Toward an Ecology of Social Action: Merging the Ecological and Constructivist Traditions

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Abstract

In this article, I trace organizational sociology's inability to develop a comprehensive framework integrating structure, agency and environment to the persistence of essentialism within the ecological tradition and nominalism within the constructivist tradition. Drawing on parallels with the Darwinian revolution, I argue that these impasses can be overcome through a combination of population thinking and a relational approach to categorization. This combination provides the metatheoretical foundation for an "ecology of social action" which merges organizational ecology and resource mobilization theory's insights into structure-environment interactions with constructivists' attention to agency, language, culture and power. The concept of a socially constructed adaptive landscape is put forward as a central metaphor for linking the ecological and constructivist traditions.

Keywords: *organizational ecology, constructivism, agency, essentialism, nominalism*

Introduction

An inability to capture the dialectic between structure, agency and environment has plagued organizational sociology from its inception. Reed (1988, 42) argues that this problem can only be resolved within an historical framework that focuses "on those social practices through which social structures are created, maintained and transformed over time." At first glance, organizational ecology's evolutionary account of social change seems ideally suited to this task. However, organizational ecology has not only failed to provide the needed synthesis. If anything, it has driven the rhetorical wedge between structure and agency and macro and micro perspectives even deeper.

In order to set their new paradigm apart from so-called "adaptationist" theories, Hannan and Freeman (1977) premised organizational ecology on the assumption that organizations are largely inert relative to the speed of environmental change. While the inertia metaphor initially served as an effective counterpoise to managerial theorists' nearly exclusive reliance on rational choice to account for organizational change, the limitations of this metaphor have now become apparent. As critics point out, organizational ecologists have simply constructed an inverted image of managerial omnipotence — a theoretical framework in which individual and corporate *actors* are incapable of significantly modifying themselves or their environments (Fombrun 1988; Meyer 1990; Winter 1990; Zucker 1989).

In contrast, constructivist theorists (e.g., Snow et al. 1986) have succeeded precisely where organizational ecologists have fallen short. By focusing on the rhetorical and claims-making activities of individual and corporate actors, constructivists have exposed the historical and contested character of intra- and inter-organizational relations and demonstrated that actors, and the alternative meanings they espouse, can play an independent causal role in history. However, although they have made significant advances in integrating agency and culture into organizational analysis, constructivists have thus far failed to connect their insights to a broader theory of organizational dynamics (Musolf 1992).

The complementary strengths and limitations of the ecological and constructivist traditions suggest the need for a synthesis. However, achieving such a synthesis requires placing these traditions within a broader theoretical and philosophical context. Drawing upon parallels with the Darwinian revolution, I argue that the primary obstacle to merging these perspectives is the persistence of essentialism within the ecological tradition and nominalism within the constructivist tradition. Moreover, the key to overcoming these impasses is to combine population thinking with a relational approach to categorization. This combination provides the metatheoretical foundation for an "ecology of social action" which integrates organizational ecology and resource mobilization theory's insights into structure-environment interactions with constructivists' attention to agency, language, culture and power. The concept of a socially constructed adaptive landscape is put forward as a central metaphor for linking the ecological and constructivist tradi-

tions. In the final section of the paper, I discuss the implications of this revised version of organizational ecology for the study of the origins, legitimation and diversification of organizational forms.

From Frame-Invariant to Frame-Relative Thinking

The Essentialist Roots of Western Science

The inability of social theorists to come to grips with the interrelationships between structure, agency and environment can best be understood in terms of the legacy of essentialism in the social sciences and the divergent reactions engendered by that legacy. Essentialist theorists from Tylor, Morgan, Marx, Durkheim and Spencer to twentieth-century advocates of "functionalism" and "evolutionism" all share a commitment to Aristotle's Natural State Model (NSM). In his Physics, Aristotle writes:

> *...natural things are exactly those which do move continuously, in virtue of a principle inherent in themselves, towards a determined goal; and the final development which results from any one such principle is not identical for any two species, nor yet is it any random result; but in each there is always a tendency towards an identical result if nothing interferes with the process.*
>
> (as quoted in Bock 1978, 43)

Whether applied to physics, biology or politics, Aristotle's approach to theory construction involves: (1) defining a class of objects so that each and every member of that class and only members of that class possess certain "essential" characteristics, (2) defining the "natural" state or path of change characteristic of members of that class and (3) distinguishing these internally generated "natural" tendencies from "deviations" caused by external "obstacles" or "interfering forces." Aristotle's model represents a *frame-invariant* approach to theory construction because its goal is to analytically strip away the effects of external forces in order to uncover context-independent universal patterns (Sober 1980).

Early chemists' formulation of the periodic table and Newton's "laws of motion" were both products of successful essentialist research programs (Sober 1980). They were successful because researchers in these fields were able to theorize "interfering forces" — e.g., the effects of friction on falling bodies — to systematically account for observed "deviations." Such successes clearly undermine any attempt to construct a global anti-essentialist argument (e.g., Popper 1972). They likewise undercut Bock's (1956) contention that the NSM does not allow for a "science" of the "accidental." These points are crucial for understanding the strengths and limitations of this doctrine because they belie the common charges that essentialism is inherently ahistorical, deterministic or non-scientific. *In principle* it is none of these. It only becomes so *in practice* when theorists in a given field fail to construct systematic theories of obstacles. It is this domain-specific, rather than global, failure that explains the historical demise of essentialism in biology. A clear understanding of why essentialism was abandoned in biology can shed new light upon the ongoing collapse of essentialism in the social sciences. Moreover, it also points to an alternative framework for constructing theories of social change — population thinking.

The Breakdown of Essentialism in Biology

The breakdown of essentialism in biology was a complex process spanning at least two centuries. The essentialist belief that each species had a distinct and fixed nature first came under attack in the 18th century. Nominalists such as Bonnet and Robinet (Lovejoy 1936; Mayr 1976) contended that "All groupings, all classes, are artifacts of the human mind" and that, therefore, only individuals are "real" (Mayr 1976, 429). This blurring of species boundaries was reinforced in the minds of some naturalists — e.g., Buffon — by a commitment to Aristotle's principle of continuity — the belief that species grade imperceptibly one into another (Lovejoy 1936). Both of these ideas suggested that species were merely the *arbitrary constructions* of human observers. The growing conviction, in the minds of some naturalists, that species boundaries were "vague" and/or that species lacked fixed essences provided a first step towards theories of species transformation.[2]

The first theories of biological "evolution" were merely "temporalized" versions of the Chain of Being (Lovejoy 1936). That is, the originally static scale of nature — the unilinear sequence believed to extend from the least to the most complex organism — was reinterpreted towards the end of the 18th century as a process occurring in time. Such theories of biological progress were essentialist in that they posited a context independent natural path of change with the environment treated as a secondary interfering force. Lamarck's theory of evolution is perhaps the best-known example of this approach to theorizing biological change. However, the inability of Lamarck and other biologists to construct convincing theories of obstacles — e.g., Lamarck's theory of use and disuse (Ruse 1979, 8) — eventually undermined attempts to build theories of biological evolution based on Aristotle's NSM.

Darwin eventually overcame these difficulties by rejecting essentialism in favor of population thinking (Mayr 1976). That is, rather than seeing variation as merely "deviations" from some fixed ideal, Darwin took it as his theoretical start-

ing point.[3] Darwin likewise abandoned the essentialist belief in a context-independent "natural" path to evolution. Instead, he used his theory of natural selection to argue that the differential survival of variants within a population would eventually lead to divergences in character and adaptation to local conditions. Darwin's cousin, Francis Galton, underscored this radical shift to population thinking by renaming the "law of errors" the "normal" curve (Sober 1980).[4] That is, prior to the Darwinian revolution essentialists saw this curve as useful because it provided a methodology for separating the "natural" from the "accidental." One need only plot data on a particular phenomenon and ascend the curve to find the mean. For essentialists it was this ideal — e.g., the "nature" possessed by each member of a species — that was causally efficacious and thus explanatory. Diversity was neither. It was simply a side effect — i.e., "errors" made by nature in attempting to reproduce a prototype. Such "errors" were "explained or explained away" through reference to interfering forces (Sober 1980, 370). In contrast, Darwin and subsequent populationists attempted to account for patterns of diversity in one time period through reference to earlier patterns of diversity. From the perspective of populationists, the diversity represented by the bell curve was now seen as "normal," not only because it was found everywhere in nature, but because existing diversity was seen as a *cause* of subsequent diversity. As Sober (1980, 370) notes, "Rather than looking for a reality that *underlies* diversity, the populationist can postulate a reality *sustained* by diversity."

Thus, in contrast to the NSM, Darwin's approach to theory construction is *frame-relative* because it abandons Aristotle's goal of partitioning the natural from the accidental. From the perspective of evolutionary theory, such a partitioning is considered impossible even in principle (Sober 1980). For instance, at the ontogenetic level a gene quite literally has no "meaning" except in relation to a specific genomic and environmental context. Likewise, at the phylogenetic level changes in diversity in successive time periods can only be explained through reference to intervening environments (Sober 1980). Thus, biologists have replaced the twin essentialist problematics of analytically separating "nature" from "nurture" and the "ahistorical" from "historical" elements of evolution in favor of more interesting frame-relative questions, such as constructing norms of reaction which graph the alternative developmental outcomes of a given genotype across varying environments (e.g., the height of a single corn genotype as a function of different levels of soil nitrogen) or niche theories which predict a population's optimal niche width in relation to specific patterns of environmental change.

Finally, although Darwin ([1859] 1958, 67) himself never entirely overcame his conviction that the term "species" was "arbitrarily given for the sake of convenience," the subsequent history of biology has demonstrated that the choice between essentialism and nominalism is a false one (Mayr 1976). Both have been supplanted by a biological species concept that defines species as bounded networks, the boundaries of which are delimited by a lack of exchange of genetic information. Darwin's confusion derived from the erroneous assumption that categories had to be "fixed" in order to be "real" (Sober 1980). A biological species concept cuts through this false dichotomy. While in the early stages of speciation the differences between varieties are ambiguous, and thus purely "nominal," as boundaries to genetic exchange form distinct and non-arbitrary species emerge. Such a relational concept of species escapes the twin horns of the essentialist versus nominalist dilemma by being historical yet realist.

The Breakdown of Essentialism in the Social Sciences

Essentialist social theorists have met with the same difficulties as their earlier counterparts in biology. As noted above, until recently virtually all theories of social "evolution" have been predicated on Aristotle's NSM. As in the biological case, the complexity of social history requires that theorists employing this framework construct systematic theories of "obstacles" to account for "deviations" from predicted "natural" paths of change. In the absence of such ancillary theories, accounting for the relationship between social structure and environment (physical, biological or social) becomes impossible within an essentialist framework because it is a theory of obstacles which provides the mapping between the uniformity of hypothesized natural states and the diversity of actual historical experience. Marxian theorists' inability to explain the persistence of the family farm (McLaughlin 1998) and functionalists' unsuccessful attempts to explain change in terms of "flexibilities and strains" (Bock 1956) are just two examples of this recurrent failure. Moreover, in contrast to biologists, social scientists must account for the role of human agency in history. Essentialists have had even less success addressing this question. Typically, actual agents on the historical stage are replaced with puppets whose movements are dictated by the strings of a closed conceptual system (Dally 1991).

Essentialists' inability to clarify the interrelationships between structure, agency and environment has led to a number of divergent reactions within twentieth-century social science. For instance, theorists in the ecological tradition — ecological anthropology, organizational ecology, evolutionary economics — have abandoned the NSM, attempting instead to explain the relationship between social structure and environment by employing various concepts of adaptation — e.g., homeostasis, development, rational choice and

population thinking (Toulmin 1981). Sociologists in the constructivist tradition have likewise rejected the NSM but have moved towards a focus on culture and language in order to address the complexities of human agency. However, each of these traditions has reached an impasse precisely at the point where it fails to deal with the other's concerns.

The Ecological Tradition

In the following discussion, I will focus on organizational ecology (Hannan and Freeman 1989) to illustrate both the strengths and limitations of the ecological tradition. Organizational ecology is one of a number of populational accounts of social change to have recently emerged within various subdisciplines of the social sciences — e.g., human ecology (Boyd and Richerson 1985; Dietz, Burns and Buttel 1990), economics (Nelson and Winter 1982), political science (Ostrom 2000) and philosophy (Jensen and Harre 1981). However, of these, organizational ecology has generated the most sustained program of empirical research and thus will be taken as an exemplar of the ecological tradition.

Seen within the context of the history of organizational sociology, organizational ecology represents the culmination of a shift from "closed" to "open" systems theories that began within this field in the early 1960's (Scott 1987). Underlying this transition is the same radical inversion of philosophic assumptions that occurred in the course of the Darwinian revolution — i.e., a shift from frame-invariant to frame-relative thinking.

Prior to 1960, organizational theorists took it for granted that the first step in theory construction was to identify the "essential" characteristics of all organizations or a limited number of organizational "types." The central analytical task for these theorists was to derive the theoretical implications of such classifications. For instance, Frederick Taylor assumed that "rationality" was an essential feature of all organizations and proceeded to derive propositions regarding the nature of control arrangements and reward systems based on this definition. Likewise, Parson's AGIL scheme was premised on the classification of all organizations into categories based on the functional "need" — i.e., adaptation, goal attainment, integration and latency — that they serve. The difficulty with such typologies is that they explain neither the origins of the organizational types posited nor how diversity within or between types was subsequently modified by environmental circumstances (Scott 1987). In short, closed system theorists lacked a systematic theory of obstacles.

In the 1960's, theorists such as Stinchcombe (1965) and Thompson (1967) abandoned the search for essential characteristics and began focusing on organizational diversity and processes of adaptation. As Thompson (1967, vii) observed:

> *No useful theory can rest on the assumption that everything is unique. It is probably inevitable that the early history of a scientific endeavor will be characterized by the opposite assumption, and by the search for universals. This certainly has been the case with organization theory, which until recently has been* ***preoccupied with discovering the essential elements of all complex organizations.***
>
> *I believe it is a sign of relative maturity when a field begins to* ***focus on patterned variations*** (emphasis mine).

Organizational ecologists have taken this trend toward open systems thinking to its logical conclusion. Rather than postulating a context-independent "natural" path to organizational evolution, they have attempted to follow Darwin's lead by conceptualizing change in populational terms as a continuous interaction between variation and context and by seeing organizational categories *not* as preexisting abstractions but rather as *outcomes* of historical processes (Hannan and Freeman 1986). The result has been a rich and rapidly expanding research program on the demography, population ecology and community ecology of organizations.

Yet, organizational ecology's undeniable success has been bought at the price of an overly structuralist and thinly historical account of social change (Zucker 1989). The inertia metaphor has restricted organizational ecologists' focus to the ecological level of analysis and precluded any serious consideration of the interpretive processes by which individual and corporate actors perceive their surroundings and act on those perceptions to continuously construct and reconstruct themselves and their environments (Fombrun 1988). Moreover, by treating actors as passive, by reifying social environments as "natural" and by not adequately addressing questions of power and conflict, organizational ecologists have left themselves open to charges of conservative bias (Perrow 1986). The inertia metaphor has likewise impeded attempts to build bridges to other open system theories that employ homeostatic, developmental or rational modes of adaptive explanation (Meyer 1990). By labeling these "adaptationist" and opposing them to population thinking (e.g., Hannan 1986), organizational ecologists needlessly perpetuate social scientists' tendency to treat these various mechanisms as competing rather than complementary forms of explanation (Toulmin 1981). Such difficulties are compounded by an overly positivist style of research and a concomitant neglect of thick historical description and substantive relevance (Baum and Powell 1995). Organizational ecologists have thus undermined their own stated goal (Hannan and Freemen 1989) of readdressing the broader theoretical, historical and political concerns of the classical theorists.

Resource mobilization theory exhibits a similar set of strengths and limitations. Paralleling the shift from closed to open systems thinking in organizational sociology, resource mobilization theorists (e.g., Jenkins 1983; McCarthy and Zald 1977; Tilly 1978) have abandoned earlier "breakdown" models that conceptualized social movements as "deviations" from some "normal" path of development, focusing instead on *frame-relative* questions involving the intersection of organizational strategy and resources. However, despite their greater attention to historical context, power and conflict, resource mobilization theorists have failed to adequately address questions of agency, ideology and grievance interpretation (Klandermans 1992). In McCarthy and Zald's (1977) case, these limitations derive directly from a reliance on essentialistic assumptions about "rational" actors (Ferree and Miller 1985). As Buechler (1993) notes, using such simplifying psychological assumptions runs the risk of treating participants and movements who do not fit this model as "deviant." While organizational ecologists make no specific assumptions about "human nature," their importation of the inertia metaphor from Newtonian mechanics has led to a similar set of difficulties.

The Constructivist Tradition

One route to recapturing the broader agenda prematurely surrendered by organizational ecology is to build stronger theoretical bridges to the constructivist tradition. Constructivists have reacted to essentialists' failure to address human agency by reconceptualizing social categories, not as universal and invariant, but rather as cultural conventions that are negotiated and contested by actors situated within particular historical contexts (Donati 1992). Such interconnected sets of socially constructed categories or "frames" provide a basis for forging shared meanings and coordinating social action.

The constructivist tradition has generated a compelling set of perspectives linking agency, language, culture and power. However, although it has succeeded precisely where the ecological tradition has fallen short, the constructivist tradition has failed to adequately theorize the dynamics of social structure. A principal cause of this failure is the tension between nominalism and realism which constructivism inherited from pragmatism (Ritzer 1992). While early constructivists, such as Schutz, resolved this tension and maintained the goal of an objective science of subjective meaning by placing phenomenological brackets around questions of ontology (Thomason 1982), in recent years constructivism has taken a decidedly nominalist turn. Thomason (1982) contends that Berger and Luckman (1967) accelerated this shift by rejecting Schutz's "ontological agnosticism" in favor of a view of social categories as *merely* "reifications." As Ritzer (1992, 252) notes, "Berger and Luckman gave absolutely no sense of the other aspect of reification — i.e., the degree to which society, as a result of the subjective processes they describe, objectively comes to acquire a life of its own." Radical post-modernists such as Latour (1987) and Woolgar (1988) have taken this nominalist position to its logical anti-realist extreme by questioning the intelligibility and even existence of an "external reality."

Nevertheless, it would be premature to abandon constructivism as a relativist and anti-realist cul-de-sac. On the contrary, I argue below that moderate constructivists' (e.g., Snow et al. 1986) insights into agency, language, culture and power hold the key to filling in the lacunae of organizational ecology and resource mobilization theory. Moreover, even radical post-modernists may unwittingly be contributing to a new science of society. By focusing on the socially unique and idiosyncratic, on life on the margins, by substituting local for grand narratives, in short, by making "normal" what from a modernist perspective is merely "deviant," radical constructivists are driving the final nails in the coffin of essentialism. Shifting the starting point of theory construction from "essential" characteristics and "natural" paths of change to variation and diversity was precisely the role that nominalism played in the Darwinian revolution.

Towards a Populational Theory of Social Change

The historical parallels with the Darwinian revolution suggest a way out of the current impasse in the social sciences. Although radical post-modernists remain wedded to a deconstructionist project, other theorists increasingly recognize the need to stake out a middle ground between essentialist-based objectivism and nominalist-induced relativism (Bourdieu 1985). For example, Brown (1990) has discussed what he calls "symbolic realism," while Rorty (1991) has elaborated a related neo-pragmatist position. More recently, Rosa (1998) has developed the notion of "reconstructed realism" in relation to questions of risk.

I believe that this emerging consensus reflects two assumptions. First, it represents an acknowledgment that "*even if* reality is symbolically constructed, some constructions are surely preferable to others" (Simons 1990, 22). If such preferences are systematically related to the physical, biological and social environments in which specific social constructions are instantiated, then processes of variation, selection and retention may provide a mechanism by which alternative constructions are perpetuated or sifted from the historical stream. Such a position is consistent in spirit, if not detail, with an evolutionary perspective on social change. In fact, it is not difficult to find incipient forms of population thinking within constructivism. West (1985) provides such an analysis of Weber, while Rorty (1991) notes the parallels between Darwinism and pragmatism. Likewise, the theory of

cultural change that Lyman (1990) claims to have "discovered" in Goffman, by his own accounting, amounts to nothing more than variation, selection and retention.

The second element of this emerging consensus is the reconceptualization of social categories in relational rather than essentialist or nominalist terms (Bourdieu 1985). Like biologists, many social scientists are beginning to treat categories as bounded networks. Such an historical yet realist approach to categorization has always been implicit within constructivism. Perhaps the best example is Weber's (1946, 187) definition of a status group as a "style of life" which places "restrictions on 'social' intercourse." However, the strong nominalist undercurrents within constructivism have continually driven adherents of this tradition onto the twin horns of the same dilemma that plagued pre-Darwinian biologists — i.e., assuming that categories are either fixed or not real. As Mayr (1976, 288) notes, it was precisely this "wrong choice of alternatives" — i.e., between essentialism and nominalism - that was the major obstacle to the Darwinian revolution. This same false dichotomy pervades the radical constructivist literature. Woolgar (1988) makes precisely this mistake when he concludes that the failure of sociologists of "science" to find some stable, invariant object underlying the historically variable activities given this label leaves nominalism as the only coherent alternative. Even Thomason (1982, 89), in defending Schutz's ontological agnosticism, falls into this trap when he concludes that Schutz's "approach is constructivist, nonetheless, and does, therefore, *assume* that the 'things' which are reified are 'really' not 'things.'"

Conceptualizing social categories as bounded networks will cut through this false dichotomy, just as it did in biology, while maintaining constructivism's central insight that social categories are historically fluid and manipulable by human agency. When extracted from a nominalist framework the constructivist metaphor becomes a powerful tool for understanding social change and the sense in which subjective processes come to acquire an objective "life of their own" becomes readily intelligible — i.e., purely arbitrary social and ideological contrasts such as race or class become distinct categories to the extent that they provide a basis for well-defined networks of social interaction. When boundaries between such networks form, the frequencies of social rules, idiosyncratic language and culture on respective sides of the boundary typically diverge (Burns and Dietz 1992). Not surprisingly, network theorists have been among the first to argue that social networks should be seen not just as "measurement constructs" but also as "phenomenological realities" (White 1992, as quoted in Emirbayer and Goodwin 1994, 37).

To summarize, social scientists can take a major step towards integrating structure, agency and environment by fully absorbing the major lessons of the Darwinian revolution. That is, they need to reject *both* essentialism and nominalism and replace them with population thinking and an historical yet realist approach to categorization (Mayr 1976).

Beyond the Impasse: Towards an Ecology of Social Action

The above discussion is intended to provide a metatheoretical foundation for an "ecology of social action" which combines organizational ecology and resource mobilization theory's insights into structure-environment interactions with constructivists' attention to agency, language, culture and power. In fact, the elements for such a synthesis already exist. Probably the best example of an historical yet realist approach to organizational taxonomy is Hannan and Freeman's (1986) discussion of organizational boundaries. However, to date, organizational ecologists have failed to connect this provocative analysis to their populational accounts of organizational change (Baum and House 1990). I argue below that this failure can be traced to the reintroduction of essentialist biases into organizational ecology through the borrowing of the "inertia" metaphor from Newtonian mechanics. This metaphor is preventing organizational ecologists from moving beyond very limited borrowings from institutional theory (Zucker 1989) to incorporate the more profound insights of constructivism.

For their part, constructivist theorists have made critiques of resource mobilization theory that parallel those made by institutionalists against organizational ecology, arguing that they focus narrowly on "the how" to the neglect of "the why" of social dynamics (Zucker 1989). Constructivists have attempted to correct this imbalance by focusing on the discursive practices used by individual and corporate actors to transform social networks and boundaries. Nevertheless, while some constructivists recognize the need to see the social construction of meaning as occurring within an organizational context (Klandermans 1992), and that framing activities can impact organizational founding and disbanding rates (Snow et al. 1986), they have thus far failed to connect their analyses to a theory of organizational dynamics.

Clearly, the challenge is to merge these intellectual traditions so as to readdress the macro-structural concerns of Marx and Durkheim in a more dynamic and non-essentialist fashion while retaining Weber and Schutz's commitment to an objective science of subjective meaning. In the following sections, I argue that such a synthesis can be achieved by: (1) abandoning Hannan and Freeman's (1977) inertia metaphor in favor of an explicit focus on organizational plasticity and integrating various modes of adaptive explanation, (2) moving questions of individual and corporate agency and interest

to the center stage of ecological analysis and (3) reconceptualizing the legitimation of organizational forms as a process occurring within the context of a socially constructed adaptive landscape and by focusing on the discursive practices that individual and corporate actors use to manipulate such landscapes and the boundaries between discrete organizational networks.

Abandoning the Inertia Metaphor

Several authors have argued that organizational ecologists' reliance on the inertia metaphor ignores the adaptive capacities of organizations (Fombrun 1988; Meyer 1990; Perrow 1986; Zucker 1989). Though accurate, these critiques fail to penetrate to the heart of the problem, which is the inappropriateness of grounding an *evolutionary* theory of organizational change on a concept with essentialist roots. Although Hannan and Freeman (1989) are careful to define organizational "inertia" in terms of relative rates of change rather than "natural tendencies," the inertia metaphor still carries with it essentialist overtones derived from its origins in Newtonian mechanics.[5] Importing such a metaphor into an evolutionary framework allows the developmentalist assumptions, which organizational ecologists claim to have abandoned (Carroll 1984), to be subtly reintroduced.

Thus, although they avoid making explicit essentialist assumptions about "rational actors," organizational ecologists have used the inertia metaphor as a justification for "black boxing" questions of agency and interest. Organizational ecologists' theoretical strategy, in this regard, is similar to institutionalists' "defocalizing" the role of agency in institutional processes (DiMaggio 1988). While Hannan and Freeman (1989, 339) maintain that they are simply constructing theories "that are robust with respect to assumptions about individual motivation," in practice this agential agnosticism results in an effective severing of the micro and macro levels of analysis. Moreover, since questions of meaning and interests are sidestepped and the internal dynamics of organizations ignored, questions of power and conflict are rarely addressed (Perrow 1986).

Echoes of Aristotle's division between the "natural" and the "accidental" are also apparent in organizational ecologists' desire to partition the "ahistorical and historical elements" of social evolution (Hannan and Freeman 1989, 19) and in their tendency to "artificially separate organizations from their environments" (Fombrun 1988, 230). For instance, with respect to organizational size distributions, organizational ecologists have failed to differentiate between an evolutionary approach, which maintains that environmental heterogeneity *may* produce bi-modal size distributions, and a frame-invariant one which treats such an outcome as a universal, context-independent process — i.e., one which occurs, as Durkheim insists, "not because external circumstances are more varied, but because the struggle for existence is more acute" (Hannan and Freeman 1989, 125). Additional essentialist echoes are apparent in organizational ecologists' tendency to decontextualize processes of legitimation and competition. Such processes are treated as "internal," "timeless" and "ahistorical," while "external" historical factors are relegated to the status of "controls" (Hannan and Freeman 1989) or ignored altogether in the case of physical and biological environments. For example, organizational ecologists have abandoned their earlier concerns with the role that collective action, the closure of social networks and the gaining of "insider knowledge" (Marrett 1980) play in the legitimation process. Instead, legitimation has been reduced to a "cognitive" process — i.e., increased taken-for-grantedness — that is treated as an unmeasured intervening variable between organizational density and various vital rates. Thus, while much of postmodern social science is moving towards an emphasis on the historical embeddedness of social actors and processes — what Dally (1991, 90) calls "radical relationalism" — population ecologists are moving in the opposite direction. Such a strategy is inconsistent with evolutionism and needlessly sacrifices any hope of capturing the active, contested character of the legitimation process (Baum and Powell 1995).

These difficulties could have been avoided simply by recognizing that inertia is not a necessary component of a Darwinian theory of change, which requires only three preconditions: (1) variation, (2) selection and (3) retention (Campbell 1965). Moreover, the latter should not be misconstrued as equivalent to inertia (e.g., as in Carroll 1984; Hannan and Freeman 1977). Even in the biological case, heritability is compatible with a wide range of structural and behavioral plasticity (Scheiner 1993). Recent empirical work on organizational change has, in fact, begun to move in this direction, painting a more complex picture in which the impact of change on organizational fitness depends on organizational age, size and the frequency, sequencing and type of changes (Amburgey, Kelly and Barnet 1993; Haveman 1993; Kelly and Amburgey 1991; Miner, Amburgey and Stearns 1990). However, if organizations vary in their *adaptive capacities* and if environments vary in the degree to which they select for such capacities (Fombrun 1988), then "inertia" is *neither* a necessary precondition nor an invariable consequence (Hannan and Freeman 1984) of organizational evolution. It is simply an empirical question (Winter 1990).

The preceding arguments suggest that "inertia" and related Newtonian metaphors such as "momentum" (Kelly and Amburgey 1991) should be abandoned in favor of an explicit focus on organizational plasticity and integrating various modes of adaptive explanation (Toulmin 1981).

Organizational ecologists' primary goal should not be to try to establish which is more important, selection or adaptation, structure or agency, but rather to *integrate* these concerns into "a general theoretical framework which would capture the dialectical interplay between 'action' and 'structure' " (Reed 1988, 35). Rather than settling for the limited objectivist goal of building theories that are "robust" with respect to agency and interests, organizational ecologists need to put such questions at the center stage of ecological analysis.

The Centrality of Agency and Interests to Organizational Evolution

In contrast to organizational ecology's current agential agnosticism, Dietz and Burns (1992) contend that an evolutionary perspective on change actually facilitates the integration of agency into social theory. A brief consideration of Emirbayer and Mische's (1998) recent discussion of agency supports this claim and highlights the potential affinity between evolutionary theory and a concern with agency. Emirbayer and Mische (1998, 963) define agency as:

> *...a temporally embedded process of social engagement, informed by the past (in its habitual aspect), but also oriented toward the future (as a capacity to imagine alternative possibilities) and toward the present (as a capacity to contextualize past habits and future projects within the contingencies of the moment).*

Emirbayer and Mische's definition emphasizes that agency is inherently temporal and thus can only be understood within a dynamic framework. The necessity of taking the temporal dimensions of change seriously is one the hallmarks of evolutionary theorizing (Greenwood 1984). In contrast, essentialist theories, which are rooted in Aristotle's distinction between the "natural" and the "accidental," have been extensively criticized for their tendency to become disconnected from considerations of time and place (Bock 1956). Although organizational ecology exhibits some of these latter difficulties, it nevertheless shares with other evolutionary perspectives a commitment to understanding the temporal dimensions of social processes, as evidenced by its extensive use of event-history methodology.

Emirbayer and Mische (1998, 975) also argue that agents have the ability "to recall, to select, and to appropriately apply the more or less tacit and taken-for-granted schemas of action that they have developed through past experience." Although this iterational dimension of agency occurs with little conscious reflection, the proper deployment of alternative schemas within specific temporal-relational contexts still requires attention and engagement on the part of actors. Such a conceptualization of agency is consistent with an evolutionary perspective. In fact, "heritability" is one of the three prerequisites of any evolutionary theory (Campbell 1965). As Dietz and Burns (1992) note, social learning through imitation is much more efficient than trial and error experimentation. Moreover, they argue that social learning is an active process, one that always requires some degree of improvisation on the part of actors.

Essentialistic theories also contain an iterative dimension. However, within such a teleological framework actors' choices are typically reduced to accelerating or retarding "natural" developmental trends (Dietz and Burns 1992). The agentic moment of iteration is thus neglected or ignored. Rational choice models, which essentialize individual actors, exhibit similar difficulties (Burns and Dietz 1992). While the "heritability" of social rules and routines is central to organizational ecology (Hannan and Freeman 1989), the inertia assumption has led theorists in this tradition to likewise disregard the agentic dimensions of iteration. For example, organizational ecologists' strategy of treating legitimacy as an unmeasured intervening variable — linking density and vital rates — leads them to gloss over the complex internal and external projects engaged in by actors to legitimate new organizational forms. Similar difficulties are apparent in recent work on intraorganizational evolution by Burgelman and Mittman (1994). While these authors concede to managers some degree of bounded "rationality," other organizational participants are treated as passive receptacles for "induced" or "autonomously" created managerial routines.

According to Emirbayer and Mische, actors also manifest agency through their orientation toward the future and their ability to imagine alternative possibilities. Moreover, they note that social scientists have tended to ignore this projective dimension of agency due to a perceived incompatibility between subjective phenomena and "behavioral observation, survey techniques, and macrostructural analysis" (Emirbayer and Mische 1998, 991). I would argue that social scientists' neglect of the projective dimension of agency is also rooted in the historical dominance of essentialism in the social sciences. Within an essentialistic framework, variability of any type tends to be discounted as merely "deviations." Such theories fail to capture the spontaneous and reflexive abilities of actors, treating them instead as passively "programmed" by their respective cultures (Dietz and Burns 1992). In contrast, evolutionary theories take variation as their theoretical starting point. In fact, Dietz and Burns (1992) go so far as to suggest that theories of social evolution may *require* the concept of agency because agency is the only mechanism able to produce sufficient variability to make such a theory viable.

From an evolutionary perspective, the variability produced through the creative and even playful engagement of

social actors is inevitably subject to the selective forces presented by the environment. The resulting differential propagation of alternative social rules, schemas or forms of organization produces additional diversity on successive levels of analysis as networks with different frequencies of these respective types of variation diverge and rediverge — and sometimes merge — into discrete networks of social interaction (Burns and Dietz 1992). As Darwin's ([1859] 1958) metaphor of a branching tree suggests, evolution is inherently multilinear. While selection within specific environments may push populations to evolve along particular trajectories, there is no *overall* direction to the evolutionary process. Translated into the social domain, such an open-ended framework is entirely compatible with the notion that actors pursuing alternative imaginative projects can play an independent causal role in history. Successful projects become the branching points of the socio-historical tree. In contrast, essentialistic theories, which privilege certain historical trajectories as "natural," tend to treat peoples and projects that behave in a manner inconsistent with the hypothesized developmental trend as deviant or pathological. Organizational ecology, because it has focused primarily on the dynamics of individual organizational populations, has thus far had little to say about the broader patterns of organizational evolution. However, I will argue below that confronting this issue will require organizational ecologists to address the discursive and claims making activities of individual and corporate actors directly.

Finally, Emirbayer and Mische's (1998) approach to agency underscores the social embeddedness of actors and their ability to contextualize past patterns of thought and action and alternative projections of future actions within the contingencies of current circumstances. Such a conceptualization of agency is consistent with Dally's (1991, 90) contention that the social sciences are moving towards a form of "radical relationalism." Such a position is completely at variance with essentialistic theories whose very goal is to decontextualize social actors and processes in order to produce *frame-invariant* laws (Bock 1956). Organizational ecologists' reliance on the inertia metaphor has led to a similar tendency to abstract organizational actors and processes from historical context. However, as the above discussion of the Darwinian revolution makes clear, evolutionary thinking is premised upon a commitment to a *frame-relative* approach to theory construction (Sober 1980) which insists that the entities evolving — whether biological species, social rules or organizations — cannot be divorced from their respective contexts. As Burns and Dietz (1992) note, the necessity of contextualizing social action within historically specific physical, biological and social environments is one of the defining features of an evolutionary perspective on social change.

If an "ecology of social action" is to avoid the current pitfalls of organizational ecology and provide a theoretical framework that is fully dynamic, open-ended and contextualized, it must studiously avoid the twin traps of reducing individual or corporate agents to essentialized "rational actors" or "ideological dupes" (Donati 1992, 155). Both of these traps can be averted by explicitly grounding a revised ecology of organizations on a constructivist perspective on agency. Constructivists conceptualize actors as operating within a discursive framework, interpreting their experiences in relation to hierarchical and articulated sets of "frames" which provide " 'schemata of interpretation' that enable individuals 'to locate, perceive, identify, and label' occurrences within their life space and the world at large" (Snow et al. 1986, 464). Moreover, alternative frames constitute "tools kits" used by contending parties to actively construct and deconstruct social and political reality (Donati 1992). Conceptualizing agency in terms of framing processes is consistent with Emirbayer and Mische's (1998, 993) definition of agency as a process of "temporally constructed engagement." The next question to be addressed is how such a constructivist perspective on agency can be integrated into an evolutionary account of social structure? In the following section, I develop the concept of a socially constructed adaptive landscape as the central metaphor for linking the ecological and constructivist traditions.

Organizational Evolution within a Socially Constructed Adaptive Landscape

In his path-breaking work on forms of control in the labor process, Edwards (1979) put forward the metaphor of a "contested terrain" to describe processes of negotiation and contention within the workplace. Although Edwards and other labor process theorists were successful in refocusing attention on issues of power and conflict, their contribution was ultimately limited by their commitment to an essentialist analysis of organizational dynamics. More recently, Bourdieu (1985), in what he describes as a break with Marxist theory, has advanced the concept of a social topology — i.e., a socially constructed and contested multi-dimensional space defined by accumulations of various forms of social and material capital. Donati (1992) alludes to a similar concept.

The metaphor of a contested terrain suggests the possibility of a more profound convergence between the ecological and constructivist traditions. From an evolutionary perspective, various dimensions of the physical, biological and social environment can be conceptualized as "adaptive landscapes." The hills and valleys of such landscapes define varying levels of fitness and, thus, differential probabilities of survival and propagation for social rules, routines or organizations.[6] Thus, in contrast to the above metaphors, the notion of

an adaptive landscape has the advantage of providing a mechanism — differential survival — that can explain patterns of structural change. Such a metaphor is implicit within organizational ecology. Unfortunately, the inertia metaphor has led organizational ecologists to reify such landscapes as "natural" (Perrow 1986). The result is a fairly mechanistic image of the evolutionary process, one in which organizations are passively selected by social environments which are treated as entirely exogenous. However, if individual and corporate actors are continually generating alternative courses of action and bringing those imaginative projections and the lessons of past experience to bear on current pragmatic situations, then it is theoretically untenable and historically inaccurate to treat adaptive landscapes as simply "given." Rather, as both Bourdieu (1985) and Donati (1992) suggest, such landscapes must themselves be seen as subject to continual construction and reconstruction. I believe that the metaphor of a *socially constructed adaptive landscape* provides a more dynamic and historical image of the evolutionary process, one in which more or less bounded networks of organizational actors are conceptualized as simultaneously adapting to and actively reshaping their environment(s).

Such a reformulation of organizational ecology has a number of advantages. First, it clarifies the interrelationship between structure, agency and environment. For instance, it provides an intelligible framework for answering the following question posed by Emirbayer and Mische (1998, 964): "If structural *contexts* are analytically separable from (and stand over and against) capacities for *human agency*, how is it possible for actors to mediate or transform their own relationships to these contexts?" Within a socially constructed adaptive landscape, individual and corporate actors alter their structural contexts by engaging in various discursive and claims-making activities and by directly employing economic and political power. To the extent that they are successful in persuading, manipulating or dominating other actors who control various forms of social and material resources they reshape the contours of the social dimensions of the adaptive landscape. Actors also modify biophysical dimensions of the landscape by deploying various technologies and associated organizational routines. In either case, such reconstructions of the evolutionary terrain alter the structural contexts of action by changing the founding and disbanding rates for social rules, routines and organizations. Such structural shifts, in turn, create opportunities for and impose constraints upon subsequent action. Thus, the metaphor of a socially constructed adaptive landscape acknowledges the centrality of agency to organizational evolution without giving agency unlimited scope (Dietz and Burns 1992). At the same time, it retains organizational ecology and resource mobilization theory's emphasis on resources as a fundamental constraint on social action.

A second advantage of this metaphor is that it allows critical theorists' (Fischer and Sirianni 1984) concerns with power and conflict to be brought back into the ecological model, while avoiding the essentialist pitfalls associated with Marxian approaches to organizational dynamics. Relative power within this framework can be conceptualized in terms of individual or corporate actors' position within the adaptive landscape, which represents accumulations of various forms of social and material capital (Bourdieu 1985). Considered in dynamic terms, power implies the ability to actively mold the contours of the adaptive landscape. As Dietz and Burns (1992, 266) note, powerful actors can not only determine what rules are applied in a given situation, but, in the long run, change the distribution of rules to favor their own interests. Questions of power and conflict also arise in relation to the construction and deconstruction of boundaries between organizational networks (see below).

Finally, from the perspective advocated here questions of "why" social actors do what they do must be seen as theoretically on a par with questions relating to "how" actors accomplish their objectives (Zucker 1989). That is, if individual and corporate actors' perceptions of and attempts to manipulate the adaptive landscape are guided by hierarchical and articulated sets of "frames" (Clemens 1993; Snow et. al 1986), then questions of meaning and interests, ideology and grievance interpretation cannot be black boxed or sidestepped. Rather, as Emirbayer and Mische (1998) contend, such questions must be seen as constitutive to any attempt to understand social dynamics. In the final section of the paper, I briefly explore the implications of such a revised version of organizational ecology for the study of the origins, legitimation and diversification of organizational forms.

From Theory to Practice

The Origins of Organizational Forms

As noted above, closed-system theorists had little to say regarding the origins of organizational forms (Scott 1987). Unfortunately, despite their many other contributions, organizational ecologists have provided few additional insights into this critical issue. In their empirical work, they have taken the emergence of new forms for granted, defining the origins of a form as coinciding with the appearance of the first organization of the population in question (Hannan and Freeman 1989). While this strategy may be adequate for purposes of modeling the subsequent dynamics of the form, it leaves the antecedent causal processes undergirding form emergence unexamined.

The reformulation of organizational ecology sketched above suggests that a complete account of form emergence will require an understanding of the interrelationships

between structure, agency and environment. Of course, it is agency that is most conspicuously absent from organizational ecologists' current accounts of form emergence. Emirbayer and Mische's (1998) perspective implies that the emergence of a new organizational form should coincide with a shift towards the projective dimension of human agency. But precisely when do such shifts in agentic orientation occur? Emirbayer and Mische's (1998) suggestion that such shifts occur during "unsettled times" is similar to Snow et al.'s (1986) argument that new forms of social movement organizations (SMO's) emerge when master frames can no longer cope with changing political, economic, or environmental conditions.

While Emirbayer and Mische's (1998) arguments regarding shifts in agentic orientation and Snow et al.'s (1986) thesis concerning frame changes provide crucial elements that are missing from organizational ecologists' accounts of form emergence, their respective references to "unsettled times" and "changing conditions" suggest that the timing of such shifts may themselves be mediated by structural and environmental dynamics. For instance, elsewhere I (McLaughlin 1992, 1996) have argued that the origins of the farmers' movement in Saskatchewan Canada can only be understood in terms of: (1) individual and corporate actors reacting against the competitive ethos of frontier capitalism by developing an alternative injustice frame grounded in cooperative ideology, (2) a shift from a generalist to a less flexible specialist cost structure among family farmers — rather than simply crop-specialization *per se* as suggested by Lipset (1968) — which was driven by an accelerating trend toward debt-financed mechanization at the turn of the century and (3) an unpredictable physical environment and an unstable wheat market which kept farmers' incomes highly variable (Fairbairn 1989). The resulting cost-price squeeze created a niche mismatch between the increasingly rigid cost structures of family farms and highly variable physical and economic environments that eventually undermined alternative explanations of farm stress or failure — e.g., attributing failure to personal characteristics such as bad management or a lack of hard work or to uncontrollable external forces such as bad luck or bad weather. Capitalism was left as the most plausible villain. It was thus a confluence of agentic, structural and environmental factors which forced Saskatchewan's farmers' to gain the "reflective distance" (Emirbayer and Mische 1998, 973) necessary to question the routinized assumptions of competitive capitalism and embark on a transformative "project" to reconstitute the socio-economic landscape of the province by constructing new niches for educational and lobbying organizations, marketing and consumer cooperatives and a farmers' political party.

The above arguments suggest that organizational ecologists can strengthen their accounts of form emergence by: (1) moving beyond their current exclusive focus on structural dynamics to consider cultural, agentic and, where relevant, the physical-environmental dimensions of form emergence, (2) supplementing their excellent quantitative analyses with equally sophisticated qualitative analyses of the temporal-relational contexts of form emergence and (3) exploring innovative quantitative approaches to analyzing these same processes. For instance, frame shifts and changes in agentic orientation might be quantified using various new methods of textual analysis (Roberts 1997). In the above case, analysis of editorials and letters to farmers' magazines might allow one to explore whether these shifts coincided with increases in the farm failure rates or whether there was a relationship between changes in agentic orientation and the origins of various farmer organizations.

The Legitimation of New Forms

As in the case of form emergence, I argue that the discursive and claims-making activities of individual and corporate actors likewise play a crucial role in the legitimation of new organizational forms.[7] Organizational ecologists allude to these concerns in their descriptions of the legitimation process:

> *The process by which organizational forms gain taken-for-granted status encompasses at least two kinds of activity. One is collective action by members of the population to define, explain, and codify its organizational form and to defend itself from claims and attacks by rival populations. The second is collective learning by which effective routines and social structures become collectively fine-tuned, codified, and promulgated.* (Hannan and Carroll 1992, 41)

It is clear from this statement and others (e.g., Carroll and Hannan 1995; Hannan and Freeman 1989) that organizational ecologists see human agency, including the rhetorical activities typically studied by constructivist theorists, as central to the legitimation process. Although organizational ecologists allude to this complexity, for reasons discussed above, they typically do not analyze it. While this strategy has produced a series of empirical studies that seem to "confirm" the density dependence model (Singh and Lumsden 1990), these same studies have been widely criticized for being poorly operationalized and weakly contextualized (Delacroix and Rao 1994; Baum and Powell 1995; Zucker 1989).

The above reformulation of organizational ecology suggests a new direction for the analysis of legitimation, one that recognizes the need to integrate organizational and cultural dynamics (Baum and Powell 1995). Rather than treating

legitimation as an unmeasured intervening variable that is passively driven by increases in organizational density, I argue that legitimation should be explicitly reconceptualized as an active social process that encompasses the social construction of organizational niches and boundaries. Individual and corporate actors construct new organizational niches by employing alternative discursive frames to remold the contours of a socially constructed adaptive landscape. That is, by actively modifying the social and, in some cases, biophysical dimensions of the adaptive landscape, actors engaged in the legitimation of a new form alter its fitness and, thereby, produce the observed patterns of increased founding and decreased failure rates.

Such a reformulation exposes organizational ecology's current lack of a vocabulary for discussing legitimation as an active social process. However, as suggested above, concepts derived from the constructivist tradition can fill this conceptual gap.[8] For instance, the various "frame-alignment" processes discussed by Snow et al. (1986) can be translated into an evolutionary framework as descriptions of the reciprocal interactions between organizational populations and their adaptive landscapes. In some instances, niche construction may involve simply "frame bridging" to previously existing social networks. In others it might involve the "frame amplification" of the latent values and beliefs of unmobilized sentiment pools, thereby raising the underlying landscape and increasing the form's fitness. In still other cases, niche construction may involve "a deliberate attempt by a social actor to create consensus among a subset of the population" (Klandermans 1992, 78) through such processes as "frame extension" or "frame transformation." The former might be visualized as a widening of an existing ridge of the adaptive landscape to create a lateral niche whereas the latter might be seen as an attempt to construct an entirely new hill or fold in the landscape.

The construction of organizational niches should simultaneously be accompanied by the creation and closure of boundaries between distinct organizational networks (Fombrun 1988; Van de Ven and Garud 1989). That is, I argue that a new organizational form cannot be perceived as "natural" or "taken-for-granted" unless it is first seen as distinct. By reproblemitizing boundaries and by focusing our attention on the discursive practices that actors use to translate "nominal" distinctions into well-defined networks of social interaction, this reformulation counterbalances organizational ecologists' tendency to "artificially separate organizations from their environments" (Fombrun 1988, 230). Likewise, questions of power and conflict are again highlighted. The negotiation and contestation over organizational boundaries must be seen as a central component of the broader political struggle to define the social categories through which the world is perceived (Bourdieu 1985). As DiMaggio (1988, 13) notes, such "institutionalizing projects" are "profoundly political" and reflect "the relative power of organized interests."

Hannan and Freeman's (1986) discussion of "segregating" and "blending" processes provides an excellent starting point for the analysis of boundary formation. Although this provocative piece provides a natural theoretical bridge to constructivism, in their empirical work organizational ecologists have largely ignored its implications. Moreover, Hannan and Freeman's discussion still places insufficient emphasis on the role of agency and culture. Here again constructivism can provide additional concepts. For example, the legitimating and delegitimating struggles attending boundary formation can be conceptualized using Benford's (1993) concept of "frame disputes." As Benford argues, in a social movement context, frame disputes — over diagnoses of problems, prognoses or solutions to problems and disagreements over the resonance or effectiveness of various rhetorical strategies — arise at the boundaries of movement subsectors and play a key role in shaping a movement's overall structure. While such disputes can occur at any time in the course of the evolution of an organizational population, they should be particularly prevalent during the early history of new forms. Moreover, although Benford's concept was intended to apply to SMO's, I believe it should be equally applicable to other types of business and non-business organizations. As Dally (1991, 100) notes, "the economy, like all other spheres, is the terrain of a political struggle, and is governed not by a single logic but by a proliferation of discourses/language games."

The above arguments underscore the need for organizational ecologists to revise and extend their approach to studying legitimation. Whatever its other advantages, the "density dependence" model clearly fails to capture the historical embeddedness and socio-political character of the legitimation process. It is not enough, as Carroll and Hannan (1989, 545) contend, to simply "establish the plausibility of the argument that legitimation drove the early (low density) evolution of the population while competition dominated in the later (high density) period." Such plausibility is, at best, a minimal historical standard and one that is not always met. Thus, organizational ecologists need, first and foremost, to supplement their quantitative analyses of legitimation with thick historical descriptions of the rhetorical and claims-making activities — particularly the framing processes and strategies — employed in the construction of new organizational niches. Such analyses should likewise include detailed consideration of such internal processes as the codification of organizational routines as well as the external frame disputes attending the creation and closure of network boundaries.

Capturing the multi-dimensional character of the legiti-

mation process will also require the exploration of new quantitative approaches. For instance, Baum and Powell (1995) have argued that organizational ecologists should attempt to measure legitimation directly. One approach, which is consistent with the above perspective, is to use various measures of print media. For example, McLaughlin and Khawaja (2000) use the annual count of environmental books published to measure the increasing legitimacy of national environmental organizations in the U.S. during the period 1895-1994. This measure was found to be positively associated with the founding rate even when other variables measuring resources and changes in the political opportunity structure were added to the model. More sophisticated approaches using textual analysis (Roberts 1997) of newspapers or other documents should also be explored. The latter techniques might also be employed to explore the relationship between legitimation and changes in resource levels and shifts in agentic orientation.

The Diversification of Organizational Forms

Finally, I argue that merging the ecological and constructivist traditions is critical to understanding the broader patterns and processes of social evolution. As the concept of a socially constructed adaptive landscape makes clear, the sum total of constructive processes occurring at both the intra- and interorganizational level continually alter both the diversity and dynamics of organizational populations and, in so doing, reconstitute society by altering structures of inequality, exploitation, domination and control (Hannan 1988). The final advantage of an ecology of social action is that it can clarify the role that agency and culture play in such large-scale social transformations. That is, such a perspective may help us to better understand how actors and the alternative meanings they espouse play an independent causal role in history by actively reshaping collective identities, by remolding organizational networks and boundaries and, in the process, creating, extending and transforming organizational niches. As McLaughlin and Khawaja (2000) argue in their analysis of the U.S. environmental movement, understanding the discursive activities of individual and corporate actors is critical to unraveling the dynamics of such complex organizational fields because they provide the critical "isolating mechanisms" which determine the heterogeneity of organizational populations (Baum and Singh 1994) and thus, in a given temporal-relation context, the direction of social evolution. Identifying the sources of such heterogeneity is crucial if organizational ecologists are to readdress the broader theoretical, historical and political concerns of the classical theorists.

Conclusion

Organizational ecology's inability to effectively address questions of individual and corporate agency and interests is symptomatic of a broader failure within the social sciences to develop a comprehensive framework for analyzing the interrelationships between structure, agency and environment. Fombrun (1988, 239) contends that organizational ecology's failure in this regard can be traced directly to "a lingering allegiance to the conceptual baggage of the neo-Darwinian frame of reference." While I agree that organizational ecologists need to be more sensitive to the potential disanalogies between biological and social evolution, my central contention is precisely the opposite of Fombrun's. Both organizational ecology and the social sciences in general can benefit greatly from a deeper understanding of the Darwinian revolution.

Such an understanding can, first and foremost, clarify the sources of some of the central impasses in the social sciences. Most importantly, I argue that the inability of social scientists to integrate structure, agency and environment can be traced to the persistence of essentialism within the functionalist, Marxian and ecological traditions and nominalism within the constructivist tradition. Moreover, as was the case in biology, I believe that the key to overcoming these impasses is a combination of population thinking and an historical yet realist approach to categorization. This combination cannot only provide the underpinnings of a more robust and historical organizational ecology, but also has the potential to provide a new metatheoretical foundation for the broader social sciences. Although the need to account for human agency in the case of social evolution precludes any simple translation of metatheoretical assumptions between biology and the social sciences, I have tried to demonstrate that an evolutionary perspective on social change is actually *more* compatible with current concepts of agency than the essentialistic approaches that have historically dominated social theory.

Finally, the concept of a socially constructed adaptive landscape provides a framework for combining the ecological tradition's concerns with structure-environment interactions, the constructivists' focus on agency, language, and culture and the critical tradition's concern with power and conflict. Such an "ecology of social action" can provide a more dynamic, historical and critical organizational ecology, one that addresses "the co-evolving nature of cultural understandings, organizational forms, and resource constraints" (Baum and Powell 1995, 536). To borrow Francois Jacob's (1982) phrase, the goal of such a revised evolutionary paradigm

should be to reconceptualize social evolution as a continuous dialogue between "the possible and the actual" and see actors and the discursive practices that they bring to bear on pragmatic situations as the focal point of that dialogue. In the conclusion of the paper, I have tried to suggest how this new ecological paradigm can open up fresh avenues for research on the origins, legitimation and diversification of organizational forms.

Endnotes

1. E-mail: pmc1701@aol.com.
2. As Sober (1980) notes, neither the vagueness of species boundaries nor the mutability of species is, in principle, fatal to essentialism. However, in practice many naturalists did find such arguments persuasive. For instance, the arbitrariness of species boundaries was one of the major arguments used by Darwin to justify his belief in evolution (Greenwood 1984, 53).
3. In taking variation as his theoretical starting point, Darwin may have benefited from nominalists' focus on individual differences. Below I argue that extreme post-modernists are playing a similar role in shifting the starting point of theory construction in the social sciences from natural states and paths of change to variation.
4. Although Sober (1980) is correct in acknowledging Galton's contribution to population thinking, it is important to note that Galton was a committed Social Darwinist who advocated a theory of progressive, saltative evolution between fixed racial types. Such a position is inconsistent with Darwin's theory of evolution. In fact, Social Darwinism represents an assimilation of Darwinian concepts back into an essentialistic framework. As Greenwood (1984) notes, invariably such misappropriations of Darwinian concepts are made for the purposes of legitimating some moral or political position.
5. In addition to the direct appropriation of Newtonian metaphors such as "inertia," organizational ecologists may also be indirectly influenced by physicalist (and hence essentialist) assumptions through their borrowing of certain mathematical models from ecology. For instance, two physicists, Alfred J. Lotka and Vito Volterra, created the Lotka-Volterra equations, which play a central role in biological and organizational ecology. Lotka and Volterra and subsequent researchers such as Raymond Pearl initially conceptualized these equations in terms that Sober (1980) would label "frame-invariant." That is, their goal was to create ecological "laws" which allowed a strict separation of "internal" (genetic) and "external" (environmental) factors (Kingsland 1985). Moreover, the latter were conceptualized as interfering forces or obstacles while the former were assumed to be fixed over the short-term — a methodological assumption introduced to simplify the mathematics. As Kingsland (1985) notes, critics contended that these researchers abstracted biological populations from their environmental and historical contexts and argued that mathematical modeling needed to be supplemented with detailed natural histories. Others contended that a rigid separation of internal and external factors influencing population growth was ultimately not possible because, among other reasons, organisms significantly modified their own environments. As Kingsland's (1985) account makes clear, over the course of the century, this latter, "frame-relative" approach to population biology has gradually but not completely won out. My contention is that organizational ecology's shortcomings as currently constructed may derive from the lingering influence of the earlier, frame-invariant, approach to population dynamics.
6. Fitness in the biological case is defined in terms of relative reproductive success — i.e., the ability of one genotype to produce more offspring that survive to adulthood than another genotype in a given environment. Defining fitness in the case of organizational populations is complicated by two facts. First, although one can metaphorically speak of organizational "births," in many cases there is no clearly defined analogue to a "parent." Second, unlike organisms, individual organizations can persist indefinitely and thus contribute directly to subsequent generations. The relative fitness of one organizational population as compared to another is thus a composite of their respective rates of founding, merger, disbanding and change. Organizational ecologists have typically pursued a strategy of modeling these rates separately rather than combining them into an overall index of fitness (Hannan and Freeman 1989, 143).
7. Although the focus here is on evolution occurring at the organizational level of analysis, I believe that the same framework could be used to explain the evolution of social units at lower levels of aggregation — e.g., social roles or organizational routines. For instance, the reformulation of legitimation discussed below could be used to move discussions of intraorganizational evolution beyond current concerns with the impact of managerial decisions on firm "efficiency" and "adaptiveness" (Burgelman and Mittman 1994), to consider both the embeddedness of organizational roles and routines in networks of social and symbolic interaction (Miner 1994) and the constructed and contested nature of the terrains on which they evolve. Thus, Hochschild's (1983) account of how airline supervisors use the "living room metaphor" to increase flight attendants' acceptance of work routines involving excessive emotional labor could be interpreted as an instance of niche construction in which a strategy of "frame amplification" is used by management in an attempt to increase the fitness of that routine within the firm. Resistance by flight attendants might be conceptualized as an attempt to create an alternative niche, with the conflict between the opposing routines and rhetorics resulting in a frame dispute. Taylor's (1994) analysis of the role that opposing discourses of "efficiency" and "the social firm" are playing in the restructuring of the Mondragon Cooperative system might be interpreted in similar terms. Finally, recent feminist discussions of how "gendered spaces" (Mehta 1996) operate to restrict women's sphere might be reconceptualized in terms of the differential reproduction of roles within an adaptive landscape. Specifically, men's greater access to resources in many instances allows them to use a patriarchal frame to shape the social topography and network boundaries in ways that favor their interests. Challenging patriarchy requires women to identify, legitimate and defend an alternative space with sufficient resources to allow them to redefine the larger landscape (e.g., see Campbell and The Women's Group of Xapuri 1996).
8. Concepts derived from the constructivist literature on technology — e.g., actor-network theory (Callon 1986; Latour 1983) — might also be helpful here, particularly in relation to questions involving human-environment interactions.

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