

The Sequencing of Transnational and National Social Movement Mobilization: The Organizational Mobilization of the Global and U.S. Environmental Movements

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Abstract

Is the mobilization of national and transnational social movements, as reflected in their organizational dynamics, mainly a top down or bottom up process? That is, does the increasing density of populations of transnational social movement organizations (TSMOs) promote subsequent growth in the density of populations of state level social movement organizations (SMOs), or visa versa? We approach the research question by analyzing the co-evolution of the populations of transnational and national environmental SMOs in the U.S. between 1945 and 2000. Our findings indicate that, early in the period under observation, growth in the population density and rate of founding among national environmental SMOs preceded growth among international TSMOs, demonstrating a clear sequence in the rapid emergence of the two movement populations. There is some indication that this process is reversed temporarily in the more recent time period. We discuss the generalizability of these results to other nations, movement populations, and levels of geographical scope. We conclude with a brief discussion of the elements necessary to construct a more rigorous test of the top-down thesis of mobilization.

Introduction

Is the mobilization of national and transnational social movements, as reflected in their organizational dynamics, mainly a top down or bottom up process? That is, does the increasing density of populations of transnational social movement organizations (TSMOs) within an issue domain promote subsequent growth in the density of populations of state level social movement organizations (SMOs) within that same domain, or visa versa? In this paper we begin to address this question for the transnational and U. S. environmental movements

Conventional logic would suggest that movements are built from the ground up, that national movement organizational populations expand as an outgrowth of the spread of local groups and, as well, that international movements are established as the outgrowth of national movements. The U.S. anti-toxics movement, for example, began as a collection of autonomous local organizations and did not coalesce into a national movement until after 1980 when a national infrastructure was established linking these local groups together. Further, many of the national groups themselves grew out of initially local struggles, as is the case with the Citizens Clearinghouse for Hazardous Waste that originated in the purely local struggle over contamination at Love Canal, NY. (Szasz, 1994)

At the international level, Chatfield (1997) asserts “TSMOs mainly began as informal networks of people who shared common concerns, often in national associations” (p. 28). Similarly, David Westby in his study of the Swedish anti-bomb movement argues “...that many TSMs [Transnational Social Movements] originate specifically in a national context, suggesting that many of them become transnational

through a step-like process in response to political opportunity.” (2002:1)

Organizationally, this implies that the expanding vitality of national populations of SMOs may lead to the formation of transnational groups in the same issue domain.

Empirically, however, the sequencing of aggregate national and international movement organizational mobilization remains very much an open question.¹

One alternative to the bottom up thesis, is that the emergence and growth of populations of transnational SMOs may be an important factor in the emergence and growth of their sister populations at the national level. Frank and his colleagues (1999, 2000; Meyer et al., 1997), for instance, strongly suggest that the international mobilization of the environmental movement preceded both the mobilization of national environmental movements as well as expanded national level public policy attention to environmental issues. They assert that environmental TSMOs form first and are later followed by intergovernmental treaties and organizations before nation states finally begin to formalize environmental issues within internal state centered agenda-setting structures. In their model of state action, “blueprints of nation-state environmentalism” are developed first in world society before being diffused and acted upon by individual nations. “The top-down global explanation proves stronger than the bottom-up domestic alternative: the global institutionalization of the principle that nation-states bear responsibility for environmental protection drives national activities to protect the environment” (2000, 96). They go on to say, “This is especially true in countries with dense ties to world society...” (2000:96) such as the United States. And there is some

¹ Seidman (2002) argues that the typical, and taken for granted, empirical focus of movement researchers that starts with local participants and moves through state level mobilization ending with nation-state targets constitutes a lens that narrows understanding of globalized movement processes. She says about this lens, “This bottom-up approach may limit social movement theorists’ ability to explore fully the transnational side of collective action or social movement mobilization.” (345)

evidence suggesting that a similar pattern may characterize the global evolution of human rights SMOs (Ball, 2000).

Several case studies of recent mobilizations buttress expectations of the importance of top-down, transnational to national, organizational processes. Two transnational social movement organizations, Earth Action (Smith, 2002b) and People's Global Action (Wood, 2002), for instance, have worked to facilitate national level mobilization around social change issues. This mechanism mirrors a similar one linking the state and local levels where top down chapter proliferation and technical assistance generate subsequent local mobilization. (McCarthy, forthcoming) We are unaware of the existence, however, of any estimate of the proportion of state level SMOs in any issue domain that are chapters or branches of TSMOs. Some credible estimates in the U.S. suggest that approximately 25% of local environmental groups have ties to national or regional umbrella organizations. (Kempton, et al., 2001; Edwards and Andrews, 2002)

In this paper we construct the underpinnings of a test of this top-down thesis of mobilization. We approach the research question by analyzing the co-evolution of the populations of transnational environmental TSMOs with the national population of environmental SMOs in the U.S., with particular attention to the timing of the founding of movement organizations and cumulative organizational population densities between 1945 and 2000. Environmental organizations compose 14% of all social change TSMOs in 1993. (Smith,1997) SMOs seeking change around the environment issues do not, we think, so heavily dominate the social movement sector at the national level in the U.S., but no similar estimate exists that would allow a comparison.

By examining the sequencing of the national and international levels of the environmental movement we attempt to provide a test of this top-down thesis of mobilization.

Theoretical Considerations

SMO Population Processes. Our approach in this research draws heavily, both theoretically and empirically, upon understandings of the *dynamics of organizational populations*, (Hannan and Freeman, 1989; Hannan and Carroll, 1992) and the *dynamics of communities of organizational populations* (Aldrich, 1999) in general, and the application of these ideas to populations of SMOs in particular (e.g. Minkoff, 1997; Hannan and Freeman, 1987). We begin by casting the formulation with which we began into a problem of the evolution of the organizational density of communities of organizational populations (in this case transnational and U.S. national ones) and cross population effects within such communities.

The emergence and growth of any population of organizations occurs within a wider institutional field (Scott, 2002) and community of organizations made up of associated populations of organizations, which would necessarily include, in the present case, at least the relevant IGOs, national and transnational professional associations, foundations, as well as other populations of national and transnational SMOs in related movement families (della Porta and Rucht, 1995). A clear theoretical specification of appropriate mechanisms by which the founding of transnational populations might spur the founding of national ones and visa-versa is embedded in conceptions of the appropriate boundaries of wider institutional fields and communities in which the populations that we focus upon here are embedded. (Keck and Sikkink, 1998; Carmin

and Hicks, 2002) In our opening effort to gain empirical purchase on this problem, the focus of this paper, we will ignore the wider institutional field as well as mechanisms of cross-population influences. We return to the consequences of wearing this set of blinders for understanding the empirical patterns we examine in our discussion.

Organizational ecologists expect that the *density of an organizational population* will have effects upon its subsequent size as well as upon populations within the same community. Early in the expansion of a population, new organizational foundings spur subsequent ones, but, eventually, increasing density can be expected to dampen the likelihood of new organizational foundings, since organizations in the same population compete with one another for resources. And while more than one population of organizations may share a resource niche, this does not necessarily mean that, regardless of their respective densities, they will find themselves in zero-sum competition. There are a number of possible relationships, ranging from fully mutual to fully competitive, that may occur among populations within the same community (Aldrich, 1999:302).

Within a single organizational population founding rates may be enhanced through a number of mechanisms. First, increased population density initially accelerates population founding rates by legitimizing the domain and establishing viable resource niches. In the early period of a population's growth each new "early riser" contributes to the establishment of a stable resource niche in the environment and increases the legitimacy of the field as a whole, making it easier to establish new organizations, as well as ameliorating the liability of newness, meaning that organizations will be more likely to persist once established. This contributes to increasing founding rates and densities in an organizational population early in the growth of an organizational population.

Related to this is the contribution the addition each new organization makes to increased founding rates by providing templates for organizational structure and action. New organizations are more likely to be founded in a population and to persist when there are established routines and structures of action. Once a model has been shown to “work” it is easier for new organizational entrepreneurs to follow established patterns and forms of action than to create them upon their own.

Third, new foundings within an organization population may be enhanced through the provision of resources for new start-ups. Existing organizations may provide direct aid (financial, informational, human, legitimacy) to new start-ups, as when the National Audubon Society and Rachel Carson Fund (along with the Ford Foundation) provided grants for the founding of the Environmental Defense Fund. Alternatively, organizations may establish spin-offs as a way of addressing routines of action that are better handled by independent entities. For example, the Sierra Club established two spin-off organizations contained in our dataset of U.S. national organization. The Sierra Club Legal Defense Fund, established in 1970 to concentrate on environmental litigation, and the Sierra Club Radioactive Waste Campaign established in 1978.

Employees of an existing organization may also leave to establish new spin-off organizations, either because they are dissatisfied with how their current employer operates or because they see an unmet demand in the environment, which they believe they can satisfy. In the environmental movement an example of this can be seen in the career of David Brower. Forced out as executive director of the Sierra Club in 1969, he founded that same year Friends of the Earth, one of the largest environmental groups in

the world today. When Brower left that organization he went on to found, among others, the Earth Island Institute in 1982.

While early risers may initially increase rates of founding by increasing density within an organizational population, increased population density may also have negative effects on rates of founding. Later in a population's growth cycle additional organizational density dampens the rate of growth and the rate of new foundings by increasing competition for material resources. While increased density initially spurs rates of founding, by indicating that there are resource niches available for exploitation, as the population expands to meet the limits of those resource niches each additional organization contributes relatively little to increased legitimacy while increasing competition over increasingly scarce resources. A majority of studies support the density dependence model and have shown *increases in organizational density that initially raise founding rates* and lower disbanding rates until, *beyond a certain point, increased density inhibits founding* and raises rates of organizational disbanding (Singh and Lumsden, 1990; Baum and Oliver, 1996).

A few social movement researchers have explored these processes across movement populations. Minkoff (1997) demonstrates how the growing density of U.S. civil rights SMOs spurred the founding of and, hence, the subsequent density of U.S. women's SMOs, suggesting that it results from the civil rights movement having provided organizational models as well as legitimacy for implementing them that encouraged the founding of new women's groups. Keck and Sikkink (1998) suggest a similar sequencing process for international environmental campaigns having modeled upon earlier human rights campaigns. The arguments of Meyer and his colleagues mirror

such a process suggesting that the increasing density of the transnational population of environmental SMOs spur the subsequent founding, and hence density, of national environmental SMOs.

The nature of the effects of density across populations of organizations linked to one another is not necessarily limited to positive ones where increasing densities in one lead to increasing densities in the other, however. Minkoff's (1997) analyses, for instance, did not show evidence of the reciprocal impact of increasing density of women's SMOs having contributed to subsequent increases in density of civil rights SMOs. Similarly, Hannan and Freeman (1987) have shown that for labor unions in the U.S. the increasing density of industrial unions during the expansion of organized labor had a dampening effect upon subsequent founding of craft unions. They interpret this pattern of results as reflecting competitive processes between these two populations of organizations, the organizations within each population contending for the same scarce resources of members and financial support. Their findings suggest that we remain alert to the possibility that the growing density of a transnational population of SMOs may dampen rather than encourage rates of founding, and hence, the organizational density of its equivalent national population, or visa-versa.

Data and Methods

We have been assembling evidence on the founding and density of transnational and U.S. national SMO populations in the environmental protection issue domain. Some of this evidence we have borrowed from other researchers and much of it we have created ourselves. We describe these several sources of evidence.

U.S. National Environmental Protection SMOs. Yearly counts of the founding of new and the total number, or density, of U.S. national environmental SMOs are drawn from the *Encyclopedia of Associations, Volume 1, National Organizations of the U.S.* (Gale Research Inc.). Each organizational entry in the *Encyclopedia* contains information on demographic variables (e.g. founding date, name changes, mergers, budget, membership, staff size) and synopses of aims and activities written by representatives of the organizations themselves. The *Encyclopedia* has been published annually since 1970 and intermittently since 1960 before that. The most recent edition (2003) contains data on more than 25,000 national associations. Editors from the Gale Research Company, the publisher of the *Encyclopedia* aggressively search for, and conduct a yearly survey of, non-profit associations active in the United States at the national level. Those associations included in the *Encyclopedia*, however, are likely to over-represent the largest and most well known groups in any category, and this should also be the case for SMOs. Smaller and more radical organizations are less likely to be included. Nevertheless, the *Encyclopedia* does provide the most complete source available for identifying a broad range of national citizens organizations. As a result, the *Encyclopedia of Associations* has been widely used as a census for bounding populations of voluntary organizations. (e.g. Baumgartner and Jones 1993; Minkoff, 1995; 1997; 1999 Johnson 2000)²

We used the 2003, 2000, 1995, 1990, 1985, 1980, 1975, 1970, and 1962 editions of the *Encyclopedia* to identify those groups to be included in our two issue domain categories. We included groups that listed environmental conservation/protection as a

² An ongoing project directed by Frank Baumgartner and John McCarthy will make this data source more accessible to a wide range of scholars in several years.

primary organizational purpose or concern. This was established through a combination of keyword headings, association name, and organizational description. The procedure followed was to first include all organizations listed under certain keywords.³ Each entry in the entire encyclopedia was then read to determine if other groups should be included even though they were not listed under one of the headings above. Finally, those organizations whose membership was drawn primarily from (1) industry, (2) governmental agencies, (3) both industry and governmental agencies, and (4) those that were professional associations whose organizational goals were primarily advancement of a professional group were deleted from the sample. When this process was complete, 683 different national environmental social movement organizations were identified as having been in existence at some time during the period under study.

The founding dates provided in the organizational entries were used to compile yearly counts of the number of foundings in each category. The year of founding is reported by the organization itself, for those few organizations (N=22) that did not report a founding date, it was imputed using the first year in which the organization appears in the Encyclopedia.⁴ Population density is calculated as the total number of organizations active during each time period. A complete time-series was constructed for each organization indicating, for each year between 1960 and 2000, whether or not the organization was active. For each organization the founding date (or the first year of the study if the organization was formed prior to 1945) was used to indicate the first year that an organization was present. The last year that an organization appears in the

³ Conservation, wildlife conservation, environment, environmental quality, environmental protection, environmental health, toxic exposure, nuclear energy, ecology, pollution control, and hazardous waste.

Encyclopedia (or 2000 if the organization persists until the end of the study period) was used as the final record for an organization.

These elaborate procedures are necessary in developing more complete time series of organizational populations. The consequences of not having adequately developed such a time series for U.S. environmental SMOs is shown dramatically in *Appendix A*. For the reasons discussed there, early estimates of population foundings and densities should be interpreted with some caution.

International Environmental Protection Groups. Data on TSMOs was gathered from the *Yearbook of International Organizations*, with an initial listing of organizations provided by Jackie Smith and Kathryn Sikkink (Smith, 1997; 2002a; Forthcoming; Sikkink and Smith, 2002). Published by the Union of International Associations (UIA), the *Yearbook* is the most comprehensive census of international organizations available, including data on governmental, business, and civil society organizations. The *Yearbook's* editors attempt to cover “all international organizations” and use United Nations records on non-governmental organizations (NGOs), self-reports, referrals, and the media to identify organizations for inclusion. Organizational descriptions are received from the organizations themselves if possible, and the information checked against other sources (periodicals, official documents, media, etc.) for accuracy. Entries contain information on a host of organizational demographic characteristics (founding date, membership, budget) as well as summaries of organizational aims and activities and

⁴ Alternatively we could have excluded these organizations from the founding analysis as Minkoff (1995; 1997) does in her analyses. We tried this alternative and it made little or no difference in our results. Or, we could have used the year of first appearance minus the 6 year average lag it takes to enter the *Encyclopedia*. Doing so makes the spikes in foundings a bit more dramatic.

cross-referenced information on each organization's relationships with intergovernmental (IGOs) and nongovernmental (NGOs) organizations.

As the most comprehensive data source on international organizations available the *Yearbook* is the favored data source for research on TSMOs (Caniglia 2001; Frank et al. 2000; Keck and Sikkink 1998; Smith 1997; Smith 2002a; Forthcoming; Smith et al. 1994; Sikkink and Smith, 2002), listing over 40,000 transnational organizations by subject area in the most recent edition.(2002/03) Clearly the *Yearbook*, as with the *Encyclopedia of Associations*, does not contain information on the entire universe of relevant organizations. But, it is reasonable to assume that the largest and the most well known SMOs in each population are included, and that smaller and more radical organizations are less likely to be included in the sample. Because the editors of the *Yearbook* also rely on UN and other official documents as the major way to identify organizations there may be some bias towards the more institutionally integrated organizations, although the majority of SMOs included in the *Yearbook* do not have official consultative status with the U.N. or other international governmental organizations (Caniglia, 2002).

Jackie Smith, with some help from Kathryn Sikkink, has identified all of the TSMOs, defined as those groups whose membership came from three or more countries and whose goals indicated that they work for some sort of political change, contained in the 1973, 1983, 1993 and 2000 editions of the *Yearbook* and has kindly shared that data with us. We included in our sample all of the organizations coded as part of the environment/wildlife and environment and development, SMIs. In all, 224 international

environmental social movement organizations were identified as having been in existence some-time during the period under study.

As with the *Encyclopedia*, we used the founding dates provided to generate yearly counts of new organizational foundings. For those few organizations that did not report a founding date (N=8) it was imputed using the first year in which the organization appeared in the Yearbook. If the organization was “captured” by Smith and Sikkink in 2000 then the organization was coded as having been present in each intervening year between the date of founding and 2000. For the remaining organizations we relied primarily upon the 2002/3 CD-ROM version of the *Yearbook* to construct a yearly record of whether or not the organization was active. The CD-ROM version has one major advantage over the hard copy of the *Yearbook* for producing density counts, it provides a record of the most recent date the *Yearbook* staff received updated information on an organization and provides links to the *Yearbook* website which indicates whether or not an organization is still active and, for those organizations no longer active, provides information on the date of dissolution.

If an organization dissolved before 2000 the year of dissolution as provided on the *Yearbook* website was used as the final year of existence. If the organization was listed as no longer active then the last year in which an entry was received was used as the final year of existence. For those few organizations (N=7) whose disbanding dates could not be constructed using this method (i.e. the last year in which an entry was updated was not available) we used the hard copies of the Yearbooks to determine the last year that the organization appeared in the directory and used this as the final year of existence.⁵

⁵ We drew a random sample of 100 organizations, from the list of 683 U.S. national environmental organizations contained in any year in the *Encyclopedia of Associations*, in order to develop an estimate of

Smoothing Trends. Because we are interested in long-term trends in foundings and density, it is helpful to suppress short run variation in the data. A moving average is the most common smoothing technique used for variables that display significant short-term fluctuation, as for example, in the analysis of changing stock prices. By smoothing values that fluctuate over time a moving average reduces random error, increases stability, and makes long-term trends in the data clearer. In the section that follows, all counts of organizational foundings are presented as three year moving averages. We report actual yearly densities, rather than a moving average, as this measure is relatively stable from year to year. Because the computation of each point in a three year moving average requires three data points (i.e. the number of foundings in the current year and the year immediately preceding and following) one observation period is lost at the beginning and the end of the time series. So, while densities are reported for every year between 1945 and 2000 in the graphs that follow 3-year moving averaged foundings are presented only from 1946-1999.

Analyses

In the following section we present a basic descriptive look at temporal patterns of environmental movement organizational founding and density patterns across the national and international populations. These patterns provide the underpinnings for a more systematic analysis of the theoretical questions that motivate this research. We begin the analyses by looking at the parallel trends in the founding and density of SMOs as a way of exploring the possible interaction between the evolution of populations of

the average lag between the founding of organizations and their inclusion in the *Encyclopedia*. The mean lag between an organizations founding and its' inclusion in the *Encyclopedia* is 6.2 years. We do not have a similar estimate for the *Yearbook*. Such lags suggest caution in interpreting the most recent periods in the founding and density patterns we will describe.

national and international environmental social movement organizations. We will discuss our first efforts at more systematic analyses in our conclusion.

Environmental national and international foundings and density. The annual number (rolling average) of new organizational foundings and the annual density for the population of *U.S. national environmental SMOs* for the period 1944-2000 is displayed in Figure 1. The founding trend shows the inverted U-shape trajectory that population ecologists have shown characterize the pattern of founding rates in most organizational populations. The number of new organizational foundings per year remains relatively stable and low (ranging between 1.6 and 7.6 foundings during three small cycles) from 1946 until the major period of expansion, beginning in 1966. The rates of national environmental foundings then explodes, peaking in 1971 with an average of 29.3 new foundings per year, shortly after the National Environmental Policy Act (NEPA) was signed by then President Nixon establishing the Environmental Protection Agency (EPA) in January of 1970. The rate of new foundings remains high (with no fewer than 18 new foundings in any year through the early 80's) but gradual declines from the 1971 peak to an average of 13.6 new foundings per year in 1987. This decline is temporarily reversed during the 1989-1990 period, perhaps as elements of the movement made preparations for the 1992 International Rio Earth Summit. The number of new organizational foundings decelerates rapidly after that point to an average of less than 4 foundings per year by 1994.

The density trend seen in figure 1 shows the cumulative actual number of national environmental SMO's active in each annual period; a joint function of new organizations and the dissolution of olds ones. We focus only on the founding of new organizations

here. The density growth curve assumes the expected S-shaped pattern we would expect in a population experiencing a period of growth and stabilization (Carroll, 1984; Hannan and Freeman, 1987). There is slow but steady growth from 1945 until 1966. From 1967 to 1973 the population experiences its' most rapid period of growth, as reflected both in the steepness of the density curve and the high rates of organizational foundings during this time. Population density continues to grow at a high, but slightly reduced, rate until 1980 after which growth slows dramatically, peaking in 1991 with 538 active national environmental organizations in existence. From 1980-1991, the population density grows at a much-reduced rate, *even though rates of new foundings remain relatively high*. This indicates that rates of organizational disbandings accelerated during this period (not shown), as the density dependence model would predict. After 1991 the population density actually begins a slow but steady decline to a total of 475 organizations remaining in 2000. Evidence of a precipitous population decline later in the period of study should be viewed somewhat skeptically, however, as a result of the delay before organizations typically enter the data source.

Figure 2 displays the number of new organizational foundings (3-year moving average) and the annual cumulative density for the *population of international environmental SMOs* for the 1944-2000 period. First, it is clear that the founding rates for international environmental organizations are much lower than those for U.S. national organizations, never reaching more than 13.6 foundings per year, as compared to a high of 29.3 foundings per year for national environmental SMOs. In the early period the founding rate is is very low (between 0 and 1.3 foundings per year from 1946-67) before jumping to between 2.6 and 6.3 new foundings per year, a level that is consistently

sustained from 1968 until 1986. The founding rate then begins a steep ascent in 1987 peaking at 13 or more foundings per year from 1989 until 1991 before experiencing a sharp and steady decline after 1993 that continues for the remainder of the observed period.

As with the national population of environmental organizations, the major periods of elevated founding rates roughly corresponds to the occurrence of major institutionalizing forces in the population's organizational field; the 1972 founding of the United Nations Environment Program (UNEP) and 1992 Rio Earth Summit in Brazil.

The density growth curve for international environmental SMOs, displayed in Figure 2, assumes the typical S-shaped pattern we have come to expect in a population experiencing a period of growth and stabilization. At the beginning of the observed period the population density increases only very slowly, by 1 organization or less per year between 1945 and 1966. After 1969 the population begins to grow more quickly experiencing steady increases over the next sixteen years until the period of most rapid growth that occurred between 1986 and 1994. After 1994 the population density curve begins to level out as fewer new organizations are founded during each time point and, presumably, rates of disbanding begins to accelerate.

U.S. National and TSMO Founding Rates Compared. Figure 3 displays the smoothed yearly founding rates of the international and U.S. national environmental social movement populations in the same figure for the purpose of comparing the timing of foundings between the two populations. Do foundings of international organizations appear to spur foundings of national organizations, or visa versa? The patterns seen in Figure 3 provide a first look at one aspect of the co-evolution of these interacting

populations of organizations, suggesting that international founding rates generally seem to lag behind national founding rates early in the cycle.

Both trend lines are marked by relatively low rates of growth prior to the late 1960s. Although, during this period both populations experience somewhat elevated founding rates, from 1958-61 for the population of national organizations and from 1961-63 for the population of international organizations. Both populations then experience their first major increase in the rate of new organizational foundings, beginning in 1966 and peaking in 1971 for the national population, and steadily rising from 1968 to 1975 in the international population. Both populations then maintain relatively high levels of foundings until early-mid 1980s. At this point, national organizational founding rates begin a steady decline that is temporarily reversed from 1989-90. International organizational founding rates, meanwhile, begin a steady increase after 1985 that peaks in the 1989-91 period. After 1990, both organizational populations experience sharp declines in their founding rates. Both organizational populations also experience their highest levels of foundings around the time of the major institutionalizing events in their fields. For the national organizational population, this is the 1971 establishment of the EPA, and for the international organizational population, this is the 1992 Rio Earth Summit.

What do these figures suggest as an answer to our motivating question? They suggest that the rate of founding of international environmental TSMOs lagged behind the U.S. national rate in the early part of the major growth spurt during the late 1960s and early 1970s, but for a brief period later in the cycle, the rate of founding of U.S. national organizations lagged behind the rate of founding of environmental TSMOs. This pattern

contradicts the claims of Meyer, Frank and their colleagues, but suggest, at the same time, that the process of co-evolution of these two populations is more complicated than our initial bottom up/ top down imagery would imply.

National and International Environmental SMO Densities Compared. The yearly population densities of the international and U.S. national environmental social movement populations are displayed together in Figure 4 providing another way to look at the co-evolution of these organizational populations. Does the increasing density of the international environmental population appear to spur increases in the national population or visa versa? From 1967-1980 the U.S. national environmental SMO population experiences rapid growth, as reflected in the steepness of the population density curve, after which growth slows dramatically, peaking in 1991 with 538 active national environmental organizations in existence. Growth in the density of the international environmental SMO population begins later and is most rapid between 1988 and 1993. Clearly, expansion of the international environmental population comes later than growth in the population of national environmental SMOs. Further, rather than growth in the density of the international population appearing to spur national growth, the period of most rapid increase in the density of the international population is followed by a period of stabilization and possible decline among the national population.

Cross-Population Density Effects. We have now examined trends in the population density and rates of founding for the U.S. national and international populations of environmental SMOs in turn and in comparison to one another. Recall that earlier studies of cross-population effects among movement populations (Minkoff, 1999; Hannan and Freeman, 1987) argue that such effects should work through

population density. What is the effect of increasing density at one level on founding rates at the other?

These cross-population effects are displayed in Figures 5 and 6. Figure 5 shows the relationship between international environmental population density and U.S. national environmental founding rates. If the top-down explanation of movement mobilization is correct we would expect increases in density at the international level to precede heightened rates of national foundings. Clearly, this is not the case. International density levels do not begin to increase appreciably until after the major period of accelerated rate of founding among U.S. national level environmental SMOs has already begun. Further, the period of most rapid growth in international densities occurs simultaneous with a collapse in the rate of founding of new national level environmental organizations.

Figure 6 displays the relationship between U.S. national environmental population density and international environmental founding rates. Early in the period under study national population density was growing slowly and international founding rates were low. Beginning in about 1968 both the rate of growth in the density of the national population of environmental SMOs and the rate of new international foundings experience significant increases, suggesting some type of relationship. While the density of national organizations continued to increase the rate of new international foundings remained relatively stable until national density began to stabilize. It is at this point, late in the growth of national densities, that international founding rates experience a major acceleration. This suggests that, early in the period increasing densities at the national level did have a positive effect upon international rates of new organizational foundings.

But, later in the period the relationship disappears as national densities stabilize and international founding rates rise sharply.

The pattern of results has been consistent across our several Figures. They suggest that in the early years of the rapid growth of the U.S. national population of environmental organizations, rates of founding of international TSMOs lagged behind, demonstrating a sequence between the two movement populations. There is some indication that this process is reversed late in the cycle of movement population growth. The results of our preliminary modeling of these processes can be seen in *Appendix B*, and are quite consistent with the interpretations we have made in examining the trends visually.

Discussion

Our presentation has ignored, so far, a number of potentially problematic assumptions that under gird our preceding analyses. These include our focus on a single nation-state, the U.S., and a single movement; the implications of defining populations by geographical scope; and our incomplete specification of the mechanisms of cross-population effects. We now take up these issues in turn

Consequences of Limiting Our Focus to the U.S. and Environmental Mobilization.

Although we are interested in the dynamics of mobilization across multiple populations of national and transnational SMOs, we have restricted our focus in this paper to the population of international and U.S. national environmental SMOs only. This decision was made primarily as a practical matter. But, how appropriate is it to ask our key questions for only a single movement and a single nation? We briefly address each of these questions in turn.

Our initial intention was to trace the co-evolution of the United States and transnational human rights and women's movements, as well as the environmental movement. The decision to focus here on constructing a time-series for the environmental movement was made only when it became apparent that we would not have the time and resources to construct the necessary data sets for all three movement populations as quickly as we had hoped. We elected to focus only on the environmental movement for three reasons. First, the work of Frank and his colleagues (2000) focused on the environmental movement. While they suggest that international mobilization of the environmental movement preceded national mobilization they perform, in our judgment, an inadequate test of their top-down thesis of mobilization. By gathering data on the *entire* population of national-level environmental organizations for one country, as opposed to data only on chapters of TSMOs, as they did, we hoped to develop a more complete test of their top-down thesis of mobilization.

Second, while the transnational environmental social movement industry is not the largest it has experienced the most growth of any TSM industry over the period under study. Environmental TSMOs are the second largest population of transnational organizations with 17% of all TSMOs focusing on environmental issues in 2000 (Smith, forthcoming). Only the human rights transnational population is larger, containing 26% of all TSMOs in 2000 (Smith forthcoming). And, while the relative size of the transnational human rights population has remained nearly stable over time the population of environmental TSMOs has nearly doubled as a percentage of all TSMOs since 1973, when they comprised only 9% of all TSMOs (Smith, forthcoming). Because the questions which we are asking address movement growth and evolution over time it

made sense to start with the movement that experienced the greatest growth (or variance on the dependent variable). The environmental TSMO sector is both large and has experienced significant growth over time thus offering the best opportunity to evaluate the dynamics of cross-population growth.

Third, we elected to focus on the environmental movement because the world polity model developed by John Meyer and his colleagues posits that the top-down method of growth should be strongest in arenas of strongly rationalized “scientific/universalistic” discourse. The environmental arena is certainly one in which blueprints for the nation-state are highly institutionalized in world society. The environmental arena, then, should provide a strong test of the world-polity explanation for movement population growth.

If the environmental movement is an appropriate locus of study, how appropriate is it to ask our question for a single nation (the United States)? Following Frank and his colleagues (2000) we expect that the United States should be an ideal location to test their theory, the nation that might be expected to most closely conform to the top-down thesis. The world-polity argument predicts that in those countries with dense ties to world society the top-down model of population growth should be strongest. “As the principle of national environmental protection has become institutionalized in world society, national activities to protect the environment have increased, *particularly among those nation-states strongly tied to world society* and those with receptor sites capable of transmitting emerging blueprints to domestic actors” (2000: 111, italics added)⁶. The United States is strongly linked to world society with many TSMO chapter memberships

⁶ Receptor sites are defined by Frank et al. (2000: 96) as “social structures (e.g. scientific Institutes) with the capacity to receive, decode, and transmit signals from world society to national actors.”

and a strong density of receptor sites in the form of science organizations linked to international science bodies. In the particulars too, Frank et al. (2000, 101) argue that United States environmentalism follows its' institutionalization in world society. "By the time the United States had adopted the first legislation in 1969, the concept of environmental impact assessment laws had [already] been discussed thoroughly in the international realm."

In spite of all these reasons why the United States should pose a strong test of the top-down thesis, there is also reason to be cautious in generalizing the results obtained here to other nations. While we do not have cross-national time-series data on the expansion of the environmental movement in other nations we suspect that the modern United States environmental movement was an "early riser" beginning before national environmental movements arose in most other countries.⁷ Certainly, the United States was the only nation to establish an environmental ministry (the EPA) prior to the establishment of the United Nations Environment Program, and that event we imagine spurred high rates of organizational founding.

Readers should be most cautious (indeed, downright skeptical) of attempts to generalize the analyses produced here to less-developed countries. While the population of environmental organizations in the United States is dense and, as the analyses here demonstrate, began expanding prior to expansion in the population of environmental TSMOs the pattern are probably very different among less-developed countries. Most

⁷ Dieter Rucht says, in his description of the French and German environmental movements, "...it was not until the early 1970s that genuine environmental movements emerged in Western Europe." (1989:85) And, approximately 65% of the German national environmental groups that responded to the Transformation of Environmental Activism (TEA) survey were founded after 1970. (Rucht, 2001) In addition, almost 90% of the Italian national environmental groups that responded to the TEA survey were founded after 1970. (Della Porta and Andretta, N.D.)

important is the differential impact which transnational chaptering, a topic we return to later, may have on the population dynamics within the United States as compared to less developed countries. The United States has “fertile soil” in which domestic movement organizations can be expected to flourish (i.e. plentiful resources and open political opportunities) and thus a strong, dense sector of independent national organizations. But, while transnational SMO chapters make up less than 15% of all United States national environmental organizations⁸, it is probable that they make up a much larger percentage in less developed countries which are more reliant upon the resources (material and human) and legitimacy provided through association with transnational SMOs (Lewis, 2002). In such cases it seems that national mobilization would be much more likely to follow transnational mobilization, but for reasons very different than those suggested by the world polity model.

Geographical Scope and Chaptering. Usually organizational populations are defined by function (e.g. newspapers, labor unions), but movement researchers (e.g. Minkoff, 1999) have subdivided them by movement or issue domain. In the preceding analyses we defined our two populations of interest, instead, by their geographical scope. Recall that environmental TSMOs qualified for inclusion if they had chapters in at least three separate nations.⁹ Defining two populations merely by geographic scope raises to

⁸ This estimate is based upon an examination of the cases contained in our dataset of U.S. national environmental SMOs. Of these, 31 (4.5%) are chapters of organizations included in our database of environmental TSMOs. Another 46 national organizations (6.7%) include “international” in their title. While some of these organizations are undoubtedly domestically based with an international focus we include them in our estimate of the percentage of national organizations that are chapters of TSMOs in order to err on the side of inclusion.

⁹ In the two populations generated from *Yearbook* and the *Encyclopedia* we use for analyses, organizations of organizations and organizations without individual members are included. We expect that the proportion of organizations that have individual members will decline as the geographical scope of an SMO expands. (see McCarthy, 1997.)

prominence another mechanism of cross-population impact, the process of chaptering, or the spawning of satellite organizations, typically within narrower geographical arenas. But, the development of coalitions of SMOs that, together, have wider geographical scope than any coalition member is also not uncommon. And there are hybrid forms such as when previously independent SMOs choose to affiliate with a national or a transnational umbrella organization (e.g. Natur og Ungdom, a Norwegian environmental group that was formed in 1967, before the formation of Friends of the Earth, and is now affiliated with FOE). (*Associations Unlimited*) So, affiliations between SMOs across levels of geographical scope do not necessarily reflect either top down or bottom up processes of mobilization, although we expect that chaptering is far more common than coalition formation.

No more than 15% of the national U.S. environmental SMOs are affiliated with environmental TSMOs, based upon our estimate from the *Encyclopedia* data. As we have suggested, we expect that the proportion of national level SMOs that are affiliates is quite a bit higher in other nations, especially less developed ones. Approximately 25% of local U.S. environmental SMOs are affiliated with national SMOs. (Edwards and Andrews, 2002; Kempton, et al., 2001) It remains to be seen whether this pattern of higher rates of affiliation at the local than the state level will be seen in other nations.

In the process of developing affiliations of SMOs across geographical levels, typically some measure of resources and templates for action are directly exchanged. This quite direct cross-population mechanism is similar to what is seen within some organizational populations, as when new firms are “spun off” as independent firms that continue to retain ties to the “incubator” firm. (Aldrich, 1999:275) There are also

indications that this mechanism is reasonably common among U.S. national citizens groups, where many such groups received start-up support from other citizens groups. (Walker, 1983; 1991) In fact, taking this mechanism into account in explaining the evolution of populations of organizations may be more feasible across geographical levels for SMOs than it is within a single geographical level because the ties between organizations are usually more transparent.

The spread of national chapters of transnational environmental organizations is not new to the late 20th century. As Frank and his colleagues note, “originating around the turn of the century, country chapters of international environmental nongovernmental associations, such as the International Friends of Nature (founded 1895) and International Council for Bird Preservation (founded 1922), ...increased dramatically over the twentieth century.” (Frank, et al. 2000:97) They go on to say, “By 1925 close to 25 percent of all chapters of international environmental associations were located outside of Europe, and that proportion approximately tripled to 69 percent by 1990.” (Frank, et al., 2000:98) They also show that the percentage of nations with chapters of “ecosystem-oriented” TSMOs increases between 1960 and 1990 by more than 100%. (Frank, et al., 2000:110) The evidence they have generated suggests that the pace of chaptering accelerated during the last decades of the 20th century.

Dimensions of a Fully Specified Model. Strong tests of cross-population effects such as these, of course, require the inclusion of indicators of the several factors we have implicated as mechanisms through which the effects operate. As we noted above, without attention to these many other actors in the fields of U.S. and transnational environmental SMOs, we risk misunderstanding these cross-population effects. Nevertheless, gathering

indicators of these many concepts has proved to be an incredibly labor intensive effort which explains why we are, as yet, unable to more adequately assess the cross-population effects. The theoretically driven concepts for whose indicators must, at a minimum, be included in a fully specified model include at least the following:¹⁰

1. Related social movement populations of organizations. For the environmental movement at the international level this would include human rights, development, anti-globalization and women's TSMOs, and, in addition at the national level in the U.S. the civil rights movement.
2. Professional and scientific associations at both the state and international levels.
3. Media attention to environmental issues.
4. Foundation resources available to national and transnational environmental SMOs.
5. Appropriate advocacy networks.
6. Regional and international inter-governmental organizations.
7. International triggering events.
8. Intergovernmental initiatives.
9. International Corporate Opponents.

Debra Minkoff's work would suggest, as well, that rates of protest around environmental issues should be included in a cross-population effects model, but U.S. protests on environmental issues made up less than 1% of all protests reported in the *New York Times* during the 1970-1975 period.¹¹ And while rates were a bit higher in this period than in the previous decade, they remained extremely low, suggesting that U.S.

¹⁰ This enumeration of factors draws heavily upon Keck and Sikkink (1998), Frank, et al. (2000); Carmine and Hicks (2002) and Sklair (1997).

¹¹ This figure is a preliminary estimate based upon a coding of all protest events reported in the *New York Times* for that period. (Project on the Dynamics of Collective Protest, 1960-1990. Doug McAdam, John McCarthy, Sarah Soule and Susan Olzak, Directors).

environmental protest activity is unlikely to play any role in the founding of transnational environmental SMOs.

Conclusion

This work was initially motivated by the audacious claims, and weak empirical tests of those claims, by that group of scholars who work with and have been inspired by John W. Meyer. Some of their claims are quite difficult to test, and this is certainly the case for the top down versus bottom up arguments about movement mobilization they have advanced. We reasoned, however, that a stronger, if substantially narrower, test of those claims than they have been able to complete would be likely to go some way in illuminating what is certainly a far more complex process, the cross-population effects of international SMO populations and the World's state level SMO populations. That process is very much worth analysis since it can provide insight on the extent and trajectory of "infrastructures of social change" (Sikkink and Smith, 2002) at both the national and transnational levels.

Our tests of their claims about environmental movement mobilization processes for the U.S. make it quite clear that the U.S. case does not confirm them. In fact, the evidence makes clear that U.S. environmental movement mobilization, as reflected in rates of founding of SMOs and national SMO density, preceded rather than followed transnational environmental mobilization, at least during the early period of the cycle.

In the process, as our previous discussion revealed, we have begun to realize how much more complex such cross-population processes may be than is reflected in the caricature of the process with which we began. Our framing of the problem has broader applicability, as well, being an appropriate one for studying similar processes between

local and national populations of SMOs. As Doug McAdam has regularly remarked, we know rather little about local SMOs, let alone the dynamics of their interaction with national SMO populations.

Figure 1: U.S. National Environmental SMO Foundings and Population Density

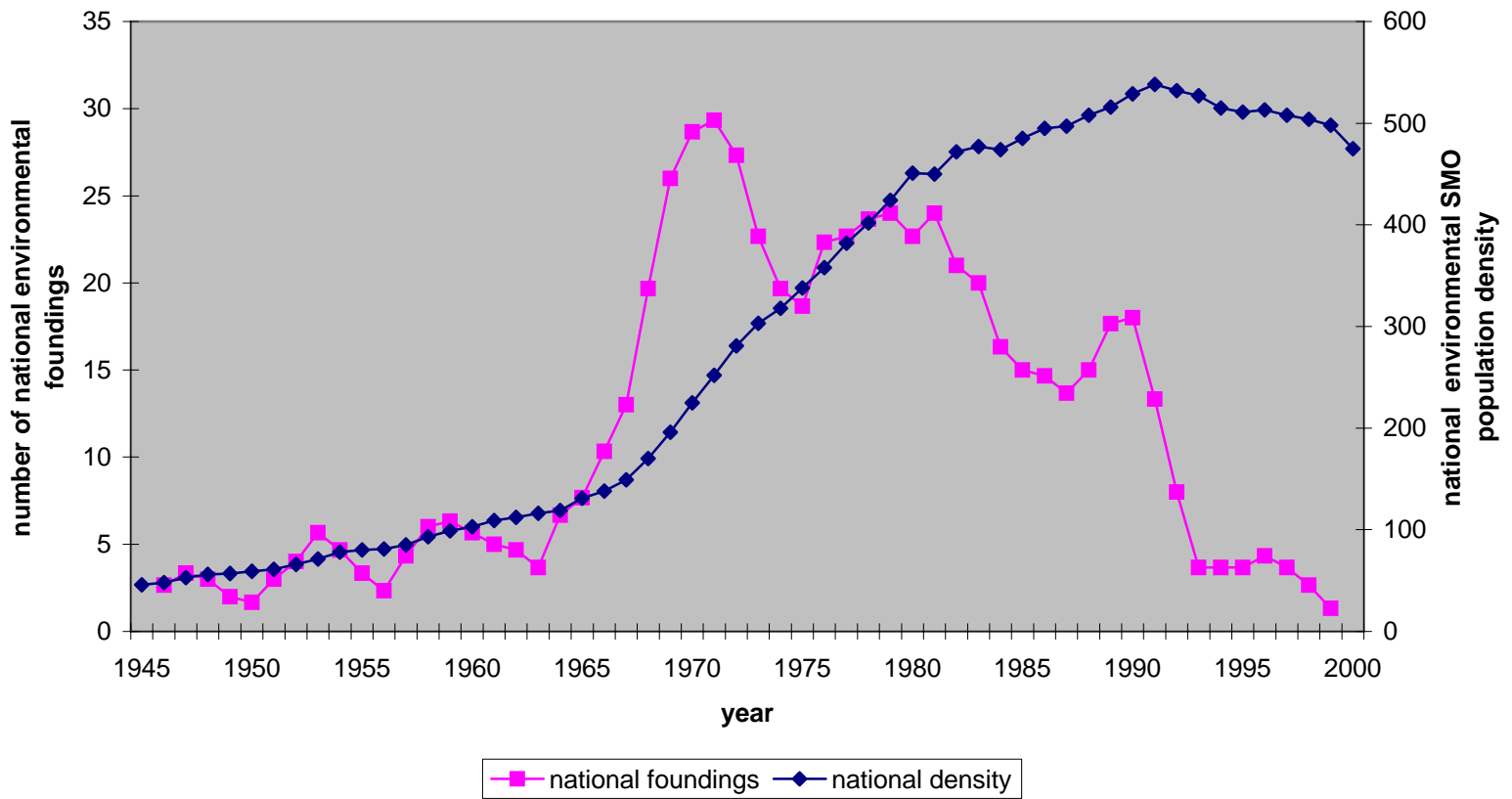


Figure 2: International Environmental SMO Foundings and Population Density

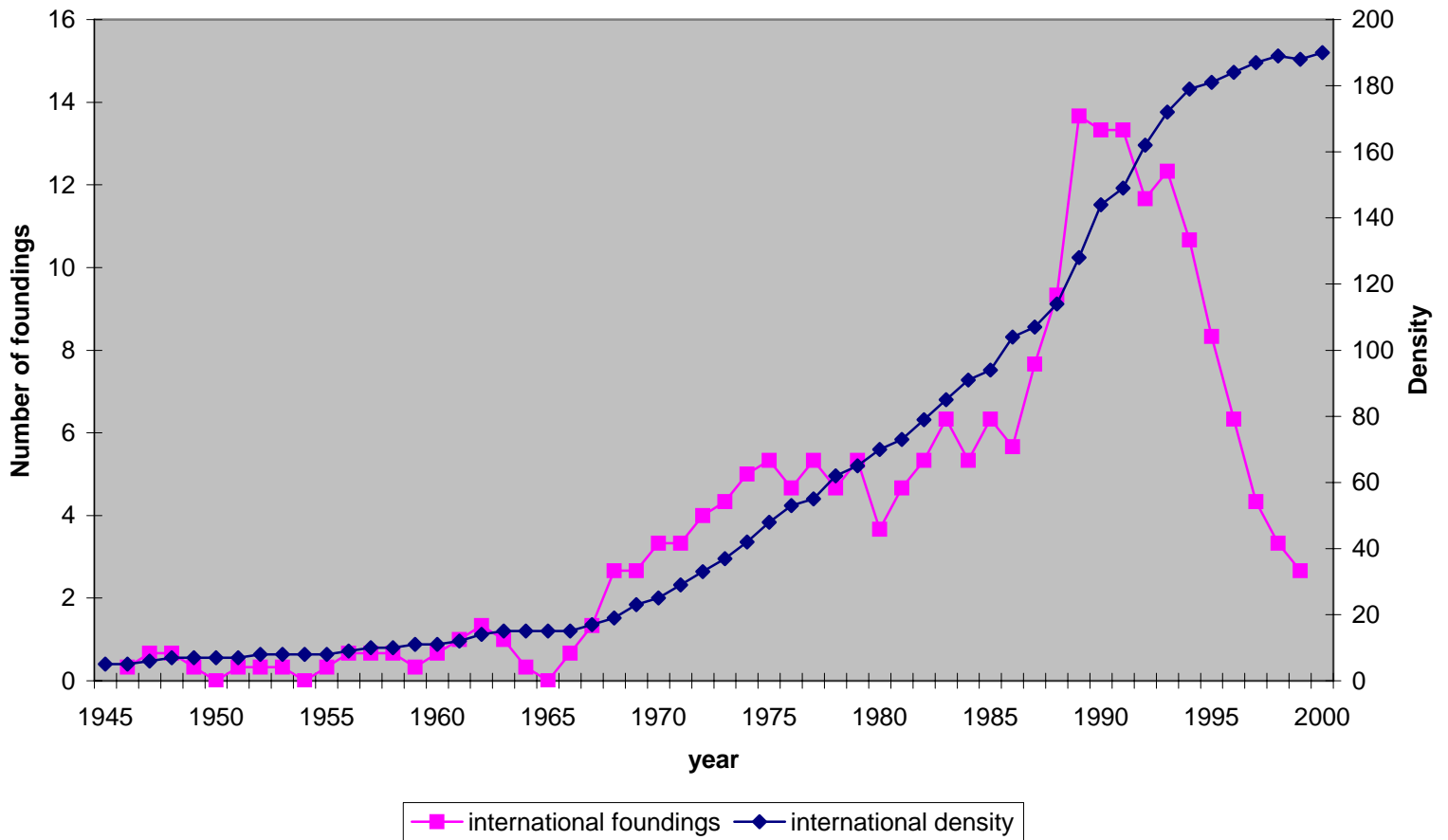


Figure 3: International and U.S. National Environmental SMO Foundings

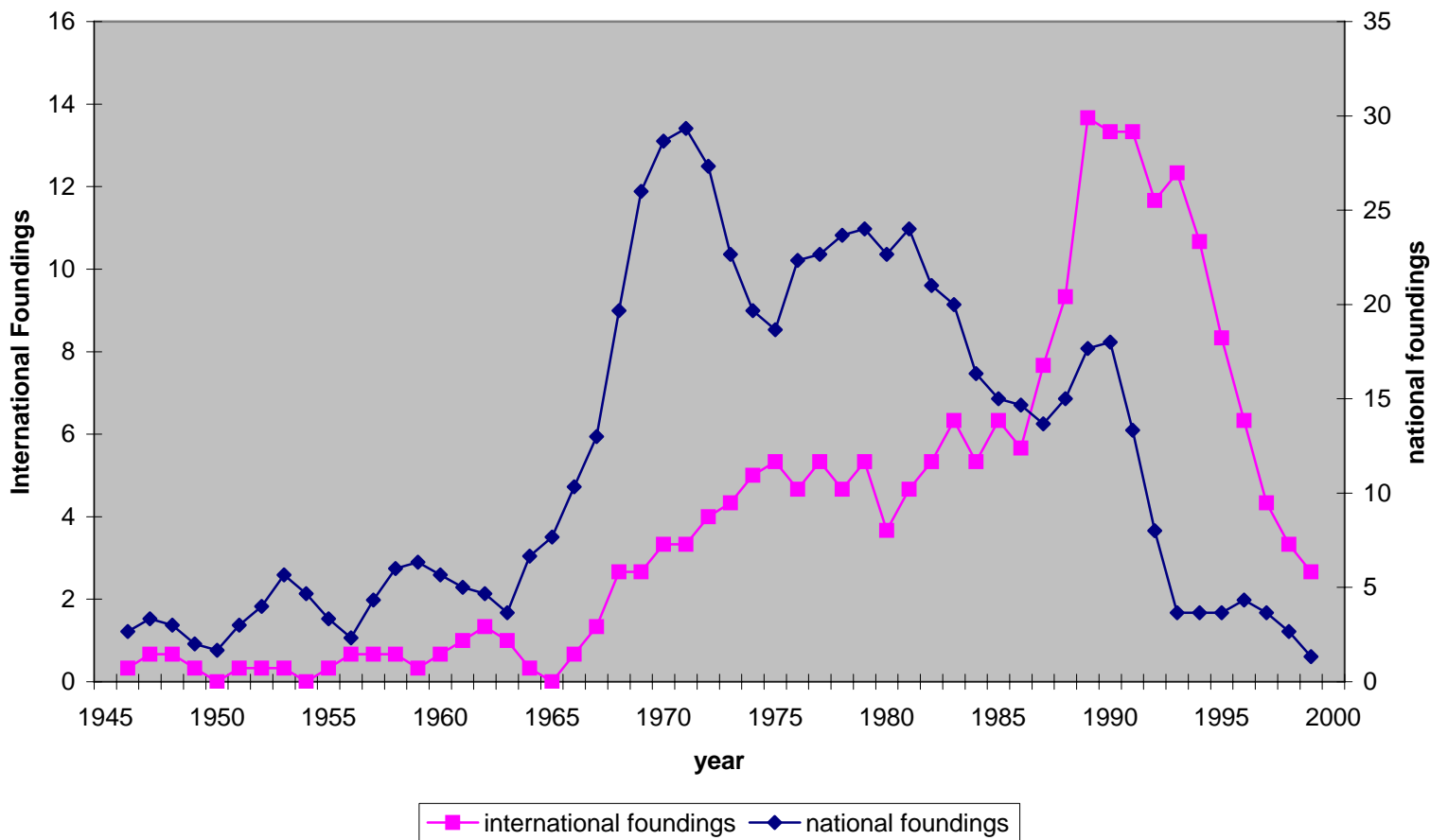


Figure 4: Yearly Density of International and U.S. National Environmental SMOs

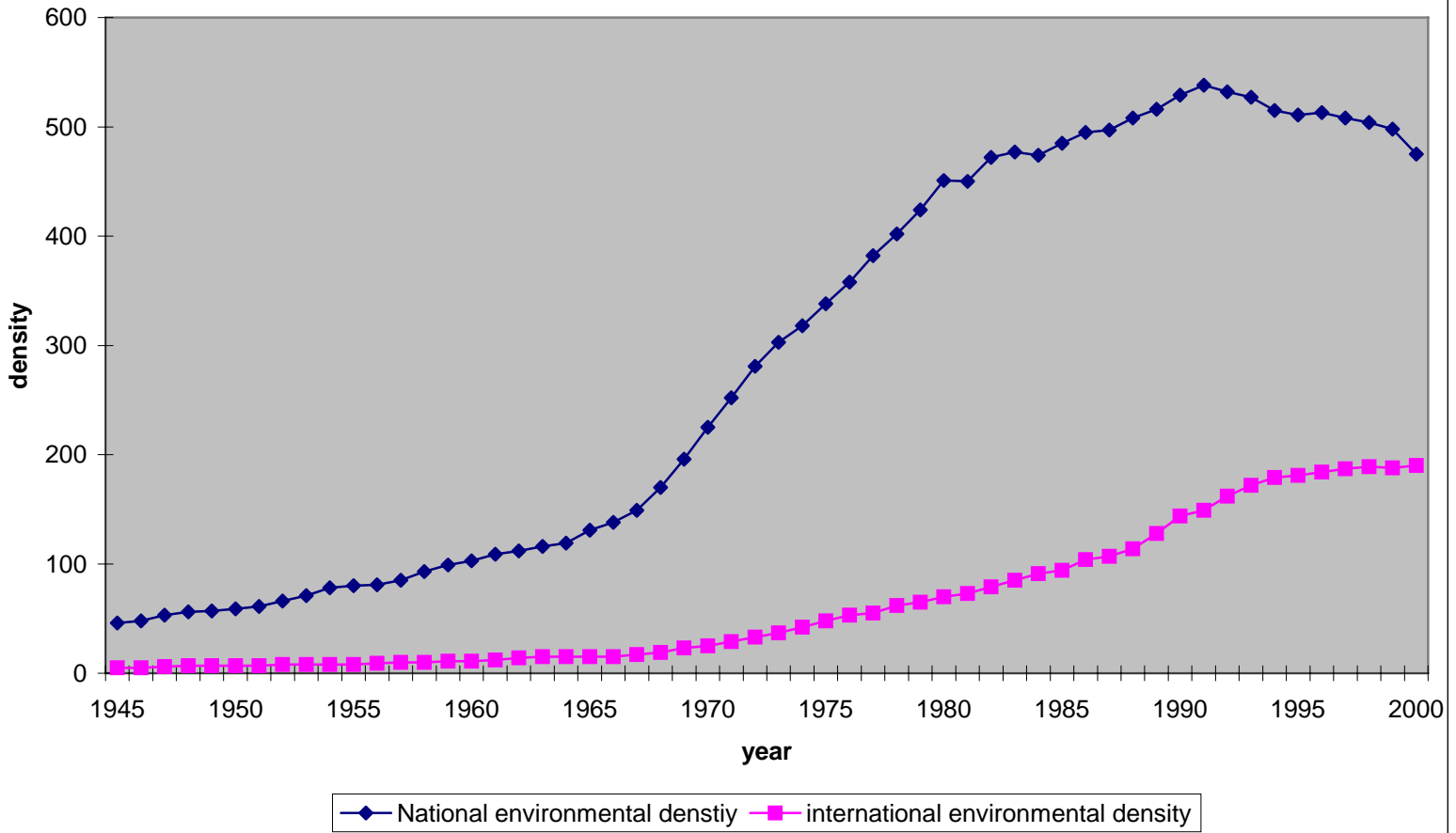


Figure 5: International Environmental SMO Population Density and U.S. National Foundings

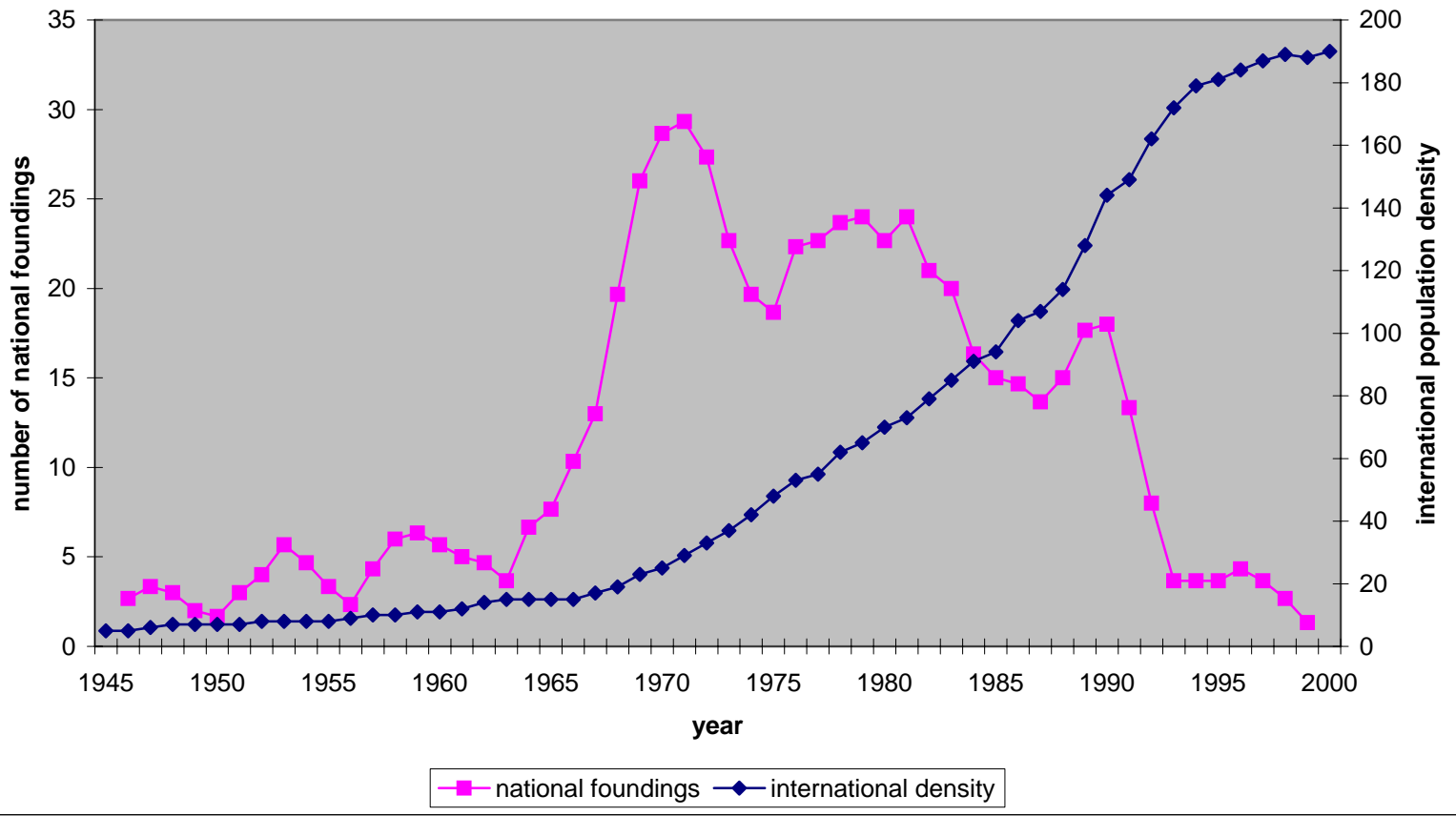


Figure 6: International Environmental SMO foundings and National Population Density

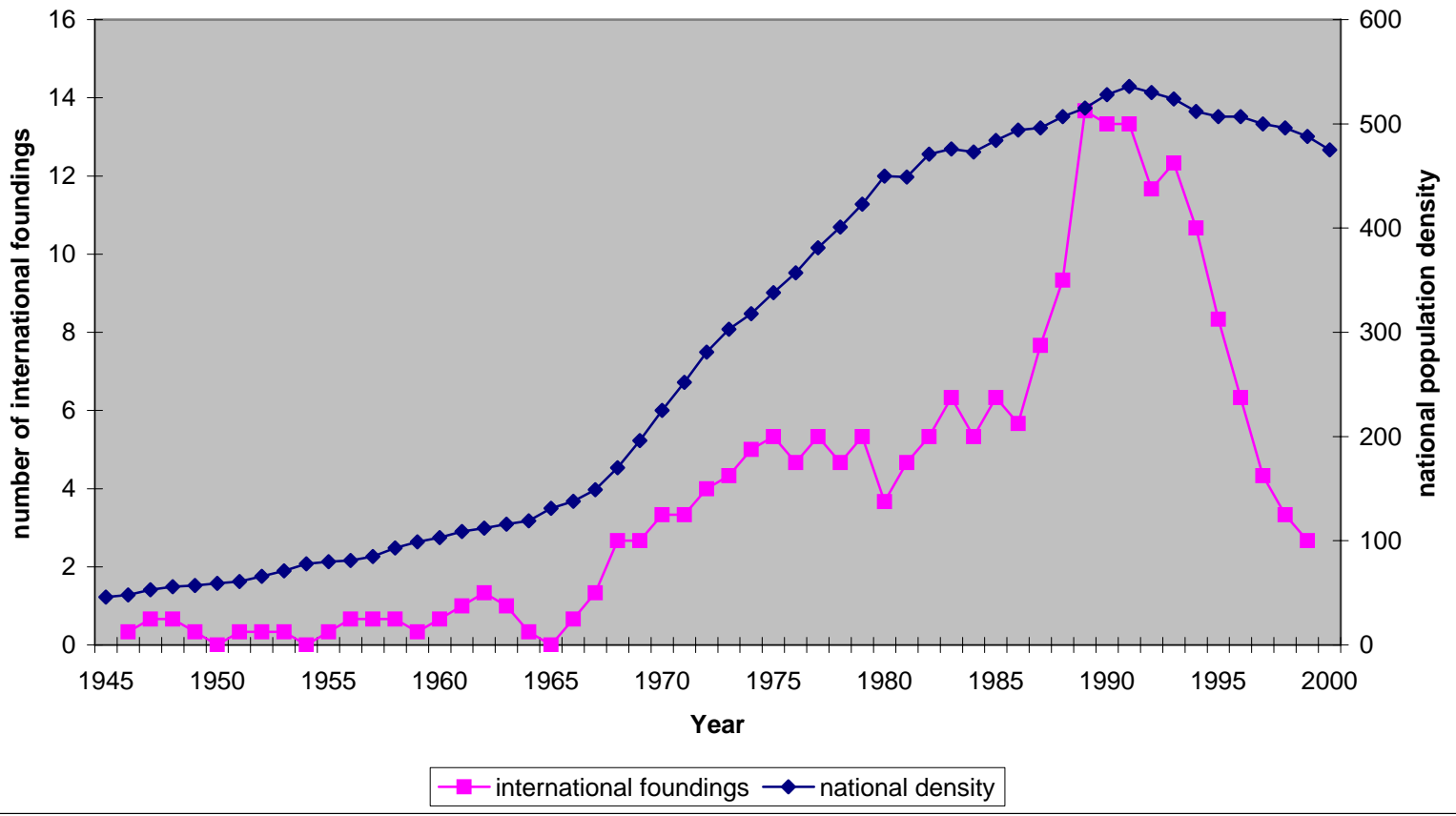


Figure A1: Foundings of U.S. National Environmental SMOs; using a more complete time series and only the 2000 edition of the Encyclopedia

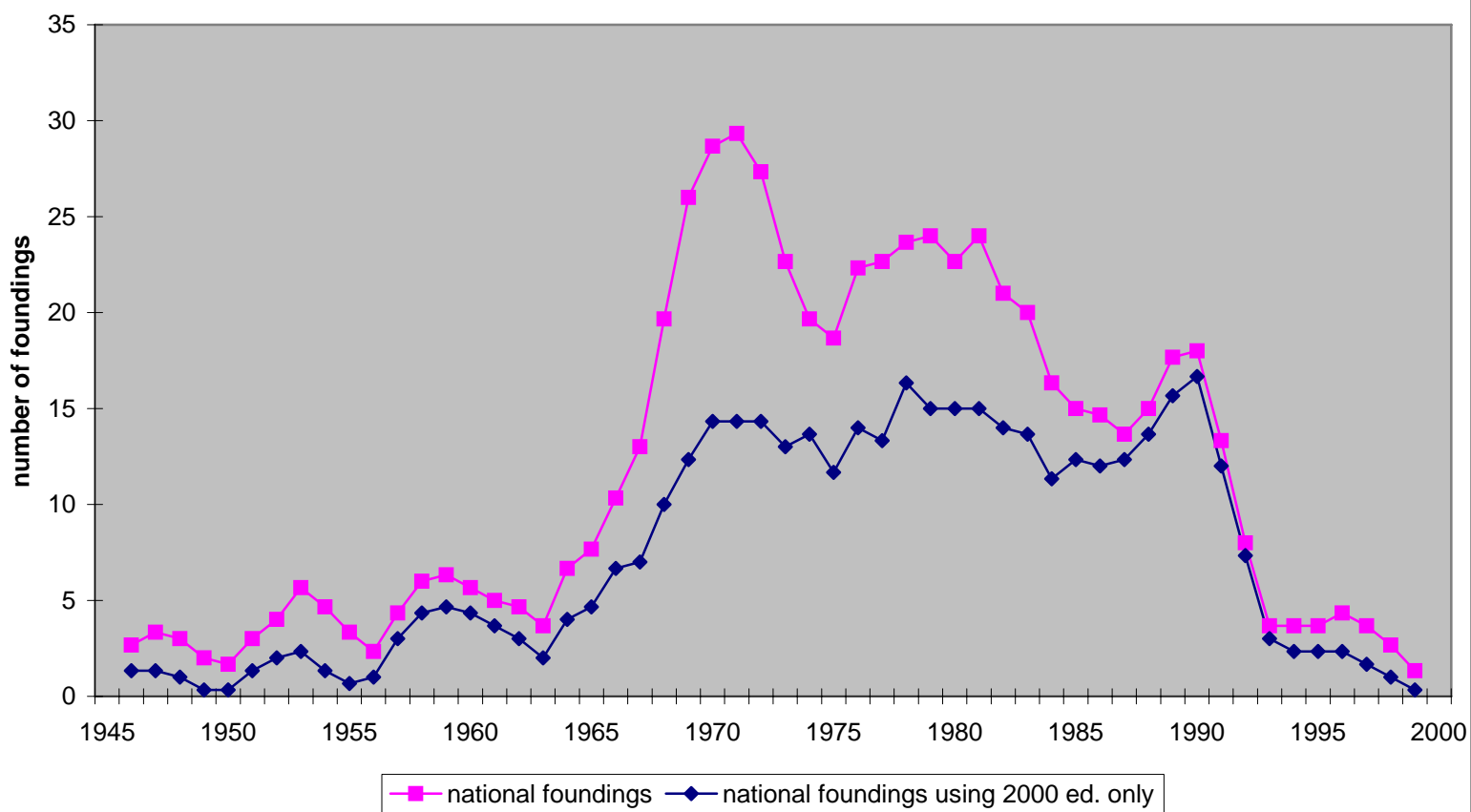


Figure A2: Density of U.S. National Environmental SMOs; using a more complete time series and only the 2000 edition of the Encyclopedia

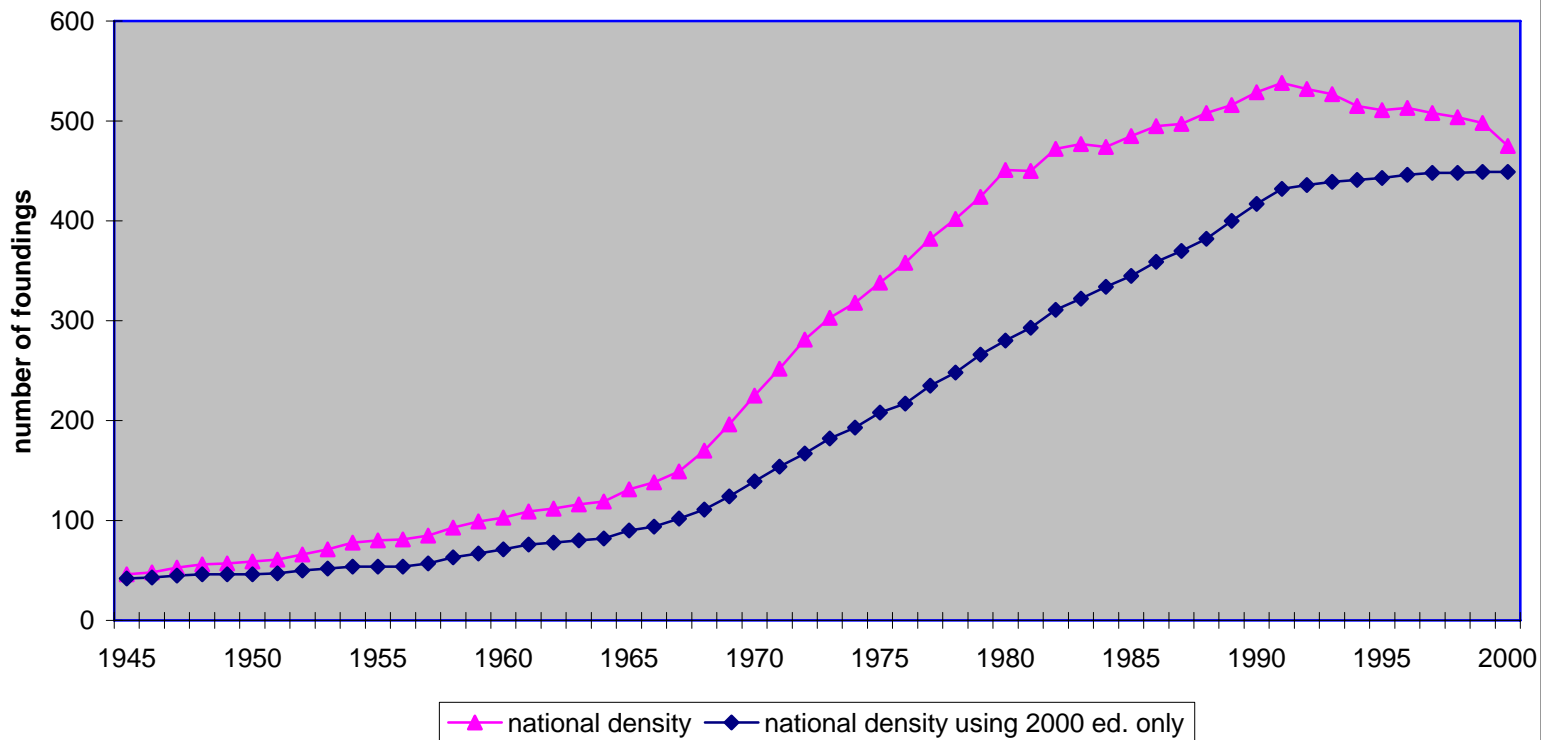


Figure B1: National Density as a Predictor of International Foundings

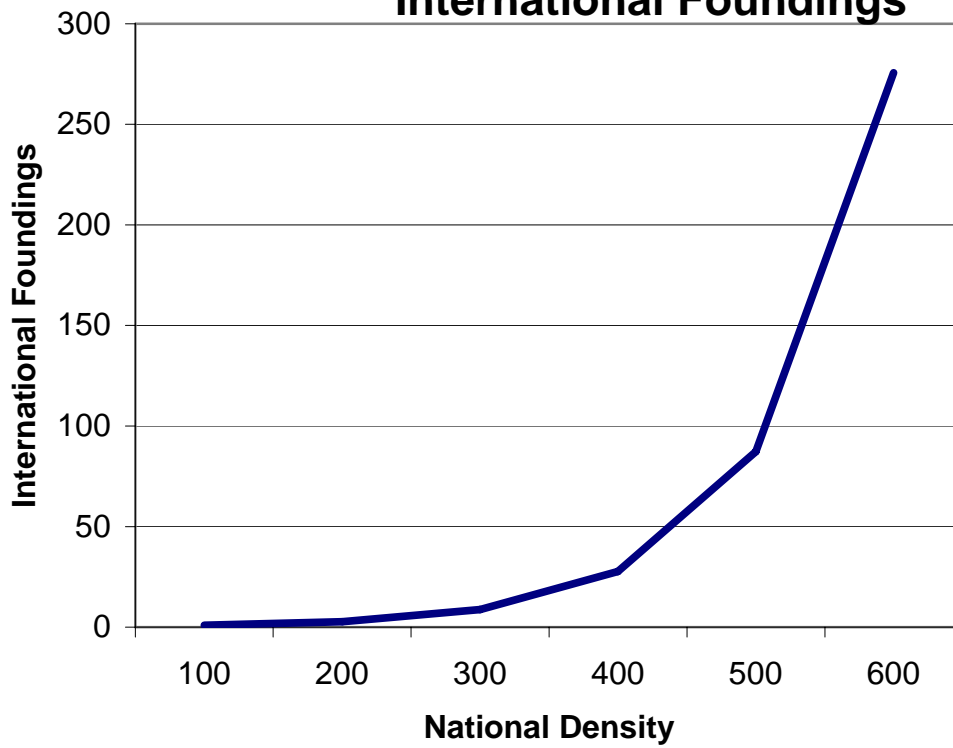
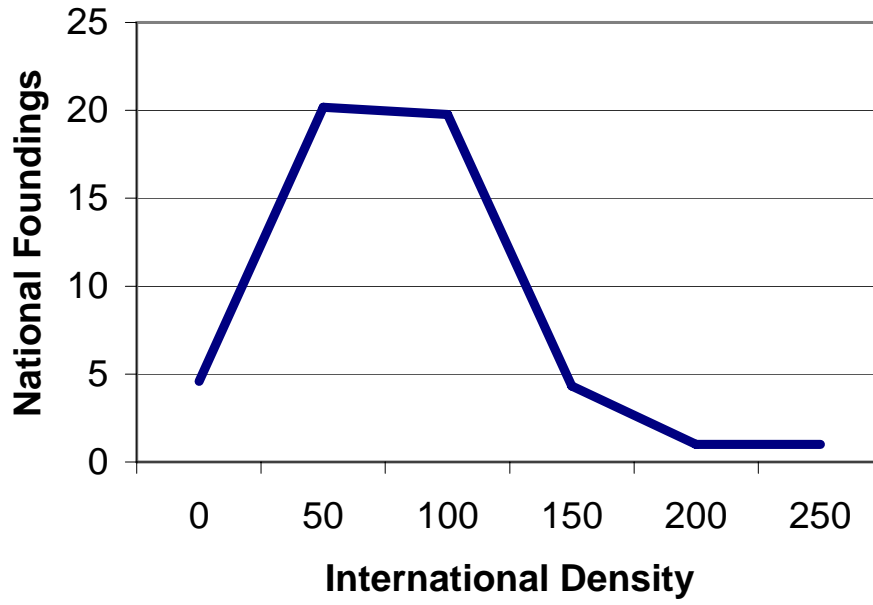


Figure B2: International Density as a Predictor of National Foundings



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Appendix A: A Comparison between A More Complete Time Series and a Fully Left-Censored Time Series for U.S. National Environmental SMOs

When exploring the evolution of an organizational population over time it is important that data be collected on the existence of organizations at intervals throughout the entire time-series rather than at one point in time at the end of the series with features of the population, most importantly founding date, inferred by backwards projection. This is especially true if an analyst is interested in using a population ecology perspective with an interest in addressing the types of questions to which population ecology can speak, specifically, changes in the rates of organizational births and deaths, as well as population densities. Failure to collect information through the entire time period can lead to severe model misspecification of organizational foundings, dissolutions and density and, as a result, serious misinterpretations. To demonstrate the importance of this issue we compare the two methodological approaches for the population of U.S. national environmental SMOs.

Figure A.1 displays two characterizations of the founding rate (3-yr rolling average) of all U.S. national environmental organizations listed in the *Encyclopedia*. One characterization is based upon evidence gathered at each of nine different time periods (the last of which is 2003), while the other uses only the 2000 edition of the *Encyclopedia* to capture the population and to project the rate of founding of new organizations backward in time. Each method shows that the population experienced low rates of founding of new SMOs from 1945 until the middle of the 1960's. The more complete time-series, however, shows a much more elevated, and variable, rate of organizational founding between 1967 and the mid 1980's than does the data derived exclusively from the 2000 edition of the *Encyclopedia*.

It is clear that projecting backward from a recent edition of the *Encyclopedia* severely underestimates the total number of organizations founded in the population. What is more problematic for analyses employing such estimates than the fact that founding rates are underestimated is that the underestimates are not consistent over time. The difference between the two lines in Figure A1 represents the number of organizations founded in each time period that disbanded before 2000. Relying solely on the 2000 edition, compared with the more complete time series, results in underestimating the number of organizations founded by between 1 and 3 organizations per year through 1966. Between 1968 and 1972 roughly half of the organizational foundings are missed when employing backwards projections and from 1967 to 1984 this method results in underestimating the number of organizations founded by between 5 and 14 organizations per year. In the most recent time period, the differences in founding rates are minimal, less than 2 organizations per year from 1987 until the end of the time series. The 2000 based backward projections of founding rates do not provide good estimates for a period of about 20 years from the mid 1960's to the mid 1980's. This period, of course, saw the greatest expansion in the size of the population as a result of the elevated founding rate of environmental SMOs in the movement's history!

How does the misspecification of founding rates by projection backward from the present affect the specification of population density estimates? Figure A.2 displays the equivalent characterizations of the density of the U.S. population of environmental SMOs

by the two methods. The period of greatest divergence between “actual” and backward projected founding rates is the period of the greatest under-estimates of density in the U.S. national environmental SMO population. The actual density of the population is increasingly underestimated from the middle of the 1960s until the late 1980s. Of course, the estimated densities cannot show a decline in the size of a population and so the fact that the movement has actually been contracting at the national level since 1990 cannot be revealed in the backward projection.¹²

If we used data on a population of organizations collected only in a recent period to project population founding rates and densities into the past and expected to meaningfully interpret those results, we would be relying on the premise that the basic *trends* between projected and “actual” founding rates are similar. Such an interpretation is based upon the assumption that organizations founded in any particular historical era have equal chances of surviving to the current period. Of course, we know that this is not a viable assumption. We know that the forces within which organizational populations are embedded do in fact enhance the likelihood of survival of some kinds of organizations while at the same time diminish the chances of survival of other kinds. For instance, many organizations concerned with nuclear energy emerged in the early 1970s, but were relatively short-lived since the expansions of the nuclear power industry stalled soon after their emergence. As well, many organizational characteristics are imprinted at birth, meaning that the primary concerns of organizations in a population are highly likely to be the result of which organizations survive. This is the case for U.S. environmental organizations. (Johnson, 2000)

Further, backwards projections such as these ignore the presence of density dependence effects. Increasing density in an organizational population leads to initially elevated rates of foundings with low disbanding rates, followed by decreased rates of foundings and elevated rates of disbanding. It thus makes a substantial difference where along the organizational population’s S-shaped development curve a sample is drawn, and what types of density effects predominate when that sample is drawn. One could expect to find founding rates and densities to be more accurate in a population that was still expanding and experiencing low rates of organizational disbanding. With lowered death rates more organizations would persist into the current time period and thus be included in a later sample. Conversely, if a population were entering a period of contraction (i.e., experiencing high death rates) when the population was sampled, estimations of foundings and density would be more inaccurate since disbanded organizations could not be included.

The data gathered in 2000 and projected backward in Figures A1 and A2 was collected on a population that has stabilized and, perhaps, begun to contract in size (as the density curve in Figure A2 suggests). Because the population presumably has reached the environmental carrying capacity, rates of disbanding are relatively high compared to earlier in the population’s history, meaning that a large number of organizations founded previously have not persisted until 2000. There is, then, severe misspecification in both the density growth curve and founding rate, and this misspecification is most pronounced during the periods when the population is growing most rapidly. If data had been

¹² The reason the two time series estimates in Figure A2 do not correspond in 2000 is that the actual densities include a number of organizations that are not included in the 2000 edition but are included in later editions and have founding dates before 2000.

collected during the early stages of the population's growth curve, before density dependence effects began generating high rates of disbanding, the amount of model misspecification would be comparatively small. For example, had we gathered data using the 1975 edition of the Encyclopedia and projected population density and founding rates backwards relatively most of the organizations founded prior to 1975 would still have been active.

Across populations of organizations, there is also variability in the accuracy of density (and founding) estimates based on projected data. More inaccurate estimates are generated for populations that experience relatively greater instability (e.g., many births and deaths) compared to more stable populations. So, the use of only one time point is problematic in estimating founding rates and densities because (1) the *trends* between projected founding and density estimates and the actual rates are dissimilar; (2) estimates of founding rates are dependent on the stage of population's development ; and (3) cross-population comparisons are compromised since some populations experience greater instability than others, which affects the accuracy of density and founding estimates.

Appendix B: Preliminary Negative Binomial Regression Results

Preliminary negative binomial regression results¹³ are generally supportive of conclusions drawn from the examination of smoothed averages. National density does, indeed, significantly predict international foundings such that greater national density is associated with increased international foundings. However, for national foundings, it seems that greater international density actually leads to *fewer* national foundings (after a certain tipping point in international density). These results suggest that while national environmental growth spurs growth in the international sector, international growth may suppress national level foundings.

Panel A: National Foundings		
<u>Variable Name</u>	<u>Coefficient*</u>	<u>Exponentiated</u>
Intercept	-1.28	0.28
International Density	0.01	1.01
International Density Sq	0.00	1.00
Panel B: International Foundings		
<u>Variable Name</u>	<u>Coefficient*</u>	<u>Exponentiated</u>
Intercept	1.52	4.59
National Density	0.05	1.05
National Density Squared	-0.0003	0.99

* All coefficients are significant at the .001 level, except for national density squared (p = .07)

¹³ Counts of foundings were used as the dependent variable. Counts of densities were lagged one year to preserve expected causal ordering. The negative binomial approach models counts of events (e.g., foundings) using a logarithmic transformation of the dependent variable to correct for problems of skewness of the data and non-negative values. Given that the dependent variable is logarithmically transformed, coefficients represent proportional differences in counts given a one-unit increase in the independent variable of interest, such that a one-unit increase in density multiplies the expected value of foundings by a factor of $\exp(B)$. Therefore, a one unit increase in international density is associated with about a 1% linear increase in national foundings; every one unit increase in national densities multiplies international foundings by about 5% ($\exp(B) = 1.05$). Since a squared term is used in the model to allow for the non-linear relationship between density and foundings, a plot including the range of values for densities (independent variables) with the corresponding predicted count of foundings is more instructive and intuitively appealing.