

Sociological Theory

<http://stx.sagepub.com/>

Formalist and Relationalist Theory in Social Network Analysis

Emily Erikson

Sociological Theory 2013 31: 219

DOI: 10.1177/0735275113501998

The online version of this article can be found at:

<http://stx.sagepub.com/content/31/3/219>

Published by:



<http://www.sagepublications.com>

On behalf of:



Additional services and information for *Sociological Theory* can be found at:

Email Alerts: <http://stx.sagepub.com/cgi/alerts>

Subscriptions: <http://stx.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

>> [Version of Record](#) - Oct 17, 2013

[What is This?](#)

Formalist and Relationalist Theory in Social Network Analysis

Sociological Theory
31(3) 219–242
© American Sociological Association 2013
DOI: 10.1177/0735275113501998
stx.sagepub.com


Emily Erikson¹

Abstract

Social network research is widely considered atheoretical. In contrast, in this article I argue that network analysis often mixes two distinct theoretical frameworks, creating a logically inconsistent foundation. *Relationalism* rejects essentialism and a priori categories and insists upon the intersubjectivity of experience and meaning as well as the importance of the content of interactions and their historical setting. *Formalism* is based on a structuralist interpretation of the theoretical works of Georg Simmel. Simmel laid out a neo-Kantian program of identifying a priori categories of relational types and patterns that operate independently of cultural content or historical setting. Formalism and relationalism are internally consistent theoretical perspectives, but there are tensions between them. To pave the way for stronger middle-range theoretical development, I disaggregate the two approaches and highlight the contradictions that must be addressed or resolved for the construction of any general and inclusive theory.

Keywords

social networks, theory, relationalism, formalism, structuralism, Georg Simmel, pragmatism

Over the last few decades, social network research has become an increasingly vibrant area of sociology inquiry. The field has grown tremendously: New journals have been created and conferences held, programs and concentrations in social network analysis have been started in institutions in North America and Europe, and large numbers of scholars have been attracted to the field from across a wide array of disciplines, including sociology, anthropology, management science, computer science, biology, mathematics, and physics. The popularity of the idea of “networking,” beginning in the late 1970s, and the rapid proliferation of social networking websites in the twenty-first century have magnified public awareness and interest in social network research. For many, social network analysis holds the promise of revitalizing and unifying sociological research under the banner of a theoretical interest in relationships—rather than individuals (as in economics and psychology) or

¹Yale University, New Haven, CT, USA

Corresponding Author:

Emily Erikson, Yale University, PO Box 208265, New Haven, CT, 06520-8265, USA.

Email: Emily.erikson@yale.edu

states (as in political science). Yet despite its potential, social network research has been subject to repeated criticisms charging that the field is atheoretical (Burt 1980; Emirbayer and Goodwin 1994; Granovetter 1979; Mitchell 1979; Rogers 1987).

Although the lack of a coherent theoretical framework allows some fields to blossom—and indeed could well have contributed to the extraordinary rise of social network research in recent years—incoherence may also prove a significant challenge for network scholars in the long-term. It is not uncommon for short-term efflorescences, based upon the inclusiveness made possible by inexact specification of conceptual foundations, to founder over time through lack of continued direction. In these cases, many eventually come to view once thriving fields as hopeless tangles of ill-defined questions, vague wording, and confused terminology, as seems to be true now for research in the closely related field of social capital (see Durlauf 2002).

If theoretical undergirdings are not well-articulated but instead are left in the realm of informal and intuitive knowledge, there is a serious risk that this information will be lost rather than transferred to the next generation of researchers. Indeed, the field of social networks has already suffered from the lack of a clear research trajectory that theoretical clarification provides. Partially as a result—and despite increases in the size of the networks field—network researchers in the social sciences have often complained of being ignored (Bonacich 2004; Freeman 2011:28). Although many have blamed the idea of interloping physicists for this state of affairs, the real issue may be the lack of a coherent framework to situate the empirical and methodological contributions of social network research. It is much easier to pull ideas and methods out of context if a field appears to others as a largely unorganized grab bag of measures, tools, and ideas.

Additionally, different theoretical perspectives suggest different approaches to measuring basic concepts, such as ties and nodes in social network analysis. Without an open acknowledgement of these differences, researchers are likely to dismiss entire bodies of work over basic disagreements as to what empirical phenomena constitute a tie (for example, interactions versus relationships) or whether the operationalizations chosen by researchers are appropriate given their underlying assumptions. This situation can frustrate the efforts of individual researchers and impede the overall progress of the field. *Sub rosa* disagreements can lead important fields to drop out of top journals when the quality of work remains high but consensus is difficult to achieve.

In this article, I argue that there are in fact two distinct theoretical frameworks that animate much of the work on social networks: formalism and relationalism. I demonstrate that there are deep tensions between the two approaches in terms of their underlying presuppositions as well as their relationship to four central concepts of general interest to sociologists: context, meaning, agency, and the relationship between micro and macro levels of social processes. It is the *ad hoc* mixing of the two streams by network researchers that has produced the incoherence widely perceived as atheoretical. At the same time, the contradictions between these two frames suggest that a unified theory built entirely on either foundation and encompassing both perspectives is unlikely and, further, that any successful combination of the two will require careful attention to the underlying presuppositions about perception, experience, and agency found in each.

SOCIAL NETWORK THEORY

There have been four responses to the state of theory in social network research: criticism and a call for more theoretical development, employment of broad theoretical concepts, informal recognition of the existence of different research streams, and efforts to build new

frameworks. The best-known article on theory and social network research is a call for the development of the ideas of culture and meaning in networks. Emirbayer and Goodwin (1994) array different types of network analysis with respect to their treatment of culture, agency, and value formation; social network researchers are then criticized for neglecting these important concerns. The authors urge network researchers to rectify what they conceive as an oversight. The larger logic of the argument implies that when network researchers show a deeper interest in culture, agency, and values, the field will (finally) become theoretical (Emirbayer and Goodwin 1994). Lately there has been an intensification of the criticism of network analysis for not adequately dealing with questions of culture and meaning (Fuhse 2009; Mische 2011; Pachucki and Breiger 2010). These assessments are in line with and tend to draw support from the larger and longer-lived critique of network research as atheoretical.

Other network researchers have attempted to spell out a theory of social networks based on the emphasis on relations (Borgatti et al. 2009; Wellman 1983). For example, Stephen Borgatti and Virginie Lopez-Kidwell have categorized two related types of network theory, one based on flows of information and the other on ties that bind individuals into collective action (Borgatti and Lopez-Kidwell 2011). This categorization is similar to Joel Podolny's earlier description of networks as both pipes and prisms (Podolny 2001). In each of these cases, the authors offered important theoretical conceptualizations; however, neither approach is sufficiently complex to be considered a theoretical framework. The approaches of Borgatti and Lopez-Kidwell and Podolny do not constitute a set of logically consistent propositions that can be used to generate hypotheses. In the end, these works are forced to lean on other more developed theories, such as rational choice theory, because they are only new metaphors that draw attention to different aspects of the same object of inquiry. The belief that network conceptualizations constitute theory, when readers from other traditions expect the development of theoretical systems, has likely added to the sense that social network research is atheoretical.

Despite criticism of the state of social network theory, it has long been informally recognized by network researchers that at least two distinct approaches exist within the field: formalism and relationalism (DiMaggio 1992; Fuhse and Mützel 2011; Pachucki and Breiger 2010). Several important recent works are sophisticated theoretical approaches that build out of formalism or relationalism but attempt to overcome the limitations of either approach. One example is John Levi Martin's longer-term project of incorporating a version of Kantian aesthetics into a theory of social action (Martin 2011).

Whatever the intrinsic merits of these combinatory efforts, they presume that formalism and relationalism can be melded. Yet the roots of these divergent approaches and their potential for reconciliation have not been given direct consideration. It is to this task that I turn in the sections that follow. In presenting both approaches, I make reference to research that does not always fit neatly on either side of the divide. In doing so I am not attempting to slot authors into one perspective or the other; instead I am using their research to illustrate the parameters of research programs that span across the contributions of any individual scholar (Lakatos 1978).

IS SOCIAL NETWORK RESEARCH ALWAYS RELATIONAL?

Social network analysis takes as its fundamental unit of analysis the relationships between actors. The actors may be individuals, but they may also be organizations, states—even animals. It is often taken for granted that this focus on relationships means that social network analysis is definitively relationalist. Relationalism, however, has a more specific

meaning that encompasses strong claims about the primacy of experience, which are not embraced by many researchers in social networks.

The theoretical roots of relationalism are numerous and not always explicitly identified. John Dewey, Charles S. Peirce, George Herbert Mead, and other pragmatist philosophers have been influential for many involved in theorizing relationalism. In Europe, the phenomenological tradition seems to have also played a role. A distinct brand of relationalism grew up around the work of Pierre Bourdieu (Kivinen and Piironen 2006) and other French sociologists, including but not limited to Luc Boltanski and Bruno Latour, who has himself embraced the early work of Gabriel Tarde, a contemporary of Durkheim (Latour 2010).¹

Mustafa Emirbayer has perhaps been the most vocal advocate for a relational approach to social science. In his “Manifesto for a Relational Sociology,” he defines relationalism in opposition to substantialism. Substantialists identify the source of social action and explanation in fixed entities, be they individuals, societies, or social structures. Relationalists instead believe that the “very terms or units involved in a transaction derive their meaning, significance, and identity from the (changing) functional roles they play within that transaction” (Emirbayer 1997:287). And, “relational theorists reject the notion that one can posit discrete, pregiven units such as the individual or society as ultimate starting points of sociological analysis” (Emirbayer 1997:287).

Emirbayer has been advocating a relationalist perspective since at least 1992, frequently drawing upon the work of Dewey and Mead in formulating new research approaches for network analysis, collective action, ethnomethodology, and studies of democracy (Emirbayer 1992; Emirbayer and Goldberg 2005; Emirbayer and Goodwin 1994; Emirbayer and Maynard 2011; Emirbayer and Schneiderhan 2013). Emirbayer regrets Kant’s influence on sociology, noting the incorporation of mind-body dualism into long-standing distinctions such as emotion versus reason (Emirbayer and Goldberg 2005) and norms versus rationality (Emirbayer and Mische 1998:965–67). Rather than bracket moral action (translated by Parsons into normatively oriented behavior) as the domain of agency, Emirbayer and Mische propose a novel definition drawing from Dewey and Mead in which individuals exist within structures of relations, but the dynamism of those structures requires actors to imaginatively construct the nature of their situation. Thus individuals respond to their circumstances, but they express agency by creatively interpreting their circumstances, which in turn affects the course of action individuals choose. Emirbayer and Mische place a particular emphasis on both temporality, because the choice to orient oneself to the past, present, or future involves significant agency, and the intersubjective nature of the process of interpretation. In their words, “Ends and means develop continuously within contexts that are themselves changing and thus always subject to reevaluation and reconstruction on the part of the reflective intelligence” (1998:967–8).

Central pragmatist ideas embraced by Emirbayer include Dewey’s concepts of intelligent action and emotions (Emirbayer and Schneiderhan 2013); a rejection of dualisms (Emirbayer and Goldberg 2005:474); Peirce’s link between problem-solving, doubt, and creativity; and the more general emphases on experience, practice, and language as intersubjective processes of coordination (Emirbayer and Maynard 2011).

Margaret Somers has been another strong voice advocating a relationalist approach, which she refers to as *relational realism*. She does not link to specific pragmatist philosophers when discussing relational realism, instead highlighting theoretical debts to feminist theorists, race theorists, Charles Taylor, and Thomas Kuhn (Somers 1994, 1998). She does, however, make references to pragmatism and pragmatist readings of texts (1998:731), introduces her theoretical agenda as “relational and pragmatic realism” (1998:743), and obliquely equates relational realism to Mustafa Emirbayer’s relationalism (1998:768, fn. 29).

Somers and Emirbayer make similar polemical points, arguing against essentialism in social science (Somers 1994:605, 621; 2008:205), the dichotomization of concepts such as normative/empirical and material/ideal (Somers 2008:22–4), and the use of a priori categories and entities (Somers 1994:628; 1998:751). Somers does not refer to Kant as the source of these concepts, placing the blame instead on Parsons (Somers 1994:621; 2008:205).

Perhaps because Somers is a comparative-historical scholar, she tends to invoke historicity where a pragmatist philosopher would be more likely to refer to experience. For example, she writes, “Relational realists believe that, while it is justifiable to theorize about unobservables, any particular theory entailing theoretical phenomena is historically provisional. For a relational realism that means one can believe in the reality of a phenomenon without necessarily believing in the absolute truth or ultimate reality of any single theory that claims to explain it” (1998:744). This difference does not, however, seem to indicate any real divergence. She places a strong emphasis on the dynamic flux of history and historical events (1994:621) and resolutely insists upon the social construction of self and identity (1994:607, 620, 622). Indeed her articulation of agency is very similar to Emirbayer and Mische’s: “People are guided to act in certain ways and not others, on the basis of projections, expectations, and memories derived from a multiplicity but ultimately limited repertoire of available, social, public, and cultural narratives” (Somers 1994:614). In addition to aligning with Emirbayer, Somers has indicated that Harrison White was a significant influence; she uses a quotation from his work as the title for the paper in which she develops the idea of relational realism (Somers 1998).

White, for his part, employs mathematical models in his work and has been the target of criticism specifically for ignoring cultural meaning and historical context (Brint 1992). Perhaps in part because of this criticism, White has devoted significant effort to articulating a relational agenda for sociology and social networks. Although philosophers rarely make appearances in his writings, this trend has been reversed in recent work in which Peirce is given pride of place as a central influence on White’s new work on language (Fontdevila, Opazo, and White 2011).

White’s central theoretical vision, articulated in *Identity and Control* (2008), is based upon a conception of reality as turbulent, chaotic, and dynamic. Individuals do not exist prior to the experience of this constant flux but instead emerge from it. “Identities spring up out of efforts at control in turbulent contexts,” he writes (White 2008:1). Our image of ourselves is an illusion that arises from “efforts at control amid contingencies and contentions in interaction” (White 2008:1). Indeed White’s language throughout is one of flows, gels, and processes that attempts to avoid any sense of fixed entities. Consistent with the pragmatists’ emphasis on problem solving, White insists that individuals, meaning, and knowledge emerge from attempts to resolve the constant ambiguity of social circumstances (Fontdevila et al. 2011:179; White 2008). Along with several different coauthors, White objects to dichotomies between communication and action (Fontdevila et al. 2011:179), ties and meaning (White et al. 2007:545), and suggests replacing duality with the idea of dualisms, which he, together with John Mohr, uses to refer to structural interdependence between different orders of social organization (Mohr and White 2008:490).

Perhaps most telling is White’s turn to language. Walter Benjamin has said that a book only truly comes into existence when it has been translated (Benjamin 1968:69–82). White reminds us that all language is an act of translation, from one person to another, and therefore is at its essence relational. Meaning is conveyed, abstracted, disembedded, and made tangible through the relational act of conversing, where it becomes eminently social (White 2008). And all meaning derives from relationships because meaning only occurs when two contexts or identities are linked, in an act of translation, communication, or abstraction

(White et al. 2007:544). Far from ignoring the content of ties, White is using language to dig deep into the interactional contents of relationships.²

Relationships are clearly central to relationalism as defined by White, Somers, and Emirbayer; however, relationships are conceived as dynamic, impermanent, and contingent. They are made, unmade, and reshaped by their social context. If relations are considered to be fixed, independent of context, or prior to social context, this would simply be another version of substantialism. Much of social network analysis simply does not fit within this relational framework. It is better described as formal. Formalism in social networks emerged out of the structuralism in Georg Simmel's works.

FORMALISM

Georg Simmel is widely considered to be a founding father of the social network tradition (Levine, Carter, and Gorman 1976a, 1976b; Levine 1989). Many people emphasize the relational aspects of his theory. Ronald Breiger stresses his debt to Spinoza (Breiger 2011). Mustafa Emirbayer writes of him as "the classical sociologist most deeply committed to relational theorizing" (Emirbayer 1997:288). Simmel also engaged with the work of Edmund Husserl, the founder of phenomenology, another important influence on relationalism (Backhaus 1998, 2003).

However, Simmel's work is widely acknowledged to contain contradictory elements and is complex enough to sustain different interpretations. In particular, Gary Jaworski has documented a mid-century intellectual struggle between competing interpretations of Simmel's work, one driven by Robert K. Merton's middle-range structuralism and the other driven by the phenomenological orientation of the New School (Jaworski 1998). In Merton's hands, Simmel's work was shed of its potentially proto-phenomenological and relational elements (Jaworski 1990). Instead Merton's Simmel was formalist—a term chosen by Simmel himself.

A formal reading of Simmel emphasizes his Kantian early work, rather than the phenomenological or Spinozan side of his later work, and I would argue that it is Simmel's formalism, rather than his phenomenology, that has been embraced in social network analysis. Understanding the logic behind this formalism can help explain issues that have puzzled critics of social network analysis, such as many researchers' lack of interest in culture and context.

A neo-Kantian, formalist interpretation of Simmel puts him in tension with relationalism as described by Emirbayer. In his *Critique of Pure Reason*, Kant (1966/1787) addressed the problem of whether reason alone, without the assistance of empirical observations, could produce knowledge. In Kant's terms this was a question of whether synthetic a priori judgments are possible, where *synthetic* means combining given knowledge or principles to create new information and *a priori* means knowledge prior to experience. The question then was whether knowledge that did not depend upon experience of the empirical world could nevertheless generate new insights. If synthetic a priori judgments were possible, such observations provided a defense of reason, conceived independently of knowledge of the world.

Kant ultimately argued that reason could produce new insights without recourse to empirical observation, as for example in geometry and arithmetic. The reason that geometry could produce insights about the empirical world was not because it was modeled after the world but because the same logic that made reasoning in geometry possible also made our experience of the world possible. For example, Kant argued that a conception of space is both essential to geometry and necessary to our perception of objects in the world. Thus, a

correspondence between the two exists because the logic of geometry is part of the means by which we apprehend the physical world. Since the idea of space is necessary to experiencing the world, it must be prior to experience—it is part of the conditions that make experience possible.

Kant expanded this position to argue that there are certain essential structures of reason. These aspects of the mind, such as the ideas of time, space, and causality, are prior to our experience of the physical world and make empirical observation possible. Since we cannot perceive objects or movement without the concepts of space and time, such categories are not part of perception. Therefore, for Kant these *a priori* structures answer the question “How is nature possible?” Although sometimes interpreted as referring to cognitive or subjective processes in his discussion of the faculties of mind, Kant is now generally understood to have argued that these faculties are necessary for any rational interpretation of the world. Thus, he should not be interpreted as referring to psychological aspects of the human cognitive process but rather to fundamental epistemological principles. Indeed one might infer this from Kant’s identification of the categories of meaning as prior to experience, as they must then necessarily transcend any particular empirical setting by their nature as *a priori* and therefore stand as universal, fixed, and true.³

As a neo-Kantian scholar, Simmel attempted to expand Kant’s philosophy beyond the natural sciences to the social sciences. The rhetorical question Simmel posed was “How is society possible?” (Simmel 2009:40). Following Kant, Simmel argues it is “answered by the conditions which reside *a priori* in the elements themselves, through which they combine, in reality, into the synthesis, society” (Simmel 1971:8). Further, “the sociological apriorities are likely to have the same twofold significance as those which make nature possible. On the one hand, they more or less completely determine the actual process of sociation as functions or energies of psychological processes. On the other hand, they are the ideational, logical presuppositions for the perfect society” (1971:9).⁴ Simmel perceived at least part of his research project as searching out these sociological apriorities (1971:8), understood as the social forms that constitute society. Indeed Leopold von Wiese, Simmel’s student, constructed a catalogue of social forms in order to advance Simmel’s vision for sociology (von Wiese and Becker 1932).

For Kant, the *a priori* exists outside of nature and experience. A straightforward reading of Simmel implies that social forms are *a priori*; that is, they exist prior to experience.⁵ Social forms do not arise from relationships experienced in the real world. Instead, relationships experienced in the world manifest the properties of ideal forms. As Backhaus has described them, Simmel’s social forms “transcend the real acts of consciousness through which they are constituted” (Backhaus 1998:263).⁶ They are not constituted by transactions but instead give form to transactions—because they posit discrete, pre-given, and fixed entities that exist outside of the material plane prior to their instantiation. To be entirely clear, in Simmel’s work, the form of associations cannot exist without the actual associations, as form does not exist without content, but form is not determined by actual associations, just as the shape of a vase is not determined by the liquid it contains. It is instead the synthesis of the two that makes society possible. Still, the ontological quality of these forms, their fixity, stands in contrast to the endless fluidity of the relationalist’s conception of social life.

The differences in the metaphysical underpinnings of relationalism versus formalism have had significant implications for approaches to social network research. The effect can best be seen on four dimensions: the content (i.e., the meaning of ties as well as the meanings that are passed through ties), the importance of the context in which ties occur, conceptions of agency, and the link between micro-level behavior and macro-social outcomes.

THE CONTENT OF TIES

For Simmel, the a priori objects that made society possible were social forms. However, Simmel is inconsistent in how he defines social forms (Wolff 1950:xxxix). Forms can be, on one hand, types of associations (e.g., competition, domination, subordination) or, on the other hand, geometric abstractions like the dyad and triad. He also refers to both specific historical institutions and constant human psychological predispositions as forms and does not hesitate to use the term *form* colloquially as well. Ultimately, as Levine explains, for Simmel, “forms are the synthesizing processes by which individuals combine into supraindividual unities, stable or transient, solidary or antagonistic” (Levine 1971:xxiv), and these include exchange, conflict, domination, and sociability as well as relation of the individual to the group, formal properties of small groups, marriage, wandering, and even adornment, among others.

Despite other inconsistencies, Simmel is clear that forms should be treated as distinct from content—and that forms, not content, are the proper subject of study for sociology. This divide is consistent with the Kantian distinction between a priori forms and a posteriori experience. In “Sociability,” Simmel argues that “neither hunger nor love, neither work nor religiosity, neither technology nor the functions and results of intelligence, are social” (Simmel 1950:41). Instead he gives as an example marriage, which he conceives as a fixed social form filled with varying emotional and individual content. Two people may be bound by marriage but have different feelings toward each other, and the intensity of their commitment may vary over time (Simmel 1971:351). Simmel encouraged social structural models of abstracted forms rather than relational types. This has been one of Simmel’s legacies in social network analysis, a theoretical groundwork for a formal sociology that focuses on patterns of ties at the expense of the content of those ties.

At the very extreme end of the spectrum this has produced a desire for social research devoid of individuals. For example, Donald Black (2000) in his article “Dreams of a Pure Sociology” imagined a field “entirely uncontaminated by psychology or other sciences (compare Simmel 1908/1950:21; Ward 1903). It contains no assumptions, assertions, or implications about the human mind or its contents. It completely ignores human subjectivity, the conscious and unconscious meanings and feelings people experience, including their perceptions, cognitions, and attitudes” (Black 2000:347–8). But even for those who never intended to exclude humanity from sociology, formal approaches have often drained content from research.

Consider a classic article on the diffusion of innovation among physicians written by Coleman, Katz, and Menzel (1971). The study reports how relationships between doctors affected the pattern by which the pharmaceutical drug gammanym was adopted for use by different doctors. There is no information on what gammanym does or, perhaps more important, the risk factors involved in its use. Neither is there a discussion of its effectiveness, which seems to be simply implied by its adoption by a growing number of doctors. Similarly, Thomas Valente’s (1996) study of the diffusion of innovations mentions the innovations under study (tetracycline, hybrid corn, family planning), but variation in the adoption rates of these very distinct technologies is attributed solely to the social structures of the communities involved. This absence is in fact the strength of the research. Much can be learned about the diffusion of innovation without having to research the innovation itself exactly because social structure, at the very least, also affects the rate and progress of adoption. The process of innovation is understood as a social form through which the specific contents of different innovations pass.

In 2004, Peter Bearman and Paolo Parigi published an article noting that since its introduction in 1985, the network instrument of the General Social Survey has been used to do a

great deal of research on relations based on a question that asks respondents with whom they discuss important matters. Until this paper, however, there had been little research investigating what it was that people were talking to each other about (Bearman and Parigi 2004:537). The absence of interest in content is not an oversight within a formal approach to social networks; it is part of an ongoing research program seeking to identify the effects of patterns of social relationship considered in and of themselves. Specifically this means separating out the effect of content from form—or in this case ignoring the content. The analytical power of a great deal of social network research comes from the ability to abstract away from the messy details of real relationships—but this tendency should be considered formal rather than relational.

Relationalists make a different set of claims. Rather than abstract away from meaning, they have made repeated calls for network analysts to include culture and meaning in their research (Emirbayer 1997; Fuhse 2009; McLean 2007; Mische 2011; Pachucki and Breiger 2010). Relationalists begin with the assumption that social networks are meaning (Fuhse 2008:62; Mische 2003:258; White 1992:67). This is to say, quoting Fuhse, that all social networks are “intersubjective constructs of expectations and cultural forms” (Fuhse 2008:52). Another way of approaching this might be to say that the meaning one individual assigns to another is the basis of any relationship; in fact, the absence of meaning could easily be understood as the absence of a relationship—when you have no expectations or knowledge of another individual. Therefore, it is not a stretch to believe that meanings constitute relationships, which in turn compose networks.

Paul McLean, for example, analyzed several hundred letters of Renaissance Florentines written in the competitive context of patronage politics. These individuals were seeking to construct relationships, that is, use social networks, to advance their careers. McLean shows that these individuals manipulated available culture frames, such as honor or *amicizia* (mutually advantageous friendship), in order to construct relationships with others that could be used to channel favors and opportunities. In this case, the network ties did not channel meaning, as in innovation studies; they were built out of meaning. And, McLean cautions, these culturally specific meanings cannot be ignored by researchers, since different ties mean different things to different individuals, and these meanings have strong implications for the way a relationship plays out: “The intensity, durability, flexibility, heterogeneity, and additivity of different social networks cannot be well understood” without an analysis of the meaning of ties (McLean 1998:54).

Ann Mische has similarly shown that young Brazilian activists “jockey over the multiple dimensions of their memberships, identities, and projects in order to build relations with other actors” (Mische 2003:269). She identifies four conversation-based mechanisms or strategies—identity qualifying, temporal cuing, generality shifting, and multiple targeting—through which the activists use conversation practices to build relationships, thus forming the basis of social movements. Each mechanism is a communicative practice, that is, a way of transmitting meaning between participants. Thus, shared meanings are the foundation of relationships, which in turn concatenate into larger affiliation and social networks. In short, for relationalists, meaning is inseparable from the study of social networks because relationships are created out of meaning. For formalists, in contrast, meaning is something that flows through relationships and should be separated out from structural analysis whenever possible. Formalists have sometimes had to come to terms with meaning (Baldassarri and Diani 2007; Gulati and Higgins 2003; Podolny and Baron 1997), but the impetus is to pick out the generalizable aspects of meaning and incorporate these into a more complex set of social forms—not to incorporate the irreducibility of meaning and relationship into the analysis, as relationalists have done.

These understandings play an important role in determining how analysts approach the measurement and definition of a tie. Relationalists object to the duality of tie and content, which is consistent with a Simmelian formalism that understands forms a priori and contents as a posteriori. To overcome this division, relationalists focus on the act of interaction, in which meaning is not separate from but instead creates—or instantiates—relationships (Stark 2011). Thus, the fundamental unit that relationalist researchers should seek to measure (the 0,1 indicators manipulated in matrices and graphs) should be interactions, gathered from behavioral data. For formalists, social forms, or relationships, presuppose interactions and indeed make them possible; thus, the nature of a relationship, a familial tie, for example, will produce different types of interactions and, further, relationships may channel different kinds of meaning as well as information. In this case, ties should be operationalized as relationships recognized by the research subjects and can be gathered through questionnaires or interviews. However, a formalist will not necessarily recognize an interaction as a network tie, whereas a relationalist will distrust subjective beliefs drained of interactional content. These differences end up posing barriers to communication between researchers and when unacknowledged create the potential for problematic comparisons across the results of research that is superficially similar but substantively different.

THE ROLE OF CONTEXT

In “The Problem of Sociology,” Simmel wrote, “In sociology, the object abstracted from reality may be examined in regard to laws entirely inhering in the objective nature of the elements. These laws must be sharply distinguished from any spatio-temporal realization; they are valid whether the historical actualities enforce them once or a thousand times” (1971:28–9). For Simmel, context is also necessarily secondary to the sociological study of forms. If the forms truly are a priori and make society possible in the same way that cognition makes the perception of nature possible for Kant, then the forms are separate from any particular realization and occur in all societies and all contexts.

In network research, this theoretical undercurrent was translated into attempts to identify local network patterns that produce similar outcomes across different contexts. For example, Ivan Chase (1980) published an overview of papers on hierarchy formation in small groups. His research clearly privileges form over content: “Hierarchies emerge from the interaction among group members rather than being generated by differences among those individuals” (Chase 1980:905). But more important, his project involves showing that the social process of hierarchy formation (i.e., a process based not on individual attributes but on interactions between individuals) not only occurs in human societies but is so general as to also occur in animal societies. Grounding processes of hierarchy formation in the animal world, that is, the natural world, gives them a fundamentally different claim to universality than if they were confined to human society. Since animals do not ostensibly have cultures, hierarchy formation is a social form prior to and independent of cultural settings.

Similarly, researchers using small group studies treat context differently than do relationalists and make different types of claims about universality. Exemplary, and now classic, research in this vein was conducted by James Davis, Paul Holland, and Samuel Leinhardt. Davis makes light of the research’s association with Simmel (Davis 1979:54); however, it is also clear that Simmel is both a direct and an indirect influence (Moreno 1934). In 1976, Holland and Leinhardt formalized a method for thinking about and identifying local structural processes in networks—that is, in social groups—called the *triadic census*.

A network is usually composed of several nodes, which often represent people, and arcs, which represent relationships between those people. The structure of the network may be

analyzed through global properties, for example, the degree of clustering in the network, but it may also be investigated through local configurations. The triadic census investigates the pattern of ties between all sets of three nodes (a triad) present within the larger network. The census gives information about which local interactions are driving the larger structure of the network. Holland and Leinhardt are, I believe, relatively catholic about the uses to which the triadic census may be put, but their emphasis—as exemplified by collaborations with Davis—is on psychological processes, such as balance and transitivity theory, that are conceptualized as human rather than cultural (Davis 1963; Homans 1951). The psychological focus abstracts from social, historical, and cultural contexts, and the emphasis on the local pulls attention away from the larger structural context while providing an elegant solution to describing networks.

Despite the theoretical drive to compare social forms across context, the object of inquiry in network research is particularly resistant to comparison. Many network statistics (density being perhaps the most prominent example) are highly dependent upon the size of the network to the extent that straightforward comparison of density measures across networks of different size is problematic. Prominent methodologists have therefore attempted to provide standard procedures for comparing network structure across diverse contexts. In early and seminal work, Boorman and White (1976) used an algebraic approach to detect deep and generalizable structural patterns across networks. Later, Faust and Skvoretz (2002) provided a method for assessing structural similarities by reducing networks to underlying structural tendencies—that is, forms that concatenate over time to produce structure. Faust and Skvoretz focus on mutuality, transitivity, cyclical triples, and star configurations—social forms so abstract they barely correspond to recognizable relational types or processes. The abstract forms, however, provide a grounded basis for suitable comparison across all kinds of network types and, therefore, network contexts. As long as researchers attempt to link local configurations to the same outcomes or attributes across different contexts, they are following an investigative program that was legitimated by Simmel's emphasis on a priori forms.

In relationalism, context plays a much different role. There is a strong emphasis on historicity (Somers 1994) and contingency (White 2008), as well as a pronounced belief that meaning develops in the relation between things rather than in things themselves. This tendency leads relationalists to draw on the insight that “big” is only meaningful in relation to something “small” in order to make more complex arguments about how concepts such as ethnic identity develop in the relation between ethnic groups (Barth 1969). Context is then not simply a setting but a Geertzian web of meaning. Somers describes it as a “social network of relationships (however incoherent or unrealizable) composed of symbolic, institutional, and material practices” (Somers 1994:616).

This approach has two implications for social network analysis. First, social forms, understood as patterns of relationships between individuals, are not something that can be lifted outside of a cultural context but instead must be interpreted through their position within the larger whole. And second, relationalists often conceive of networks as the very web that links individuals and objects of meaning into that larger whole.⁷ The goal is not transposability across settings; instead, networks are a necessary means by which to analyze or interpret one particular setting.

Addressing the first implication, Daniel McFarland has shown that network effects vary across different contexts. He analyzed predictors of student resistance in two high schools and found that network and status effects varied according to the organization of tasks in the classroom and the topic of study. Network density and the status of individual students were both predictors of student resistance, but when they were examined in connection with the

presence of teacher-centered management of tasks, McFarland found that high-status student interventions increased, but the effect of network density on student resistance decreased. These local effects also had much greater explanatory power than race and class-based background variables. As McFarland writes, "The nature of this social context greatly defines what strategies of action are sensible for the actors to take" (McFarland 2001:666). The effects of network position and structure were only fully understood when the interaction with classroom instructional format was also considered, which is to say that the effects of networks were best understood embedded within a larger context, not abstracted from it.

David Stark's (1996) influential article on recombinant property is an example of the second implication, networks as webs of meaning. In this work he described the creation of a new kind of capitalism in the postsocialist economy of Hungary that came about through mixing together and recombining different existing types of property. By evaluating ownership patterns of the 220 largest Hungarian firms, he identified a *mélange* of ties to local government, foreign ownership, private individuals, banks, and other firms. Interfirm ties, in particular, proliferated across the economy, creating a new unit of analysis, the network of firms. This network was a hybrid between market and hierarchy in which firms increased their value by sharing assets and distributing debt across organizational boundaries. He argued that it was not simply the structure of these ties but the reorganization of existing relationships that was so important to reshaping the Hungarian economy. Firm-to-firm ties blurred conceptions of property ownership, creating new opportunities and a new development trajectory for capitalism. As he wrote, "Change, even fundamental change, of the social world is not the passage from one order to another but rearrangements in the patterns of how multiple orders are interwoven. Organizational innovation in this view is not replacement but recombination" (Stark 1996:995).

This is not to say that generalization is absent from relationalist approaches. For example, Stark's work suggests that charting patterns of institutional recombination will be a consistently powerful tool for investigating social and economic transitions. In practice, however, formalism and relationalism have displayed very different attitudes to historically situated research. Relationalists have embraced exotic and historical settings, despite issues with generalizability, as such settings magnify the effect of context for researchers and provide empirical support for the theoretical emphasis on setting. Formalists have treated context as a distraction, avoiding historical or culturally distant settings despite the fact that these should really be incorporated into the research agenda in order to test the generalizability of the forms and mechanisms identified by analysts. The result has been a lack of comparative research for both relationalists and formalists, on one hand because context is so important and on the other because context is of so little importance. This is unfortunate as both could benefit from testing the limits of the applicability of their theories.

THE MICRO-MACRO LINK

The relationalist and formalist perspectives also offer different approaches to the micro-macro issues long problematized in sociology. The "micro-macro problem" is really a catch-all phrase for a number of linked theoretical problems. One part of the micro-macro problem is the question of how micro-interactive patterns cumulate into larger social structures; however, one might also ask how social scientists reconcile the fact that two different styles of explanation occur or appear valid at different levels of social formations. And perhaps most central to the development of social theory, how is agency reconciled with a social structural perspective?

Network scholars have argued that network analysis offers a unique solution to the micro-macro problem (Burt 1980; Emirbayer and Goodwin 1994). To quote Emirbayer and Goodwin, “By thus facilitating analyses at both the individual and group level, 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 interactions of groups or institutions” (Emirbayer and Goodwin 1994:1418). Again I would argue, contrary to this, that social network research offers two distinct approaches to the relationship between micro and macro.

First consider Emile Durkheim’s definition of structural social phenomena, which is entirely consistent with a formal theory of social networks. Durkheim described social structure as “the number and nature of the elementary parts of which society is composed, the way they are arranged, the degree of coalescence they have attained, the distribution of population over the surface of the territory, the number and nature of channels of communication, the form of dwellings, etc.” (Lukes 1973:9). Such a description is reminiscent of Simmel’s work. Indeed, Durkheim owed a theoretical debt to Simmel, whose work he both published and critiqued in the *Année Sociologique*. In “Sociology and Its Scientific Field” (1900/1960), Durkheim began by criticizing Simmel’s work on social forms but ultimately moved to incorporate Simmel’s concept of forms into his larger vision of sociology, suggesting finally that they should be studied under the title “social morphology,” a subfield which he argued should complement the study of social functions.⁸

Gary Jaworski (1994) has argued that the popularity and influence of Simmel’s work at this time made it necessary for Durkheim to appropriate elements of it in order to proceed with his larger project of building an institutional infrastructure for the new discipline of sociology. I argue that there were theoretical reasons for Durkheim to incorporate Simmel’s work into his larger project. Although Durkheim was not a formalist, there was an underlying affinity in the way that these two theorists approached what we now think of as the micro-macro problem.

It is well known that one of Durkheim’s central projects was to identify society as a distinct object or system, separate from and entirely different than a mere collection of individuals. This was an important justification for the emerging discipline of sociology. What it implies, however, is that Durkheim was not interested in resolving the distinction between micro- and macro-levels of analysis. He was interested in creating it. Simmel’s work offered another means by which to consider how society had properties that could not be located in individuals, thus emphasizing the distinct existence of the social. For example, the number and nature of channels of communication have an impact on individual behavior but derive from collective behavior. Thus they have the appearance of a social fact.

For Simmel, it was the disjuncture of the individual from the social that is the basis for society; in his words, “The a priori of social life consists of the fact that it is not entirely social” (1971:14). It is, in fact, the tension between individuality and groupness that permeates Simmel’s conception of the social. By comparing individuals with society we are able to see both the individual as distinct from society and society as distinct from individuals—so each conception relies upon the other (1971:6–22). Again and again, although perhaps most explicitly in “The Metropolis and Mental Life” and “Group Expansion and the Development of Individuality,” Simmel (1971) comes back to the productive tension between the opposite but intertwined notions of individuality and group.

The city cultivates individuality through increasing freedom but decimates individuals under the weight of “depersonalizing cultural achievements” (1971:338). People are less bound to others but also less fully realized as their personal development is suppressed by the rational calculativeness demanded by city life. In “Group Expansion and the Development

of Individuality,” that give and take is part of a general process in which increases in individuality are always compensated for or matched by increases in groupness, so that a balance—the balance that maintains society—is always achieved. Individuals experience interactions, but those interactions are a vessel through which individuals imperfectly experience the essential categories of the individual and the group. Like Durkheim’s work, this approach does not so much resolve the micro-macro problem as create a conceptual apparatus that helped make it an enduring feature of social theory.⁹

Preservation of the idea of the individual as distinct from the social continues in later formalist works. John Levi Martin’s book *Social Structures* (2009) is a particularly compelling and sophisticated version of formalism. Martin himself should not be categorized solely as a formalist. Much of his work draws from Bourdieu (Martin 2000, 2003; Martin and George 2006). Bourdieu is generally considered to be relational—although not necessarily relationalist in Emirbayer’s sense—and Martin himself associates his work on field theory with Emirbayer’s relationalism (Martin 2003:40). However, Simmel is also a strong influence. For example, Martin cites Simmel in the first page of an article in which he proposes a method for analyzing beliefs without reference to their contents (Martin 2002:862). Martin engages with the pragmatists but has approached their work with some skepticism (Martin 2003). His most recent book makes a compelling argument about the importance of resuscitating Kant’s third critique, the theory of judgment (Martin 2011).

It is in his book *Social Structures* that Martin theorizes social network research. The influence of Simmel on this text is explicit. The book opens with a quote from Simmel, and he is repeatedly cited as an inspiration in the introductory chapter (Martin 2009:1–25). Martin’s project in this book is to identify a small number of local interaction patterns (i.e., social forms) that produce larger concrete patterns, or rules, of interaction (i.e., social structures) across all types of contexts. Contrary to a strictly formalist interpretation of Simmel, Martin argues that relational contents do matter (Martin 2009:8), yet he resists detailed examinations of specific interactional contents as much as possible in order to associate actors’ subjective expectations about relationships with extremely abstract, generalizable social forms, such as asymmetry, equality, and exchange (Martin 2009:81–2). History is considered, but not as a unique or relational space; instead it is a site for “common pressures that facilitate or impede the construction of regular aggregations of relationships” (Martin 2009:328). Martin implies that interactions may be fluid, but what is sociologically interesting is that they produce concrete structures. He is more interested in “relations,” mutual expectations about behavior, than “relationships,” by which he means actual interactions (Martin 2009:336). These structures are not merely efforts to contain the turbulent mess of interactions produced by social life, as in White’s relational sociology; they are Durkheimian social facts confronting the individual. They are not fluid but instead are obdurate, defined crystallizations that stand outside of the individuals and interactions that created them (Martin 2009:1–25). For these structures to stand outside of individuals, there must be an individual that exists outside of social structure.

Martin is thus both internally and externally consistent with formal theory when he insists upon the existence of the individual. The analysis of fixed social structures requires theorists to posit the idea of the individual acting within those structures, thereby preserving the duality of the individual and society. In his words, “I do not believe there is sufficient analytic ground to treat relations—in this case, interactions—as the things, as opposed to the persons” (Martin 2009:14 f. 18). And although understated in his criticism of works that take such an approach (specifically the work of Harrison White), Martin believes that the analysis of ties between organizations is likely to be fundamentally different than the analysis of ties between people (2009:335).

Relationalism, on the contrary, seeks to problematize the categories of individual and group through its focus on relations and interactions. In White's words, "My theory aims not just to sidestep the 'structure and agency' problem, but to build on grounds of concepts that eliminate that problem" (White 2008:15).

White opens *Identity and Control* (2008) with a description of children playing in a playground. The scene begins with children happily engaging in different play activities. When playing, the children are engrossed in their task. In White's sense, their entire being is involved in their particular play activity, so that when they move from task to task, they become different selves—or are in different states of being. Identity, or the idea of individuality, comes when there is a clash or a mismatch between different activities. White's example is "when the clothes that classmates insist upon, as their badge of belonging, are disdained by a parent at home" (White 2008:5). Now the children must make sense of contrary expectations in each setting, and they do so by creating a story, or a sense, of how they move from sphere to sphere. This story, and the clash of interactions that made it necessary, is the basis for a sense of identity or individuality.

Similarly, groups emerge out of interactions and relations. In White's language, "task groups as status systems [are] made up from socially patterned judgments around networks" (2008:63). Production markets are perhaps White's most developed example of group formation (White 2002). Markets are groups, individuals know when they are in the market for something, and producers know who else is in the market, that is, who their competitors and buyers are. As White shows, markets do not simply emerge from the ether; they are constructed and depend upon very real relationships—perhaps most important the relationship between producer and consumer. Producers do not create products because they are internally driven to bring something to the market; they make products because they expect consumers to buy them, and those expectations are a crucial part of the price-setting mechanism in White's market model. Intersubjectivity is therefore central to the existence of the market.

In *Identity and Control*, and in relationalism more generally, the individual and the group, or the social, are not essential categories; they are simply different manifestations of similar processes. Both are derived through relations, or the messy interactions of daily life. The theoretical presuppositions of relationalism drive researchers to explore collective dynamics that emerge only through the complexity of multiple interacting units—not in discrete interactions between individual and collective forces, such as are found in the local structural patterns of the formalists. In fact, the importance of relations relative to identities leads researchers away from a focus even on groups, and many of these works locate the source of change in the interstices between groups rather than through endogenous group developments (Padget and Powell 2012).

AGENCY VS. PROCESS

Part of the reason that the micro-macro problem offers an enduring and rich theoretical puzzle is because different attempts to resolve it inevitably touch on the problem of agency. Simmel's approach to agency again can be straightforwardly interpreted through the lens of neo-Kantianism. This perspective shows an interesting inversion of Kant's approach to free will. Kant argued that because we perceive nature, our perceptions must exist outside of nature, and since they exist outside of nature, they are not subject to the laws of nature. For Simmel, social forms exist within society, and therefore those forms are subject to the laws of society—which is the proper study of sociology. Social forms are both a priori and subject to deterministic laws (Simmel 1971:3–35). The forms, however, could have different

contents—and form is distinct from content—so the contents of forms are the domain of individual agency. The individual's influence over the cultural content of social forms leaves space for autonomy and choice. It follows that the study of culture should be excised from the science of society, since it is the realm of agency and is resistant to scientific investigation.¹⁰

A later attempt was made to formulate a different theory of agency still based in Simmel's work but drawing from his theory of overlapping social groups (the web of group affiliations). Rose Laub Coser developed this approach in her essay, "The Complexity of Roles as a Seedbed of Individual Autonomy" (1975). Drawing also from Merton, Rose Laub Coser argued that the multiple, overlapping role sets occupied by individuals in modern society give them autonomy by allowing them to decide which role they would like to occupy at a given time, thus offering different options for behavior. Granovetter refers to Rose Laub Coser's work in "The Strength of Weak Ties: A Network Theory Revisited" (1983) and seems to adopt this position in his discussion of agency in "Economic Action and Social Structure: The Problem of Embeddedness" (1985), where he argues that agency is derived from the fact that actors are "embedded in concrete, ongoing systems of social relations" (Granovetter 1985:487).

The problem with this interpretation, however, is that without further clarification it is not immediately clear why occupying a complex structural position composed of many roles would increase autonomy rather than impose additional constraints on behavior (as for example in role strain theory). One might consider, for example, whether a working mother has more or less autonomy given her performance of multiple roles. Simmel argued that overlapping affiliations increased individuality, but he did not associate individualism with increased autonomy. Far from freeing modern individuals, according to Simmel, multiple associations "determine" them (1964:141, 144, 150). Indeed, in modern times, "the individual as a moral personality comes to be circumscribed in an entirely new way" (1964:141). The benefit that does come to individuals who participate in numerous different groups is that their personality is "enriched" (1964:142, 149, 154).¹¹ By this I would argue Simmel means cultural and personal enrichment—deeper appreciation of the arts and life, more subtle and nuanced patterns of thought and communication, even higher, more refined expressions of creativity—not increased autonomy. Thus, the emphasis on different, overlapping role sets does not in and of itself rescue the idea of agency from within a formalist perspective with its emphasis on the static crystallization of ties.

For relationalists, agency is a less problematic concept to begin with. Kant and Simmel believed that it was possible, or even likely, that science would produce a thorough explanation of all the parts and processes of the natural and social world. In a sense, then, free will was endangered by a scientific worldview. But relationalists emphasize contingency and historically particular explanation rather than deterministic laws. Thus, the possibility of science accurately predicting all human behavior based on universal covering laws is ruled out.

The constant flux of social environments posited by relationalists engages actors in repeated interactions. This is the lived experience so important to pragmatists. Because there are no clear temporal boundaries to a dynamically shifting environment or indeed spatial boundaries to the relevant social context, actors must creatively define the situation for themselves. For example, in negotiations within a boardroom, actors must decide whether they are responding to the other individuals in the room, individuals they represent who are outside of the room, or perhaps their mother's expectations for the kind of person they would become as adults. This process does not consist of an actor deciding to shift between existing roles, which may offer additional constraints, but instead creatively determining and negotiating an otherwise unfixed social context.¹²

Shifting temporal patterns and strategic choice may be seen as central, for example, to the narrative in "Robust Action and the Rise of Medici, 1400–1434" (Padget and Ansell 1993).

In this study, John Padgett and Christopher Ansell showed the historically contingent process through which the marriage, economic, and patronage networks of the Florentine Renaissance evolved into a network of relations that allowed for and sustained Cosimo Medici's rise to power through a strategy of multivocality or "robust action." Because of its involvement in various internal politics, the Medici party came to occupy a marginal position in Florentine elite society. That very marginality came to mean the party was able to bridge various factions and take power. However, its ultimate success also depended upon the strategic manipulation of Cosimo Medici himself, whose strategy of rule depended on his ability to take actions that could be interpreted as beneficial by many distinct, and indeed often opposed, factions. Cosimo's rule, and therefore the centralization of power in Florence, depended upon both the complex and contingent historical process that had resulted in the particularly fractured structure of alliances it had created in Florentine society and the actor's creative response to this situation.

The difference between relationalist and formalist approaches to agency is not simply a shift in the locus of action from the individual to the social. Both the formalist and relationalist positions strongly emphasize the structural sources of social action. The crucial difference between the two lies in their beliefs about the fixity of forms. In a formalist approach, structural position largely dictates what actions individuals take. In a relational explanation, the ambiguity, complexity, and flux of any one position require the constant interpretation of circumstance through which agency is expressed. The emphasis on experience, interactions, temporality, and performance is central to this conception of agency (Stark 2011). Somewhat counterintuitively then, despite a formalist emphasis on the existence of the individual, the individual as a locus can play a larger role in relationalist explanations of social outcomes than in formalist explanations, which, if consistent, are more likely to treat the individual as a vessel, responding to particular structural or environmental conditions.

The temporal dimension to agency and the dynamism embraced by relationalists imply different data requirements. Whereas a formalist can often be content with static images of network structure at any one point in time, understanding the evolution of network structures over time will be much more important to relationalist explanatory strategies. Similarly, using interactions as the basis for ties will produce more dynamic networks, but for formalists interactional data will simply complicate the underlying structure of stable relationships, which would be better measured through the beliefs individuals have about their relations to others. A more explicit sense of why researchers make these choices would significantly aid in the interpretation of different research projects, particularly in establishing what types of criticism are valid given the goals of the researcher.

CONCLUSION

Many readers will note that formalism appears to be aligned with deductive reasoning, whereas relationalism is aligned with inductive reasoning. One question then may be whether this is all there is to the contrast between the two approaches. An emphasis on the *a priori* in formalism naturally lends itself to a deductive mode of inquiry; however, deduction does not automatically lend itself to study of crystallized, locally defined structures of social relations that constrain individual behavior and/or outcomes. And induction does not necessarily lead to a focus on relations between things as a locus of action and meaning, rather than the things themselves. Similarly, universalism and particularism are two poles that capture something of the difference but do not describe the full complexity of each perspective. Posing induction and particularism versus deduction and universalism does little to illuminate the different positions of relationalism and formalism on agency and

micro- and macro-level processes. The reason relationalism and formalism appear opposed along many analytical dimensions is linked to the fact that relationalism is largely based on pragmatism, which was, at least in part, a critical response to Kant. Reducing these two theoretical approaches to a simple dichotomy rules out understanding that alternative approaches with their own internal logic and intellectual lineage exist, such as complexity theory or structural anthropology, and rules out the potential for working through the contradictions as well.

Rather than diametric opposites, relationalism and formalism should be considered two distinct and well-developed theoretical foundations for social network research (despite claims that formalist research is atheoretical). However, there is a significant tension between the two that stems from a basic disagreement over the status of a priori social forms, where formalism embraces and relationalism largely rejects the initial premise of the existence of the a priori. A dogmatic embrace of either approach will almost inevitably ignore a large body of useful work—or render its goals and methods incomprehensible. For example, Emirbayer and Goodwin argue that network researchers have forgotten the importance of culture, values, and agency. However, seen through the lens of formal and relational theory, it is clear that formal social network analysts work within a theoretical tradition that privileges form (i.e., structure) over content (i.e., culture). Imposing only one of these theoretical narratives suppresses the philosophically grounded and logically sound reasons why formalists may consciously eschew an emphasis on culture—in order to identify a priori forms that transcend specific cultures or to preserve a sense of contingency in human life via the domain of culture and meaning. Such attempts are likely to simply increase confusion between researchers attempting to communicate or to evaluate each other's works. Any inclusive theoretical framework for social network research will have to address these underlying tensions in order to avoid unproductive partisanship and logical incoherence.

Given that unification under the banner of a shared interest in “relations” elides important distinctions that muddy debate, what sort of resolution is possible for social network research? I briefly outline four possible approaches: choosing one or another framework, theoretical pluralism, adopting a new theory powerful enough to encompass both approaches, and empirical research exploring the areas of tension between the two research programs.

There are clear advantages to adopting a formalist perspective, which offers a well-defined research program, the end goal being the enumeration of all meaningful social forms, complete with an understanding of their effect on focal actors. Since social forms are local—otherwise they could not be transposable to other contexts—this enumeration is perhaps an attainable goal. Certainly the construction and investigation of the triadic census, a complete enumeration of all possible combinations of relations between three actors, provide a beginning (Davis 1979). Studies on the generalizability of the principle of reciprocity and its relationship to social structure (Gouldner 1960; Martin 2009) also fit in this mold, as well as Heider and Festinger's balance theory (Festinger 1957; Heider 1958) and Davis, Holland, and Leinhard's transitivity theory (Davis 1979). Research on different types of brokerage roles (Gould 1989; Gould and Fernandez 1989), local motifs in network structures (Faust and Skvoretz 2002; Milo et al. 2002), and network exchange theory (Cook and Emerson 1978; Willer 1999) may also be considered important contributions to what could become an encyclopedic investigation of egocentric social forms. All are largely transposable local patterns identifiable through graph theory that link external structures of relations to individual behavior via psychological mechanisms that exist prior to an individual's experience of the world and require minimal attention to the contents of interactions. Emerging work on the relationship of genetics to social structure will potentially play an increasing significant role for work in the formalist tradition (Conley, Rauscher, and Siegal 2013; Fowler, Dawes, and Christakis 2009).

Clearly a challenge for formalism is the consideration of networks contents, which have been shown many times to affect network processes (Baldassarri and Diani 2007; Gulati and Higgins 2003; Podolny and Baron 1997). Simmel, who was somewhat imprecise, demonstrated a way forward by simply broadening what is meant by social forms. Researchers then could incorporate culture and meaning by picking out separable and repeatable elements of culture. Alternatively, a nested approach may be attempted, where certain social forms, for example dominance and equality, may be considered a priori conditions necessary for intersubjectivity and communicative interaction, but all other social contents operate according to an a posteriori logic and should be researched using a relationalist mode of analysis. This nesting cannot be considered a compromise as it is in contradiction to relationalist opposition to transcendent givens. Further consideration of research in evolutionary and developmental psychology may also be warranted before unconditionally adopting this stance.

If relationalism were to become the central theoretical tradition of social network research, it might find establishing a defined research agenda a difficult task—particularly as much current research is based on criticisms of formalist approaches. Relationalism has a less clearly defined agenda but also is not so entirely moored to outcomes for individual actors. There are many social processes that are of great interest, not because of their impact on any one person (or actor) but because of their impact on society itself—for example, state formation, social revolution, economic transformation, and collective action. In fact, the entire subgenre of historical network research can be reasonably considered to fall within a relational framework (Bearman 1993; Erikson and Bearman 2006; Gould 1995; Hillmann 2008a, 2008b; McLean 2007; Padgett and Ansell 1993; Padgett and McLean 2006; Van Doosselaere 2009). Thus, a focus on social and historical transformation may provide a guiding thread. This does not however imply that a relational approach must be confined to the distant past, as demonstrated by work on collective action (McAdam 1990; Mische 2003) and crisis resolution (Gibson 2011), among other topics.

A central problem for relationalists will be the lack of generalizability for many of their research findings. However, in many cases relationalists are making claims about very large and enduring cultural systems—such as capitalism (Stark 1996) or the idea of citizenship (Somers 2008). I believe that relationalists will have to further develop the possibilities for identifying and delineating distinct social systems in order to avoid a hermeneutical trap of unique research findings. An effort to do so is already underway in research on culture (Goldberg 2011) and contexts (Diehl and McFarland 2010). The possibility of nesting approaches is also an option for relationalists, who may incorporate repeated local patterns into their explanatory strategies as mechanisms, with the understanding that those mechanisms are only comprehensible tools when embedded within a description of the cultural and historical understandings of subjects in any one research context. A pragmatist theory of mechanisms has already been outlined (Gross 2009).

Other philosophical systems may offer additional paths through which to reconcile the two perspectives, given that adopting a new framework will also require fundamental reconceptualization of basic assumptions in formalism and relationalism.¹³ It may prove difficult, however, to persuade researchers to adopt an entirely new framework. A simpler approach may be to encourage theoretical pluralism in social networks, where different traditions are acknowledged and evaluated on their own terms. Pluralism contributes to fragmentation of the field but is also consistent with current state of social theory in general (Levine 1995). Finally, I suggest that although theoretical disagreement cannot necessarily be resolved by empirical analysis, it can certainly stimulate empirical research. For example, it is possible to empirically investigate how agency is expressed in structural settings as well as how network contents transform or instantiate structural patterns. Thus, many insights, which may change the nature of the debate, could emerge in the course of conducting research focused on the points of greatest theoretical dispute.

ACKNOWLEDGMENTS

I would like to thank Julia Adams, Peter Bearman, Scott Boorman, Damon Centola, Philip Gorski, Stephen Kalberg, Richard Lachmann, Andrew Papachristos, Arnout van de Rijt, Sampsa Samila, David Stark, anonymous reviewers, and the participants of Boston University's Society, Politics & Culture Workshop, Yale University's Comparative Research Workshop and Organizational Behavior Workshop, Columbia University's Networks and Time Workshop for their helpful comments.

NOTES

1. Similarities between relational sociology and actor-network theory have been explored by Sophie Mützel (Mützel 2009).
2. White's relationalism and his influence on the development of relationalism in social network analysis have been treated at greater length by Ann Mische (2011).
3. For the prevalence of a psychological reading of Kant by his contemporaries, see Warren Schmaus (2003) on Emile Durkheim's reading of Kant.
4. Simmel seems to be acknowledging two different readings of Kant, one psychological and the other epistemological. The psychological reading was being upended during the time in which Simmel produced his research. Although Simmel was more closely affiliated with the Baden school of neo-Kantianism (rather than the Marburg school), Simmel was certainly aware of Hermann Cohen's work as Simmel introduced Ernst Cassirer to Cohen's work during a course the two took together on Kant (Friedman 2011). It was Cohen who first introduced an epistemological, rather than psychological, reading of Kant.
5. Positing another a priori outside of the faculties of reason and in social relations is a significant break with Kant, but that is far beyond the scope of the paper. Gary Backhaus does deal with this issue in his articles.
6. Backhaus is focusing on Simmel's affinity with Husserl's phenomenology in this writing; however, his interpretation also emphasizes the importance of local structures over individuals' experience of them and the way in which they predate the local interactions that might otherwise seem to produce them.
7. Although it has been within the purview of relationalism to analyze networks composed solely of signs and symbols, this runs this risk of reproducing the mind/body, culture/form dualism of a Saussurian versus Peircian basis for semiotics.
8. Not incidentally, Durkheim, along with Simmel, is often identified as a founding father of social networks (Borgatti and Lopez-Kidwell 2011; Emirbayer and Goodwin 1994; Martin 2009).
9. It is also true that Simmel has been used by others to attempt to dissolve the distinctions between macro- and micro-levels; for example, Breiger emphasizes Simmel's debt to Spinoza, arguing that the duality of persons and groups stems from their essential unity—each is simply a different manifestation of the same substance (Breiger 1974, 2011). That both interpretations are possible is again a testimony to the complexity and multivocality of Simmel's texts.
10. Simmel also studied culture, but in many cases he did not consider his work on culture sociological. For example, consider the titles of *Philosophie des Geldes* and *Philosophische Kulture*.
11. Simmel (1964:166–7) described freedom as a fixed attribute of society: Each society has its quotient of freedom that is expressed in different manners in different periods of time that possess different types of social organization. Freedom was simply expressed differently in primitive societies.
12. The importance of the creativity of actors in constructing their social context also has important implications for how content and context are interpreted within a relationalist agenda, although this remains underexplored.
13. Readers and reviewers have, for example, suggested Wittgenstein as well as the work of activity theorists L. S. Vygotsky, A. N. Leont'ev, and A. R. Luria.

REFERENCES

- Backhaus, Gary. 1998. "Georg Simmel as an Eidetic Social Scientist." *Sociological Theory* 16:260–81.
- Backhaus, Gary. 2003. "Husserlian Affinities in Simmel's Philosophy of History: The 1918 Essay." *Human Studies* 26:223–58.
- Baldassarri, Delia and Mario Diani. 2007. "The Integrative Power of Civic Networks." *American Journal of Sociology* 113:735–80.

- Barth, Fredrik. 1969. *Ethnic Groups and Boundaries: The Social Organization of Culture Difference*. Boston, MA: Little, Brown.
- Bearman, Peter. 1993. *Relations into Rhetorics: Local Elite Social Structure in Norfolk England, 1540–1640*. New Brunswick, NJ: Rutgers University Press.
- Bearman, Peter and Paolo Parigi. 2004. "Cloning Headless Frogs and Other Important Matters: Conversation Topics and Network Structure" *Social Forces* 83:535–57.
- Benjamin, Walter. 1968. *Illuminations: Essays and Reflections*, edited by H. Arendt. New York: Schocken Books.
- Black, Donald. 2000. "Dreams of a Pure Sociology" *Sociological Theory* 18:343–67.
- Bonacich, Phillip. 2004. "The Invasion of the Physicists." *Social Networks* 26:285–88.
- Boorman, Scott A. and Harrison C. White. 1976. "Social Structure from Multiple Networks. II. Role Structures" *American Journal of Sociology* 81:1384–446.
- Borgatti, Stephen P. and Virginie Lopez-Kidwell. 2011. "Network Theory." Pp. 40–54 in *The Sage Handbook of Social Network Analysis*, edited by J. Scott and P. Carrington. Thousand Oaks, CA: Sage.
- Borgatti, Stephen P., Ajay Mehra, Daniel J. Brass, and Guiseppe Labianca. 2009. "Network Analysis in the Social Sciences." *Science* 323(5916):892–5.
- Brint, Steven. 1992. "Hidden Meanings: Cultural Content and Context in Harrison White's Structural Sociology." *Sociological Theory* 10:194–208.
- Breiger, Ronald. 1974. "The Duality of Persons and Groups." *Social Forces* 53:181–90.
- Breiger, Ronald. 2011. "Baruch Spinoza: Monism and Complementarity." Pp. 253–62 in *Sociological Insights of Great Thinkers: Sociology through Literature, Philosophy, and Science*, edited by C. Edling and J. Rydgren. Santa Barbara, CA: Praeger.
- Burt, Ronald. 1980. "Models of Network Structure." *Annual Review of Sociology* 6:79–141.
- Chase, Ivan D. 1980. "Social Process and Hierarchy Formation in Small Groups: A Comparative Perspective." *American Sociological Review* 45:905–24.
- Coleman, James, Elihu Katz, and Herbert Menzel. 1971. "The Diffusion of an Innovation Among Physicians." *Sociometry* 20:253–70.
- Conley, Dalton, Emily Rauscher, and Mark L. Siegal. 2013. "Beyond Orchids and Dandelions: Testing the 5HTT 'Risky' Allele for Evidence of Phenotypic Capacitance and Frequency Dependent Selection." *Biodemography and Social Biology* 59:37–56.
- Cook, Karen S. and R. M. Emerson. 1978. "Power, Equity and Commitment in Exchange Networks." *American Sociological Review* 45:721–39.
- Coser, Rose Laub. 1975. "The Complexity of Roles as a Seedbed of Individual Autonomy." Pp. 237–63 in *The Idea of Social Structure: Papers in Honor of Robert K. Merton*, edited by Lewis A. Coser. New York: Harcourt Brace Jovanovich.
- Davis, James A. 1963. "Structural Balance, Mechanical Solidarity, and Interpersonal Relations." *American Journal of Sociology* 68:444–62.
- Davis, James A. 1979. "The Davis/Holland/Leinhardt Studies: An Overview." Pp. 51–62 in *Perspectives on Social Network Research*, edited by P. W. Holland and S. Leinhardt. New York: Academic Press.
- Diehl, David and Daniel McFarland. 2010. "Toward a Historical Sociology of Social Situations." *American Journal of Sociology* 115:1713–52.
- DiMaggio, Paul. 1992. "Nadel's Paradox Revisited: Relational and Cultural Aspects of Organizational Structure." Pp. 118–42 in *Networks and Organizations: Structure, Form, and Action*, edited by N. Nohria and R. G. Eccles. Boston, MA: Harvard Business School Press.
- Durkheim, Emile. 1960. "Sociology and Its Scientific Field." Pp. 354–75 in *Emile Durkheim, 1858–1917: A Collection of Essays with Translations and a Bibliography*, edited by K. H. Wolff. Columbus, OH: Ohio State University Press.
- Durlauf, Steven N. 2002. "Bowling Alone: A Review Essay." *Journal of Economic Behavior & Organization* 47:259–73.
- Emirbayer, Mustafa. 1992. "Beyond Structuralism and Voluntarism: The Politics and Discourse of Progressive School Reform, 1890–1930." *Theory and Society* 21:621–64.
- Emirbayer, Mustafa. 1997. "Manifesto for a Relational Sociology" *American Journal of Sociology* 103:281–317.
- Emirbayer, Mustafa and Chad Goldberg. 2005. "Pragmatism, Bourdieu, and Collective Emotions in Contentious Politics." *Theory and Society* 34:469–518.

- Emirbayer, Mustafa and Jeff Goodwin. 1994. "Network Analysis, Culture, and the Problem of Agency." *American Journal of Sociology* 99:1411–54.
- Emirbayer, Mustafa and Douglas Maynard. 2011. "Pragmatism and Ethnomethodology." *Qualitative Sociology* 34:221–61.
- Emirbayer, Mustafa and Ann Mische. 1998. "What Is Agency?" *American Journal of Sociology* 103:962–1023.
- Emirbayer, Mustafa and Erik Schneiderhan. 2013. "Dewey and Bourdieu on Democracy." Pp 131–57 in *Bourdieu and Historical Analysis*, edited by P. Gorski. Durham, NC: Duke University Press.
- Erikson, Emily, and Peter Bearman. 2006. "Malfeasance and the Foundations for Global Trade: The Structure of English Trade in the East Indies, 1601–1833." *American Journal of Sociology* 112:195–230.
- Faust, Katherine and John Skvoretz. 2002. "Comparing Networks across Space, Time, Size, and Species." *Sociological Methodology* 32:267–99.
- Festinger, Leon. 1957. *A Theory of Cognitive Dissonance*. Evanston, IL: Row.
- Fontdevila, Jorge M., Pilar Opazo, and Harrison C. White. 2011. "Order at the Edge of Chaos: Meanings from Netdom Switchings Across Functional Systems." *Sociological Theory* 29:178–98.
- Fowler, James H., Christopher T. Dawes, and Nicholas A. Christakis. 2009. "Model of Genetic Variation in Human Social Networks." *Proceedings of the National Academy of Sciences* 106:1720–4.
- Freeman, Linton C. 2011. "The Development of Social Network Analysis—with an Emphasis on Recent Events." Pp. 26–39 in *Sage Handbook of Social Network Analysis*, edited by J. Scott and P. Carrington. Thousand Oaks, CA: Sage.
- Friedman, Michael. 2011. "Ernst Cassirer." *The Stanford Encyclopedia of Philosophy (Spring 2011 Edition)*, edited by E. N. Zalta. Retrieved July 15, 2013 (<http://plato.stanford.edu/archives/spr2011/entries/cassirer/>).
- Fuhse, Jan A. 2009. "The Meaning Structure of Social Networks." *Sociological Theory* 27:51–73.
- Fuhse, Jan and Sophie Mützel. 2011. "Tackling Connections, Structure, and Meaning in Networks: Quantitative and Qualitative Methods in Sociological Network Research." *Quality & Quantity* 45:1067–89.
- Gibson, David. 2011. "The Interactional Production of Possibility and the Cuban Missile Crisis." *American Journal of Sociology* 117:361–419.
- Goldberg, Amir. 2011. "Mapping Shared Understandings Using Relational Class Analysis: The Case of the Cultural Omnivore Reexamined." *American Journal of Sociology* 116:1397–436.
- Gould, Roger. 1995. *Insurgent Identities: Class, Community, and Protest in Paris from 1848 to the Commune*. Chicago, IL: University of Chicago Press.
- Gould, Roger V. and Roberto M. Fernandez. 1989. "Structures of Mediation: A Formal Approach to Brokerage in Transaction Networks." *Sociological Methodology* 19:89–126.
- Gould, Roger. 1989. "Power and Social Structure in Community Elites." *Social Forces* 68:531–52.
- Gouldner, Alvin W. 1960. "The Norm of Reciprocity: A Preliminary Statement." *American Sociological Review* 25:161–78.
- Granovetter, Mark. 1979. "The Theory-Gap in Social Network Analysis." Pp. 501–18 in *Perspectives on Social Network Research*, edited by P. Holland and S. Leinhardt. New York: Academic Press.
- Granovetter, Mark. 1985. "Economic Action and Social Structure: The Problem of Embeddedness." *American Journal of Sociology* 91:481–510.
- Granovetter, Mark. 1983. "The Strength of Weak Ties: A Network Theory Revisited." *Sociological Theory* 1:201–33.
- Gross, Neil. 2009. "A Pragmatist Theory of Social Mechanisms." *American Sociological Review* 74:358–79.
- Gulati, Ranjay and Monica C. Higgins. 2003. "Which Ties Matter When? The Contingent Effects of Interorganizational Partnerships on IPO Success." *Strategic Management Journal* 24:127–44.
- Heider, Fritz. 1958. *The Psychology of Interpersonal Relations*. New York: Wiley.
- Hillmann, Henning. 2008b. "Mediation in Multiple Networks: Elite Mobilization before the English Civil War." *American Sociological Review* 73:426–54.
- Hillmann, Henning. 2008a. "Localism and the Limits of Political Brokerage: Evidence from Revolutionary Vermont." *American Journal of Sociology* 114:287–331.
- Homans, George C. 1951. *The Human Group*. New York: Routledge and Kegan.

- Jaworski, Gary Dean. 1984. "Simmel and the *Annee*." Pp. 161 in *Georg Simmel*, edited by D. Frisby. London: Ellis Horwood.
- Jaworski, Gary Dean. 1990. "Robert K. Merton's Extension of Simmel's *Uberschbar*." *Sociological Theory* 8:99–105.
- Jaworski, Gary Dean. 1998. "Contested Canon: Simmel Scholarship at Columbia and the New School." *The American Sociologist* 29:4–18.
- Kant, Immanuel. 1787 [1966]. *Critique of Pure Reason*, translated by F. Max Müller. New York: Doubleday Anchor.
- Kivinen, Osmo and Tero Piironen. 2006. "Toward Pragmatist Methodological Relationalism: From Philosophizing Sociology to Sociologizing Philosophy." *Philosophy of the Social Sciences* 36:303–29.
- Lakatos, Imre. 1978. *The Methodology of Scientific Research Programmes, Philosophical Papers, Vol. 1*, edited by J. Worrall and G. Currie. Cambridge, UK: Cambridge University Press.
- Latour, Bruno. 2010. "Tarde's Idea of Quantification." Pp. 147–64 in *The Social after Gabriel Tarde: Debates and Assessments*, edited by M. Candea. London: Routledge.
- Levine, Donald N., Ellwood B. Carter, and Eleanor Miller Gorman. 1976a. "Simmel's Influence on American Sociology. I." *American Journal of Sociology* 81:813–45.
- Levine, Donald N., Ellwood B. Carter, and Eleanor Miller Gorman. 1976b. "Simmel's Influence on American Sociology. II." *American Journal of Sociology* 81:1112–32.
- Levine, Donald N. 1989. "Simmel as a Resource for Sociological Metatheory." *Sociological Theory* 7:161–74.
- Levine, Donald N. 1995. *Visions of the Sociological Tradition*. Chicago, IL: University of Chicago Press.
- Lukes, Steven. 1973. *Émile Durkheim, His Life and Work: A Historical and Critical Study*. Harmondsworth, UK: Penguin.
- McAdam, Doug. 1990. *Freedom Summer*. New York: Oxford University Press.
- McFarland, Daniel A. 2001. "Student Resistance: How the Formal and Informal Organization of Classrooms Facilitate Everyday Forms of Student Defiance." *American Journal of Sociology* 107:612–78.
- McLean, Paul. 1998. "A Frame Analysis of Favor Seeking in the Renaissance: Agency, Networks, and Political Culture." *American Journal of Sociology* 104:51–91.
- McLean, Paul. 2007. *The Art of the Network: Strategic Interaction and Patronage in Renaissance Florence*. Durham, NC: Duke University Press.
- Martin, John Levi. 2000. "What Do Animals Do All Day? The Division of Labor, Class Bodies, and Totemic Thinking in the Popular Imagination." *Poetics* 27:195–231.
- Martin, John Levi. 2002. "Power, Authority, and the Constraint of Belief Systems." *American Journal of Sociology* 107:861–904.
- Martin, John Levi. 2003. "What Is Field Theory?" *American Journal of Sociology* 109:1–49.
- Martin, John Levi. 2009. *Social Structures*. Princeton, NJ: Princeton University Press.
- Martin, John Levi. 2011. *The Explanation of Social Action*. New York: Oxford University Press.
- Martin, John Levi and Matt George. 2006. "Theories of Sexual Stratification: Toward an Analytics of the Sexual Field and a Theory of Sexual Capital." *Sociological Theory* 24:107–32.
- Milo, Ron, Shai Shen-Orr, Shalev Itzkovitz, Nadav Kashtan, Dimitri Chklovskii, and Uri Alon. 2002. "Network Motifs: Simple Building Blocks for Complex Network Structures." *Science* 298:824–7.
- Mische, Ann. 2003. "Cross-Talk in Movements: Rethinking the Culture-Network Link" Pp. 258–80 in *Social Movements and Networks: Relational Approaches to Collective Action*, edited by M. Dania and D. McAdam. Oxford, UK: Oxford University Press.
- Mische, Ann. 2011. "Relational Sociology, Culture, and Agency." Pp. 80–97 in *Sage Handbook of Social Network Analysis*, edited by J. Scott and P. Carrington. Thousand Oaks, CA: Sage.
- Mitchell, J. Clyde. 1979. "Networks, Algorithms, and Analysis." Pp. 425–51 in *Perspectives on Social Network Research*, edited by P. Holland and S. Leinhardt. New York: Academic Press.
- Mohr, John and Harrison White. 2008. "How to Model an Institution." *Theory and Society* 37:485–512.
- Moreno, Jacob L. 1934. *Who Shall Survive?* Washington, DC: Nervous and Mental Disease Publishing.
- Mützel, Sophie. 2009. "Networks as Culturally Constituted Processes: A Comparison of Relational Sociology and Actor-network Theory." *Current Sociology* 57:871–87.
- Pachucki, Mark A. and Ronald L. Breiger. 2010. "Cultural Holes: Beyond Relationality in Social Networks and Culture." *Annual Review of Sociology* 36:205–24.

- Padgett, John F. and Christopher K. Ansell. 1993. "Robust Action and the Rise of the Medici, 1400–1434." *American Journal of Sociology* 98:1259–319.
- Padgett, John F. and Paul D. McLean. 2006. "Organizational Invention and Elite Transformation: The Birth of Partnership Systems in Renaissance Florence." *American Journal of Sociology* 111:1463–568.
- Padgett, John F. and Walter W. Powell. 2012. *The Emergence of Organizations and Markets*. Princeton, NJ: Princeton University Press.
- Podolny, Joel M. and James N. Baron. 1997. "Resources and Relationships: Social Networks and Mobility in the Workplace." *American Sociological Review* 62:673–93.
- Podolny, Joel M. 2001. "Networks as the Pipes and Prisms of the Market." *American Journal of Sociology* 107:33–60.
- Rogers, Everett. 1987. "Progress, Problems and Prospects for Network Research: Investigating Relationships in the Age of Electronic Communication Technologies." *Social Networks* 9:285–310.
- Schmaus, Warren. 2003. "Kant's Reception in France: Theories of the Categories in Academic Philosophy, Psychology, and Social Science." *Perspectives on Science* 11:3–34.
- Simmel, Georg. 1950. *The Sociology of Georg Simmel*, edited by K. H. Wolff. New York: The Free Press.
- Simmel, Georg. 1964. *Conflict and the Web of Group-Affiliations*, translated by K. H. Wolff and R. Bendix. New York: Free Press.
- Simmel, Georg. 1971. *On Individuality and Social Forms*, edited by D. N. Levine. Chicago, IL: University of Chicago Press.
- Simmel, Georg. 2009. *Sociology: Inquiries into the Construction of Social Forms, Volume 1*, translated by A. J. Blasi, A. K. Jacobs, and M. Kanjirathinkal. Boston, MA: Brill.
- Somers, Margaret. 1994. "The Narrative Constitution of Identity: A Relational and Network Approach." *Theory and Society* 23:605–49.
- Somers, Margaret. 1998. "We're No Angels: Realism, Rational Choice, and Relationality in Social Science." *American Journal of Sociology* 104:722–84.
- Somers, Margaret. 2008. *Genealogies of Citizenship: Markets, Statelessness, and the Right to Have Rights*. London: Cambridge University Press.
- Stark, David. 1996. "Recombinant Property in East European Capitalism." *American Journal of Sociology* 101:993–1027.
- Stark, David. 2011. "What's Valuable?" Pp. 319–38 in *The Worth of Goods: Valuation and Pricing in the Economy*, edited by J. Beckert and P. Aspers. New York: Oxford University Press.
- Valente, Thomas W. 1996. "Social Network Thresholds in the Diffusion of Innovations." *Social Networks* 18:69–89.
- Van Doosselaere, Quentin. 2009. *Commercial Agreements and Social Dynamics in Medieval Genoa*. New York: Cambridge University Press.
- von Wiese, Leopold and Howard Paul Becker. 1932. *Systematic Sociology, on the Basis of the Beziehungslehre and Gebildelehre of Leopold von Wiese*. New York: John Wiley & Sons.
- Ward, Lester Frank. 1903. *Pure Sociology: A Treatise on the Origin and Spontaneous Development of Sociology*. New York: Macmillan.
- Wellman, Barry. 1983. "Network Analyses: Some Basic Principles." *Sociological Theory* 1:155–200.
- White, Harrison. 1992. *Identity and Control: A Structural Theory of Social Action*. Princeton, NJ: Princeton University Press.
- White, Harrison. 2002. *Markets from Networks: Socioeconomic Models of Production*. Princeton, NJ: Princeton University Press.
- White, Harrison. 2008. *Identity and Control*. Princeton, NJ: Princeton University Press.
- White, Harrison C., Jan A. Fuhse, Matthias Thiemann, and Larissa Buchholz. 2007. "Networks and Meaning: Styles and Switchings." *Soziale System* 13:543–55.
- Willer, David. 1999. *Network Exchange Theory*. Westport, CT: Praeger.
- Wolff, Kurt H. 1950. "Introduction." Pp. xvii–lxiii in *The Sociology of Georg Simmel*, edited by K. H. Wolff. New York: The Free Press.

AUTHOR BIOGRAPHY

Emily Erikson is assistant professor of sociology and the School of Management (by courtesy) at Yale University. Her fields of specialization are social networks, comparative-historical research, and theory.