Using Social Network Analysis to Explore Social Movements: A Relational Approach

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ABSTRACT   *This paper uses a 'relational' approach to network analysis to demonstrate the linkages between different types of environmental organizations in London. A 'relational' approach was used to avoid problems associated with 'positional' approaches such as structural determinism, subjectively defined and misleadingly labelled blocks of 'approximately' equivalent actors, and reification of the action/issue basis of networks. The paper also explores definitions of social/environmental movements. Whilst broadly agreeing with Diani's consensual definition of a social movement, it argues that we need to be much more precise about the type and intensity of networking required; it must be more than informal or cursory, and should bind individuals and organizations into collaborative networks. Evidence from a survey of 149 environmental organizations and qualitative interviews with key campaigners suggests that whilst many organizations might share information, it is often stockpiled or ignored, hardly creating the kinds of network links that might lead to shared movement identity. The kinds of links that do bind movements are collaborative. In practice, in the environmental movement in London, conservationists tend neither to share information nor to engage in the collective action events of reformist or radical organizations, suggesting that conservationists should perhaps not be considered part of the movement.*

KEY WORDS: Environmental movement, social movements, social network analysis, collective identity

Introduction

The central aims of this paper are to illustrate the value of 'relational approaches' (defined below) to network analysis in preference to 'positional approaches' (defined below) in the study of social movements, and to give some guidance regarding the type of networking required in order to call a social phenomenon a movement. 'Relational approaches' are based on the actual patterning of relations in a social network, whereas 'positional approaches' focus on underlying social 'structures' or positions in a network, rather than relations, in which organizations can be structurally equivalent and placed into 'blocks' without necessarily having a relationship with each other. The latter approach, which tends to be the methodology preferred by most social movement network analysts, is problematic

for a number of reasons, in particular because of its deterministic nature; it suggests that social relations are mysteriously pre-given and are the source, rather than the outcome, of behavioural conformity or shared viewpoints.

Because an essential step in any research is to be clear about the object of study, the paper begins by discussing definitions of social/environmental movements, in particular highlighting the centrality of networking in movement definitions. Whilst networking is often stressed as an essential ingredient of movement dynamics, few scholars have ever stipulated the type and intensity of networking that must exist in order for social phenomena to qualify as movements. This paper stresses that network links must be more than cursory, and should involve *shared engagement in collective action* in order to have a complete recipe for a social movement. The data are drawn from a survey of 149 environmental movement organizations in London, and therefore the paper also informs us about environmental movement dynamics in England's capital city.

What is the Environmental 'Movement'?

Unfortunately, defining the environmental movement is far from a straightforward task. This is not only because the environmental movement is fluid and amorphous but also because scholars have, in a more general sense, different notions of what constitutes a social movement. Resource mobilization theorists, for instance, tend to focus upon formally organized and partly institutionalized social movement organizations (e.g. McCarthy & Zald, 1977; Diani & Donati, 1999), whilst this would be anathema to some new social movement (especially Melucci, 1989, 1996) and political process theorists. The latter group of theorists often insists that social movements are disorganized and non-institutionalized entities.

In practice, the distinction between institutionalized and non-institutionalized organizations is arbitrary because both classically defined non-institutional social movement organizations (SMOs) and more formal organizations, often known as pressure groups or NGOs (non-governmental organizations), seek to influence policy using direct and indirect means. In practice, the terms 'SMO' and 'pressure group' are frequently used interchangeably. Rawcliffe (1998), for example, talks of 'environmental pressure groups' in reference to some of the environmental organizations that Rootes (2000) calls 'environmental movement organisations' (EMOs). Over time, distinctions between pressure groups and movement organizations have been weakened to such an extent that is now commonplace to regard pressure groups, given that they meet certain criteria, as a part of social movements.

A further problem with a non-institutional definition of movements is that it would imply that organizations like Friends of the Earth (FoE), Greenpeace and the World Wide Fund for Nature (WWF) – organizations that closely match the characteristics of pressure groups as defined by Jordan & Maloney (1997) – would be excluded on the basis of their relatively involved level of engagement with the policy-making process. However, removing these 'large' and influential groups from a working definition of the environmental movement is inappropriate. They are dynamic, professional organizations, and can be regarded as agenda setters for the rest of the movement. Further, public perceptions of the environmental movement are shaped largely by these organizations because, by virtue of their specialism and professionalism, they attract the greatest degree of press coverage. According to Rootes (2003, p. 2):

> Such a restrictive approach [focussing on non-institutionalised protest] sits uncomfortably with common usage in which those inside and outside environmentalist circles continue to refer to the environmental movement as a present reality.

Having decided that pressure groups *can* be part of a movement, given certain conditions, we now need to discuss what those conditions are. In 1992, Diani (1992b) wrote a landmark article that teased out the commonalities shared by a multitude of scholarly definitions of movements. He concluded that there is convergence on three main points. Social movements, he claimed, are a *network* of informal interactions between individuals and organizations that engage in *collective action* on the basis of a *shared identity*. Therefore, according to Diani, organizations, whether they are formal, informal, institutionalized or non-institutionalized, can only be considered to be part of a movement if they are *networked* to other organizations that engage in collective action on similar issues. It is certainly true that, despite the lack of consensus on what constitutes a social movement, or indeed even the environmental movement, most scholars agree that networking is a key part of the definition, and this conceptualization is growing in popularity (Diani & Eyerman, 1992, pp. 7–10). Diani (1992b, p. 18) goes so far as to suggest that to understand a movement properly requires due consideration of interaction, otherwise research becomes over-focused on mobilization processes and organizational characteristics.

Rootes' (1999, p. 3) definition of the environmental movement is therefore a useful and practical one: 'broad networks of people and organisations engaged in collective action in pursuit of environmental benefits', especially if we recognize that the networks and organizations may be formal or informal, and that those involved use a wide range of institutional and non-institutional tactics. However, these definitions imply that networking need only be *informal*. This paper challenges the idea that weak and informal network links between those seeking environmental benefits are enough to make a movement.

Methodology

Identifying the Sample Using Realist and Nominalist Criteria

Given that the environmental movement consists of networks of both individuals and organizations, the focus of this paper on organizations is a compromise. Similarly to Rawcliffe (1998), it is assumed that those most likely to be committed and involved in the environmental movement are members, supporters or activists of particular environmental organizations.[1] I am not suggesting that those people who are environmentalists by virtue of their lifestyle (e.g. eco-communards, eco-urban squatters or even marginal cases like the wine bottle recycler) are not part of the movement, because that would clearly be incorrect in cases in which the individual has collaborative network links with other committed organizations and individuals.[2] Of course, organizations are also much easier to locate and survey than individual environmental activists, even if they are well networked. Therefore, for this research, the unit of observation was organizations, and Diani's (1992a) theoretical notion of 'social movement' was used as a basis for defining the limits of the environmental movement. The decision of whether or not to include certain environmental organizations was made using both realist and nominalist criteria.

The *realist* approach to defining network boundaries is based on actors' own interpretations of whether or not their organization is a part of the network in question.

In practice, this amounts to an organization claiming that it identifies with the rest of the network, and that at least one other network member views it in this light. Quite often, this kind of approach uses a snowballing technique. However, there is a lack of guidance with regard to the appropriate place to halt the snowballing procedure, and therefore, by nature of the method, 'it is scarcely informative to learn that a network constituted by a snowball sampling procedure is well connected' (Laumann *et al.*, 1983, p. 22).

In contrast, the *nominalist* approach is based on the researchers' own perceptions and constructs with regard to their theoretical interests (Laumann *et al.*, 1989 [1982]). This involves seeking out those actors (in this case environmental organizations) that are of interest, and finding out the extent of links between the parties. The nominal approach has been criticized for being restrictive because researchers' own theoretical interests can have the effect of artificially constraining the networks (Knoke & Kuklinski, 1982, p. 25).

For identifying organizations within the environmental movement it is commonsensical to follow the guidelines of Diani (2002a), and to begin with a nominalist approach and follow this up with a realist approach. Thus, I began by compiling a database of organizations that I perceived to be part of the movement. For this I used the Environment Council's *Who's Who in the Environment* (1999), Internet searches, community databases, visits to local studies libraries, local newspaper searches and environmentalist magazines. I signed up to various movement email discussion groups and newsletters, and carried out informal telephone interviews with activists.[3] The network's spatial boundary was Greater London because of the vitality of environmental activism in the capital, and because it has been under-studied. A questionnaire was sent to all identified national and regional environmental organizations within Greater London, as well as to local groups within two locales – the region immediately surrounding Heathrow Airport, and a chunk of southeast London surrounding the Greenwich peninsula. These spatial limits are indeed arbitrary, but were regarded as a necessity to keep a control on the network size, given the time and financial constraints of the research.[4]

Using nominalist criteria, 148 national organizations, 64 regional, 132 northwest London-based and 96 southeast London-based environmental organizations, with at least a surface appearance of being part of the environmental movement, were identified. This was followed up by a questionnaire that sought to find out whether these organizations really were, in a realist sense, part of the environmental movement. Four questions were asked:

1. Do you consider your organisation to be part of the environmental movement? *Yes/No*
2. What are the main aims of your organisation? (please paraphrase the relevant part of your organisation's constitution if it has one) …………………………………
3. Is one of your organisation's main aims to preserve or protect the environment? *Yes/No*
4. Is your organisation part of a network of environmental organisations? I.e. is your organisation in contact with at least one other organisation that is part of the environmental movement? *Yes/No*

If an organization's representative answered 'no' to question 4, they were asked to return the questionnaire without providing any further data. This was because, by a social movement definition, an organization without links to the rest of the movement cannot be regarded as

part of it. Thirty-two per cent of the 440 questionnaires that were sent to environmental organizations were returned completed. A further 6 per cent were returned unanswered, some with a message informing me that the organization had folded, others claiming that the organization was unknown at the address to which the questionnaire had been posted. This is to be expected given the nature of collective action. As Knoke (1990) suggests, the environmental movement, especially at the grassroots level, is known to experience periodic attrition and renewal as organizations fold when issues are resolved or activists 'burn out' and new ones form to cover new issues or take their place. Although it seems low, this response rate is not drastically lower than the expected average response rate of 50 per cent for SMO surveys (Klandermans & Smith, 2002), and Ansell's (2003) response rate for a similar survey of US EMOs at 40 per cent. However, not all respondents provided data on their network links. In all, 114 listed their five most important links with other environmental organizations at each of the national, London-wide and local (borough) levels.

Given the exploratory nature of this research, we need not be alarmed at the relatively low response rate. Having data from even a small proportion of potentially relevant cases does not prevent the carrying out of a useful exercise in the discovery of network patterns. It still enables us to get an idea of the patterning of relations between different types of EMOs. In addition, a selection of environmental activists and conservationists were interviewed in order to gain a qualitative insight into the reasons for the networking patterns that were discovered.

The patterning of relations between different types of EMOs was analysed using a 'relational' rather than 'positional' approach to network analysis, because of a number of inherent weaknesses of the positional approach, as discussed in the next section of the paper.

The Case for Using Relational Rather than Positional Approaches to Network Analysis

Positional Approaches

Positional (sometimes called 'structural') approaches to network analysis assume that it is the pattern of relations that results in given behaviours and beliefs, whereas relational approaches allow us to view the pattern of relations as a *result* of behaviours and beliefs rather than a *cause* of them. I prefer to conceive of homophily, attributes and behaviour as *determinants* of relational structures rather than vice versa (McPherson & Popielarz, 1992; McPherson *et al.*, 2001). Galaskiewicz (1979, pp. 84–85), for instance, attributes patterns in the money-exchange network between voluntary organizations in Tower Town (a pseudonym) to organizations' auspices. In his moral support network, value homophily leads to organizational proximity and organizations' scope of activities determines links in the information network. In contrast, the structural approach suggests that relations are mysteriously pre-given and are the source rather than outcome of behavioural conformity or shared viewpoints amongst structurally equivalent actors. For example, Ansell (2003, p. 142), in his clique analysis of seventy environmental movement organizations in the San Francisco Bay Area, suggests that network closure dampens enthusiasm for collaboration with local government structures. It could, perhaps more convincingly, be argued that a preference to bypass the state leads to counter-cultural networks that develop strong collective identities and become cliquey by virtue of their beliefs.

Positional approaches are based on the notion of structural equivalence, in which actors A and B have identical configurations of relationships and are placed into 'blocks' on that basis (Burt, 1983). The block would then be given a label, and the assumption would be made that these actors (in this case organizations) have shared characteristics as a result of their having similar patterns of interaction with others. However, pure structural equivalence rarely occurs in real data (Everett, 2002). Thus, analysts dilute the criteria for equivalence based on an arbitrarily selected value or qualitative interpretation of a hierarchical clustering diagram for which 'no objective standard can be invoked as to the value of alpha at which clustering should be halted' (Knoke & Kuklinski, 1982, p. 64). The 'alpha' refers to the number of iterations carried out, which is selected by the researcher (more on this below). Clustering is usually calculated using an algorithm called CONCOR, which produces clusters of actors based on approximate structural equivalence. It does this by correlating actors' configurations of relationships within a network against each other. Two actors with an identical pattern of relations get a score of one, and two with a completely different pattern receive a score of minus one. This matrix is called a structural equivalence matrix. As ones and minus ones rarely occur in real data – because actors have similar but not identical configurations of relationships, and some overlap in the patterning of the relations, CONCOR is used to identify similarities. This is done by continuing to correlate the correlations until the matrix presents itself in a neat one/minus one pattern. This shows the first layer of clusters. The process is repeated indefinitely until one obtains a configuration of clusters that fits some preconceived notion of the social structure of the network in question. It is standard practice to then determine whether the blocks identified through cluster analysis are related to each other using a cut-off density of the researcher's choice (Schwartz, 1977). This means that analysts can select a standard of 'structural equivalence' that conveniently supports their theories regarding network partitions. Diani (1992b, pp. 124–126), for example, admits in his analysis of twenty Italian EMOs that he halted the aggregation process at a level at which organizational characteristics and belief systems showed some significance in the resulting blocks. Where data are incomplete, or network boundaries are misconceived, reality can be dangerously misinterpreted.[5] Further, it is unhelpful for certain types of research because actors within blocks need not have relations with one another, just a similar profile of ties towards others. Thus, blocks are not cohesive subgroups – they may, indeed, completely lack in-group relations, and actors within them need not even be aware of one another's existence. The theory claims that this kind of network approach, which is most consistent with Nadel's (1965) conception of structure, is all explanatory, but in practice it often explains little. The work of Diani (1995, 2002b) is illustrative.

Diani's *Green Networks* (1995) analyses relations between ideological divisions of the Milanese environmental movement (excluding radicals). In this book, he uses a mixture of positional and relational analysis on visible and latent movement networks. The focus of this discussion is on visible inter-organizational ties and the positional analysis that inform the bulk of his findings. Structural equivalence is used to identify the 'logic' behind the alliance structure of forty-two EMOs. Using an undefined definition of structural equivalence, which may have been influenced by his own interpretation of the 'logic' of the alliance structure, five positional blocks were identified. Block 1 consisted *mostly* of major organizations (including WWF), Block 2 *mostly* of local groups, Block 3 was defined by adherence to a specific local campaign, Block 4 was *mostly* animal rights groups and Block 5 was a 'residual position', consisting of the debris from the rest of the

network (pp. 117–118). These blocks are not totally coherent with their labels, nor rigorously defined. Using standard statistical modelling, he proceeds to show that the key factors influencing these network positions are degree of formal organization (levels of membership and having an office) and a focus on urban issues (traffic, urban planning and protecting buildings) (p. 119).

Although his preliminary relational analysis suggested that organizations with similar characteristics tend to choose each other as partners (p. 103), positional analysis contradicts this by indicating no polarization between political ecologists and conservationists, despite different ideologies. However, it is not surprising that the positional analysis yields these results. The equivalence blocks need not necessarily be robust and are very unlikely to be strictly equivalent. The fact that each of the five groups contains conservation *and* political ecology groups (i.e. Block 1 – major organizations – includes political ecology and conservation groups including WWF, Block 2 contains local political ecology and conservation groups, Block 5 contains a mixture of 'residual' organizations etc.) means that 'framing' is hardly likely to contribute significantly to this configuration of blocks that each contains a mix of ideologies within them. The reason why Diani finds so little support for his hypotheses seems to be because the methodology does not suit his purpose. Interrelations between conservationists and political ecologists may have been better calculated by a simple count of ties that conservationists extend towards political ecologists and vice versa and to see whether there is bias over and above chance expectations in this outcome. The same could have been done for cooperation between new middle-class-based SMOs and according to organizations' perceptions of their political opportunity structure (POS)[6] – other hypotheses for which he finds no support. Diani preferred to place organizations into apparently spurious 'equivalence' blocks and to statistically test the effect of framing and other social movement theory (SMT) variables on network positions.

Diani's (2002b) block modelling of 124 Glaswegian ethnic/minority, community, social exclusion and environmental NGOs shows how approximately structurally equivalent block configurations do not always cohere with the action and issues of the organizations. Although most EMOs ended up in the same block (possibly by virtue of the value of alpha at which clustering was halted), the 'social exclusion' block included the RSPB, ethnic/minority NGOs were distributed evenly throughout the three blocks and the leftovers were conveniently labelled with the catch-all phrase of 'community action'. If he had statistically tested the effect of variables such as ideology or issue basis on the block model configuration it is likely that these would have been insignificant because of the range of groups within each block.

Relational Approaches

Relational approaches are not based on structural equivalence but on the actual patterning of relations. Thus, the problems associated with reifying the action/issue basis of networks, the mislabelling of blocks and the subjective nature of non-pure structural equivalence are avoided. Thus, this paper focuses on *patterns of networking* between different types of environmental movement organizations, and discusses the extent to which they appear to have impacted current configurations of *relationships* (not *positions*). Network relations are not seen as answers in themselves but as patterns requiring interpretation. To avoid structural determinism, the emphasis is on seeking to explain

network patterns found using counts of ties that organizations of a particular type extend to others of a particular type. This approach allows for behaviour to influence network relations as much as network relations govern behaviour.

Here I will introduce the relational network analysis procedure that I have used for comparing the intensity of ties between and within conservationist, reformist and radical EMOs in London.[7] Based on their websites, and on information provided in the survey, organizations were classified as being conservationist, reformist or radical, based on the assumption that these three are more or less mutually exclusive. Drawing on similar distinctions made between types of environmentalism in previous studies (e.g. Rucht, 1989), I suggest that conservationists seek to preserve or protect the environment by means of practical projects or legislation, reformists seek wider spread environmental improvements thought incremental political gains, whilst radicals seek to bring about direct change through direct action or alternative lifestyles.

Although organizations were also asked about the information-providing and -receiving ties they have with others, the first part of the discussion focuses only on collaborative ties. This is because sharing of information is too weak a network link to form a real movement dynamic, and because collaborative networks allow us to consider the extent of shared collective action – another important dimension of any 'movement' (cf. Diani, 2003).

After identifying the main component[8] of the collaboration network, which consisted of fifty-one conservationist, seventy-eight reformist and six radical organizations, the actors were partitioned, or put into 'ideological blocks', according to their conservationist, reformist or radical nature, rather than into approximately structurally equivalent blocks as one would in a positional analysis. Counts of entries in the partitioned matrix have been calculated as percentages of ties from each 'faction' of the movement, showing the extent to which each category of organizations extends ties towards other groups in the same and other categories. The density figures themselves were not used because of problems encountered when comparing different sized networks or blocks within networks.[9] The result has been translated into a three-dimensional graph to allow for proportions of ties between environmental groups with different ideologies to be easily visualized.

Results

The partition results suggest that the majority of 'important' collaborative ventures are with reformists, regardless of the type of organization that initiated the tie. Radicals listed only seven ties, with four directed towards reformist organizations and three shared with other radicals. There is a notable absence of collaboration between conservationist and radical organizations (see Figure 1).

The prevalence of reformist organizations in collaborative ventures is probably due to their presence on a broader range of issues, or specialism on a single issue, which allows all their resources to be deployed to that effect. The radical environmental movement consists of smaller organizations, usually having fewer resources, a higher degree of issue and action specialism, and a more effective division of labour. For example, the Wombles, Peoples' Global Action, London Rising Tide, London Indymedia and London Genetix Engineering Network are phoenixes from the ashes of the late Reclaim the Streets (RTS) and they all have differing foci or means of action.[10] These groups appear to consist of small numbers of busy and committed activists and the labour is very much divided according to issue or preferred tactics. For instance, activists from the Genetix Engineering
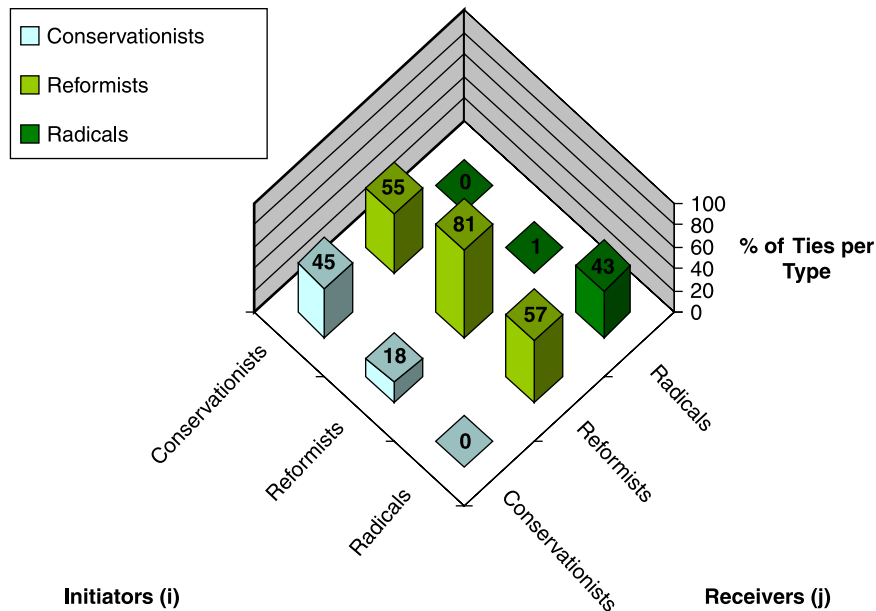
Figure 1. Collaboration network by organizational type

Network will be fairly unlikely to collaborate extensively with London Rising Tide because the former focuses on GM crops and the latter on climate change. The activists, some of whom work full time on their pet-issue of concern, are limited in time, resources and knowledge to be able to cooperate with others campaigning on a different issue or providing a different logistical support role. However, radical GM activists have, and frequently do, work in collaboration with reformists like Greenpeace. Unlike its radical counterparts, Greenpeace has the time, resources, money and manpower to commit to several issues at once (Sauven interview with Seel, 2001). Rather than attributing network links to a quest for ideological purity, collaboration can become an issue of practicality.

Although organizations such as FoE and Greenpeace are partially motivated by nature and biodiversity concerns, they do not specifically campaign on them but on broader issues such as reducing resource use and challenging corporate power (FoE), and preventing the growing of GM food and campaigning on toxic waste (Greenpeace). All these projects contribute importantly, yet indirectly, to conserving biodiversity. Whilst the campaigns of reformists often have overarching positive environmental objectives with recourse to biodiversity and nature protection, the management of nature reserves is perhaps too trivial or small scale for organizations like FoE and Greenpeace, who focus instead on the macro issues,[11] leaving the nature-based local level to more suitably qualified specialist conservationists. Other reformists are single-issue specialists, for example the Campaign Against Climate Change and the Real Nappy Network, or NIMBY-motivated, and find countryside issues outside of their ambit. Thus, conservationists may collaborate in reformist actions of multi-issue coalitions, but reformists rarely return the favour by participating in specifically conservationist events that they may regard as important but aside from their main foci. That conservationists may regard collaboration efforts with

reformist organizations as important can be interpreted as a function of the fact that conservation organizations are increasingly realizing the links between nature protection and broader environmental issues.

Especially, there is a noticeable absence of ties from radicals to conservationists and vice versa. On the 1990s anti-roads protests there was minimal conservationist intervention:

> ... there was an endangered snail that was found along the Newbury route, a tiny little snail and there was an idea that possibly ... they would have to stop the route going that way, but that didn't happen – but they did have to move the snails and I am not sure which group actually did the moving. It may have been the Wildlife Trusts or somebody like them ... But they weren't there on the ground, they were more to sort of consult ... But I can't think of any conservation organisations that were there officially. (Freeman (FoE/EDAG) interview, February 2004)

Where conservationists assist radicals, this is likely to be in the provision of information, or specialist conservation tasks, such as species monitoring or relocation. At the time of fieldwork, there were no specific site battles involving radical direct action camps within London, hence reducing the scope for collaboration between conservationists and radicals. Not all conservation organizations engage in site battles in any case. For example, most of the work of local conservationists is onsite at a local nature reserve, precluding the need for extensive networking.

In addition to calculating the frequency of ties within the partitions, inbreeding scores have been calculated for each partition for each of the collaboration and information-sharing networks using Skvoretz and Agneessens' (2003) SPSS Syntax Inbreeding programme (Table 1).[12] Inbreeding is 'when people [or organizations] tend to associate (over and above chance expectations) with others like themselves on the dimensions [observed]' (Skvoretz, 1991, p. 275). The concept of inbreeding expands upon Blau's (1977) distributional theory of social structure. Blau argues that inbreeding occurs along social dimensions of interest. The absence of inbreeding is as important as its presence because it is associated with seizing opportunities to associate with others outside immediate social groupings. Within the total population, just as 'increasing heterogeneity increases the probability of intergroup relations' (Blau, 1977, p. 80), so does a homogeneous population mean that inter-group relations are less likely, and inbreeding bias estimates are likely to be higher. This part of the paper discusses inbreeding scores in the information provided,[13] information received *and* collaboration networks.

As expected, especially high inbreeding biases are present amongst reformists in the collaboration network – as suggested above, many reformist organizations are multi-issue, or formed to fight a specific, often urgent, campaign. There were also high biases amongst conservationists in the information-provided and information-received networks.

Table 1. Organizational identity inbreeding biases

	Collaboration network (%)	Information-provided network (%)	Information-received network (%)
Conservationist	26	70	75
Reformists	64	2	4
Radicals	38	30	0

This could be because conservationists are likely to require specialist information about habitat and species conservation from other like-minded organizations, but their work may be site specific to a local nature reserve and provide little scope for collaboration. Conservationists share more information with other conservationists than any other type of group, more so than they collaborate. This amounts to sharing of information and helps to explain why conservationists tend to collaborate in actual projects only to a small extent, but share information much more frequently.

The sample had too few radical organizations to draw healthy conclusions about their inbreeding tendencies. However, an interview with Coleman (EDAG) indicates that collaboration inbreeding biases would likely be high amongst radicals:

> There is lots of interaction with Earth First! groups around the country … the strongest links we have are amongst activist networks and then a small amount of interaction with FoE recently over the Baku Ceyhan … (Interview, November 2003)

These data suggest that conservationists and reformists have different identities, especially given the high inbreeding biases shown in each network whereby reformists have a 64 per cent likelihood of choosing other reformists to collaborate with over conservationists, and conservationists have a 70 per cent chance of providing information to other conservationists, and a 75 per cent chance of receiving it from others like themselves. This means that the construction of the cognitive praxis of conservationists is biased towards conservationist interests, and not necessarily shared with other players in the environmental movement.

If we take the 'shared identity' aspect of Diani's definition of social movement seriously, we could conclude that conservationists are not really part of the same movement as others within the environmental movement. Indeed, this is the approach that Doherty (2002) takes in his work on the Green Movement, although he excludes conservationists on the basis of their not being engaged in the types of action that result in a change in a social order. Conservationists' failure to grapple with issues that have potential to change the social order could be what deters them from engaging and sharing information with their counterparts. Although the sharing of information is important in the development of a cognitive praxis for the environmental movement, is it a sufficient enough network link to qualify as a movement dynamic?

How Networked do SMOs Have to be to be Part of a Movement?

Diani (1992b) suggests that a movement is an informal network. But what kind of network links do they have to be? At a glance, it would appear that Diani (1992a) implies that organizations are expected to engage in joint collective action to be part of a movement and therefore that they must all be part of the collaboration network to be party to it. However, Diani's definition is much looser than this, and arguably too loose.

Diani (1992a) suggests that a movement is made up of a network of organizations and individuals with a collective identity that engages in collective action using semi- or non-institutional channels. The way in which Diani defines collective action is interesting. He is not (at least in an early version of his definition) suggesting that every organization has to have a collaborative network link to at least one other organization in a network in order to be part of a movement. The suggestion is that collective action is two or more

individuals engaging in a protest activity and that these individuals be linked to others in the network who need *not* be participating in that same action. The links between organizations can be informal or highly structured, frequent or infrequent, intense or cursory. These links, he suggests, mostly involve the sharing of information, expertise and materials, and are what lead movements to develop 'broader senses of meaning' (1992b, p. 8).

However, if the links are infrequent, brief and relaxed, they may amount to nothing more than a friendship between two people who may not share interests, and will not necessarily give the movement a sense of unity through shared meanings. The link may be just a brief consultation of a webpage, which could constitute a network link sufficient to tie people with a similar concern, but engaging in a completely non-compatible form of action, into the movement. Such cursory treatment of 'information received' is a very weak network dimension to insist on. This problem is mostly avoided in this research because the question asked for the top five important providers of information – however, a group with few information-providing sources that looks at FoE's website just once a year is likely to list this as an important source. Such interaction is informal, it may be infrequent, but it definitely involves an information link between organizations. It is a misleading measure because most people who are subscribed members of organizations experience the information they receive as members in a similar fashion as White (CPRE Senior Development Officer, interview, October 2003): "Well, as a fairly typical member of these organisations, I don't read the stuff properly and possibly for not until about six months later."

Information from other organizations tends to get stockpiled, whilst the work demands of their own organizations and routines of everyday life are prioritized.

If network links can consist of a simple exchange of information between two organizations, this means that a member of the Wildlife Trusts receiving a magazine from the Butterfly Conservation Society would count. However, when activists receive information from other organizations, they do not necessarily find it particularly informative or useful. According to Waugh (Volunteer Coordinator, LWT, interview, June 2003), much of the information she looks at from other organizations is 'fairly glib ... and designed for a public audience and not of much use'. Similarly, Robertshaw (voluntary warden, CWT), mostly finds the monthly glossy magazines she receives unhelpful to her conservation work:

> Mostly because we are at a stage where if we need information, we need specific information. And these magazines are for a public audience ... they don't tell you how to do butterfly transects ... because that would be deadly boring for the public. (Interview, February 2004)

Diani's (1992a) suggestion that the network dimension of a movement can be informal and irregular is too weak, and his idea of collective action needs strengthening – collaborative networks bind a movement together much more than information exchange does. Besides, information often flows only one way and has no effect. If it is stockpiled, ignored or is too basic then it is clearly not leading to the development of 'broader senses of meaning' (Diani, 1992a, p. 8). To be a movement, its components must *share* in at least some actions and events rather than just sit on information. Although engagement in collective action is part of Diani's definition, he does not insist on a collaborative network. Collaborative interaction should be more important than informal networking in definitions

of a movement. At the very least I think that we should insist that there is collaboration, or at least two-way sharing of information, to be part of a movement.

Diani's suggestion that overlapping memberships are a network link (1995, p. 4) is a weak assertion for similar reasons. This would mean that we have to conceive of the RSPCA as part of the environmental movement if a member of staff was also a supporter of Greenpeace. For similar reasons, this is too weak a basis on which to ground a theoretical definition of social movements. Although some activists may have a holistic view, many may see their campaigning interests as separate concerns.

Since 1992, Diani has sharpened up his definition (2002b; Diani & Lindsey, 2003), becoming much more prescriptive about how a movement should be defined and the types of network links it must have. In terms of interaction, social movements, he suggests, 'consist of *innumerable exchanges* between individuals and/or organisations, which involve *discussing ideas*, *exchanging information*, *pooling resources*, *sharing emotions*, *engaging together in acts of defiance and social criticism*' (Diani, 2002b, p. 3, emphasis added). He does not specify whether or not all these types of interactions must be present to qualify as a social movement but, as I do, emphasizes that we must focus on collaborative links that he calls 'collective efforts'. Movements, he says, engage in conflict (problematically excluding many 'cultural conflicts', and solutions-based campaigning by insisting on a specifiable opponent), collective action, are networked and have a collective identity (2002b, p. 4).

Diani (2002b) measures 'collective efforts' by organizations' co-attendance at public campaigning events. He selected attendance at three such events out of twenty-six in his study of the Glaswegian NGO-field to qualify as engagement in collective efforts. This is a poor measure because such events are not always organized collectively and can be organized centrally by a single organization. Thus, organizations could be party to the same event but have no joint role in organizing it, be ideologically opposed to each other, or even, if the event is large, not see one another. Public campaigning events chosen by Diani included, for example, an Asian Youth Festival, a City Council Cultural Diversity Meeting, an Open Space Event on Fighting Police and Racism, and an Open Space Event on City Council's Equality Policy. For Diani, attendance at any three of these events would indicate a 'collective effort'. He assumes that this measure tells us that collaboration is sustained beyond short-term coalitions that he does not view as part of a social movement dynamic because they apparently lack collective identity. However, even if coalitions are short term, they sow the seeds for collaboration on other projects and indicate long-term collaboration to a greater extent than attendance at one-day events. For instance, the Baku Ceyhan Campaign coalition, formed to protest against BP's gas pipeline between Azerbaijan and Georgia, has created network links that have endured and resulted in the No New Oil Coalition, and is itself a project of its forerunner, the Ilusu Dam Campaign.

In his 2002b paper, Diani measures collective identity by multiple memberships that he argues 'provide an indicator, no matter how rough of whether core activists perceive two organisations as compatible and close to the point of sharing their individual commitments between them' (2002b, p. 14). Multiple memberships, he claims, are 'channels for the circulation of information [and] resources' (Diani, 2004, p. 348). However, memberships may be short lived and often entail little more than paying a subscription and receiving a newsletter, thereby representing a much less significant form of movement interaction than coalitions. Individuals may have multiple interests that need not be totally compatible with one another. 'Bloggs' might be a member of an ethnic rights group and an environmental

group, but this does not signify a collective identity in any sense. It certainly does not result in an 'interactive and shared definition' to problems and solutions because the issues are very distinct. According to Diani (2003, p. 303), formal coalitions do not have a collective identity, do not lead to connections between activists in the longer term, nor apparently do they 'concatenate in broader systems of solidarities and mutual obligations'. Yet they clearly do this to a greater extent than most multiple memberships do. To use multiple memberships as an indicator of collective identity they must at least be *active* memberships on the same or related issues. In this latter sense, multiple memberships are important and can be indicators of collective identity.

For the purposes of defining the environmental movement in London, the collaboration network is the most convincing measure of its reality. It is certainly more meaningful than participation in one-day events, (most cases of) multiple memberships and (perhaps cursory) information-passing links. However, information links do give us some idea of the networking that may or may not lead to the development of shared concerns (or collective identities).

Conclusion

This paper has used a relational approach to network analysis in order to non-deterministically explore links between different types of organizations that are generally regarded to be a part of the 'environmental movement'. The 'relational approach' was chosen over the 'positional approach' because it allows us to systematically assess the extent to which different ideologies impact upon relations in a more convincing manner than positional approaches. Positional approaches tend to assume that the configuration of relations leads to behavioural conformity, and often result in misleadingly mislabelled blocks of a mixture of types of organizations that are assumed to have universal characteristics, which they often do not.

To be a part of the environmental movement we would expect organizations nominally defined as part of the environmental movement to have shared concerns about the environment, to engage in collective action, and to be *networked collaboratively*. The evidence from the survey of environmental organizations in London suggests that conservationists tend to have very different, specialist concerns, evidenced by their lack of information sharing with the rest of the movement. Reformist groups, although they share information widely, have very high inbreeding in the collaboration network, indicating that radical organizations and conservationists tend *not* to join in with reformists' collective action events. Although the number of radical organizations was very small, there is some evidence from interviews that radical organizations tend to work in relative isolation from the rest of the movement. Thus it appears that Jordan & Maloney (1997) are probably correct in their assertion that the environmental movement actually consists of separate sub-movements. It also appears that Doherty (2001) has relatively accurately defined a 'movement' with what he refers to as the system-challenging Green Movement, which excludes conservationists.

Acknowledgements

Notes

1. I use the term organizations in a loose sense here, recognizing that many radical activist groupings prefer the much more fitting term 'disorganization'. For the purposes of this paper, 'organization' refers to all types of environmentalist groupings whether formally organized or fluid entities.
2. For example, McAdam notes in his work on Freedom Summer (1986, p. 66) 'the problem is that the member/non-member distinction may miss the greater number of people who are, by some definition active in the movement'.
3. Galaskiewicz (1979) used a similar approach to identify community organizations in 'Tower Town'.
4. Even though the spatial boundary is arbitrary in network terms, the regions were chosen carefully for the balance of activism in those areas. Southeast London was the site where I conducted previous research and I uncovered a broad range of types of environmentalism. It has an especially vibrant radical activist network and squatters' scene and was the spawning ground of the Reclaim the Streets party and protest phenomena. Heathrow was selected because of the very pressing environmental concerns generated by the apparently ever-expanding airport, notably the controversy concerning the building of a fifth terminal and a possible third runway.
5. See White *et al.* (1976)q for a step-by-step guide to block modelling structurally equivalent positions, Sailer (1978) for a description and critique of the approach, and Burt (1983) for a comparison with cohesiveness.
6. Although Diani (1995, p. 15) suggests that an organization's perception of its POS is important, he does not allow for the fact that different groups face different opportunities, depending on their choice of strategies and target.
7. See Scott (2000) for a complete yet concise introduction to the procedures involved in social network analysis. Wasserman and Faust (1994), though, have produced the 'social network analysis bible' for those readers especially interested in the methodology.
8. A component is a connected sub-section of a sociogram. The main component of a network is always the largest one. A component analysis allows disconnected sub-components to be identified, and these can be removed from the network to allow a broader range of social network analysis to be performed.
9. Friedkin (1981) shows how comparing the density between networks (and, by implication, blocks) of different sizes is problematic. He states that density as a measure of cohesion is inaccurate because it 'belies the degree of connectivity' (p. 45) and it does not equate well with structural cohesion in terms of the number of triads. For instance, a network with twenty actors and a density of 0.004 has an average of 0.05 pairs joined, compared to a network of sixty actors with the same density and an average of 0.77 pairs joined. Small increases in low densities are more significant than much larger increases in higher densities.
10. Some of these organizations co-existed with RTS. Even where this was the case, RTS members formed the core membership of these newer groups.
11. This excludes local FoE groups, who do campaign on local, yet mostly reformist, issues.
12. See Skvoretz (1991, especially pp. 283–284) for the equation to calculate differential inbreeding. Differential inbreeding has been used because it 'usefully allows each group to have its own inbreeding bias' (Skvoretz, 1991, p. 282).
13. The information-provided network was constructed from the question that asked: 'Please list the 5 most important environmental organisations [at each of the local, London-wide and national levels] to which your organisations has provided information or advice in the last 12 months. The information-received network was worded similarly, but asked for the most important EMOs from which information or advice had been received.

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