of aesthetic distancing. Although not readily apparent to all readers of Bourdieu, Bourdieu’s arguments about aesthetic distancing and competition for cultural forms are logically coherent. Readers not impressed by this discovery may be impressed by a different one: Despite the extreme parsimony of the distinction model, it captures and clarifies a fundamental argument in Bourdieu’s theory.

Above, I identified three broad arguments concerning culture and competition. The simulation analysis shows that the homophily model reflects the argument that cultural processes constitute a single ecology in which people are a scarce resource for
which cultural forms compete (Blau 1986, 1988, 1989; Blau et al. 1985; Mark forthcoming; Swidler 1986). The distinction model reflects a dual ecology in which people compete for cultural forms and cultural forms compete for people (Bourdieu [1979] 1984; DiMaggio 1987). The distinction model illustrates the consequence of Bourdieu's argument that as a cultural taste becomes widespread, it loses its distinctive power: As the niche, or market (DiMaggio 1987), of a cultural form expands to include more people, the proportion of people in that niche who like the cultural form declines.75

Neither model reflects an ecology in which people compete for cultural forms, but cultural forms do not compete for people (Peterson and Kern 1996).

75Another implication of the distinction model (and of the homophily model) is consistent with DiMaggio's (1987) arguments concerning market expansion. The number of people in the niche, or market, of a cultural form positively affects the absolute number of people who like the cultural form (b=.071; p<.001). DiMaggio argues that this result is the reason cultural producers are willing to sacrifice a large portion of a small market to capture a small portion of a large market; in absolute terms, the small portion of the large market is bigger.
CHAPTER 4. EMPIRICAL ANALYSIS

Having identified conflicting predictions implied by the homophily and distinction models, I use an empirical test of these predictions to choose between the models. However, before presenting this test, I use empirical data to demonstrate the finding that this analysis seeks to explain: Different cultural forms occupy different niches in social space.

Data

The 1993 General Social Survey (GSS) was administered to a national probability sample of 1606 non-institutionalized, English-speaking adults living in the contiguous United States. The 1993 GSS contained a module on culture (Marsden and Swingle 1994). Eighteen items report respondents' feelings toward 18 types of music. Five response choices ranged from "like very much" to "dislike very much." A sixth choice was "don't know much about it." I code the response "like very much" as liking, and I code the other five responses as non-liking. An additional 14 items report respondents' participation in 14 leisure activities. Respondents were asked whether they had

76 The 18 types of music are: (1) Big Band/Swing; (2) Bluegrass; (3) Country/Western; (4) Blues or Rhythm and Blues; (5) Broadway musicals/show tunes; (6) Classical music-symphony and chamber; (7) Folk music; (8) Gospel music; (9) Jazz; (10) Latin/Mariachi/Salsa; (11) Mood/easy listening; (12) New age/space music; (13) Opera; (14) Rap music; (15) Reggae; (16) Contemporary pop/rock; (17) Oldies rock; (18) Heavy metal.

77 The 14 leisure activities are the following: (1) Attend an amateur or professional sports event; (2) Visit an art museum or gallery; (3) Make art or craft objects such as pottery, woodworking, quilts, or paintings; (4) Go to an auto, stockcar, or motorcycle
participated in that form within the last 12 months. Available responses were “yes,” “no,” and “don’t know.” I code “yes” as liking, “no” as non-liking, and “don’t know” as missing. Three items report television viewing habits. Respondents were asked how often they watched three different categories of television show. Available responses were “every day,” “several times a week,” “several times a month,” “rarely,” “never,” and “don’t know.” I code “every day” as liking, “several times a week,” “several times a month,” “rarely,” and “never” as non-liking, and “don’t know” as missing. I use the variables age and years of education to define a two dimensional social space.

Niches

Methods

I use GSS data to document that different cultural forms occupy different niches in sociodemographic space. As I have constructed the homophily and distinction models,

race; (5) Go camping, hiking, or canoeing; (6) Grow vegetables, flowers, or shrubs in a garden; (7) Go to a live ballet or dance performance, not including school performances; (8) Go to a classical music or opera performance, not including school performances; (9) Go hunting or fishing; (10) Take part in a music, dance, or theatrical performance; (11) Participate in any sports activity such as softball, basketball, swimming, golf, bowling, skiing, or tennis; (12) Go out to see a movie in a theater; (13) Record a TV program so you could watch it later; (14) Play a musical instrument like a piano, guitar, or violin.

The three categories of television show are the following: (1) Prime-time drama or situation comedy programs; (2) World or national news programs; (3) Programs shown on public television.

Individuals who have a missing value for the variable age, years of education, or any of the 35 cultural forms is eliminated from the analysis. For the items on musical taste, the response “don’t know much about it” is coded as non-liking. The empirical analysis is based on the remaining 1542 observations.
they are general; neither model draws distinctions between different categories of cultural forms, such as musical tastes, leisure activities, and television viewing. Therefore, I combine all 35 cultural forms into a single analysis. The test for niches is the same as that described in Chapter 2. I estimate a polytomous response logistic regression model with the form of equation 6 (Chapter 2). 102 parameters are estimated (3 parameters for each of 34 logits), but the values of these parameter estimates are not important for determining whether cultural forms occupy niches. Niches are indicated if the model that includes the effects of age and education fits better than the model that includes only the intercepts.

Results

Again, the statistic of interest is $G$, -2 times the natural logarithm of the ratio of the likelihood of the reduced model to the likelihood of the full model. The value of this statistic is 1879.* With 68 degrees of freedom, the null hypothesis is rejected at the .001 error level.** This result demonstrates that different cultural forms occupy different niches in sociodemographic space.

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*The number of observations is 13422, which is the sum of the numbers of cultural forms individuals likes.

**Each of the independent variables significantly improves the fit of the model when added individually. When the model with the intercepts alone is compared with the model including just age and the intercepts, $G=1131$ (d.f.=34; $p<.001$). When the model with just age and the intercepts is compared with the model including age, education, and the intercepts, $G=748$ (d.f.=34; $p<.001$).
Competition

Methods

I use GSS data to answer two questions: (1) Do cultural forms compete with each other for people? (2) Do people compete with each other for cultural forms? My methods for answering these questions are the same as those used to identify the implications of the homophily and distinction models concerning competition (Chapter 3). \[^{82}\] I operationalize the niche as described in Chapter 3. I seek a niche width that maximizes the association across individuals and cultural forms between being in the niche and liking the cultural form. Table 3 reports the correlation between being in the niche and liking the cultural form at different niche widths. The correlation peaks when niche bounds are set 1.4 standard deviations above and below the niche center. Therefore, 1.4 standard deviations is the niche width I use in the empirical analysis of competition. To determine whether cultural forms compete with each other for people, I regress proportion-forms on number-forms. To determine whether people compete with each other for cultural forms, I regress proportion-people on number-people.

\[^{82}\] Niches are defined in the same way as in Chapter 3. Again, a niche width of 3 standard deviations (1.5 to each side of the mean) maximizes the association, as measured by Kendall's tau-b, between being in the niche of a cultural form and liking that cultural form.
Table 3. Pearson Correlation Between Being in the Niche and Liking the Cultural Form at Different Niche Widths in GSS Data

<table>
<thead>
<tr>
<th>niche width (w)*</th>
<th>correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>.16442</td>
</tr>
<tr>
<td>1.1</td>
<td>.16745</td>
</tr>
<tr>
<td>1.2</td>
<td>.17311</td>
</tr>
<tr>
<td>1.3</td>
<td>.17653</td>
</tr>
<tr>
<td>1.4</td>
<td>.18243</td>
</tr>
<tr>
<td>1.5</td>
<td>.17778</td>
</tr>
<tr>
<td>1.6</td>
<td>.17689</td>
</tr>
<tr>
<td>1.7</td>
<td>.17177</td>
</tr>
<tr>
<td>1.8</td>
<td>.16231</td>
</tr>
<tr>
<td>1.9</td>
<td>.15616</td>
</tr>
<tr>
<td>2.0</td>
<td>.14900</td>
</tr>
</tbody>
</table>

a. Niche bounds are set w standard deviations above and below the niche center. (E.g., if w is 1.0, the distance from the lower bound to the upper bound is 2.0 standard deviations.)

Results

Table 4 presents the results of these tests. Number-forms has a negative effect on proportion-forms (b=−.0024). This result indicates that cultural forms compete with each other for people: the number of cultural forms with niches overlapping a person’s position in social space negatively affects the proportion of those cultural forms the person likes. This result is consistent with the predictions of both the homophily and distinction models.

Table 4 also shows that number-people has a positive effect on proportion-people
In other words, people do not compete with each other for cultural forms; the number of people in the niche of a cultural form positively affects the proportion of those people who like the cultural form. This result disconfirms the prediction of the distinction model and supports the homophily model’s prediction of a localized bandwagon effect.

Table 4. Empirical Tests for Competition: OLS Coefficients.

<table>
<thead>
<tr>
<th>type of competition indicated by a negative coefficient</th>
<th>cultural forms compete for people</th>
<th>people compete for cultural forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>unit of analysis</td>
<td>person</td>
<td>cultural form</td>
</tr>
<tr>
<td>dependent variable</td>
<td>proportion of forms person likes (proportion-forms)</td>
<td>proportion of people who like form (proportion-people)</td>
</tr>
<tr>
<td>intercept</td>
<td>.3645***</td>
<td>-.2585</td>
</tr>
<tr>
<td>number-forms</td>
<td>-.0024***</td>
<td></td>
</tr>
<tr>
<td>number-people</td>
<td></td>
<td>.00049*</td>
</tr>
<tr>
<td>r-square</td>
<td>.0191</td>
<td>.1715</td>
</tr>
<tr>
<td>n</td>
<td>1539*</td>
<td>35</td>
</tr>
</tbody>
</table>

a. Three people are located outside the niche of each of the 35 cultural forms. Therefore, the dependent variable is undefined for these observations. 1542-3=1539.

* p<.05, two tailed test
*** p<.001, two-tailed test

Discussion

These findings concerning competition are new. No previous research shows that for this set of cultural forms the number of cultural forms with niches overlapping at a person’s position in social space negatively affects the proportion of those cultural forms
that the person likes. Nevertheless, this finding supports the predictions of the
homophily and distinction models and arguments of sociologists concerning competition
(Bourdieu [1979] 1984; DiMaggio 1987; Swidler 1986) and resources (Blau et al. 1985).

The finding that the number of people in the niche of a cultural form positively
affects the proportion of those people who like the cultural form has not been shown by
previous empirical research and is unanticipated in the theoretical literature. I was
directed to this finding because the homophily model predicts it (and because the
distinction model predicts the opposite of it). This process demonstrates one advantage
of theory driven research: Theory driven research leads to the discovery of empirical
facts. Formal theoretical analysis limits the role of our preconceptions about the logical
implications of our assumptions and forces us to consider relationships among variables
we might not have otherwise considered.

In addition to providing new information about the empirical world, these findings
have implications for the homophily model and for the distinction model. Both models
are supported by the finding that the number of cultural forms with niches overlapping at
a person’s position in social space negatively affects the proportion of those cultural
forms that the person likes. However, the finding of a local bandwagon effect supports
the homophily model and disconfirms the distinction model. In considering the relative
merit of these two models, it is important to recognize the limited nature of the empirical
findings. While the findings are based on a representative sample of the United States,

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83 One near exception is Mark’s (forthcoming) study which reveals similar findings
in an analysis limited to musical forms.
the sample is taken from one society at one time. These findings tell us little about arguments that different cultural processes, including aesthetic distancing, operate during different historical periods (DiMaggio 1982b,c; Levine 1988). While these findings suggest that the homophily model's explanatory power is superior to that of the distinction model, we do not know if the superiority of the homophily model holds across time and space. Nevertheless, no single empirical finding is general, and most scientific progress is incremental; the present study is one more example of these facts.

As discussed, these empirical findings can be compared to the predictions of two formal models. The question remains of what these findings imply about the arguments of aesthetic distancing and homophily more generally. Many models could be built incorporating these arguments; whether the most parsimonious, fruitful, and empirically accurate model is based on an assumption of aesthetic distancing, homophily, or both is not known. Fortunately, however, because my goal has been to construct the most parsimonious answers to the question of why cultural forms occupy niches, at least one more general conclusion can be drawn: The most parsimonious answer to the question of why there are niches that is based on aesthetic distancing does not explain the local bandwagon effect while the most parsimonious answer based on the homophily model does.⁴⁴

Although this more general conclusion is justified, these findings tell us little

⁴⁴Although we do not know for certain that more parsimonious explanations than homophily and distinction models will never be discovered, the homophily and distinction models are the most parsimonious explanations that have been proposed.
about Bourdieu's social reproduction theory itself. We can draw a weak positive conclusion: A parsimonious explanation for niches and competition among cultural forms for people can be built from assumptions extracted from Bourdieu's theory. However, because the homophily model explains these two findings and the local bandwagon effect, this positive conclusion is not of substantial importance. On the other hand, a negative global conclusion about Bourdieu's social reproduction theory is not justified because the distinction model is based on such a limited subset of Bourdieu's arguments that it cannot be taken as a reasonable representation of Bourdieu's theory.
CHAPTER 5. CONCLUSION

Goals Achieved

The homophily and distinction models are alternative answers to the question of why different kinds of people like different kinds of culture. This paper identified conflicting predictions implied by the two models. An empirical test using GSS data supports the homophily model and disconfirms the distinction model. Although this finding should not be taken as the final word on the relative merits of the arguments explored in this paper, the present analysis accomplishes several methodological and substantive goals.

Explains an Important Finding

First, the formal models that I develop are notable because of the substantive importance of the finding they explain. I mention three levels on which this finding is important. First, that different kinds of people have different cultural tastes and practices is a fundamental characteristic of the social world. Because this fact is obvious, the task of explaining it is sometimes overlooked. Nevertheless, I argue that explaining such facts is necessary to developing our understanding of the social world.

Second, while the empirical analysis reported here examines a limited range of cultural forms, music and leisure activities, the models considered are more general. The homophily and distinction models assume very little in addition to what they assume about the transmission of cultural traits; aside from assumptions about patterns of social interaction and social influence and assumptions about processes of taste loss, these
models represent cultural theory, as discussed in Chapter 1, in a very general and basic form. That is, cultural tastes are transmitted through a social learning process that occurs through social network ties. Thus, both models are applicable to a wide variety of cultural forms: E.g., language and dialect, religion, food, drugs, and attitudes, beliefs, and values. Both models provide explanations for the concentration of these cultural forms in niches. Of course crude models may not be able to explain every finding of interest to us. For example, neither the homophily model nor the distinction model tells us why eating utensils have wider niches than musical forms. Nevertheless, implication of the qualitative prediction that different kinds of people will like and practice different kinds of culture for a wide variety cultural forms is valuable.

Third, that fact different kinds of people like and practice different kinds of culture has implications for other social differences. Students of culture argue that cultural differences perpetuate socioeconomic stratification (Bourdieu [1979] 1984; DiMaggio 1987; DiMaggio and Useem 1978), and empirical research supports this claim (DiMaggio 1982a; DiMaggio and Mohr 1985; Mohr and DiMaggio 1995). Cultural

85This argument that the transmission of cultural tastes occurs through social network ties is less general than the defining characteristic of a cultural theory only to the extent that one's definition of network ties excludes communication that occurs through channels such as the mass media, other publications, the Internet, and commercial products. If one defines network ties only as connections between individuals who engage in face-to-face interaction with each other, then the homophily and distinction models ignore several avenues of social learning. If one defines network ties broadly, as any pathway of communication, then the assumption of network transmission of cultural tastes is as general as the defining characteristic of a cultural theory. Of course, how one defines network ties has implications for the network structure one considers (see Carley 1995).
differences often underlie intergroup conflict (e.g., religious, ethnic), and differences in cultural practices such as smoking, diet, condom use, and seatbelt use have implications for health outcomes.

*Empirically Tests Formal Theories*

In seeking to explain the finding that different cultural forms occupy different niches in social space, I accomplished the two basic tasks of science—the building and testing of theory (Jasso 1988; Mayhew 1984a)—with a rare but promising combination of methods: I derive hypotheses using a formal method, computer simulation, and empirically test those hypotheses using survey data. The use of formal theory helps us achieve a high level of logical rigor; we can be confident in our claims about what our theories explain. In addition to wanting to know what our theories predict, we also want to know whether our theories' predictions are true. Tests with survey data based on a representative sample permit empirical evaluation of predictions about sociodemographic patterns.

*Clarifies Ecological Arguments about Culture*

While sociologists of culture rarely discuss ecological processes explicitly, the concept of competition is frequently used to illuminate cultural processes. I identify three different competitive arrangements that correspond to three different ecologies. The arguments of Blau and Swidler are consistent with the cultural ecology proposed by Mark (forthcoming) in which cultural forms compete with each other for people. Implicit in the work of Peterson and Kern (1996) is an ecology in which people compete with each other
for cultural forms. Bourdieu ([1979] 1984) and DiMaggio (1987) describe a dual ecology in which cultural forms compete with each other for people and people compete with each other for cultural forms. This dual ecology is intriguing because of its symmetric character: Entities that are populations in one ecology are the resource in the other ecology, and the entities that are a resource in the first are populations in the second. Different consequences of this ecology are proposed by Bourdieu ([1979] 1984) and DiMaggio (1987). A more complete understanding of a dual ecology as a theoretical argument, let alone as a potential empirical reality, requires more theoretical analysis.

Clarification of these arguments permits identification of sociodemographic patterns of cultural taste that can be observed in cross-sectional data. Therefore, an empirical test of these arguments using GSS data is possible. Below, I discuss ways in which future work might examine the dynamic implications of such arguments.

*Identifies Conflicting Predictions*

Faced with two different explanations for the finding that different kinds of people like different kinds of culture, I seek to determine which of the two explanations is more empirically accurate. My strategy is to identify conflicting predictions implied by the two models (Mayhew 1984a). Computer simulations identify conflicting predictions implied by the two models. The distinction model predicts that people compete with each other for cultural forms: The number of people in the niche of a cultural form negatively affects the proportion of those people who like that cultural form. Instead of predicting competition among people for cultural forms, the homophily model predicts a local
bandwagon effect: The number of people in the niche of a cultural form positively affects the proportion of those people who like that cultural form. This difference is non-obvious and is unlikely to have been revealed by an informal treatment. This difference is not only important because it permits us to choose between these two models. Identification of this difference helps us to know what the two explanations really mean. What would the world look like if the homophily model were true? What would the world look like if the distinction model were true? While neither model is true\(^\text{86}\), asking such questions is a good way to think about explanations because it forces us to seek an explanation that does more than give an answer to our original question. This approach forces us to seek an explanation that accounts for a larger number of empirical findings. Only an explanation that accounts for multiple empirical findings can simplify our understanding of social processes.

*Logically Connects Aesthetic Distancing and Competition for Distinction*

Discovering that the distinction model predicts that people compete with each other for cultural forms clarifies the logical relationship between two of Bourdieu's ([1979] 1984) central arguments. One argument Bourdieu makes is that people engage in aesthetic distancing: People reject the cultural forms liked and practiced by people different from themselves. Bourdieu also claims that people compete with each other for cultural forms. The results of my simulation analysis show that the aggregate level

\(^{86}\)As discussed above, that the social structure is unbiased in the distinction model and that the influence structure is unbiased in the homophily model are aspects of the models that are not empirically true.
implication of aesthetic distancing is competition among people for cultural forms. As more people come to like a cultural form, the greater is the probability that a person who likes the cultural form will meet a person different from herself who also likes the cultural form. The popularity of a cultural form is limited by the process of negative social influence, and the limiting effect of negative social influence increases with the popularity of the cultural form. Thus, people compete with each other for cultural forms. Bourdieu describes the same process with different terminology: A cultural form is useful because it distinguishes people who like it from people who do not. As more different kinds of people come to like a cultural form, its distinctive power gets used up; the cultural form is no longer as attractive to people and its popularity levels off or begins to decline. These arguments also imply that people compete with each other for cultural forms.

Empirically Tests Conflicting Predictions

An empirical test with GSS data shows that cultural forms compete with each other for people: The number of cultural forms with niches overlapping at a person’s position in social space negatively affects the proportion of those cultural forms that the person likes. This result supports the similar predictions implied by the homophily and distinction models. However, people do not compete with each other for cultural forms. Instead, there is a local bandwagon effect: the number of people in the niche of a cultural form positively affects the proportion of those people who like the cultural form. This finding supports the homophily model and disconfirms the distinction model. The
empirical test indicates that the homophily model is the preferred explanation for the finding that different kinds of people like different kinds of culture because the homophily model is the model that explains the larger number of empirical findings. More generally, the paper evaluates arguments about cultural processes on the basis of the empirical accuracy of their logical implications. This approach, unlike the approach of dwelling on the empirical accuracy of models' assumptions, has the potential to repeatedly lead to the development of more powerful theories.

Implications for Future Research

My attempt to answer the question of why cultural forms occupy niches in social space has raised several questions that remain unanswered. In this section, I discuss some of these unanswered questions and how future research might address them.

Several alternatives to the homophily and distinction models can be considered. Among these are fourteen models that result from different combinations of the four assumptions with respect to which the homophily and distinction models differ. These assumptions, as presented in Chapter 2, are the following: (1) a biased social structure (i.e., homophily); (2) a biased influence structure; (3) inactive taste loss; (4) negative social influence. The homophily model is based on (1) and (3), and the distinction model is based on (2) and (4). The fourteen other combinations of these assumptions define fourteen additional models (see Table 5).^7 Examination of these models will permit

^7Notice that when there is no assumption of negative influence, the alternative to positive influence is no influence.
identification of the theoretical source of the difference this study identified between the homophily model and the distinction model. Such an analysis can indicate whether the difference in predictions results from the difference in assumptions about similarity bias (i.e., a biased social structure vs. a biased influence structure), from the difference in assumptions about taste loss (i.e., inactive taste loss vs. negative social influence), or from an "interaction" between both differences. Such an analysis would also reveal the implications of a model based on (1), (2), and (4); this set of assumptions is closer to the arguments of Bourdieu ([1979] 1984) than is the distinction model, which was constructed with an eye toward parsimony.
Table 5. Sixteen Ecological Models of Culture

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Considering additional assumptions generates additional alternatives to the homophily and distinction models. Above, I briefly discussed the potential assumption of cultural homophily: People with similar cultural tastes are more likely to interact with
each other than are individuals with dissimilar cultural tastes (Carley 1991; Mark 1998). This assumption could be combined with the distinction model to explain (sociodemographic) homophily. According to this new model, people choose interaction partners with similar cultural tastes; sociodemographic similarity is irrelevant to choice of interaction partner. However, because cultural forms tend to occupy niches, as predicted by the distinction model, pairs of individuals with similar cultural tastes tend to be similar with respect to sociodemographic characteristics. Thus, people who are similar with respect to sociodemographic characteristics tend to interact with each other as a consequence of other processes. If one were attempting to construct a formal model that accurately reflected Bourdieu's ([1979] 1984) social reproduction theory, this model might be a preferable alternative to the model described above based on assumptions of homophily, a biased influence structure, and negative influence. The reason is that while the model assuming cultural homophily offers an account for (sociodemographic) homophily, the assumption of cultural homophily reflects Bourdieu's main argument concerning cultural capital. Future research should further examine the implications of this model.

Another additional assumption I briefly mentioned is a culturally biased influence structure: positive social influence is more likely to occur between interaction partners with similar cultural tastes than between interaction partners with dissimilar cultural tastes. The addition of this assumption could improve the empirical accuracy of the homophily model by predicting that positive social influence is more likely to occur
between sociodemographically similar interaction partners than between sociodemographically dissimilar interaction partners. We have already seen that the homophily model predicts that different cultural forms occupy different niches in sociodemographic space. Because people who are sociodemographically similar tend to have similar cultural tastes, adding the assumption of a culturally biased influence structure generates the prediction that positive social influence is more likely to occur between interaction partners who are sociodemographically similar than between interaction partners who are sociodemographically dissimilar. Future research should examine how the implications of this model differ from those of the two variants of the distinction model described above.

Another variant of the distinction model that warrants consideration is one in which aesthetic distancing is assumed to be asymmetric so that higher status people tend to reject cultural forms liked by lower status interaction partners but so that lower status people tend to accept cultural forms liked by higher status interaction partners. This variant of the distinction model captures an aspect of Bourdieu's argument not reflected in the distinction model examined in this study. However, incorporation of this more nuanced assumption is only justified from a positivist perspective if it results in a more fruitful or empirically accurate model. Recognition of this requirement raises the question of what finding this model might explain that the model based on symmetric aesthetic distancing does not. A reasonable guess would be an asymmetric finding, such as Peterson's (1992) omnivore/univore finding. Peterson finds that high status people
tend to like more cultural forms than do low status people. Although this finding is asymmetric, it seems more likely that asymmetric aesthetic distancing in which low status people tend to reject the cultural tastes of high status people would explain this finding than it is that asymmetric aesthetic distancing in which high status people tend to reject the cultural tastes of low status people would. Future research should address this question.

Cultural Dynamics

Although the above analyses are cross-sectional, the homophily model has dynamic implications. The micro-level processes of taste acquisition and taste loss can result in changing sociodemographic patterns of cultural taste at the aggregate level. In this section, I discuss implications of the homophily model for change in niche position, niche width, and niche depth.

Niche Position

Above, I defined the position of the niche center of a cultural form on a single dimension as the mean position on that dimension in the society weighted by the proportions of the people in the positions who like the corresponding cultural form. According to the homophily model, the position of the niche center for a given cultural form can change with time (McPherson and Ranger-Moore 1991; McPherson and Rotolo

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88 The distinction model also has dynamic implications. Although much of the discussions that follow applies to the distinction model as well as the homophily model, I focus on the more empirically accurate homophily model.
1996). For example, if some people below the niche center lose their taste for the cultural form and if some people above the niche center develop a liking for the cultural form, then the niche will move up on the dimension.

Students of culture have recognized the importance of niche movement. DiMaggio (1982b,c) and Levine (1988) discuss how theater, opera, and symphonies became “high culture.” Likewise, the niche of jazz music has changed position over time (DiMaggio and Ostrower 1990). Originally, a cultural form of blacks with little education and low income, jazz has become a high status cultural form that is popular among whites as well as blacks.

One promising aspect of the homophily model is that it offers a general explanation for change in niche position. Because cultural forms compete with each other for people, the people most likely to lose a cultural taste are those for whom many cultural forms are competing (Popielarz and McPherson 1995). As discussed above, the number of niches that overlap at a person’s position in social space indicates how many cultural forms are competing for that person. Accordingly, the people who like a cultural form who are most likely to lose their taste for the cultural form are those who are in a region of high niche overlap. The people most likely to acquire a taste for a cultural form are those in the niche of the cultural form who are also in the niches of few if any other cultural forms. Therefore, the homophily model predicts that niches of cultural forms move away from regions of high niche overlap toward regions of low niche overlap.
Niche Width

Sociologists argue that distributions of social and cultural characteristics across society is an important, yet under-examined topic (Blau 1977b; DiMaggio, Evans, and Bryson 1996). As work by McPherson and Rotolo (1996) suggests, the homophily model has potential for explaining variation in characteristics of distributions of cultural tastes such as variance. For any cultural form, the variance of the people who like that cultural form on a sociodemographic dimension determines the width of the niche of that cultural form on that sociodemographic dimension.

Students of culture recognize the importance of change in niche width. DiMaggio (1982b,c) and Levine (1988) consider change not only in niche position, but also in niche width. Not only did the niche center of cultural forms such as theater and opera move to higher levels on the dimensions of education and income in the latter half of the Nineteenth century. The lower bounds of the niches of these cultural forms rose on the dimensions education and income while the upper bonds remained relatively still. Together, these changes result in niche contraction, a decline in niche width. The opposite of niche contraction is niche expansion. The history of country music provides an example of niche expansion; Peterson and DiMaggio (1975) discuss the process by which liking for commercial country music, which was heavily concentrated in the South and Southwest in 1945, spread to all parts of the United States and to Canada.

The homophily model yields testable predictions about change in niche width over time. As I described above, niche overlap influences the likelihood that individuals will
lose or acquire cultural tastes. Individuals in regions of high niche overlap tend to lose
cultural tastes while individuals in regions of low niche overlap are more likely to acquire
new tastes. Accordingly, if the niche of a cultural form is surrounded by regions of low
niche overlap, the niche of the cultural form is predicted to expand. On the other hand, if
niche overlap is higher at the niche edges than at the niche center, competitive pressure at
the niche edges is predicted to result in niche contraction.

Thus, the homophily model has potential for explaining generalism and
specialism of cultural forms in sociodemographic space. A generalist cultural form
exploits a wide range of resources on one or more dimensions of a resources space; that
is, a wide range of people across one or more sociodemographic dimensions like the
cultural form. A specialist cultural form exploits a narrow range of resources; the people
who like the cultural form fall within a narrow range on one more sociodemographic
dimensions.

Proportion of People in Niche who Like Cultural Form (Niche Depth)

The other aspect of generalism and specialization is intensity of exploitation, or niche
depth. Although specialists exploit a narrow range of resources, they exploit those
resources intensively; specialists have deep niches. On the other hand, generalists, which
exploit a wide range of resources, exploit those resources less intensively; generalists
have shallow niches. Above, I operationalized the concept of niche depth as the
proportion of people in a niche who like the cultural form occupying that niche.
DiMaggio (1987) considers the relationship between niche depth and niche width and
argues that producers of cultural goods seek to expand the niches of their cultural goods (i.e., increase niche width) even at the expense of high popularity within the original niche (i.e., niche depth) because overall, popularity is greater for cultural forms that exploit wide niches with low intensity than for cultural forms exploiting narrow niches with high intensity.

The above analysis examined the relationship between niche depth and the number of people in the niche in cross section. The homophily model’s prediction of a positive relationship is supported by the data. The homophily model also has implications concerning this relationship over time. However, because the dynamics involved are sufficiently complex to make speculation questionable at best, I limit myself here to presenting a question for future analysis to explore via computer simulations. Does change in the number of people in a niche precede or follow change in niche depth? In other words, does high intensity of exploitation lead to expansion of a niche to include more people? Or does a high number of people in the niche of a cultural form increase the proportion of people in the niche who like the cultural form? Analysis of the homophily model will reveal the predicted ordering. Empirical analysis with repeated panel data could test this prediction.
Implications for a General Ecological and Evolutionary Theory

Human ecologists (Hawley 1944; Vayda and Rappoport 1968), macrosociologists (Lenski et al. [1970] 1995), and evolutionary culture theorists* (Boyd and Richerson 1985:290-292) call for the development of a general ecological and evolutionary theory. Such a theory would explain distributions of species, including humans, across geographic space, relevant resource spaces, and across time. The theory would also explain distributions of genetically transmitted traits and culturally transmitted traits across populations. This monumental task is not attempted in the present work; however, clarification of the relationship of the present work to other ecological and evolutionary work addressing these issues may help to facilitate the eventual achievement of such a general theory.

Cultural Form as Trait, Population, or Resource

The issue addressed above of the role a cultural form plays in an ecology is also disputed by theorists who explicitly take an ecological and evolutionary perspective. Evolutionary culture theorists argue that a cultural form is a trait that characterizes each member of a population (Boyd and Richerson 1985; Cavalli-Sforza and Feldman 1973). For example, liking to camp is a cultural trait with two attributes: Some people like to camp; other people do not like to camp (Cavalli-Sforza et al. 1982). Every person is characterized by her value on this trait. Likewise, every cultural form can be treated as a dichotomous, multiple-category, or continuous trait, and every person is characterized by

*Durham (1990) uses the term “evolutionary culture theory” to refer to this emerging area of study.
a value on each trait.

For Soltis et al. (1995), cultural forms are traits that may affect the survival chances of human groups. Groups characterized by one attribute of a dichotomous trait may have a higher chance of survival, of growth, and of reproduction by division than other groups. Likewise, groups characterized by the other attribute may be more likely than other groups to cease to exist from dispersal of their members. Over time, this process will result in group level selection for the advantageous trait attribute and the proportion of individuals and groups displaying that attribute will increase.

As discussed above, the homophily model takes a different approach. A cultural form is a population that feeds on people rather than a trait that characterizes people. According to this view, "the bow and arrow is a species, the habit of flattening children's skulls is a species, the practice of reckoning numbers by tens is a species" (Tylor [1871] 1889:8). Lumsden and Wilson (1981:305) make a similar suggestion: "We can think of the human mind as an island into which [cultural forms] immigrate like species of organisms, and where they occasionally evolve into new forms ('innovation') or become extinct." Similarly, Podolny and Stuart (1995) argue that technological "innovations compete with one another for the ... resources and attention" (p. 1225) of organizations.90

90Technology is a type of culture frequently de-emphasized in the sociological literature on culture. However, because variation in the technologies people use are best explained by cultural theories, technology is classified as a type of culture according to the definition of culture I adopt (Chapter 1). The end result of classifying technology as a type of culture is by no means novel (Guglielmo, Viganotti, Hewlett, and Cavalli-Sforza 1995; Hawley 1944; Kroeber and Kluckhohn [1952] 1963; Lenski et al. [1970] 1995).
This approach not only differs from the approach taken by evolutionary culture theorists in the role that culture plays in an ecology, it is different in that it considers a predatory population that is not composed of biological organisms. While human ecologists and evolutionary culture theorists have departed from the practices of bioecologists in numerous ways, consideration of only populations of biological organisms continues to be widely adhered to (Hawley 1944; Vayda and Rappaport 1968). Nevertheless, some social scientists do make this departure. Organizational ecologists examine populations of social rather than organizational forms (Hannan and Freeman 1977; McPherson 1983). Although Lenski et al. ([1970] 1995) view cultural forms as traits, they do consider the ecology of human societies, a community of social rather than biological forms.

Is there an advantage to analyzing cultural forms as populations in a community rather than as traits of people? I believe there is: Modeling cultural forms as populations in an ecology facilitates consideration of the interaction between different cultural forms (i.e., between different populations in a community). The most sophisticated models of the transmission of cultural traits apply to an individual cultural form (Cavalli-Sforza and Feldman 1973; Cavalli-Sforza et al. 1982; Boyd and Richerson 1985; Soltis et al. 1995); aside from one notable exception\textsuperscript{91}, the prediction about the composition of a human population with respect to one cultural trait is independent of the prediction about the

\textsuperscript{91}Boyd and Richerson (1985: Chapter 8) develop a model of indirect bias in cultural transmission in which a person's characteristic on one cultural trait affects how influential that person is on others' adoption of that person's characteristic on a different cultural trait.
composition of that population with respect to a different cultural trait.\textsuperscript{92}

Unlike evolutionary culture theory, the homophily model views liking for a cultural form as qualitatively different from not liking the cultural form. Not liking a cultural form is the default state of the relationship between a person and a cultural form because liking a cultural form requires expenditure of time and energy. Of all the cultural forms that have ever existed or could have existed on earth, any person does not like—does not know of—most of them. As discussed above, this requirement that a person expend time and energy to like a type of culture (i.e., the assumption of inactive taste loss) creates a situation where cultural forms compete with each other for people. Thus, the homophily model yields predictions concerning the interdependence among cultural forms.

As discussed above, sociologists of culture have considered cultural forms to be resources for people or sociodemographic groups of people (Bourdieu [1979] 1984; DiMaggio 1987). While the empirical test provided here is not consistent with this argument, a variant of the cultural form as resource argument (Mohr 1997; Podolny, Stuart, and Hannan 1996) has received empirical support (Podolny et al. 1996).\textsuperscript{93} These

\textsuperscript{92}This characteristic of evolutionary culture theory, application to a single trait, is not to be lamented. By attempting to understand the simple process of cultural transmission thoroughly before modeling more complex processes, these researchers may succeed in building a solid foundation for a cumulative science that addresses culture. The present discussion aims to clarify differences between approaches so that progress through reconciliation can be achieved.

\textsuperscript{93}Note that in combination, two studies of technology provide support for a dual ecology of culture (Podolny and Stuart 1995; Podolny et al. 1996).
sociologists argue that cultural forms, such as technological innovations (Podolny et al. 1996) and institutions (Mohr 1997), are limited resources for organizations. As organizations compete with each other for this scarce resource, they carve out niches in a cultural resource space.

Is there an advantage to analyzing cultural forms as populations in a community rather than as resources? The empirical analysis provided above demonstrates one advantage of the population conception relative to the resource conception: The argument that cultural forms are populations competing for people is more empirically accurate than is the argument that cultural forms are a resource for people. However, this result may be limited to musical tastes and leisure activities; Podolny et al. (1996) find support for the cultural form as resource view in their analysis of technological innovations. On the other hand, my result that cultural forms are not resources for people may be very general while the cultural form as resource view presented by Mohr (1997) and Podolny et al. (1996) is equally accurate. The resolution to this apparent contradiction lies in the difference in the entities argued to consume cultural forms. While my analysis shows that people do not compete with each other for cultural forms, Mohr (1997) and Podolny et al. (1996) argue that organizations compete with each other for cultural forms. These claims may be completely compatible. Future research should examine the relationships between ecologies of culture and people (Mark forthcoming), organizations and culture (Mohr 1997; Podolny and Stuart 1995; Podolny et al. 1996), and organizations and people (McPherson 1983).
Biased Culture Change and Random Cultural Drift

I have sought to answer the question of why different kinds of culture occupy different niches in social space. I have not addressed the question of why particular kinds of culture occupy particular niches. For example, I have not considered why heavy metal music is most popular among young people and big band music most popular among older people. Why isn’t liking for heavy metal music concentrated among old people and liking for big band music concentrated among young people? The homophily model argues that the reason we observe one arrangement and not the other is chance. Heavy metal music could have just as easily become most popular among old people and big band among young people.\(^\text{94}\) Of all the possible pairings between cultural forms and niches that could characterize a particular society at a particular time, only one does, and

\(^{94}\)Some readers may object that this argument ignores the historical process that led to the presently observed pattern of cultural taste. While the argument does ignore, perhaps to its credit (DiMaggio 1987), inherent relationships between cultural forms that may have made big band music more likely to emerge in one period of time and heavy metal music more likely to emerge in a different period of time, the homophily model does not ignore processes of change in patterns of cultural taste. The pattern of cultural taste at one point in time shapes the probabilities of various patterns at a latter point in time. Bigger changes can occur between points more distant in time than between points closer in time. Although the homophily model offers one explanation for this evolutionary process, the ultimate answer the homophily model provides to the question of why liking for heavy metal music is concentrated among young people and liking for big band music is concentrated among old people is still chance. A historically particular answer can be offered: Today, liking for big band music is concentrated among old people and liking for heavy metal music is concentrated among young people because big band music originally emerged in an older cohort than did heavy metal music. However, this answer begs the question of why these different musical forms emerged in these particular cohorts. Again, the answer offered by the homophily model is chance. The answer “chance” may be just as unsatisfying to some readers as a historically particular one. The strength of the answer “chance” is that it is simple and yields an empirically accurate prediction.
that is the pattern of cultural tastes we observe. According to the homophily model, aside from being characterized by the people who like a cultural form, all cultural forms are the same (DiMaggio 1987). A person is not more likely to positively receive one cultural taste than another expressed by the same interaction partner.

This characteristic of the homophily model makes it an example of a random cultural drift model (Boyd and Richerson 1985; Cavalli-Sforza and Feldman 1973, 1981). No cultural form is assumed to be more inherently fit than another cultural from across all of social space or within a particular niche. Recall that in the initial condition of the simulations, every person liked every type of culture. No cultural form had an advantage relative to any other in any region of social space. Nevertheless, the stochastic process of choosing one of the tastes a person holds every time that person tells an interaction partner a taste combined with the process of inactive taste loss results in different cultural forms becoming most prevalent in different regions of social space.

The alternative to models of random cultural drift are models of biased cultural change (Boyd and Richerson 1985; Soltis et al. 1995). These models assume that some cultural forms are advantaged relative to others with respect to fitness (i.e., probability of transmission). For example, in most environments, individuals with potential models who use a hoe and potential models who use a plow are more likely to adopt the plow than the hoe because the plow is the more productive technology. Soltis et al. (1995) describe how the process of biased transmission can also operate at the level of the human group.
An important question is whether a model of random cultural drift is more appropriate than is a model of biased cultural change for explaining sociodemographic patterns of musical taste and leisure activity. Boyd and Richerson (1985:291) argue that "evolutionary forces imposed by the environment will be strong for some behaviors, such as basic subsistence techniques, weaker for others, such as modes of social organization, and virtually absent for still others, such as grammar and syntax." I argue that musical tastes and leisure activities fall reasonably close to the grammar and syntax end of this spectrum. It is hard to imagine how one's physical environment would make some types of music more appealing than others. One's physical environment could make some types of leisure activity more appealing than others (e.g., skiing and surfing). However, determining all the relative advantages of different cultural forms in different environments and incorporating these advantages into the model would increase the complexity of the model greatly. The approach I have taken in this dissertation has been to see what can be accomplished with a model of random cultural drift. Whether it is appropriate to adopt such a model can be evaluated by the empirical accuracy of the predictions it generates. The above analysis shows that it does generate three empirically accurate predictions. Another means of evaluating such a model is to empirically test the claim that musical tastes and leisure activities do not have different relative advantages in different physical environments. Gugliemino et al. (1995) describe a method for

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95Most such differences are masked by the categorization used in the empirical data I analyze. For example, one item asks about participation "in any sports activity such as softball, basketball, swimming, golf, bowling, skiing, or tennis."
empirically testing such a claim.

**Analysis of Culture in Different Types of Society**

The approach of the present study differs from the approaches taken by evolutionary culture theorists and many human ecologists because I consider cultural patterns in an advanced industrial society while evolutionary culture theorists (Boyd and Richerson 1985; Soltis et al. 1995; Cavalli-Sforza and Feldman 1973) and some human ecologists (Netting [1977] 1986) focus on smaller, more homogeneous societies. While much work considers differences between societies (Boyd and Richerson 1985:56-60), I focus on differences within one large, heterogeneous society. Assumptions are accordingly different: While the models of evolutionary culture theorists often assume random mixing (of cultural parents) (Boyd and Richerson 1985; Cavalli-Sforza and Feldman 1973), the assumption of a biased social structure is fundamental to the homophily model. The difference in the types of society the models focus on is also reflected in the dependent variables considered. Evolutionary culture theorists focus on the proportion of a human population with a certain trait attribute, or on the mean value of a trait in the case of a continuous trait (Boyd and Richerson 1985; Cavalli-Sforza and Feldman 1973). My analysis shows that which cultural forms people like is related to their positions in sociodemographic space.

Both approaches can be generalized to deal with the different type of society. From the perspective of the homophily model, a system of small homogeneous societies

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⁹⁶For an exception, see Boyd and Richerson (1985:66-67).
is a network in which each position corresponds to a different society. The transmission of cultural tastes occurs more frequently within societies than between, and more frequently between geographically near societies than between geographically distant societies. From the perspective of evolutionary culture theory, a large and heterogeneous modern industrial society is a society where there is a bias in the formation of sets of cultural parents.

Conclusion

I have examined two explanations for the finding that different cultural forms occupy different niches in sociodemographic space: homophily and distinction. I find that while both models explain this finding, they yield different predictions concerning competition. While the distinction model, consistent with the arguments of as Bourdieu and DiMaggio, predicts that people compete with each other for cultural forms, the homophily model does not predict this form of competition. Instead, the homophily model predicts a local bandwagon effect: the number of people inside the niche of a cultural form positively affects the proportion of those people who like the cultural form. Until now, this hypothesis had not been examined theoretically or empirically. The above analysis reveals empirical support for this hypothesis. In other words, this study discovered a fact about sociodemographic patterns of cultural taste. Such discovery is one major benefit of theoretically driven empirical research. Attempting to explain the obvious helps us to discover the non-obvious.
The program cultsim, written in Gauss, simulates the homophily model and the distinction model. Following cultsim are the five procedures cultsim calls: relsimx.e.g, pickv.g, telltst3.g, influ.g, recvtst.g.

/* cultsim generates the simulated data analyzed in this study. Parameter settings determine whether cultsim simulates the homophily model or the distinction model. To simulate the homophily model, homoexp=10, influexp=0, frgt=1, and neginfl=0. To simulate the distinction model, homoexp=0, influexp=10, frgt=0, and neginfl=1.*/

homoexp = 10; /*Homoexp determines the strength of the similarity bias in the social structure (i.e. the strength of homophily).
If homoexp=0, there is no bias.
The strength of homophily is a positive function of homoexp.*/
influexp = 0; /*strength of similarity bias in influence.*/
frgt = 1; /*Is there forgetting (i.e. inactive taste loss)? 0 = no; 1 = yes*/
neginfl = 0; /*Is there negative influence? 0 = no; 1 = yes*/

n = 156; /*number of people in one system.
Roughly 10% of number of observations in GSS*/
systems = 10; /*number of systems simulated for one set of parameter settings*/
sysid = 1; /*system identifier*/
frgttime = 17; /*If a person holds a taste, but does not express it or positively receive it for for frgttime-1 consecutive rounds, the person will lose this taste from inactivity.
In Mark (1998), memory=frgttime-2*/

/*156 observations are randomly selected from 1993 GSS. For these observations, the values of 2 variables—age and educ—are recorded in posvec1r.*/
posvec1r = {
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75 12
31 18
61 12
40 16
34 18
48 16
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</table>
posvec = reshape(posveclr,n,2); /* turn row-vector into an n*2 matrix. posvec determines the positions of all the individuals in a system on the sociodemographic dimensions age and education. */

output file = ct0698c.asc reset;
/*Cultural Trend data is collected in the file ct[month year letter].asc. There is one observation for each round simulated for each society. Not used in present study.*/

rounds = 500;
/*Each system is simulated for this number of rounds.*/

do while sysid le systems*2; /*One pass through this loop simulates one system for the designated number of rounds.*/

a = ones(35,n); /*a is tastes by persons matrix of ones and zeros. a[i,j]=1 if the jth person likes the ith cultural form, and a[i,j]=0 otherwise. There are 35 cultural forms. In the initial condition, each person likes each cultural form.*/
frgmat = a;

/* frgmat is used to implement the homophily model's assumption that tastes can be lost from inactivity. frgmat is a tastes by persons matrix which indicates which persons like which cultural forms and how long it has been since each person has told an interaction partner about a taste or been told about (and positively received) that taste by an interaction partner. At the beginning of a round (round t),

frgmat[i,j] = 0 if person j does not like cultural form i and if one of the following is the case: (1) person j never liked cultural form i; or (2) the last time person j was told taste i, person j received taste i negatively. Case 1 does not occur in the present simulation analysis because a, the cultural forms by persons matrix, begins as all ones (i.e., every person likes every cultural form and because a "created taste" is always for one of the original 35 cultural forms. Case 2 only occurs in distinction model, in which case frgmat is inconsequential because there is no inactive taste loss.

= 1 if person j told or positively received taste i in the last round (t-1)
= 2 if person j last told or positively received taste i in round t-2 and has not negatively received taste i in round t-2 or since.
... = frgttime-1 if person j last told or positively received taste i in round t-(frgttime-1) and has not negatively received taste i in round t-(frgttime-1) or since.
= frgttime if person j once liked cultural form i, but lost it from inactivity and has not negatively received taste i since losing it from inactivity,

where frgttime is a positive integer that determines how many rounds a person can maintain a preference without telling it or being told it.*/

relsimlr = relsimxe(posvec,homoexp,2);
/* relsimlr is a matrix of relative similarities between individuals. relative similarity can be asymmetric. The relative similarity of i to j, relsimlr[i,j], is a function of how close i is to j relative to how close other people are to j and is a function of homoexp. If homoexp=0, then the relative similarity is the same for each pair of individuals. A person's relative similarity to herself is zero.

rexsimx.e.g is given a vector or matrix called posvec that indicates every person's position on one or more sociodemographic variables. Columns of posvec that indicate positions on continuous variables are to the left of
columns of posvec that indicate positions on nominal variables. The third value relsimx.e.g takes indicates the number of the sociodemographic variables that are continuous. Relsimx.e.g determines relative similarity between persons based on the Euclidean distance between them in the multidimensional space defined by the sociodemographic variables in posvec.*

\[ i = 1; /* round identifier and count variable */ \]

\[ \text{do while } i \leq \text{rounds; } /* One pass through this loop simulates one round of interaction. */ \]
\[ \text{fctdyads } = \text{sumc}((\text{sumc}(a').*(\text{sumc}(a')-(\text{ones}(\text{rows}(a),1)))))/2); \]
\[ \text{culthomc } = \text{fctdyads}/((n*(n-1)/2)*\text{rows}(a)); /* culthomc is a measure of the cultural homogeneity of a system. See Carley (1991)*/ \]

\[ \text{format } /\text{rd } 0,4; \]
\[ \text{sysid homoexp influexp frgt neginfl } i \text{ sumc(sumc}(a)) \text{ culthomc;} \]

/* data is collected on each system at the beginning of each round of interaction. Eight variables/parameters are recorded: a system identifier (sysid), homoexp, influexp, frgt, neginfl, a round indentifier (i), the total number instances of an individual liking a cultural form (sumc(sumc(a))), and cultural homogeneity (culthomc). This data is collected in ct*.asc. Analysis of this data is not reported in the present study. */

/* step 1: partner selection */
\[ \text{pickvec} = \text{pickv(cumsumc(relsiml')}'); \]
/* Applying the procedure pickv.g to row-cumulated relsiml generates a vector of who picks whom as an interaction partner. Pickvec is an n*1 vector. Pickvec[i] is the number of the person that ith person picks as an interaction partner. */

/* step 2: initiation of interaction by taste expression */
\[ \text{tellvec } = \text{tellst3}(a,.01); \]
/* In each round, each person initiates interaction with the person she has selected as her interaction partner by telling that person a cultural taste. tellst3.g determines which taste each person tells her initiate. Each of the tastes that a person holds, the person is equally likely to tell her initiate. The second value given to tellst3.g is the probability that the initiator will acquire and tell a taste she does not currently hold. In such a case, each of the tastes the initiator does not hold the initiator is equally likely to express. If it is determined by the computer generated random number that the person will tell a taste she does not currently hold and she holds all potential tastes, she will tell no taste. Likewise, if it is determined that the person will tell a taste she already holds and she holds no tastes, she will tell no taste. 

Tellvec is a vector where cell i is the row of the taste that the ith person tells her partner. */
/*step 3: influence determination*/
    influvec = influ(pickvec, relsimxe(posvec, influexp, 2), neginfl);
/*influvec indicates whether positive influence, negative influence, or no influence
occurs. influvec is an n*1 vector of ones and zeros if neginfl=0 and is an n*1 vector of
ones and negative ones if neginfl=1.
If influvec[i]=1, the ith person will positively influence her initiate.
If influvec[i]=-1, the ith person will negatively influence her initiate.
If influvec[i]=0, the ith person will not influence her initiate.*/

/*step 4: taste reception*/
    {a, frgtmat} = recvtst(pickvec, influvec, tellvec, a, frgtmat);
/*recvtst.g adjusts a and frgtmat for tastes expressed between which pairs and how the
tastes are received. cells of frgtmat corresponding to expressed or positively or
negatively received tastes are set to zero*/

/*step 5: inactive taste loss*/
    if frgt eq 1
        frgtmat = frgtmat + a; /*If there is forgetting, every round, frgtmat is increased by a to
mark the passage of time.*/
        a = (frgtmat % frgttime) > 0; /*If frgtmat[i,j] = frgttime, then the jth person loses her
taste for the ith type of music.*/
    else
        frgtmat = a;
    endif;

    i = i + 1; /*1 is added to the round counter.*/
endo;

if sysid eq 1;
    outputm = ((sysid - homoexp - influexp - frgt - neginfl) * ones(n, 5)) - seqa(1, 1, n) - posvec - (a');
/*A matrix that will eventually be the dataset is constructed. This dataset is the one
analyzed in the present study: cc0698c.asc — Cultural Cross-section data.*/
else;
    outputm = outputm|
        ((sysid - homoexp - influexp - frgt - neginfl) * ones(n, 5)) - seqa(1, 1, n) - posvec - (a');
/*A dataset for the most recent system simulated is appended to the bottom of the
cumulative dataset.*/
endif;
sysid = sysid + 1; /*1 is added to the system counter.*/
/*after the homophily model has been simulated SYSTEMS times, the distinction model
is simulated SYSTEMS times.*/
if sysid eq systems+1;
    homoexp=0;
    influexp=10;
    frgt=0;
    neginfl=1;
endif;
endo;
output file = ct0698c.asc off;
output file = cc0698c.asc reset;
format /rd 0,0;
outputm; /*The dataset is written to a file*/
output file = cc0698c.asc off;
end;
relsimxe.g (3/24/98) produces a matrix not necessarily symmetric relative similarities from posmat, a matrix specifying people's positions on one or more continuous dimensions and one or more nominal dimensions of social space. Relsimlr, the matrix returned by the procedure, is undefined if posvec has 3 or fewer positions.

Distances between pairs of individuals on a given dimension are standardized relative to the variance on that dimension. The distance between individuals in multidimensional space is calculated as the Euclidean distance.

For posmat, all continuous dimensions must be to the left of all nominal dimensions.*/

proc relsimxe(posmat,expon,numcdims);
local n,numdims,numcdims,dimcount,maxdist,dyaddist,catfreq,pnotmode,sinilrmat,
relsimlr;

n = rows(posmat);
numdims = cols(posmat);
if numcdims ge 1;
    dyaddist = (((posmat[.,1].*ones(n,n))-(posmat[.,1].*ones(n,n)))./(stdc(posmat[.,1])*sqrt((n-1)/n))).^2;
else; /*i.e., first column of posvec is a nominal dimension*/
    catfreq = counts(posmat[.,1],seqa(0,l,l 1)); /*numbers of people in positions 0 to 10*/
    if sumc(catfreq) lt n; /*e.g., a person is at position 12.*/
        "too many categories"; /*As written, this procedure cannot handle nominal
dimensions with positions greater than 11.*/
    endif;
    pnotmode = (sumc(catfreq)-maxc(catfreq))/sumc(catfreq);
    dyaddist = ((posmat[.,1].*ones(n,n)).ne(posmat[.,1].*ones(n,n))).*
(2*(n^2)/sumc(sumc(((posmat[.,1].*ones(n,n)).ne(posmat[.,1].*ones(n,n))))));
endif;
if numdims ge 2;
    dimcount = 2;
do while dimcount le numcdims;
    if dimcount le numcdims;
        dyaddist = dyaddist+
(((posmat[.,dimcount].*ones(n,n))-(posmat[.,dimcount].*ones(n,n)))./(stdc(posmat[.,dimcount])*sqrt((n-1)/n))).^2;
    else;
        catfreq = counts(posmat[.,dimcount],seqa(0,1,11));
        if sumc(catfreq) lt n;
            "too many categories";
        endif;
        pnotmode = (sumc(catfreq)-maxc(catfreq))/sumc(catfreq);
    endif;
    if sumc(catfreq) lt n;
        "too many categories";
    endif;
    pnotmode = (sumc(catfreq)-maxc(catfreq))/sumc(catfreq);
dyaddist = dyaddist +
((posmat[.,dimcount].*ones(n,n)).ne(posmat[.,dimcount].*ones(n,n))).*
(2*(n^2)/sumc(sumc(((posmat[.,dimcount].*ones(iMi)).
.ne(posmat[.,dimcount].*ones(n,n))))));
endif;
dimcount = dimcount + 1;
endo;
endif;
dyaddist = dyaddist.^1/2;
maxdist = maxc(dyaddist'); /*maxdist is an n*1 vector of the distance from
the ith person to the person farthest from the ith person*/
simlrmat = diagrv((maxdist*ones(1,n))-dyaddist,zeros(n,1)); /*simlrmat is an n*n matrix of similarity values.
simlrmat[i,j] = maxdist[i]-dyaddist[i,j] for i<>j
simlrmat[i,i] = 0*/

/*For nominal dimensions, there needs to be more than one person in every position for
division by zero not to occur.*/
repsimlr = (simlrmat.^expon)./(simlrmat.^expon.*ones(n,1)); /*repsimlr, an n*n matrix, is simlrmat raised to a power
elementwise and row normalized. The greater the power, the
stronger is the force of homophily on the dimension. If the
power is zero, all pairs are equally likely to interact. If the
power is negative, people are biased toward picking dissimilar
interaction partners.*/
retp(repsimlr);
endp;
/* pickv.g picks interaction partners. Pickv.g operates on a
matrix of each individual's cumulative probabilities of
initiating interaction with each individual in the system.
pickv.g returns a vector of numbers indicating the column of a
(or the element of posvec) of the person each person picks for
interaction*/

proc (I)= pickv(cumprobm);
  local n,ran,p,i,j;
  n = rows(cumprobm);
  ran = rndu(n,1);
  i=1;
  p = zeros(n,1);
  do while i <= n;
    j=1;
    do until cumprobm[i,j] >= ran[i];
      j=j+1;
    endo;
    p[i]=j;
    i=i+1;
  endo;
  retp(p);
endp;
/*telltst3.g (12/13/97) picks the cultural tastes that individuals tell to the people they have chosen as interaction partners. A person may tell her partner a cultural taste she already holds, or she may acquire one of the potential cultural tastes she does not hold and tell that taste to her partner.

In each round, each person tells one taste to one other person. telltst.g produces a vector where cell i is the row of the taste that the ith person tells her partner.*/

proc (1) = telltst3(tastemat,p);
local i,n,k,j,acog,mdord,createv,tellvec;
    n = cols(tastemat); /*number of people in system*/
tellvec = zeros(n,1); /*will be the row numbers of tastes initiators express*/
createv = (rdu(n,1)).le (p);
i=1;
do while i <= n;
    /*In one pass through this loop, the ith person chooses a cultural taste, one she already held or one that she creates, and tells this taste to the person she initiated interaction with. A and frgtrmat are adjusted according to what happens.*/
        k = rows(tastemat); /*number of tastes in system*/
        acog = submat(tastemat,seqa(1,1,k),i);
        mdord = sortc((rdu(k,1))~seqa(1,1,k),1);
        /*acog is a k*1 vector of the initiator's tastes.*/
        rndord = sortc((rdu(k,1))~seqa(1,1,k),1);
        /* The initiator will go through this random order of all potential tastes.*/
        j = 1;
        if createv[i] eq 0; /*if person i will tell a taste she already holds*/
           if sumc(acog) ge 1; /*if person i holds a taste*/
               do until acog[rndord[j,2]] eq 1;
                   /*this loop goes through tastes in the random order established by rndord until a taste held by the initiator or the potential new taste is reached.*/
                       j = j + 1;
               endo;
        endif;
        tellvec[i] = rndord[j,2];
        endif;
        endif;

    if createv[i] eq 1; /*if person i will tell a taste she did not already hold*/
        if sumc(acog) lt k; /*if person i does not hold every taste*/
            do until acog[rndord[j,2]] eq 0;
                /*this loop goes through tastes in the random order established by rndord until a
taste not held by the initiator is reached. */

    j = j + 1;
    endo;
    tellvec[i] = rndord[j,2];
    endif;
    endif;

/* tellvec[i] may be 0 if person holding no tastes expresses a taste she holds or if a
person expressing a taste she does not hold holds every taste */

    i = i + 1;
    endo;
    retp(tellvec);
    endp;
/*The procedure influ.g (10/22/97) takes picvec, relsimlr, and neginfl (whether there is negative influence) and determines which initiates are positively influenced by their initiators and, depending on the value of neginfl, which initiates are negatively influenced or not influenced. The procedure returns the positive influence vector, pivec, an n*1 vector of which initiators have positive influence (indicated by ones) and which initiators have negative influence (indicated by -1; occurs if neginfl=1) and which initiators have no influence (indicated by 0; occurs if neginfl=0).*/

proc(l)= influ(pickvec,relsimlr,neginfl);
local pip,n,dpickvec,piincr,probpi,mdvec,pivec;
pip = .3; /*positive influence parameter determines the average probability of being positively influenced. If influexp = 0, relsimlr is all the same and probpi[i] will be pip.*/

n = rows(pickvec); /*number of people in system*/
dpickvec = design(pickvec);
if cols(dpickvec) lt n;
dpickvec = dpickvec~zeros(n,n-cols(dpickvec));
endif;
/*dpickvec is an n*n matrix where dpickvec[i,j]=1 if person i picked person j and dpickvec[i,j]=0 otherwise.*/

piincr = (((sumc(sumc(relsimlr)))/(n*(n-1)))^(-1))*pip;
probpi = (maxc((relsimlr'.*dpickvec)')).*piincr;
/*probpi is an n*1 vector of probabilities of positive influence between initiates and initiators.
Relsimlr[i,j] is j's similarity to i relative to everyone else's similarity to i. If i picks j, pickvec[i]=j and dpickvec[i,j]=1. (Relsimlr'.*dpickvec)[i,j] = relsimlr[j,i]
And probpi[i]=relsimlr[j,i]*piincr.
This formula makes some probpi greater than 1.*/

mdvec = mdu(n,1); /*A vector of random numbers is generated.*/
pivec = mdvec .< probpi; /*An initiate is positively influenced by her initiator if the random number is less than probpi.*/

if neginfl eq 1;
Pivec = (pivec.*2)-ones(n,1);
endif;
retp(pivec);
endp;
/*recvst.g (10/22/97). Initiates receive the tastes told to them.
tellvec[i] is the taste the ith person tells to her initiate.
pickvec[i] is the initiate of the ith person.
influvec[i] indicates whether the ith person's initiate receives
the taste positively (+1), negatively (-1), or neutrally (0).*/

proc (2)= recvst(pickvec,influvec,tellvec,tastemat,frgtmat);
local i,n,randord;

n = cols(tastemat); /*number of people in system*/

/*Add rows to tastemat if tastes were created this round. This does not happen in present
study.*/
if maxc(tellvec) gt rows(tastemat);
tastemat = tastemat|zeros(maxc(tellvec)-rows(tastemat),n);
frgtmat = frgtmat|zeros(maxc(tellvec)-rows(frgtmat),n);
endif;

randord = sortc(mdu(n,l)~seqa(l,l,n),l);
/*randord puts initiators of interaction into a random
order. This puts the dyadic interactions into a random
sequence. Because one person may be told the same taste
by two different people and because the two people may exert
opposite influence, things are tricky. random order is good;
it makes the probability of positive influence equal to the
proportion of people telling a person a taste who have
positive influence on the person.*/

i=1;
do while i <= n;
/*the ith pass through this loop resetting the cell of
frgtmat corresponding to the ith initiator in the random
order and to the taste she expresses back to zero. This
resetting for expressed tastes occurs before resetting
for received tastes.*/

if tellvec[randord[i,2]] gt 0;
/*this only happens if the initiator had a taste to express*/
frgtmat[tellvec[randord[i,2]],randord[i,2]]=0;
endif;
i=i+1;
endo;
do while i <= n;

/*The ith pass through this loop simulates the reception by initiate of the taste told by the ith initiator in the random order established by randord.*/

if tellvec[randord[i,2]] gt 0;
  if influvec[randord[i,2]] eq 1;
    tastemat[tellvec[randord[i,2]],pickvec[randord[i,2]]]=1;
    frgmat[tellvec[randord[i,2]],pickvec[randord[i,2]]]=0;
  endif;
  if influvec[randord[i,2]] eq -1;
    tastemat[tellvec[randord[i,2]],pickvec[randord[i,2]]]=0;
    frgmat[tellvec[randord[i,2]],pickvec[randord[i,2]]]=0;
  endif;
  i=i+1;
endo;
retp(tastemat,frgmat);
endp;
REFERENCES


Creation of an Organizational Base for High Culture.” *Media, Culture and Society* 4:33-50.


