

# **SOCIAL MOVEMENTS AND CURRENT NETWORK RESEARCH**

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## **I. Introduction**

A closer look at current academic research suggests a sweeping paradigm shift towards network thinking. This outburst of scholarly activity spans very disparate research fields, ranging from complexity theories and traditional hard science to organizational theory and foreign affairs policy. Social movement research is not an exception to this trend. Influenced particularly by the analysis of social networks, current research in social movements uses network concepts and tools to define, map and understand the behavior of social movements.

This paper is an attempt to explain the different approaches to network theory, starting from the dominant perspective of social network analysis and its applications in social movement theory. To enrich this framework of analysis we further explain recent theoretical developments in other fields of enquiry. The goal is to clarify the notion of networks and map the field of networks research. This paper will further attempt to piece together elements from different approaches to furnish an integrated approach to the study of social movements. How do these developments affect the data sought and the questions asked by the researcher?

This will help us understand the theoretical and practical implications of the networks approach for our specific object of research, namely the anti-globalization movement and its relationship with the Internet. In that respect, the case of the anti-globalisation movement is going to be used as an illustrative example of the problems that current social movements pose to researchers and of how network theories can help us in resolving them.

## **II. Case Study: The Anti-globalisation Movement, the Internet and the Network Metaphor**

The shift of social movement research towards network theory is in part warranted by the nature and characteristics of current social movements. According to the academic literature on the subject, the anti-globalisation movement constitutes a perfect example of current social movement trends. This is because it is characterized

by ideological diversity, loose organizing and a global outlook. It is also claimed to be an Internet-based movement, owing much of its flexible structure and ideological make up to its use of the Internet. From a theoretical perspective, the notion of networks is by far the most common metaphor used to explain its workings and characteristics. In that respect, the concept of networks also serves as the theoretical glue to tie the anti-globalisation movement and the Internet into the same theoretical argument. Being both characterized as a 'network of networks', their relationship is so self-evident that it is considered as a given. The following section is an attempt to outline and critique the claims about the anti-globalization movement and its relationship with the Internet, as well as the network metaphors used to explain them.

### *Characteristics of the anti-globalisation movement*

The anti-globalization movement made its first impact on public consciousness during the Seattle meeting of Trade Ministers in late 1999. "The Battle of Seattle" was followed by demonstrations in almost every summit of a transnational economic organization or major political power, including the International Monetary Fund (IMF), the World Bank, the FTAA, the EU or the G8 (Van Aelst 2002: 5-6).

The anti-globalization movement is not opposed to globalization per se, but to the way it is shaped by neoliberal concerns, disregarding human rights and environmental issues. International economic institutions, such as the IMF or the World Bank, responsible for regulating the neoliberal globalization project, constitute the focal point of this fierce protest activity. Protestors challenge the form of these institutions, their internal structure and decision-making procedures, as well as the content of their policies, which are guided by the principles of free-market and world trade deregulation (Van Aelst 2002).

But despite its extensive publicity, little is known about the actual workings of the movement. How is it organized? How does it pick its targets and methods? Which are its ideological orientations? Academic literature on the subject suggests that the movement is characterized by its global scale, loose structure and mélange of different ideological orientations.

First, the anti-globalization movement is global in its scope and nature as it has to match the scope and nature of its targets: international institutions and multinational corporations. With slogans such as 'Globalise the resistance', the anti-globalization movement has taken on the concepts of 'one world' and 'global solutions' (Anheier, Glasius et al. 2001). Its protests span the globe from Seattle, to Melbourne, to Prague, to Florence as they "wander around the world... closely shadowing the periodic landing of global flows of wealth and power in their meeting places" (Castells 2001: 142).

Secondly, the anti-globalization movement can be seen as a *mélange* of different ideologies. This is because its campaigns do not fit neatly in the single-issue category but seem to push forward a more multi-issue agenda. Indeed, the anti-globalization movement seems more as an aggregate of very diverse organizations and causes. This was exemplified by the G8 summit in Genoa in July 2001, where “an estimated 700 groups attended the Genoa Social Forum, ranging from traditional trade unions and charities like Oxfam and Christian Aid, as well as groups concerned with peaceful protests about globalization, the protection of human rights, environmentalism, the peace movement, poverty and debt relief for developing nations, to the more radical anarchists and anti-capitalist forces at the forefront of the ‘black block’.” (Norris 2002). Thus, its agenda is inevitably multi-issue, consisting of very different and often oppositional issues and goals. For many, this is an indication of ideological shallowness and confusion, which may prevent the movement from communicating a clear and coherent sense of its common cause (Bennett Forthcoming). Others, however, consider this diversity as precisely the key to the movement’s effectiveness and mass appeal, especially among the younger generation.

Thirdly, the global scale and ideological diversity of the movement are sustained through a flexible, non-hierarchical and loose mode of organization. According to Castells, the anti-globalization movement is a perfect example of such a coalition: “The anti-globalization movement does not have a permanent, professional organization, does not have a center, a command structure, or a common program. There are hundreds, thousands of organizations and individuals, around the world, converging in some symbolic protests, then dispersing to focus on their own specific issues – or just vanishing, to be replaced by new contingents of newly born activists” (Castells 2001: 142).

### *The anti-globalisation movement and the Internet*

The anti-globalisation movement is considered by many as an ‘Internet-based’ movement, using the Internet extensively to organize protests and events and to communicate its goals and ideology. As Castells puts it, “[t]he anti-globalization movement is not simply a network, it is an electronic network, it is an Internet-based movement. And because the Internet is its home it cannot be disorganized or captured. It swims like fish in the net.” (Castells 2001: 141-2).

The first studies of the impact of the Internet on social movements were mainly concerned with its consequences as a new form of communication. Current research, however, considers the Internet not only as a communication medium but also as an organizational process in itself (Tarrow 2002: 15). According to Tarrow, “the suspicion

is growing among scholars that the importance of the Internet goes well beyond communication, to constitute a social network remarkably similar to the reticular structure of social movements... Since many social movements lack consistent, hierarchical organizational structures, these theorists seem to say, it is only a short step to regarding the Internet itself as a form of organization" (Ibid). As such, the Internet is thought to influence the characteristics of the movement itself, its structure, ideology and scale.

First, the Internet permits the organization of events and protests on a global scale, serving as a connecting mechanism between participants in different countries. It is thus considered as a prerequisite for the existence of the current networks of global protest (Ibid), allowing for the coordination of thousands of activists and permitting an international division of labour both prior to and during protests (Van Aelst 2002: 5).

Secondly, the Internet is thought to drive towards looser and less hierarchical modes of organization, which mimic its own loose and non-hierarchical structure. According to Bennett, "[t]he intriguing feature of each general characteristic of global activism is that communication practices are hard to separate from organizational capabilities, as activists increasingly operate in networks without walls, conventional leadership or membership, geographical or issue boundaries, or other aspects of conventional hierarchical organizations or formal coalitions" (Bennett Forthcoming). Organizing is very fluid and flexible, as Internet linkages create openings for new players to enter the field (Ibid).

It is further argued that "Internet-based transnational movements exhibit less ideological crystallization and more centrifugal tendencies than non-Internet based movements" (Tarrow 2002: 18). This is due to the "click-here" logic of the Internet, which can connect seemingly disparate ideas (Bennett Forthcoming). It also results from the low cost of networking which creates "a low threshold of idea expansion" (Ibid). This makes it more difficult for networked activism to develop core ideas, which may cause confusion and communication difficulties that prevent the movement from maturing (Ibid).

### *The network metaphor*

From a theoretical perspective, the concept of networks is by far the most common metaphor used to explain the workings and characteristics of the anti-globalization movement. This is hardly surprising as in current social movement theory the notion of networks has become central in the definition itself of what constitutes a social movement. For the anti-globalization movement in particular the networks concept seems to describe well both its loose organizing and ideological fragmentation.

Regarding the organising aspect of the movement, many scholars suggest that the movement is organized as a network of networks, an organization of organizations. More specifically, Tarrow notes that “[n]etworking was the fundamental organizing technique within the Seattle protests” (Tarrow 2002: 12), noting that “[t]he modal organizational form in transnational contention against international institutions is networks of organizations, at least some of which have histories of collaborative mobilization” (Ibid: 13).

Furthermore, this network structure can account for the ideological diversity or confusion characterizing the movement. This is because the network mode of organization enables ideologically disparate groups to unite under the anti-globalization banner and to plan common protests and events. However, “[w]hile networks can reduce the costs and conflicts often associated with bringing diverse players into issue and protest campaigns, they also may harbour intellectual contradictions that ultimately limit the growth of ideological or even intellectually focused movements. Rather than pushing toward ideological commonalities, activist networks more often function more as pragmatic information exchanges and mobilization” (Bennett Forthcoming)

More importantly, in a large part of anti-globalization literature the network metaphor is often used to bind the anti-globalization movement and the Internet in the same theoretical argument. In that respect, their relationship is considered as self-evident as “it is no coincidence that both can be labelled as a ‘network of networks’” (Van Aelst 2002: 16). Yet, more empirical data is needed to test these claims, as the anti-globalization movement and the Internet have so many characteristics in common that patterning the one onto the other can be deceptively easy. My research is an attempt to examine these claims, by studying the movement as a network of individual activists and organizations and by examining the role that the Internet plays within it.

But how should one go about in examining such claims? How can we study the ideology and organization of such a loose and diverse movement? As it became evident from the above, the available literature on the subject points to the network metaphor, as the concept that can adequately explain the different aspects of the movement. However, while this concept seems to provide a solid theoretical basis for explaining the movement’s function, ideology and organization, its application in social movement theory is still a contested terrain. The following section is an attempt to highlight the different approaches to network theory and social movements in order to provide us with a better conceptualization of our research questions and methods of research. Apart from the dominant social networks perspective, this survey revealed a multitude of network perspectives coming from a variety of fields, including complexity

and self-organisation theories, traditional hard science, such as physics or biology, as well as foreign affairs policy.

### **III. Current Approaches to Network Theory**

#### **1. Social Network Analysis**

The study of social networks began to take off as an interdisciplinary specialty in the 1970s, aided by the rapid development of discrete combinatorics, and particularly graph theory, and the availability of better computers (Freeman 2003). Since then its growth has been substantial, as “the social network approach has evolved into a set of theories, models, and substantive applications in many domains that have traditionally interested social scientists” (Koku and Wellman Forthcoming: 6).

“Network analysis is not a formal or unitary “theory” that specifies distinctive laws, propositions or correlations, but rather a broad strategy for investigating social structure” (Emirbayer and Goodwin 1994: 1414). It is closer to a “paradigm” or “perspective” rather than a predictive social theory (Ibid). Nevertheless, network analysis holds to some basic theoretical assumptions, shared by all its practitioners. Central to these assumptions is what Emirbayer and Goodwin call the ‘anticategorical imperative’. “This imperative rejects all attempts to explain human behavior or social processes solely in terms of the categorical attributes of actors, whether individual or collective” (Ibid).

Social networks analysis proposes that social behavior and processes should be “explained with reference to networks of social relations that link actors or “nodes”. The unit of analysis can be an individual person, a group, an organization or even the whole of ‘society’, as “any entity that is connected to a network of other such entities will do” (Ibid: 1417). In fact, network analysts often perform their investigations on both the individual and group level, as they believe that individual and group behavior cannot be fully understood independently of one another. Thus, “network analysis makes it possible to bridge the “micro-macro gap” – the theoretical gulf between microsociology, which examines the interaction of individuals, and macrosociology, which studies the interaction of groups or institutions.” (Ibid: 1418).

However, network analysis claims to be doing much more than simply mapping the patterning of relationships within society. More specifically, network analysts contend that “the structure of relations among actors and the location of individual actors in the network have important behavioral, perceptual, and attitudinal consequences both for the individual units and for the system as a whole” (Knoke and

Kuklinski quoted in Emirbayer and Goodwin 1994: 1418). In that respect, networks have both enabling and constraining dimensions, favoring certain types of behavior and restraining others (Ibid).

To uncover the patterning of relations and its enabling and constraining dimensions, network analysts rely extensively on the use of mathematics and graph theory. As Freeman notes, “[f]rom the outset, the network approach to the study of behavior has involved two commitments: (1) it is guided by formal theory organized in mathematical terms, and (2) it is grounded in the systematic analysis of empirical data.” (Freeman 2003). Nevertheless, it is worth noting that social network analysis often tries to overcome its reliance on quantitative measures by combining them with more ethnographic and qualitative data, taking into account the historical context of each case study (Breiger Forthcoming).

### *Social Movement Theory: the Social Networks Approach*

In recent years, social networks analysis has had an extensive influence on social movement theory and research. This influence concerns not only the definition itself of what constitutes a social movement, but also the operationalization of research questions and the choice of research tools and techniques. Hence, the interest of movement analysts in social networks theory is currently evident “in both the range of the research topics addressed, and the depth of the research results” (Diani 2000: 3).

Movement analysts turned to social networks theory in their search for a more concrete theoretical basis for the analysis of social movements. As Diani argues, “social networks may help us overcome a current paradox: namely, that for all the richness of empirical results, the methodological breakthroughs, and the increasing conceptual sophistication, we still lack a social movements theory proper” (Ibid: 5). By ‘theory of social movements’ he means “a set of propositions which explicitly address the analytical peculiarity of the concept of social movement vis a vis cognate concepts, and treat the concept as the building blocks of a distinctive theoretical argument.” (Ibid: 5).

In that respect, what seems to have been lost in previous theories is “the peculiarity of the relationship between action, identity, and organization which takes place in social movements” (Ibid: 8) and which differentiates them from other collective actors. More specifically, previous theoretical strands seem to overlook two dynamics which are essential to social movement activity. First, they do not seem to recognize that “a movement is a form of collective organization with no formal boundaries, which allows participants to feel part of broad collective efforts while retaining their distinctive identities as individuals and/or as specific organizations” (Ibid). Second, they seem to

disregard the importance of interaction and communication for the production of movement identities. Lacking in formal boundaries, social movements have a hard time defining their members. As a result, membership to a movement ultimately depends on the mutual recognition between participants. Hence, it seems that the above perspectives fail to capture the essence of the social movement experience: “being part in a conflict which is at the same time embedded in specific, “local” orientations, interest, identities, but at the same time exceeds their boundaries, while maintaining the freedom and individuality of specific actors” (Ibid: 8-9).

In that respect, the network perspective can offer a better conceptualization of social movements, one that captures more accurately their fluid and evolving nature. In this vein of enquiry social movements are defined as “a network of informal interactions between a plurality of individuals, groups and/or organizations, engaged in a political or cultural conflict, on the basis of a shared collective identity” (Ibid: 13). This definition provides a better theoretical clarification of the notion of social movements, as it distinguishes them from other collective actors or phenomena, such as ‘protest activity’, ‘movement organizations’ or ‘coalitions’. It also respects their dynamic and fluid nature and acknowledges the importance of interaction and communication. In addition, the flexibility of the concept “and in many senses its very ambiguity, enables researchers to deal with phenomena of change” (Ibid: 4). This concept can further be used to study social mechanisms, as it allows us “to focus on specific dynamics relevant to the spread of social movement activity” (Ibid). Finally, this definition can accommodate the notion that social movements are composed of a diversity of actors with different profiles, orientations, and agendas (Ibid: 17).

But how is the network concept practically applied in social movement research? First, social movement studies often adopt “the conventional view of networks as sets of nodes, linked by some form of relationship, and delimited by some specific criteria” (Ibid: 6). However, it still leaves some room for debate about what is a node, a tie or a boundary. In that respect, “[n]odes may consist of individuals, organizations, and eventually – if more rarely – other entities such as neighbourhoods... or states... They may also consist of events linked by persons, or as in some recent application, even of elements of speech” (Ibid: 6-7). Ties can be direct or indirect, weak or strong, single or multiple. In addition, the boundaries of the network “may be defined on the basis of realist or nominalist criteria... Nominalist criteria are predetermined by the analyst; in contrast, realist criteria include in a given network only those nodes that happen to be actually related to each other by some kind of relation” (Ibid: 7). To map and assess these characteristics movement analysts employ the familiar measures and research tools developed by social networks analysis.



### Limitations

Nevertheless, the networks approach to social movements is not without its limitations. In that respect, the criticisms bearing on social networks research can also be applied to this strand of social movements research. The main thread of criticism concerns the inadequate conceptualization of human agency and culture. In that respect, network analysis is often criticised for its structural determinism, which “neglects altogether the potential causal role of actors’ beliefs, values, and normative commitments” (Emirbayer and Goodwin 1994: 1425). Instead, it produces network ‘snapshots’ of social structure through time, paying insufficient attention to the historical mechanisms which dominated their emergence.

Another problem of social network analysis is “[t]he abstruse terminology and state-of-the-art mathematical sophistication” which seems “to have prevented many of these “outsiders” from venturing anywhere near it. The result has been an unfortunate lack of dialogue among network analysts, social theorists, and historical sociologists, and a consequent impoverishment of their respective domains of social inquiry.” (Ibid: 1446).

However, in recent years, a different vision of network analysis has gradually started to emerge, one “which does not emphasize empiricism and concreteness, and highlights instead the inextricable link between social networks and culture” (Diani 2003: 5). This line of inquiry is influenced by White’s seminal contributions and considers networks as “crucial environments for the activation of schematas, logics, and frames” (Breiger Forthcoming). “White (1992) considered discursive “narratives” and “stories” to be fundamental to structural pursuits, writing that “stories describe the ties in networks” and that “a social network is a network of meanings” (Ibid). “This perspective prompts a reflection on the relationship between the social networks and the cognitive maps through which actors make sense of and categorize their social environment and locate themselves within broader webs of ties and interactions.” (Diani 2003: 5). Nevertheless, this field is still underdeveloped, constituting a critical area of debate among social movement scholars (Ibid).

## **2. Networks in other research fields**

To complement the research framework proposed by social network analysis and enrich our understanding of networks, this section will attempt to provide a glimpse of

network concepts in other fields of enquiry. It can be argued that the past twenty years have seen a shift towards network thinking in a variety of fields, ranging from organization theory to physics, from American policy to French philosophy. Developments in these fields are interrelated and share many common assumptions. However, each one is focused on its particular line of inquiry, tailoring the concept of networks and its applications to the specific characteristics and demands of the field.

a. American policy – RAND Corporation

The RAND Corporation is a think tank founded in 1946 in California, “to provide the intellectual know-how for the military’s nuclear build-up” (Barabasi 2002: 143). Its work has been expanded considerably in the preceding decades and it currently advises the American government on a variety of issues, including health, education, criminal justice and international policy. In recent years, RAND has produced a series of publications on the rise of network forms of organization and their effect on international conflicts and American policy.

The RAND Corporation suggests that “the network form of organization is on the rise, deeply affecting all realms of society” (Arquilla and Ronfeldt 1996: 18). In that respect, networks are the last in a series of forms which have at times dominated the organization of societies. The key principle of the information-age network “is heterarchic collaboration among members who may be dispersed among multiple, often small organizations” (Ibid: 33). The purpose of networks lies in social equity and accountability. However, they can be hampered by identity and loyalty crises. According to Arquilla and Ronfeldt, network-type forms have existed throughout history, but their demand for dense communication between interacting members limited their development. This explains the current rise of networks, as the information and communication revolution of late 20<sup>th</sup> century has enabled the network form of organization “to gain strength and mature” (Ibid).

Arquilla and Ronfeldt propose that the impact of networks will be felt more by civil society actors and less by the state or the market. This is because networks are based on trust and cooperation and are thus more suitable to civil society organizations, whose functioning and ideology are conducive to these values. RAND analysts further propose that the emergence of networks has given way to a new mode of conflict, ‘netwar’, which is based on “network forms of organization and related doctrines, strategies, and technologies attuned to the information age” (Ronfeldt and Arquilla 2001). In that respect, terrorist and activist networks are more skilled in netwar than the

state or corporations, as they have more readily adopted network forms of organization.

Nevertheless, RAND's most interesting contribution to the current network literature is their identification of five levels of analysis for netwar actors, which can be used as guidelines for any inquiry into social movement networks. In that respect, the organizational level constitutes the starting point for any inquiry into civil society networks. This entails questions such as "To what extent is an actor, or set of actors, organized as a network? And what does that network look like?" (Ibid). To map the network under research and evaluate its main properties, analysts can employ the tools and techniques developed by social networks analysis.

A second level that should be examined is the narrative one. This entails an understanding of the narratives or stories that keep the network together. Such narratives "are not simply rhetoric - not simply a "line" with "spin" that is "scripted" for manipulative ends. Instead, these narratives provide a grounded expression of people's experiences, interests, and values" (Ibid). In that respect, stories have two major functions. Firstly, they "express a sense of identity and belonging - of who "we" are, why we have come together, and what makes us different from "them"" (Ibid). Secondly, "stories communicate a sense of cause, purpose, and mission. They express aims and methods as well as cultural dispositions - what "we" believe in, and what we mean to do, and how" (Ibid). Several approaches have been developed to analyze the narrative level, drawing from a broad range of fields, including political discourse, narrative paradigms, agenda setting, metaphors, frames and messages.

A third level of analysis is the doctrinal one, which requires us to determine which of the existing doctrines make best use of the network form of organization. "This level of analysis is very important for explaining what enables the members to operate strategically and tactically, without necessarily having to resort to a central command or leader." (Ibid). This can be achieved by having a set of guiding principles and practices or a doctrine which "can enable them to be "all of one mind" even though they are dispersed and devoted to different tasks" (Ibid). Arquilla and Ronfeldt identify two doctrinal practices which are particularly suitable to netwar actors: 'leaderless resistance' and swarming strategies (Ibid).

The fourth level of analysis refers to the technological and communication infrastructure available for the establishment of networks. This is a very crucial aspect, as the network form of organization is closely tied to the availability of information and communication technologies (Ibid).

The fifth and final level concerns the social underpinnings of netwar actors. This level entails an assessment of the personal friendships and bonds between network

participants. Such relationships underlie the successful formation of activist groups, as “[t]o function well, networks may require higher degrees of interpersonal trust than do other approaches to organization, like hierarchies” (Ibid).

### b. Actor-Network Theory

Coming from a more avowedly subversive stance than organizational theory or the RAND Corporation, theorists within contemporary science studies have developed a more post-modern approach to social networks (Breiger Forthcoming). To describe their theoretical perspective, analysts within this vain of enquiry have coined the “intentionally oxymoronic” term “actor-network” (Law 1999: 5). More specifically, actor-network theory is concerned with “how actors and organisations mobilise, juxtapose and hold together the bits and pieces out of which they are composed” (Law 1992).

An interesting contribution of actor-network theory is its conceptualization of social structure. More specifically, actor-network theory treats social structure as a verb and not a noun. It proposes that “[s]tructure is not free-standing, like scaffolding on a building-site, but a site of struggle, a relational effect that recursively generates and reproduces itself” (Ibid). Thus, ANT theorists view social structure as a fluid process, whereby “no version of the social order, no organisation, and no agent, is ever complete, autonomous, and final” (Ibid). In that respect, there is no single social order, with a single centre of command and stable relations. Instead, there is a plurality of orders and resistances.

In addition, actor-network theory proposes an interesting conceptualization of the micro and the macro. This conceptualization has always been a source of frustration for social research, as by having to focus on either the micro or the macro, sociological research has had difficulty producing a complete image of the object under research (Latour 1999). In that respect, actor-network theory proposes that the macro-social is neither an anonymous field of forces nor an overarching entity which makes sense of local interactions. Instead, it “refers to something entirely different which is the summing up of interactions through various kinds of devices, inscriptions, forms and formulae, into a very local, very practical, very tiny locus” (Ibid: 17). Thus, “[b]ig does not mean ‘really’ big or ‘overall’, or ‘overarching’, but connected, blind, local, mediated, related” (Ibid: 18). Therefore, the global and the local, actor and network designate two faces of the same phenomenon, meaning that “[i]n the social domain there is no change of scale” (Ibid). This is a very important contribution of actor-network theory “since it means that when one explores the structures of the social, one is not lead away from the local sites...but closer to them.” (Ibid).

### c. Meshworks, Hierarchies, Complexity and Self-Organization

The theoretical work of Deleuze and Guattari has been particularly influential in the more post-modern and philosophical strands of network theory, including the actor-network theory explained in the previous section. Their most salient idea is the metaphor of the rhizome, “a subterranean plant growth process involving propagation through the horizontal development of the plant stem” (Clever 1999). This system is contrasted to the “more familiar arboreal processes associated with the vertical, centralized growth of trees” (Ibid). The metaphor of the rhizome allowed Deleuze and Guattari to analyze human interactions in horizontal and dispersed networks and identify their main characteristics.

The distinction between meshworks and hierarchies underlies two alternative philosophies of life. “Hierarchies entail a degree of centralized control, ranks, overt planning, homogenization, and particular goals and rules of behavior conducive to those goals” (Escobar 2003). Meshworks, on the other hand, “are based on decentralized decision making...self-organization, and heterogeneity and diversity... It can be said they follow the dynamics of life, developing through their encounter with their environments (by “drift”), although conserving their basic structure.” (Ibid). Meshworks and hierarchies do not exist in pure form but in degrees. They can therefore co-exist in the same system and are dependent on each other, as one gives birth to the other (de Landa).

The theoretical perspective of Deleuze and Guattari is closely related to complexity theory and theories of self-organization. Complexity theory is “interested in discerning common principles to explain “the architecture of complexity” across all natural and human systems” (Ronfeldt and Arquilla 2001). To understand this architecture, complexity theorists are “delving into the structures and dynamics of biological, ecological, and social systems where networks are the organizing principle” (Ibid).

A very interesting strand of complexity theory is the science of self-organization. Self-organization theory is based on the notion that “simple beginnings lead to complex entities, without there being any master plan or central intelligence planning it” (Escobar 2003). Self-organizing systems are built according to bottom-up processes. “This is what is called emergence: the fact that the actions of multiple agents interacting dynamically and following local rules rather than top-down commands result in some kind of visible macro-behavior or structure” (Ibid). Thus, in self-organizing systems “[l]ocal turns out to be the key term” for understanding their power. (Johnson 2001: 74). In addition, such systems tend to become more intelligent and sophisticated,

as they are flexible and adaptive, learning over time and “responding more effectively to the changing needs of their environment” (Escobar 2003).

According to Johnson, self-organizing systems are based on five major principles. The first is an old slogan of complexity theory, which states that ‘more is different’(Johnson 2001). This means that in order for a system to become intelligent, a critical mass of participants and local interactions is needed for the bottom-up processes to take off (Ibid). It also means that micromotives, governing the behavior of individual actors, should be distinguished from macrobehavior, which becomes apparent only by observing the entire system (Ibid).

The second principle of self-organization proclaims that ‘ignorance is useful’. This implies that it is not necessary for the components of the system to be very sophisticated in order for the system to become intelligent. On the contrary, it is “[b]etter to build a densely interconnected system with simple elements, and let the more sophisticated behavior trickle up.” (Ibid: 78).

A third principle of self-organization suggests that random encounters between individual actors should be encouraged as they “eventually allow the individuals to gauge and alter the macrostate of the system itself.” (Ibid: 78-79). Hence, it is exactly these ‘side-walk’ encounters that liven up the system and help it sprawl in different directions.

The fourth principle of emergence urges us to ‘look for patterns in the signs’ (Ibid). This is because pattern detection allows feedback and meta-information to circulate within the system’s mind. This principle also entails that communication within the system should be frequent and uninhibited.

Finally, the fifth principle of self-organization advises us to ‘pay attention to neighbors’. This is because “[l]ocal information can lead to global wisdom” (Ibid: 79), as it is exactly these local interactions which determine the system’s intelligence.

#### d. Networks and Physics

One of the latest approaches to network theory comes from the field of physics and tries to produce a more accurate examination of the physical properties of networks. To achieve this, Barabasi and his colleagues have examined a variety of networks found in nature, society, business and the Internet. Their approach is closely related to social networks analysis and complexity theories, but retains nevertheless its distinctive hard science perspective.

One of the major findings in this line of inquiry is that complex networks are scale-free, meaning that in a real network there is no such thing as a characteristic node. Instead, we see a continuous hierarchy of nodes, spanning from rare hubs to the

numerous tiny nodes” (Barabasi 2002: 70). Thus, real networks can be characterized as scale-free, a term which has “rapidly infiltrated most disciplines faced with complex webs” (Ibid).

These complex networks seem to be less chaotic than it was initially suspected, as their architecture is characterized by hierarchical modularity. This means that their structure is composed of “[n]umerous but highly interlinked modules” which “combine in a hierarchical fashion into a few larger, less interlinked modules” (Ibid: 236). This design permits parts of the system to evolve separately and experiment with different functions, ensuring that in the event of an experiment gone wrong, the network can preserve its stability by isolating the dysfunctional module (Ibid).

But how are these hubs created? The answer lies in the two principles that determine the formation and evolution of networks: growth and preferential attachment. Growth means that “[e]ach network starts from a small nucleus and expands with the addition of new nodes” (Ibid: 86). Preferential attachment implies that “these new nodes, when deciding where to link, prefer the nodes that have more links.” (Ibid: 86). Hence, first-movers in a network seem to have an advantage over late-comers, as their higher number of incoming links attracts even more links by new-comers. However, age is not the only factor which determines the status or ‘fitness’ of a node, as ‘fitness’ a multi-factor construct (Ibid).

Hence, understanding networks involves much more than simply mapping out their structure and hubs. Networks should be viewed as dynamical systems which change continuously over time. This means that “having a faithful drawing... doesn’t bring us any closer to understanding the processes that created” them in the first place (Ibid: 91). The theory of evolving networks is one step towards understanding the way networks are “assembled by reproducing the steps followed by nature when it created its various complex systems” (Ibid). This indicates that the researchers’ interest should shift from describing the topology of networks to understanding the mechanisms that shape their evolution (Ibid).

#### **IV. Conclusions: An Integrated Approach**

As it is evident from the above, there are currently several approaches to studying and conceptualizing networks. This is possibly an indication of a paradigm shift, taking place in a broad range of research fields. But even if this is true, this paradigm shift is far from being complete. This is because, for all the research, hype and publications, we are still missing a viable integrated approach, an approach that would bring

together elements from different theoretical strands to account for the complex nature of networks. The same pattern is evident in the network approach to social movements, which relies almost entirely to the social networks approach and tends to disregard developments in other fields.

Therefore, this section will be an attempt to connect the dots by synthesizing the different approaches to network thinking. This will allow us to understand the implications of this synthesis for the conduct of our study: How can we best conceptualize the anti-globalization movement and its relationship with the Internet? How can we conceptualize the notions of structure and ideology? And what kind of practical guidelines can such a conceptualization afford us?

A common characteristic of the discussed approaches is their anti-essentialist view of human life. This means that social processes and human behavior are not explained in terms “of the categorical attributes of actors, whether individual or collective” (Emirbayer and Goodwin 1994: 1414). Instead, network analysts understand the notions of power, role, or character in relational terms, claiming that it is the position of an actor within a web of relationships that determines its major characteristics. Thus, the focus of network theories lies in relations, interactions and links.

In addition, they understand ideology and structure as dynamic and fluid processes and not as easily defined outcomes. This conceptualization is proposed by actor-network theory, complexity and self-organization theories, as well as Barabasi's work in physics. It is also suggested by social network analysis, even though it does not often apply it in practice. This is because it tends to focus more on outcomes, producing just ‘snapshots’ of structure frozen in time, instead of highlighting the mechanisms and processes of ideology formation and organizing.

Network theories also propose a different conceptualization of the micro and the macro, of the global and the local. In that respect, network analysts conceptualize the global not as universal or overarching but as a pattern of interactions, as an entity of connected local actors. This means that through the study of local actors and their connections, network analysts can draw conclusions not only about the micro, the specific actor, but also about the macro, the global patterning of these relationships. It is worth noting here that this conceptualization is present in very disparate fields of network thinking. For instance, it provides the premises for the more theoretical and post-modern argument of actor-network theory. At the same time it is also proposed in mathematical and physical terms by scholars such as Barabasi, who argue that complex networks are inherently scale-free.

So having those in mind, how can we best explore the relationship between the anti-globalization movement and the Internet? First, a qualification should be made.



This qualification involves a distinction between networks as a form of organization and networks as a research tool. Several of the reviewed researches tend to conflate the two, as by adopting the networks approach to the study of social movements, they also instinctively assume that the movements under research are organized predominantly as a network. On the contrary, this is a claim that will need to be supported by the findings of the study. Besides, one should keep in mind that according to Deleuze and Guattari, in real systems meshworks and hierarchies co-exist. Thus, it could easily be the case that the anti-globalization movement is composed by hierarchical and meshworked elements, connected with each other through hierarchical or non-hierarchical relationships. In that respect, the notion of hierarchical modularity, as proposed by Barabasi, can also be of help when trying to visualize the movement's structure and organization.

But how can structure and ideology be conceptualized for the purposes of this study? Adopting the anti-categorical and anti-essentialist view of network theory, this study will conceptualize the notions of structure and ideology in relational terms. Furthermore, and according to actor-network theory, structure and ideology will be perceived as verbs and not as nouns, as fluid processes and not as easily determinable outcomes. Therefore, this study will try to avoid the trappings of previous researches, which produced 'snapshots' of structure and ideology, failing to capture their dynamic nature.

But how can we study such processes? Following the assumptions of complexity and self-organization theories, these processes can be examined by focusing on local actors and their relationships and interactions with other organizations within the movement. This means that this study is going to focus on a sample of organizations and websites and their relationships with other actors. The sample will be selected according to specific criteria which will ensure its diversity and the richness of our findings. More specifically, the sample will include organizations with different ideological positions, nationality and role within the movement according to the available academic and journalistic literature.

Selecting and observing just a sample of anti-globalization organizations is necessary for practical reasons, as an attempt to examine the whole of the movement would be an enormous task. It might also be a futile task, as the movement is always in a state of flux, making it almost impossible to obtain a complete record of its participants at any point in time. Furthermore, focusing on specific organizations or otherwise local actors is also conducive to the theoretical propositions of the network approach. More specifically, network theory proposes that complex networks are scale-free, attempting to bridge the micro and the macro by perceiving the latter as a pattern

that emerges from the connections of the micro. This means that by studying these connections and interactions and by analyzing the identity and characteristics of the separate actors, we are able to draw valuable conclusions about the macro level.

To analyze the processes of structuring and ideological formation, as well as the role of the Internet within them, this study is going to focus on three major levels. First, it is going to thoroughly examine the selected organizations or micro actors. The five levels of analysis of netwar actors proposed by the RAND Corporation will be very useful in this line of inquiry. Thus, this analysis will examine the organizational aspects of the selected organizations, their narratives, doctrines and technological infrastructure, and, to a lesser extent, the social bonds linking their participants. In addition, the notion of the 'fitness' of network nodes, as proposed by Barabasi, can also be useful here. In that respect, the notion of 'fitness' depends on how skilled in netwar is the selected organization, as well as on its potential influence on the movement.

Secondly, this study is going to analyze the relationships and interactions of the selected organizations with other actors within the movement. The five principles of self-organization, as proposed by Johnson, will provide the guidelines for such an inquiry. Thus, questions around relationships and interactions will focus on who they consider their neighbours to be (is it geographical, ideological or social proximity?), how they establish and sustain relationships with their neighbours and the kinds of feedback processes and cues that they use. In addition, having in mind the notions of growth and preferential attachment, as identified by Barabasi, we can inquire into the preferences of organizations when it comes to creating bonds with others, as well as the factors that influence the 'fitness' of a node.

Thirdly, this study is going to be structured around two points in time, determined by two very different anti-globalization events: the European Social Forum and the May Day demonstrations. The former is a gathering aimed to bring together different anti-globalization organizations to exchange opinions about the movement and the state of the world. The latter is a pure protest event. By focusing on these two different events, this study can identify possible differences in the processes of structuring and ideological formation according to the nature of the event being organized. It will also allow us to compare these with periods of relative calm, as such events represent the outbursts of collective activity and are only a part of the story. In that respect, an important aspect of social movements, and an aspect which is certainly worthy of research, is the relationships and processes which sustain them in periods in-between major events, when they seemingly lie dormant.

Perceiving ideology and structure as processes and defining them in relational terms means that an examination of all three levels of analysis is needed in order to

better capture and understand them. Thus, when it comes to ideology, the study will try to identify the ideological positions of the different actors and the way these positions are altered through the interactions with their neighbours. It will also attempt to understand whether the preparation for different events alters the goals and mission of different organizations and their proposed framework of action. In terms of structuring processes, this study will first try to understand the internal structure of the separate actors and the extent to which it is hierarchical. It will further try to identify instrumental connections with other organizations, forged to help the co-ordination of a specific event or to sustain the movement in periods of calm. Do these connections have any hierarchical elements? Does any organization dominate the decision-making about goals, planning and organization? This study will further try to understand the role of the Internet in establishing and sustaining these relationships, in decision-making and feedback processes, in periods of calm and in periods of intense protest activity.

In practical terms, this research is going to use two methods of data collection. First, a content analysis of the websites of the selected organizations will reveal some basic information about their doctrine, ideological position, narratives, technological infrastructure and links with other organizations. However, it is worth noting that this analysis is mainly introductory, providing a first but not definitive inquiry into the field. Its value is going to be mostly descriptive, providing quantitative and systematic data concerning the organizations under research. Secondly, interviews with web coordinators, campaigners and activists belonging to the selected organizations will shed light on their actual use of the Internet and their perceptions about its effectiveness for organizing and establishing relations with other actors.

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