CHAPTER TWO

MUCH ADO ABOUT NETWORKS: SOCIAL THEORY AND NETWORK ANALYSIS

> "Nobles and other politicians pay broad attention to social networks because politicians and nobles are trained by the realities of their survival to listen for resonances in networks."
>
> — Harrison White (1993c: 57)

The main implication of the last chapter is that a more adequate contemporary critical theory could benefit from adopting aspects of the social network, and more specifically, Harrison White's approach to the study of social structure. Although network constructs may initially seem quite foreign to the concerns of critical theory, it should be remembered that social network imagery can be found readily in work by both Foucault ([1975] 1979) as well as Habermas [1985] 1995). Even Max Horkheimer's original statement on critical theory seems to fit well with the sort of conceptual range that is exemplified in a network approach to social structure, though it is one which is too often ignored. As Horkheimer writes: "Critical thinking is the function neither of the isolated individual nor of a sum-total of individuals. Its subject is rather a definite individual in his relation to other individuals and groups, in his conflict with a particular

class, and finally, in the resultant web of relationships with the social totality and with nature" (Cited in Agger 1979: 139). Given this common ground, it is somewhat strange that the connections between critical theory and network analysis are still mainly undeveloped and have been rarely addressed in the literature, if at all.[1] In his Critical Theory and Methodology, Raymond Morrow only makes brief mention of network analysis, and this only in so far as it is connected to the debate over "social structure." Morrow does not mention how the network approach may be used in furthering the broader aims of critical theory.

Critical theory's omission of network analysis is even more striking when we realize the extent to which social network constructs have been incorporated into accounts of social movement theory. Social movement researchers have found network analysis to be an important tool for analysis, especially in studying participation in political movements. In Snow, Zurcher and Ekland-Olson's (1980: 792, 790) study, for example, it was revealed that "63 percent of the students participating in political movements were drawn into their respective movement's orbit of influence by being linked to one or more members through a pre-existing, extramovement interpersonal tie." "[T]he network channel is the richest source of movement recruits," the authors conclude. In commenting on this article, Emirbayer and Goodwin (1995: 1420) note that the research "provide[s] a useful correction to social psychological and culturalist approaches

[1] Obviously, some of these figures just cited simply used the word in a more or less vague sense, as something less than an actual analytic, but the prevalence of the term's uses and applications suggests it is an important concept.

that place undue explanatory weight upon such variables as 'individual motivation' to the exclusion of actors' patterns of embeddedness within actual networks of social ties."[2]

More recently, in debates about new social movement theory, Charles Tilly suggests that the greatest advances in recent years have come about by conceptualizing social movements in terms of social networks. In summing up this literature, he writes:

> [O]n the whole social-movement analysts have ended up thinking that movements depend intimately on the social networks in which their participants are embedded, that the identities deployed in collective contention are contingent but crucial, that movements operate within frames set by a historical accumulation of shared understandings, that political opportunity structure significantly constrains the histories of individual social movements, but that movement struggles and outcomes also transform political opportunity structures. (Tilly 1998: 457)

A critical network analysis may also be one of the only ways to come to terms with mapping relations of domination and emancipation in the "network society." As Manuel Castells, who knows well the importance of networks, writes:

> Networks organize the positions of actors, organizations and institutions in societies and economies. The social relevance of any social unit is thus conditioned by its presence or absence in specific networks. Absence of a dominant network leads to structural irrelevance. Only life in the net amounts to social existence in accordance with the structurally dominant values and interests. Because networks shape in an uneven way societies, segments of society, social groups and individuals, the most fundamental social distinction refers to the position in a given network. (Castells 1996: 29)

Furthermore, while critical theory remains light years behind, in public policy documents, theorizing society in network terms is already well underway.

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[2] This emphasis on the importance of ties for social mobilization is left unaddressed by Fraser (1998:149) who argues that it is "multiplex complex moral imperatives that motivate struggles for social injustice." Although the thrust of this argument could very well be recast in network terms, Fraser herself does not do so.

Take, for example, Arguilla and Ronfeldt's The Advent of Netwar (1996), a piece of work produced by the Rand Corporation at the behest of the Office of the Secretary of Defense. These authors suggest that the composition of modern society is currently experiencing almost revolutionary changes which pose serious threats to security issues in the United States and around the globe. More specifically, they argue that the explosion of information technologies has made existing conceptions of warfare obsolete, and they coin the term "netwar" to describe the possibilities of conflict posed in the new age. They write:

> The term 'netwar' denotes an emerging mode of conflict (and crime) at societal levels, involving measures short of war, in which the protagonists use – indeed, depend on using – network forms of organization, doctrine, strategy and communication . . . The netwar spectrum may increasingly include a new generation of revolutionaries and activists who espouse postindustrial, information-age ideologies that are now just taking shape (Arguilla and Ronfeldt 1996: 5).

In so far as critical theory either could or should explicate or radically articulate these "netwars," it seems logical enough that critical theorists should at least be knowledgeable of the rudiments of the social structures that keep them in action. In this chapter I attempt to delve into the core constructs and meanings behind the "network perspective on social structure," so as to better situate and understand White's development of the network paradigm, one that views networks as "formed from the flotsam of aborted disciplines" (White 1992a: 65).

What is Network Analysis?

If there is one constant in the output of work generated by Harrison C. White over the last four decades, it is a fascination with theorizing and modeling social networks. White was

among the first to incorporate network analysis into the domains of American sociology, and he is decidedly unequivocal on the importance of viewing social relations in network terms. As he puts it, "all social actors and processes can be construed in terms of nodes and transactions and their mutual patterns as networks across time" (White 1995b: 59, emphasis added). Two decades prior, White had written that it is "common to accept networks as the natural metaphor for describing how people fit together in social organization . . . Focus on their nature as receivers, processors, and transmitters of messages to close contacts and thence indirectly to distant persons in large populations" (White 1973a: 45).

Over the course of the last generation, it seems that social scientists have started to take the social network paradigm seriously, although direct debt to White is often unacknowledged. Today, network constructs are invoked in the description and explanation of a variety of concerns in social science, from career advancement to the transmission of disease; from rumor diffusion to the workings of social movements and cults (Stark and Bainbridge 1980); and the study of philosophical change (Collins 1998). This interest is appropriate. As White claims, "When properly assessed across both cultural and social aspects, networks provide grounding for analysis, on the one hand, of biotech companies' maneuvers for alliance, as well as, on the other hand, for the conflict-ridden diffusion of sexual practices among third world youth populations" (White 1998a: 3).

Parallel to this growth of network analysis in social science has been the massive explosion of informational and disciplinary networks that are having more and more impact on global life. As Wayne Baker (1994: xvii) writes:

> [T]he world is a network of relationships. Every person is a nexus of relationships; everyone is at the center of a vast circle of contacts and connections. The circle encompasses old and new friends, family and relatives, business colleagues and associates, professional contacts, acquaintances, neighborhood and community ties, on an on and on. The circle includes old ties that lay dormant and forgotten now but would be recalled the instant you encountered a person. The circle includes endless chains of indirect links – a friend of a friend of a friend, etc. Each of us is more than an individual; each is an individual with a wide network of relationships.

Peter Abell (1994: 1083) has said that there is nothing particularly complicated about such forms of network analysis, "surely one of the most straightforward forms of sociological discourse." Most commentators, however, seem to imply the opposite — namely, that network constructs and research based in the social network tradition are more complicated and sophisticated than other approaches in sociology. Emirbayer and Goodwin (1994: 1411), for example, speak of the "powerful new approach" offered by network analysis and laud its "technical sophistication." Hedström and Swedberg (1994: 327) refer to network analysis as "one of the fastest-growing areas of contemporary sociology" and "the most powerful and innovative form of so-called structural sociology." Emirbayer (1997: 298) claims: "The best developed and most widely used approaches to the analysis of social structure are clearly those of social network-analysis." Do statements such as these represent a truly radical development in the evolution of social analysis, or can they be passed off simply as the sloganeering of another of sociology's interest groups?

It is certainly the case that network analysis' heavy emphasis on method and measurement, on learning skills originating in a number of disparate social scientific disciplines (e.g. mathematics, geography, cognitive psychology, and so on), often makes

many researchers without training in these areas quite wary of the approach. In graduate theory seminars, we are told that sociology has philosophical roots, that there is a connection — somewhere — between the legacy of the "classical" sociologists and our own research concerns. For network analysts, however, this tradition appears to be fairly dispensable. They prefer, to controversial philosophical and epistemological questions, a language of binary codes, calculators, and complicated algorithms — a language many social scientists apparently do not care to learn.

Conversely, network analysts have shown little interest, if any, in extending their efforts in the direction of social and political theory, that is, in bringing out the radical (Rogers 1987) implications of network analysis. This is fairly understandable for three reasons: (a) network analysts seem to take Durkheim (White, Boorman and Breiger 1976) more so than Marx to be the theoretical forefather of their pursuits; (b) they are often turned off by the seemingly "political" nature of much research in social theory; and (c) they are generally skeptical of the theoretical advances that, say, Frankfurt School "critical theory" has made in furthering analysis of social process.

Moreover, the seeming idealism of much work in critical theory – such as Adorno's faith in "reconcilement with nature" (Hazelrigg 1995: 75; see also Hazelrigg 1995: 67-68), Horkheimer's "return to God" (Cf. Wiggershaus [1986] 1994: 654); or Habermas' "communicative rationality" (Habermas 1989a; 1989b), all seem to take for granted what network analysis rejects. As Emirbayer and Goodwin (1994: 1417) write, approaches that direct attention to "the 'intrinsic characteristics,' 'essences,' attributes, or goals of individuals, as opposed to their patterned and structured interrelationships, are all inherently suspect."

Until recently, the theoretical development of network analysis has been a much-maligned affair. Not only had there been few explicit attempts at theory within the network tradition, but too many social scientists, after stumbling upon the network approach, simply used it as a crutch. As we shall see in chapter three, Harrison White reminds us that there is, in fact, a great deal more to social life than social networks. In order to properly understand social networks, network constructs must be related to a broader theoretical architecture, one that includes, for example, identities, stories and institutions.

Be this as it may, the huge popularity of social networks in the discipline and the public at large necessitates a brief critical genealogy of this tradition. In the following section I try to do just that. I do not provide a review of the more technical dimensions to network analysis, as more qualified scholars have already done so (see Barnes 1972; Boissevain and Mitchell 1973; Boissevain 1974; Leinhardt 1977; Rogers 1987; Wellman and Berkowitz 1988; Scott 1991; Wasserman and Faust 1994; Embirbayer and Goodwin 1995). Rather, I direct my attention to the question of network analysis for social theory.

The Distinction of the Network Approach

Social anthropologist Jonathan Barnes claims the distinction of being the first to utter the word "network" in a scientific context, when he used the construct in his study of class relationships in a Norwegian fishing village (Barnes 1990). He notes, "The word [network] has been part of the English language since Shakespearean times but I think it was not used in social science in a technical sense until 1954, when I published an article which hinged on a technical use of the word" (Barnes 1990: 6).

Networks figured prominently in S.F. Nadel's Theory of Social Structure (1957), and, in American sociology, analysis in networks terms was announced by James C. Coleman in an early paper on "Relational Analysis" (1958).[3] Coleman then predicted a shift away from the individual as the primary unit of analysis, towards the "networks of relations among individuals" (Coleman 1958: 28).

The number of social scientists using the word "network" increased slowly in the 1960s, a bit more in the 1970s, and then it started to skyrocket into the 1980s and 1990s. Social Science Abstracts lists only four articles related to social networks published in the years 1981-1982. By 1983-1984, this number was up to 24, and in the following year there were 116 entries concerning social networks. For 1997-1998, the index listed 152 entries.

Since mid-century, network analysis has done the most work as a descriptive technique employed in the analysis of social structure. Social actors are identified in a given organizational field and their relations or connections to one another are represented either graphically or through a data-matrix. Network relations can be based on many things, including "any kind of socially meaningful tie" (Leinhardt 1977: xiii). Social ties may include social evaluations; resource transfers; associations or affiliations; behavioral interactions; movements between places or statuses; physical connections; formal relations; and biological relationships (Wasserman and Faust 1994). While early network analysis in the 1930s followed the lead of sociometrist Jacob L. Moreno to explain small group interaction, the social network perspective has since expanded to include organizational and macro-sociological structures. Leinhardt claims:

[3] For a general overview of the "relational" approach to social analysis (a field which subsumes network

> What is of interest to the [network analyst] is how the relations are arranged, how the behavior of individuals depends on their location in this arrangement . . . By focusing attention on the ties between individuals, rather than on the qualities possessed by individuals, it [network analysis] forces social scientists to think about constraints on individual behavior, constraints that are inherent in the way social relations are organized. In so doing it leads us to ask whether there exist any fundamental structural rules: principles that govern and facilitate social interaction. (Leinhart 1977: xiii).

Leinhardt's implicit critique of social science that focuses on "qualities possessed by individuals," has, in more recent years turned into a critique of what is known as "categorical" analysis, which is to say, a method of research that rests "almost exclusively on the traits and characteristics of individual persons" (Freeman n.d.: 6). Emirbayer and Goodwin (1995: 1414) similarly argue that network analysis champions the "anticategorical imperative," which "rejects all attempts to explain human behavior or social processes solely in terms of the categorical attributes of actors, whether individual or collective." Harrison White has been making the crucial argument at least since the 1960s. As he put it in an early lecture:

> The fruit of much sociological theory is this deception: social structure must be the sum of individual values; so you can define it a priori out of your own head. Or in recent versions, you can find it by pooling response of populations to questionnaires. Categorization is the frame of our language and thought so social reality is categorical. But neither insight nor prediction results, just an endless game of rewriting history in the present framework of categories. (White 1968: 1-1 – 1-2)

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analysis) see Emirbayer (1997).

Even earlier, in his programmatic network paper on "Coupling and Decoupling," White (1966: 1) cautions, "categories are meaningful and operative only in the context of a complicated social structure with its attendant elaboration of culture."

Advocates of the network approach such as White contend that "categorical" sociological research is blind to relational data — that categorical variables in themselves explain nothing (Cf. Hazelrigg 1997: 96). As Wasserman and Faust put it, "The fundamental difference between a social network explanation and a non-network explanation of a process is the inclusion of concepts and information on relationships among units in a study . . . 'Standard' social science perspectives ignore the relational information" (Wasserman and Faust 1994: 7).

Barry Wellman (1988: 30) says that network analysis is "more than a set of topics or a bag of methodological tricks with a new mystifying vocabulary. It is a distinctive way of tackling sociological questions that provides a means to the end of taking social structure seriously." He provides five general principles for the structural or network approach:

1. Structured social relationships are a more powerful source of sociological explanation than personal attributes of system members.
2. Norms emerge from location in structured systems of social relationships.
3. Social structures determine the operation of dyadic relationships.
4. The world is comprised of networks, not groups.
5. Structural methods supplement and supplant individualistic methods (Wellman 1988: 30 - 40).

Network analysts "want to tease out the structural patterns that underlie the surface noise of social systems and use [the] knowledge of these patterns to understand social

interaction" (Wellman 1994: 1). According to White, Boorman, and Breiger (1976: 732), "network concepts may provide the only way to construct a theory of social structure."

In the next section I explicate three of the most important techniques and social constructs found in recent network analysis: vacancy chains, block-models, and structural equivalence.

Vacancy Chains, Blockmodels, and Structural Equivalence

With the publication of Chains of Opportunity (1970), White's lasting contributions to the study of social networks became evident. While his efforts did not yield the sorts of insights into network theory for which he was hoping,[4] the notion of vacancy chains as it was developed in that work has been a major advance in the study of social mobility and other social processes. As Ivan Chase defines it, "a vacancy chain is simply the sequence of moves that a vacancy[5]makes from initial entry into a system to final termination" (Chase 1991: 135). According to Harrison White, "vacancy chains concern my first [scientific] obsession, made manifest in the impacts of contingency in social life," (White 1992c: 210). They comprise one of the many "unseen influences of a social structure on individual destinies" (White 1968: 14-2).

What White endeavors to show in his research and through this concept, is that mobility within organizations depends not so much on "men" or employees, but rather on chains of vacant positions that move up, down, and through organizations. Vacancy chains are important because they explain how what "happens to one individual at one

[4] "Judged by my initial goals, this book does not move far into the study of sociological network theory" (White 1970: viii).

point in time and space redounds to affect other individuals at other points in time and space" (Chase 1991: 134). Vacancies in different places in social organizations create differential effects for individuals seeking advancement. Chase (who also studies vacancy chains in hermit crabs) writes:

> The number and initial strata of vacancy chains created influence the career possibilities of the individuals already in the system and those about to enter. The more chains initiated at higher levels, the more mobility opportunities for individuals throughout the system, as the chains move downward, and the greater the speed with which individuals advance to high status or large units and positions. On the other hand, if chains are mostly initiated at lower levels, individuals already in high status positions will see their careers plateau while only those at lower levels will move comparatively quickly before they reach are career bottleneck caused by the lack of opportunities at higher levels. (Chase 1991: 146)

In his work on "structural holes," Ronald Burt (1992) builds upon a similar notion of absences as a key to social mobility and action. While I cannot fully address Burt's theory here, it is instructive to point out the resemblances to White's approach.

Burt defines a structural hole as "the separation between nonredundant contacts. Nonredundant contacts are connected by a structural hole . . . As a result of the hole between them, the two contacts provide network benefits than are in some degree additive rather than overlapping" (Burt 1992: 18). Where no structural holes exist, what Burt calls "redundant contacts" proliferate. Burt suggests two measures for such redundancy, what he calls "redundancy by cohesion" and "redundancy by structural equivalence." Redundancy by cohesion is when a given set of social actors are "connected to one another, and so provide the same network benefits," (Burt 1992: 18).

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[5] Vacancy chains systems can be seen at more institutional scope, in descriptions, for example, of empty or vacant spaces in the urban landscape, spaces that can become the site of protest and intervention and

Redundancy by structural equivalence describes a situation where social actors are not connected in a direct way, but are indirectly more or less equivalent in the larger population — their ties make them into an equivalent class, even if individual actors within the classes are not connected.

In both cases, Burt's redundancies are detrimental to social actors because redundant situations do not provide unique information that might allow for entrepreneurial action. As Mizruchi (1994: 338) comments:

> Burt is concerned with how actors identify and take advantage of opportunities in social systems, vacancies that he refers to as 'structural holes.' By filling a hole, an actor increases his or her likelihood of upward mobility but he/she also alters the structure so that a hole no longer exists in the same position. Burt shows how actors who are skilled at filling structural holes and in maximizing the efficiency of their social ties (by minimizing redundant contacts, for example) have greater upward mobility than do actors who are less successful at both using and altering the social structure.

As Burt's work suggests, the notion of "structural equivalence" (Lorrain and White 1971) has been another important construct or working concept for network analysis. Categorizing social actors and events as structurally equivalent allows for a shearing away of social structure (determined analytically on the basis of ties) into different classes or blocks. White provides the crucial definition: "Members are deemed to be structurally equivalent to one another through attributes in common, relational or categorical" (White 1992a: 80). In spite of the seemingly abstract nature of the concept, structural equivalence is one of the key principles to everyday social organization at all scopes, and might even share some elements of, say, Rosabeth Moss Kanter's notion of

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appropriation. See McDonogh (1987).

"homosocial reproduction."[6] Yet White's notion goes far beyond the involuted social ties of corporate managers. He says that, "two lonely kids alone on the fringes of a playground," are structurally equivalent. "Also structurally equivalent are two 'stars' who each reach out to gather the other kids into their respective orbits but have little to do with each other. Or structural equivalence can be abstracted from the particular others, so that two quarterbacks are equivalent even though there is no overlap between the kids in their orbits" (White 1992a: 80).

The methodological technique known as "block modeling" goes hand in hand with structural equivalence. Block modeling "classifies people on the basis of where they fit in a larger web of relationships," (Boorman and Levitt 1983b: 3), i.e. different types of tie, e.g. neighborhood, sport, job, kinship, religion, or university (Boissevain 1974: 29). Block modeling is an important method for network analysis because is provides a "self-consistent search procedure" (White and Breiger 1975: 68) for structurally equivalent social formations in a given population and produces network data akin to an "X-ray" photograph. Used "to detect structural patterns of interaction and communication . . . block modeling provides ways to distill frequently very striking and revealing patterns" (Boorman and Levitt 1983a: 3).

Block modeling begins by compiling data on the social organization or population under consideration (e.g. graduate students in a sociology department; firms in a production market). The presence or absence of ties is discerned between different social

[6] Kanter comments: "[T]hose who run the bureaucratic corporation often rely on outward manifestations to determine who is the 'right sort of person.' Managers tend to carefully guard power and privilege for those who fit in, for those they see as 'their kind' . . .. [B]ecause of the position of managers in the corporate structure, social similarity tends to become extremely important to them. The structure sets in motion forces leading to the replication of managers as the same kind of social individuals. And the men who manage reproduce themselves in kind" (Kanter 1977 [1993]: 48).

actors under consideration, and they are coded in binary form. Discriminating social ties are no easy matter, whether for actors or observers. As White writes in an article from the late 1990s,

> [A] social tie often has considerable affective intensity, but the essential character is not the idiosyncratic content or etiology of this tie or that. I can strike up a pleasant chat with a stranger at a bus stop, but this does not constitute a network tie. What counts is that each actor is, and knows it is, committed to entailment to other ties. It is known to so know, furthermore. Thus it is subject to, and known to be subject to, the hegemonic pressures of others engaged in the social construction of that network. (White 1998a: 4)

Boorman and White (1976: 1386-1387) provide the crucial summary of the block modeling procedure:

> The rows and columns of each matrix are then identically permuted in a self-consistent search with two objectives. First, the population of persons is to be partitioned into positions; second, for each type of tie there is to be a specified network of <u>bonds</u> connecting positions. Following rearrangement, the rectangular submatrix reporting ties from persons in one position to persons in a second position is termed a <u>block</u> for that type of tie. The specific aim of rearrangement is to reveal <u>zeroblocks</u>, blocks containing no ties; all other blocks correspond to bonds between positions. The image of a type of tie is a square binary matrix reporting the bonds. A <u>blockmodel</u> for a population is the set of images obtained from the separate types of tie. The term block will also be used for the set of members of a position.

Once the structural equivalence of blocks has been determined it becomes possible to make statements concerning the relational properties of the data. Block models are all about simplifying and mining relational data; they create clusters of actors who are

structurally equivalent in terms of ties. Absences, or zero-blocks, mark the boundaries of the model.[7]

White himself uses block models in his article, "Modeling Ideology as Configurations for Action" (1988). White begins by stating his intention to develop sociological models which "can capture aspects of the subtle interplay of culture with social process" (White 1988: 36) and he offers his argument as a follow-on from the interpretive endeavors of cultural theorists such as Clifford Geertz. He states: "I ask you to judge whether [White's scheme] is not consistent with that of Geertz, who calls for 'thick description' in disdain of overly sociologized and mechanical approaches to interplay between culture and social process. The very subtleties and complexities he emphasizes cry out in my mind for explicit and thus mathematical formulation" (White (1988: 37).

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[7] Despite the early enthusiasm for block models (some of which still continues today), it is important to note that some members of White's group at Harvard quickly became worried about the quite literally fascistic implications of the block-modeling procedure. Although noting that block modeling "technologies certainly have significant benevolent uses," Scott Boorman and Paul Levitt wrote two 1983 articles in the New York Times which drew out the more sinister implications of the approach. They wrote: "In the mid-1970s, we were part of a research team at Harvard that published the first papers on block-modeling's social applications. The response was revealing. Places like mental institutions and rehabilitation centers in Lithuania were quick to request reprints. Later, members of the group received inquiries from the Swiss as well as West Germans whose questions (and travel reports sent back home) were especially exhaustive" (Boorman and Levitt 1983a: 3). Boorman and Levitt were concerned that perhaps they had created a monster, one which would make it incredibly easy, for example, for corporations to compile and analyze relational data on their employees. Information such as "whom you talk with in your company; whose phone calls you do not return; whom you eat lunch with; [and] to whom do you send carbon copies of memos and letters," (Boorman and Levitt 1983a: 3) can be used by organizations to determine promotions and other questions of inter-organizational mobility. They continue: "If the [block] model locates [an employee] in a favorably regarded block, innocence by association prevails and all is well. But if he associates with known noncooperators, or, worse still, is assigned to a block judged likely to split off and found a rival company, he then can be passed over in the next promotion" (Boorman and Levitt 1983: 3). In part two of their commentary on the potential hazards of block models, Boorman and Levitt (1983b) suggest some ways through which employees may protect themselves from being the subject of a block model analysis. These involve (a) informing an employee when s/he is the subject of a block model analysis; (b) giving the employee access to the database stripped of other's personal identification; and (c) disclosing to the employee the "structural role of the different blocks." Boorman and Levitt also stress that a class of employees should be ready to theorize alternative possible block model interpretations should a contentious situation arise.

At the root of White's attempt to theorize ideology are two block models. The correspondence between them represents "class-consciousness" (or the lack thereof). On the one hand is a block model from the perspective of an individual person or actor. White suggests that a person who is "urgently concerned with his social locale conceives it as a configuration of specific actors joined one to another by basic sorts of ties" (White 1988: 36). More specifically White says that these ties are comprised of three sorts: "those which help or hinder, or those plus neutral familiarity" (White 1988: 38).

Using the principle of structural equivalence, in this situation a block model could place each actor within some social configuration of overall ties in a population — a grouping that implies class membership within a social totality. White (1988: 38) argues that the social positions identified through such an analysis would "have objective standing [and] state an abstract position . . . in a field of standard types of ties, even though computation builds from a subjective point of view. Social class in the Marxist sense is such an abstract position."

On the other side of the ideology equation sits an analogous block model computed from what White calls the "icon." According to White, the urgent pressures of social configurations come not only from the immediate environs within which one is embedded, but also from icons, or symbols, i.e. "dramatic configuration[s] portrayed in analogous terms" (White 1988: 38). These icons or cultural guides are metaphors, and work as "mappings between own social locale and cultural image" (White 1988: 36). From White's perspective, the vexing issues of class consciousness and ideology, stem from a (failed) search for structural equivalence within an actor's own social locale, where a social actor strives to determine his or her own network position. Class-

consciousness is bolstered or negated in so far as the actor identifies with the way ties are distributed within the icon (e.g. within a play, a TV script, or a novel). White argues:

> The guidance a person can obtain from an icon is by a correspondence between his class position and one he finds in the icon. (The correspondence may be a negative one, in which case it is better called irony.) In our mathematical parse of this intuitive search for correspondence, a person's algebra is mapped from that of an actor in the icon. The person may have but a vague apprehension of his class position . . . A correspondence, a mapping from a class position in the icon, can yield and influence his search. (White 1988: 39)

White thereby attempts to model ideology as tangible social process. He wants to map out the specific social "plumbing" of ideology. Rather than analyzing ideology just in terms of values, meanings or belief systems, strains of network membership are given a pivotal role in White's theory. Moreover, contrary to a heavy sort of determinism which has been attributed to network analysis in general and White's work in particular (Emirbayer and Goodwin 1995), White's method allows for changes in class position: "Class position once identified will tend to persist until urgent pressure or disorienting change in context fuels renewed search . . . persons beginning to be conscious of a distinctive new class position may produce or induce changes in the menu of icons" (White 1988: 39). White concludes that his model "captures much of what people actually do, and need to do" (White 1988: 41)

Networks and the Problem of Theory

While the network approach appears to be widely known and well respected in some areas of social science, it has all but been ignored by the sociology's top theorists. Emirbayer and Goodwin (1994: 1412) argue: "There has been an unfortunate lack of

interest in situating network analysis within the broader traditions of sociological theory, much less in undertaking a systematic inquiry into its underlying strengths and weaknesses." This lack of theoretical attention has led, not surprisingly, to a noticeable theory gap in the network literature.

Berkowitz (1988: 492) reports that "the most frequently voiced criticism of structural analysis is that it consists of 'methods without theory.'" He argues that, despite the increasing number of studies produced under the rubric of the "network approach," there is no consensus, theoretically speaking, on where this domain of social science is going.[8] Berkowitz (1988: 494) himself ups the ante on the received view of network analysis and claims that it runs the risk of becoming "a collection of findings without a paradigm." In spite of the persistent calls which would turn us to mathematics and "new models" of society, it is not at all clear how far the collective output of network analysis has taken representations of the social.

Wasserman and Faust's (1994) mammoth introduction to empirical network analysis seems to exemplify the paucity of genuine conceptual development within the network paradigm. They write "One area . . . that needs more work is development of general propositions about the structure of social networks based on replication across a large number of networks" (Wasserman and Faust 1994: 732). This statement is couched in a section of their book sub-titled "General Propositions about Structure," propositions that take up less than one-half page of text.[9]

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[8] One work that does not appear much in the social network literature yet is itself quite "theory rich" and therefore argues against this position is Jeremy Bossevain's Friends of Friends: Networks, Manipulators and Coalitions.

[9] Granovetter (1979) also pointed out the lack of theory in network analysis some time ago.

Barnes (1972: 5) statement seems quite prophetic: "[A]t present the supply of mathematical tools available far outstrips the supply of social data to which the tools might be applied. Hence some discussions of social networks are exercises in mathematics that contribute nothing whatsoever to social understanding."[10] As we shall see, it is precisely this concern which also plagues Harrison White, and to which his Identity and Control is so urgently addressed.

In the next section I address a few critiques of social network analysis, some of which have already been voiced, and others that surely soon will be.

Criticisms of the Network Approach

Given that network analysis has been slow in getting recognized by most sociological theorists, it is not surprising that there has been a paucity of critical and interpretive work on the subject. The theoretical arguments against network analysis that do exist remain largely unspoken and unwritten. The work of Jonathan Turner represents one exception.

In his mammoth text on sociological theory, Turner argues that, despite the potential of network analysis to contribute to a "scientific sociology," it is one that is not likely to be realized. Turner sees three main limitations to incorporating network theory within more mainstream sociology. He argues:

> First . . . network analysis is overly methodological and concerned with generating quantitative techniques for arraying data in matrices and then converting the matrices into descriptions of particular networks (whether as graphs or equations). As long as this is the case, network theory will remain primarily a tool for empirical description. Second, there has been little effort to

[10] Hazelrigg (1999) comments: "And that remains an accurate judgment. A big part of the 'problem' is that most sociologists cannot think, or so it seems, in terms of those tools and therefore don't understand what would count as such data, much less how they might go about constructing it."

> develop principles of network dynamics, per se. Few seem to ask theoretical questions within the network tradition itself . . . Third, network sociology has yet to translate traditional theoretical concerns and concepts into network terminology in a way that highlights the superiority, or at least, the viability, of using network theoretical constructs for mainstream theory in sociology. (Turner 1993: 557-558).

He goes on:

> Network analysis is a bag of computer algorithms and mathematical formulations whose relevance to the real world or to traditional theoretical questions in sociology is, at best, tenuous; much mainstream "theory" is now so philosophical and antiscientific that any approach that is too "scientific looking" will be rejected. What is required . . . is for network analysis and much "theory" in sociology to become theoretical in the sense of developing testable laws and models of human organization. (Turner 1993:p. 571-2)

Even more trenchant criticisms of the network approach could come from the wings of "post-structuralist" theory.

What would Jean Baudrillard, for example, make of network theory in general, and Harrison White's work, in particular? One response might be to deride the network approach as being another manifestation of pseudo-science under the reign of the commodity form. This would build upon Baudrillard's early critique of commodity fetishism in Toward a Political Economy of the Sign, where he suggests that this concept has been abused and misused in the hands of cultural critics. Baudrillard suggests that by associating Marx's concept with such benign relations such as "object fetishism, automobile fetishism, sex fetishism, [and] vacation fetishism," theorists misunderstand Marx's crucial problematic. Baudrillard insists that commodity fetishism in fact has a much more precise and important meaning. It consists of "the (ambivalent) fascination for a form (logic of the commodity or system of exchange value), a state of absorption,

for better or for worse, in the restrictive logic of a system of abstraction. Something like a desire, a perverse desire, the desire of the code . . . What is fetishized is the closed perfection of a system, not the 'golden calf,' or the treasure" Baudrillard ([1968] 1986: 88, 92-3). Applying this statement to network analysis, one could argue that, its scientific pretensions notwithstanding, its main contribution might lie simply in reproducing — within their research labs and elsewhere — hegemonic social relations in capitalist society.

Another post-structuralist critique could be offered by someone following in the vein of Félix Guattari (1984 [1976]: 163), and who is appalled by the structuralist imperative to reduce social situations to the binary imperatives of computerized code. Guattari comments:

> The structuralists' ideal is to be able to capture any situation, however complex, in a simple formula – a formula that can be expressed in mathematical, axiomatic form, or handled by a computer . . . Whatever the complexity of the situation it is looking at and of the way it proposes to formulate it, structuralism assumes that it can be reduced to a system of binary relations, to what is called in semiotics digitalized information . . . What they give back to us is comparable to a kind of technocratic vision of the world; it has lost the essence of the background from which it came. By "essence," I mean all that relates to desire.

Lawrence Hazelrigg's argument in the first volume of his Social Science and the Challenge of Relativism, may also quell some of the more unreflective network theorists' enthusiasm for their own abstractions. In surveying possible approaches to what he terms the "challenge of relativism," Hazelrigg writes:

> Or, as some still do, we can lend our voices in appeal for the case of social science, the "sciences of man" and "humanistic study" of the social condition. "Take us seriously," these vaunted servants say, "give us enough money, a large-enough computer, and we will build a complete

> causal model of the world social system." But the "sciences of man" are idler wheels in the industrial machine, and social scientists have come lately to realize that the engineers of our world have devised other, more efficient means for the transfer of motion from one set of gears to another. (Hazelrigg 1989a: 45)

The network approach could also face the charge of a form of "scientific purism" well-known in sociology at other periods in its history. As Turner and Turner (1990: 181) write, this purism was "renown for providing a nonpolitical and essentially elitist and anti-democratic ideology for young members of the American upper classes who felt the need for some kind of conception of their social role beyond what could be found in the populist and constitutionalist American political tradition."

Yet perhaps the most vociferous critique of the network approach could come from the feminist camp in sociology. The offer (or the claim) to incorporate the network approach (and more specifically the work of Harrison White) into the realm of critical theory might indeed be met with some resistance from feminists. For the most part, like previous social theory, network analysis has been created by elite white men in powerful institutions, and so the network approach may likely generate "Meet the new boss, same as the old boss" sentiments. Indeed, it would be quite easy to write a simplistic pseudo-ideological critique of network analysis on precisely these grounds. Yet such a critique, in my view, misses the value in using network constructs in progressively useful manner, for example, in projects of feminist political theory.

In recent years, we have witnessed more calls for sociology that emphasizes "embodied" knowing (e.g. Joan Alway 1998), for sociologies of "everyday life" (Smith 1987), for science from the perspective of oppressed groups (Harding [1991] 1993). As Joan Alway (1998: 4) writes in connection with Habermas: "Feminists are . . . very leery

of theory, especially on so grand a scale . . . [T]he theoretical urge toward generalization and abstraction tends to erase individual experience, unique voices, and difference, thus making even self-declared critical theories into yet another tool of domination." To a certain matrix of feminist thought and practice, then, the abstract formalisms of the network approach might seem threatening and disconcerting, and the very discussion of "action," moreover, may be dismissed as being an inherently "masculine" concept.

Yet surely feminists are also interested in action — in the positing of freedom — in transforming reified social relations. Furthermore, while important, there is no logical reason why feminism should be allowed the final judgement in issues of critical theory. As the late Gillian Rose (arguably one of the most important female critical theorists of the last two decades), eloquently put it: "Feminism never offered me any help . . . Feminism does not speak of the woman with the gift and power of Active Intelligence" (Rose 1995: 140, 141).

Feminist theorists might more specifically suggest that, in all this talk about, for example, structural equivalence and abstract models of network process, there is neglect in network analysis of attention to individual differences. Such critics may ask a question such as the following, namely: Doesn't conceptualizing human beings as nodes, or in roles or positions, seem to erase individuality? Such a question could emerge from a critique of what T.W. Adorno called identity thinking. As Dahms (1998: 16) comments:

> Identity thinking is in fact a <u>reified</u> form of thinking. Identity thinking turns things that are different into things that are alike. If any concept is assumed to adequately describe an object, even though the concept does not fully grasp the complex and/or contradictory nature of an object, it in fact assimilates the object in its various dimensions to the fragmented scope and depth of the

> concept. If we engage in identity thinking, we project the appearance that things that are different, or at the very least not exactly the same, are in fact identical.

Emirbayer and Goodwin (1994) suggest that some of models of network analysis (as variants of structural determinism[11] have indeed contributed to the reification of social relations and, in so doing, neglected important issues of agency and culture. They argue:

> Structural determinism rests analytically on a reification of social relations; it transforms the important theoretical distinction between a structure of social relations, on the one hand, and cultural formations, on the other, into an ontological dualism. It thereby "ruthlessly abstracts" the formal or "objective" dimensions of social relations from their cultural and intersubjective contexts so as to be able to represent and analyze such relations with sophisticated technical tools; in the process, however, it drains such relations of their active, subjective dimension and their cultural contents and meanings. (Emirbayer and Goodwin 1994: 1427-1428)

While it might appear at first glance that White's approach does attempt to reduce individuals to "abstract equivalence" (Benhabib 1986: 183, cited in Dahms 1998: 2), further reading indicates that White does not at all want to erase difference. As he states, "each person is effectively unique. No two share an identical topological position in the full networks they live in . . . Each of us lives under erratic bombardment of all kinds of messages in a large and complex web which yet is different from, though tied to, the web of any neighbor" (White 1973: 45).

As this quote indicates, White is not as far away from the feminist perspective as some of the latter may think. To reinforce this claim, I will briefly compare White's agenda with the work of Dorothy Smith, who is also interested in studying the problematics of "everyday" life.

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[11] Emirbayer and Goodwin (1994) include White's early work (e.g. White et. al 1976; Boorman and White 1976) in this frame.

Networks and Everyday Life

In her book, The Everyday World as Problematic: A Feminist Sociology, Dorothy Smith (1987) maps out the foundations of a mode of research she calls "institutional ethnography." Such a research program, she claims, would uncover and therefore enrich our understanding of "relations of ruling," which is to say, the (in) visible social, economic and political structures that mediate our cultures and life-chances. As Smith (1987: 151) writes, "the aim is to explicate the actual social processes and practices organizing people's everyday experience from a standpoint in the material world." Smith's methodology involves addressing social problems and concerns at different organizational and institutional levels, starting from the relations of domination faced by subordinate social actors in particular locales and then moving to more embedded levels of social structure, interrogating along the way the social actors and institutions that she argues are responsible for the social problems at the levels below.

While there are, of course, some very important differences between Smith's approach and the network theory of Harrison White, it seems to me that the two endeavors share some basic theoretical affinities. Both perspectives eschew an authority that comes with social scientific explanation, and both seek to understand social events from an insider's point of view. As White (in Schwartz 1967: 1) noted in a lecture from the late 1960s,

> One disadvantage of sociological discussion is that we tend to look down at the foibles of the societies we study. We should avoid this, and if we accept what they do as reasonable, we take a first step toward understanding why they do it. (Or, as Mao says, "The masses are the real heroes, while we ourselves are often childish and ignorant, and without this understanding it is impossible to acquire even the most rudimentary knowledge.")

Like Smith, White pays attention to different levels in social formations, and he too is fascinated by "the ongoing co-ordering of activities that brings our world into being" (Smith 1987: 212). Furthermore, both Harrison White and Dorothy Smith stress the importance of researchers digging into their own personal background (White 1998d) for insight and leads. For his part, White himself admits that what got him thinking so much about social networks from an early age was the fact that he was a "Southern boy with lots of family" (White 1998d). In Identity and Control he is adamant that his is not pie the sky sociological theory, and comments, "all this also can be transposed to the small scale of organizational life around yourself, as well as the larger scale reflected in your newspaper's accounts of new administrations in business and in nation" (White 1992a: 148)

More fundamentally, White and his colleagues might ask what is at the core of Smith's notion of institutional ethnography if not some notion of network dynamics? According to White, in "social formations . . . Ties between persons, and how they chain together and spread out in social networks, always prove the key" (White 1993: 15). As Janet Chafetz (1997) has already noted, Smith "does not explicate any method for moving from the realm of personal experience to a more abstract, systemic level of understanding, a level she presupposes by talking about patriarchy and capitalism" (Chafetz 1997: 102). This deficiency, I suggest, may well be ameliorated by adopting some elements in Harrison White's theory, more specifically his notion of self-similarity and his network theory of social structure.

There is, on the other hand, a basic difference between a feminist perspective like Smith's and White's approach, and these obviously pivot around the normative issues of

emotion and commitment to the subjects of analysis. As White puts it, "Empathy, however necessary, does not supply focus. Guidance from theory is required" (White 1993c: 42).

Conclusion

As I mentioned above, one of the main problems with existing network analysis is its lack of attention to the concerns of social and sociological theory. As we shall see in the next chapter, theories of social networks are no simple matter. White argues: "[P]rocesses even of diffusion, much less manipulations for control, cannot be described properly in a stripped-down network viewed as sheer physical connectivities. Ties and identities alike are socially constructed, not just imposed by observers" (White 1992a: 93). While White can, as we have seen, be characterized as a "network man" — both in his long-term study of social networks and also in his ability to organize and spin off his own social networks — it is important to realize that his appropriation of network concepts is not exhaustive nor uncritical of what has come to be recognized as "the network approach" and that his project differs from traditional "network analysis" in many important ways.

With Anne Mische, White suggests that despite the technical, mathematical and computerized sophistication of network analysis, theoretically, this research tradition remains in the dark. These authors write, "the phenomenology and theory of network ties has thus far remained ad hoc, casual, indeed largely implicit, because networks have not been understood as embedded in domains . . . The network approach has so far … centered on formal techniques to the detriment of substantive theoretical grounding" (White and Mische 1998: 703, 717).

Such concerns are reiterated in White's paper "Constructing Social Organization as Multiple Networks" (1998a). There White argues that the history of network analysis in the social sciences may be divided into three stages. The first, which White associates with the work of Moreno (1934) and Elizabeth Bott (1957) was developed by researchers "who could not find satisfying explanations in terms of familiar social categories such as class and group memberships along with the attributes of individuals" (White 1998a: 1).

The second tradition, according to White, manifests in the work of highly technical and mathematical forms of network analysis which utilize "a bare bones definition of network as a sheer collection of pair connections" (White 1998a: 2). The published output found in the journal Social Networks, and the conference proceedings organized by that journal's sponsor, the International Society for the Study of Network Analysis, exemplify work in this second tradition. White says that it has stimulated some innovation in terms of measurement, but has "provided little practical help" (White 1998a: 2).

The third — and present — stage of network analysis is what White calls the "theory phase." White argues that "what remains elusive up to the present time is the ontology and phenomenology of networks." He suggests that "the nodes in the mechanistic models of networks . . . must be recast as being themselves dynamic structures, identities, co-generated along with the multiple networks in which they embed" (White 1998a: 2, 3). It is precisely the ontology and phenomenology of networks that White attempts to elaborate in Identity and Control and to which we now turn.