

**SOCIAL PSYCHOLOGY AND SOCIAL NETWORKS:
INDIVIDUALS AND SOCIAL SYSTEMS**

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19 November 2007

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Abstract

Social psychology and social network research are both centrally concerned with human sociality. Despite some historically significant interactions between the two, these areas of investigation have not been usefully deployed together in recent research endeavours. This paper attempts to bring out some points of both theoretical and methodological contentions, to characterize the gap between them, to traverse briefly the trajectories of its historical development, and to provide some concrete instances of these differences. Intellectual resources available to Asian social psychology are reviewed, which may help bridge the gap between the two areas of research. We conclude by calling for a greater integration of social psychology and social network perspectives in future research.

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All too often the research disciplines of social psychology and social networks talk past each other, often unaware of each other's contributions, each with a somewhat singular perspective on how to research and understand social phenomena. The distance between the two disciplines is sustained by the application of different data analytic methods, but more fundamentally by attention to different aspects of human sociality. Social psychology – especially through the research tradition of social cognition – often concentrates on individual perceptions of and behaviors by social actors. Yet, with some notable exceptions, social psychological research is not usually concerned about how these individual behaviors cumulate to a social system that may feedback to affect the processes of social perception being studied. Social network research, on the other hand, studies the more systemic elements of human social structure – what might be called *network topology* – in ways that (potentially at least) can deal with feedback effects. Yet social network studies typically pay little attention to the motivated social cognition of individuals, and thereby risk a seriously under-theorized account of a system of human social actors.

On the one hand, social cognition as the most dominant perspective in social psychology in the past quarter century has arguably portrayed a person as a stand alone information processor. Social cognition has often been cast as a cognitive psychology of information processing about social entities – self, other individuals, and groups. It is true that social cognition is not purely cold cognition, but hot cognition as well, incorporating affect and emotions, as well as motivational drivers of the cognitive processes. Nonetheless, it has often been assumed that motivated cognitive processes are no different whether they are constructing, manipulating, storing, retrieving, or deploying mental representations about physical objects or social objects. The universal symbol processing machinery is the core of these processes, and investigation of this mechanism that resides in an individual mind has been the focus of social cognition – the individual social actor understood as the motivated cognitive agent.

On the other hand, social network research deals with the patterns of relational interdependency among social actors and other entities within a social system. Social network analysis often deals with systems of human social interactions and relationships within reasonably small groups or organizations, but not limited to such domains. Nor should the area be confused with the popular *social networking*

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websites that have appeared on the Internet in recent years, where individuals may collect a number of web partners that they label as “friends”. At the most general, social network approaches deal with social systems (principally amongst humans, but also amongst other animals, as well amongst organizations, institutions and even events) wherein some (but not all) pairs of the social entities are connected by relations of one type or another. These relations may be quite specific and tangible, such as exchange of resources or communication by email, or based on recognized relationships of various types, such as friendship or authority, or more abstract, such as connections between organizations. The important feature of social networks is that it is *relational*, not solely at the individual-level or at a group or organizational-level. Underlying assumptions are that these relations establish certain interdependencies among the social entities, be they individuals, groups, or organizations, and that these interdependencies are not random, but tend to be patterned in systematic ways. The goal is usually to understand this patterning and the resulting social outcomes. Conversely, any system of interdependencies among social entities can be represented as a social network and analyzed as such.

Of course, the differences between the two areas are not always so stark. In certain research domains – for instance, in small group or organizational processes – individual and systemic perspectives can come together in natural and compelling ways. Especially in *Asian social psychology*, there has been a strong tradition of *methodological relationalism* (Ho, 1998) – the significant point to which we shall return later. But, in general, social network and social psychological researchers naturally tend to focus within their own strengths and knowledge and, if they ever ask themselves the question, they are sometimes puzzled as to how, or why, the alternative perspective might be considered.

We argue that social psychological and social network research complement each other, rather than contradict, in ways that have yet to be fully exploited. We believe that a richer account of human sociality demands an integration of individual and systemic perspectives. It may be the case, as extreme individualists would argue, that individual social cognition is sufficient to explain human social processes, with wider accounts of social structure an unnecessary addition. Alternatively, it may be the case, as extreme structuralists would argue, that network topology imposes such strong opportunities and constraints on individuals that accounts of what is going on

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“inside people’s heads” are unnecessary to explain human social action. There is nothing intrinsically incoherent about such radical theoretical positions, even if few researchers might endorse them fully. Yet, unless individualist and structuralist accounts are empirically tested together, so that their relative explanatory values can be examined side by side, it is impossible to say which is to be preferred. The universality of a single explanation can only be confirmed by excluding other possibilities, thereby necessitating the examination of alternative accounts.

Of course, one does not have to accept a single theoretical perspective. We ourselves do not believe that the complexity of social life can be adequately encompassed within one or two theoretical postulates. There is now plenty of evidence that in most, if not all, social circumstances, multiple social processes occur simultaneously, both at the individual level as well as at the system level. It is for that reason that we see social psychological and social network research as complementary.

Much of the difference between the two approaches, especially in the practice of research, centers around their perspectives on social context, in turn leading to different data analytic methods. Research into social cognition often places people in a generic social context called a “laboratory.” A laboratory is in fact a special social context in which people are caught in the institutional setting of social psychology experiment (usually in universities and other research institutions), well defined role relationships involving experimenters, participants, and others, and are expected to behave in certain ways (e.g., following experimenters’ instructions, performing some unnatural tasks like pressing a bar). Through carefully controlled experimental design, some aspects of this social context are manipulated (more often than not, they involve stimuli on computer screens or words written on paper) seeking to find strong effects that generalize across different contexts. This laboratory-based approach lends itself to the use of general linear model techniques as well-established and all-purpose data analytic tools. The rigor of careful experimental control and manipulation is appealing. For research in this tradition, social networks surrounding participants, which exist prior to their entry to the laboratory and continue to engage them after departure, is assumed to be a source of uncorrelated random errors.

For research into social networks, on the other hand, social context is crucial because it is through the social environment, expressed as network ties, that the social

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system influences individuals. In fact, the individuals who are being studied are assumed to be connected together to constitute a social system and to influence each other through the social network of which they are part. To the extent that they are assumed to be interdependent – at least indirectly if not directly – there may be some dependency in the data that tap their social psychological processes. Typically social network research uses survey, archival or electronic means of data collection with the expectation that there will be dependence in the data, and obviously, if true, this undermines the assumptions of the general linear model, in which errors associated with psychological measures are assumed to be independent. Hence, there has been the development of special purpose methods known as *social network analysis*, that can seem arcane and overly difficult to those unfamiliar with them. The complexity of the system, however, can be beguiling and gives researchers plenty to confront without dealing with the complications of individual-level effects. Topology without people can be difficult enough.

Laboratory-based social psychologists might see context-based social network research as potentially confounded and not generalizable; social network researchers, on the other hand, might see laboratory-based, social psychological studies as decontextualized, artificially minimizing, or worse ignoring, social effects, and lacking ecological validity. Social psychologists typically have richly endowed theories of individual social cognition but poorly described theories of social context; while social network researchers have powerful techniques for dealing with context but often under-theorized accounts of individuals.

In this article, we contend that, with some notable exceptions, each of the two areas tends to disregard the concerns of the other, but for both there remains an implicit tension that needs to be addressed for a full account of human social behavior. The tension is between individualist and systemic explanations. We begin by reviewing some important themes in the history of social psychology that express analytic and theoretical difficulties about how to handle individuals within larger scale social systems. We describe how nascent attempts to integrate social network methods into social psychology faded as experimental social cognition grew to prominence in the latter few decades of the twentieth century. We then turn to some theoretical themes within the history of social network theory, and explain how certain accounts of endogenous structural processes grew out of social psychological

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theories but gradually shed their psychological background. Even today, these structural accounts are contrasted to theories that demand some degree of individual-level explanation, yet that requirement too often remains implicit and not widely appreciated within the network community.

Our conclusion is not that social psychologists or social network researchers should cease the research they are doing, but rather that the two areas will need to deal with each other in a more integrated fashion than has occurred to date. The potential outcome is for rich descriptions of human social processes that do justice to both individual psychologies and the systematicities of social systems. To this task, Asian social psychology and Asian social psychologists may be able to bring some theoretical and practical knowledge.

Some themes in social psychology

Individualism and social psychology

When Floyd Allport, one of the early originators of modern social psychology, wrote his major text in the 1920s (Allport, 1924) he included chapters on human physiology, such as that of the human vocal system. One can admire his thoroughness, for surely it is enough for the study of social psychology to know that humans communicate, without having to understand the specific biological mechanisms. Yet these chapters represented more than just pedantry, for Allport as a behaviorist was keen to demonstrate that social phenomena could be analyzed in terms of stimulus-response chains, right down to the biological strata. The corollary for Allport, the social psychologist, was that the individual was the appropriate unit of analysis in social behavior, and social units such as groups of people were merely epiphenomenal. Once we understood the stimulus-response chains for each individual in the group, we understood all there was to know about that group of individuals as a whole, and the group as an entity in its own right disappeared.

It may seem a curious irony for one of the founders of social psychology to be such an unremitting opponent of the concept of social entities. “There is no psychology of groups which is not essentially and entirely a psychology of individuals,” Allport (1924, p.4) argued. Admittedly, in that era he had to stake some firm ground, for sociologists influenced by Durkheim were quite ready to claim

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the opposite, that individual psychology was irrelevant to the study of social events (“...sociology is not a corollary of individual psychology.” Durkheim, 1895/1966, p.101).

Groups and social psychology: interdependence

Yet the next generation of social psychologists was uncomfortable not just with Durkheim but also with Allport. Sherif (1936/1964), Lewin (1948), and Asch (1952) attempted to develop theories that would take a middle path, embracing both individual and social phenomena. Sherif (1936/1964, p.4) argued against a strict opposition of the individual and the social: “The psychology of the individual is valid social psychology, and social psychology is valid individual psychology.” The amalgamation of the individual and the social into a cohesive theory, however, raises issues at the point where that theory comes to postulate units of analysis. If the Allportian individual is not a construct adequate in itself to explain social phenomena, then what other entities are needed? When Sherif was writing the above quote in 1936, he was concentrating on social norms. By the time of the well-known Robbers Cave experiment of the 1950s (Sherif, Harvey, White, Hood & Sherif, 1961/1988), norms were still part of the equation, but only as one important feature of a *group*. In these experiments, Sherif organized summer camps for school boys, where they were formed into teams with the resulting inter- and intra-team dynamics observed under conditions of team competition and cooperation. These studies provided an early examination of now well-established intergroup effects.

Even though Sherif regarded both the group and the individual as social entities, there is a degree of tension implicit in the conjunction of the two concepts. As the group is made up of the individuals, the risk is that the use of both constructs as units of analysis will result in confusion about an appropriate level of explanation: in essence, the *micro-macro* problem of how smaller scale effects cumulate to larger scale systems. Multi-level explanation can be complex when the description of individual social behavior has an implicit recursive character: individual-level phenomena are explained by the group dynamic which in turn arises from individual-level phenomena. Moreover, multi-level analysis – including both the aggregation of individual data to infer group-level effects and the inference of individual behaviour from group-level data – runs the risk of *ecological fallacies* because

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intuitively plausible group-level analogues of valid individual-level hypotheses frequently do not hold (Achen & Shively, 1995).

Sherif et al. (1961/1988) could largely avoid these issues because the Robbers Cave experiment imposed groups on the boys, so that group membership could be taken as exogenous, determined by the researchers, not the participants. Even so, Sherif recognized that within the imposed groups, hierarchies and differing role relationships among individuals - what he called *group structure* - would emerge. In a sense, the group takes on a life of its own, over and above the passive tag of imposed group membership. So, although the problems of multi-level analysis could be side-stepped by treating group membership exogenously, sufficient perhaps for an analysis of ingroup and outgroup processes, this approach masks a richer description of the group dynamic. Sherif understood this well and provided plenty of observational detail of events in the summer camp. He also attempted simple network analyses of the pattern of friendships among the boys in each group. He clearly recognized that this could provide part of the richer description that he sought to flesh out his broad-based conclusions about group membership effects. Yet he did little with the network study, and – to be fair – the methodological tools available at that time were not particularly helpful in anything other than relatively simple analyses.

The lure of the notion of *group* as a construct to posit alongside the *individual* in explaining social phenomena attracted other early social psychologists. As Sherif had done, Lewin (1948, p.84) made clear that he did not regard individual-level variables as a sufficient basis for social psychology.

“A group is more than, or, more exactly, different from, the sum of its members. It has its own structure, its own goals, and its own relations to other groups. The essence of a group is not the similarity or dissimilarity of its members, but their interdependence.”

Lewin (1948, p190) then famously extended the notion of interdependence to “a fundamental fact of group life, namely, interdependence of fate”.

Defining interdependence of members as the essence of the group may seem straightforward but actually carries important theoretical and methodological implications. To begin, interdependence is importantly a *relational* concept. Once the general notion of interdependence is introduced it leads naturally to the idea that

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relational aspects may be more general than group membership. For instance, if interdependence is expressed at the level of pairs of individuals, then essentially we have a network perspective. There is also ambiguity about the notion of *group*. It was clear that the Robbers Cave experiment referred to small groups of individuals in face-to-face interaction, although Sherif et al. (1961/1988) may have intended to generalize to broader social categories. Interdependence of fate, on the other hand, could apply to individuals who do not even know of each other's existence, for instance, among individuals who share membership of the same social category. Lewin (1948) was comfortable with this for, writing at around the time of the Second World War, he wanted to draw conclusions about large-scale social conflicts based on race or nationality. The result, however, is that the potentially general relational notion of interdependence is reduced to individual-level demographic characteristics that permit categorization within a population. The slide from using interdependence as a serious analytic construct to using it as a metaphor is then quite simple to take.

Of course, the definition of a social category as a group, as with Sherif's imposed group membership, avoids recursive conundra associated with multiple levels of analysis. A social category such as race is seen as explanatory of individual behavior, not the converse; and this fact breaks the cycle of individual behavior explained by group processes that in turn are explained by individual behavior. However, Lewin's insight about interdependence implies that any group-like nature attributed to a social category does not arise simply because its members share characteristics, but because the group is ultimately constituted by the resulting relational interdependencies. The categorical variable is merely a proxy. So, as with imposed group membership, social categorical variables may help to sidestep the macro-micro problem, but in the end do not solve it.

Asch (1952, p.252) had a similar notion that a social system was based on relations among individuals, arguing that "(a social) system ... is present in the interrelations between the activities of individuals." Social phenomena were more than just a pattern of inter-relations, however, for individuals shaped their activities in accord with their construal of the social environment in which they were placed:

"One could say that all the facts of the system can be expressed as the sum of the actions of individuals. This statement is misleading, however, if one fails

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to add that the individuals would not be capable of these particular actions unless they were responding to (or envisaging the possibility of) the system.”

So, in summary, the generation of social psychologists after Allport rejected his extreme individualism and sought additional social constructs of some sort, frequently encompassed within the generic expression *group*. But what is interesting is that for these psychologists, the idea of *group* rested on notions of relationships and interdependence among individuals, expressing some form of broader system. As noted above, this theoretical exposition is not so far from an implicit network perspective, except that in practice it all too often decomposed into explorations of social categories or externally imposed group structures. Nevertheless, into the 1960s, several prominent social psychologists could build on these general ideas and conducted interesting research using explicit relational and network approaches (Festinger, 1949; Milgram, 1967; Newcomb, Turner, & Converse, 1965; Thibaut & Kelly, 1959).

Relational structures in organizational research

Similar relational perspectives had developed in certain traditions of organizational psychology. The idea that informal relational structures carry much of the explanatory power in organizational research has received considerable and longstanding theoretical attention (for instance, Barnard, 1938; Ibarra, 1992; Ranson, Hinings, & Greenwood, 1980; Weick 1979, 1987.) In analyzing informal structure, formal group membership is sidelined or at best becomes an attribute of individuals. What is of interest is the way that these individuals, to follow Asch (1952), inter-relate their activities in actual fact, irrespective of how senior organizational management imagines that they should or will coordinate.

In the organizational tradition, the notion of interdependence was considered more explicitly in empirical research. The analytic investigation of inter-personal relations in organizations began with the famous series of Hawthorne studies (Roethlisberger & Dickson, 1939), at around the same time that Floyd Allport was writing in the 1920s. These studies showed an interesting progression through the debate about whether social phenomena could be described solely in individualist terms. The design of the first set of studies – examining whether workers’ productivity would vary under different lighting conditions – would have fitted

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Allport's individualist psychology neatly. As is well known, the researchers concluded that productivity increased, not due to lighting variations, but because the workers were being observed by the research team.

Most modern psychology textbooks cease their description of the Hawthorne studies at this point. So it is not so well known that the series of studies went on for many more years and concluded with an extended ethnographic examination of inter-relationships among workers in the Bank Wiring Room (Roethlisberger & Dickson, 1939). By this time, the original individualist perspective was left far behind, and a network system explicitly invoked. Following this remarkable series of studies, organization theory has retained a longstanding interest in systems-based and network-based approaches and solely individualist accounts have not always been treated kindly. As the eminent organizational theorist, Karl Weick, remarked, a preoccupation with individual cognition in psychology has left organizational researchers "ill-equipped to do much more with the so-called cognitive revolution than apply it to organizational concerns, one brain at a time" (Weick & Roberts, 1993, p.358).

Social cognition, aggregation and analysis

So in both social and organizational psychology, there have been longstanding traditions of both individual-level and systems-level research, sometimes at tension with each other, but with some attempts at integration as noted above. However, the possible incorporation of network perspectives into social psychology faltered in the last few decades of the twentieth century, as powerful new experimental methods to examine intergroup processes came to the fore. For instance, Tajfel's influential minimal group paradigm (Tajfel, Billig, Bundy, & Flament, 1971) is a rigorous study design. Participants respond to various questions about "their group" *as if* the group exists, when in fact the experimental paradigm *removes* the interdependence among group member. Given the research design, researchers need have little fear of being tripped up by the intricacies of the micro-macro problem with its multiple levels of analysis, for the group membership variable is deliberately constructed as exogenous and explanatory of individual behaviors. The problem of aggregation – revisiting the micro-macro problem of how individuals cumulate to form social entities such as

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groups – is set aside and the method of analysis can then be based on standard statistical approaches.

Yet the problem of aggregation is hidden, not dissolved. If Allportian individualism is not adequate, then social constructs other than individuals are required. Yet any social entity or phenomenon is constituted ultimately by a combination of individuals. The analytic method whereby individuals are aggregated in effect posits a particular social entity or entities as units of analysis, and at the same time represents the researcher's solution to the micro-macro problem. For the method presupposes a (sometimes implicit) theory of how individuals combine to form the social units that matter. Simple methods of aggregation – such as imposed group membership or social categories – mask the problem by assuming that the individuals are combined by external fiat or exogenous attributes. Such assumptions (leading for instance to assumptions of independence of observations) are not just conveniences to enable standard statistical analysis; they have theoretical implications and make implicit claims about the social world. Empirically the drawbacks may not be too serious depending on the type of question that is being asked. But the cost will be major if aggregation methods are not just simple, but simplistic, as some critics have argued they often are (e.g. White, Boorman & Breiger, 1976).

It is not unusual that what seems to be a methodological decision such as a method of aggregation can in fact be a surrogate for a major theoretical issue. Similarly, the related notion of interdependence among individuals – a central feature of the various ideas of group discussed above – can be played out in methodological terms. In analytical terms, with interdependent observations, researchers who employ standard statistical approaches do so at their own peril, with a relatively modest auto-correlation in the data leading to a dramatic increase in the probability of a Type I error (Krackhardt, 1988). This of course is not a problem for individualist theories because aggregation is not theoretically necessary. Moreover, research designs such as the minimal group paradigm carefully ensure that one experimental observation does not influence another. The problem has analytic roots with theoretical consequences. It arises for those who wish to use an aggregated concept such as *group* as a unit of analysis, while retaining some notion of interdependence as the underlying basis of what a group is. In other words, the theoretical and

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analytical issue for those analyzing groups or organizations using general linear models is how to justify a theoretical assumption of interdependence, when the analytical assumption is not.

Some themes in social network theory

In contrast, social network theory is explicitly based on interdependence and the network structure itself is seen as a resolution of the problem of aggregation. The aggregated system is represented as the overall pattern of relational connections between pairs of individuals – that is, the *network structure* – and different network structures are presumed to present different outcomes.

At its most basic, a *social network* comprises a set of *nodes* (or social actors), representing individuals or in some cases other social entities (e.g. companies), and a set of *edges*, representing a social connection or *tie* between two nodes. The presence of ties between some pairs of actors, and the absence of ties between other pairs, implies a complex system of interdependence among individuals. The overall collection of network ties, then, is the network structure. This very basic representation can be elaborated to include, for instance, strength of ties, attributes of nodes and a dynamic and changing set of edges. The network then is an attempt to represent the social system among a given set of individuals.

In this representation, the micro-macro problem is resolved in the sense that relations between pairs of individuals naturally cumulate to the *global network structure*. Within the network there are *local structures* – for instance, the *personal* or *egocentric network* of each node, the set of ties emanating from each node. So, each node experiences different network environments, enabling a representation of local social context.

There are other versions of local network structures that are not centered on specific nodes: for instance, the patterning of a small number of network ties into regularities such as triangles. Because triangulation involves at least three individuals, it is an indicator of complex interdependence (and in fact adds a quite separate layer of interdependence, that is, between possible network ties, not just among individuals). These local structures may be taken to represent the outcomes of social processes among the individuals concerned, and the processes may be considered to

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apply across the network. How these local regularities aggregate to the global network in specific empirical instances is a question of considerable interest.

So, social network theory has the means to examine some of the themes of aggregation and interdependence that lie at the heart of social psychological theory but are not usually overtly addressed. But what is too often missing from a network approach is a complex representation of the nodes in the network, that is, of the individuals within the system. Often network analysts content themselves with incorporating simple demographic qualities of the nodes, but without the sophistication of social cognitive theories within social psychology. Too often, the psychology is absent from the structure.

To illustrate the argument, we will concentrate on theories of triangulation within network theory to show how, although psychological factors are implicit in some accounts, they have typically been lost in efforts to understand the processes of interdependence within triads of individuals. Yet, theoretical accounts remain incomplete without the engagement of psychological factors.

To begin, it is important to distinguish between what might be termed structural and node-level processes. Structural processes occur when the network is *self-organizing*, in the sense that the presence of certain ties encourages other ties to form (or be maintained, or disappear). These structural processes are sometimes described as *endogenous* network effects. They imply that certain ties are more likely to be present because of the social environment of *other ties*, not just of other people. To postulate such effects is to buy into an implicitly dynamic framework, even though the actual observations may not be longitudinal. An observed cross-sectional network is taken as the outcome of structural processes that have worked their way through the network over a period of time, organizing the network ties into certain regularities.

Such structural processes are to be contrasted with node-level effects, where the qualities of the nodes themselves lead to the formation or dissolution of network ties. Measures on the nodes are usually referred to as *attributes*, whether they be demographic or psychological. Individuals may come together because they share attributes, a process known as *homophily* (McPherson, Smith-Lovin & Cook, 2001). Some individuals may have attributes that make them *popular* (i.e. they have many network ties directed towards them) or *active* (i.e. they express many network ties

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toward others.) These latter node-level effects are sometimes referred to as *receiver* or *sender* effects, respectively (e.g. Lusher & Robins, 2007).

The distinction between structural and node-level processes reflects some of the distinctions between network and social psychological theory. Structural effects encompass the self-organizing and systemic elements of a networked social system, and are seldom considered by social psychology. Node-level effects embrace the demographics of individuals, the public categorizations within which they are described, and also certain publicly visible behaviors, but also potentially the psychology of social action in terms of attitudes, social perceptions, motivations and individual differences. While social network research frequently incorporates demographic variables, and to a lesser extent certain behaviors (e.g. smoking or drinking among adolescents), it seldom explicitly bothers with node-level effects relating to psychology.

Triads and balance

Nevertheless, if we consider the history of social network theory, we find an implicit tension between explanations for triangulation based on structural processes and on node-level psychology. The original basis of network theory about triangulation was formulated by Simmel (1908/1950), who argued that the social dynamics of a triad of actors was fundamentally different from that of a pair of actors. (A triad is a triple of nodes and the ties between them – which may include the absence of some ties – so it is not necessarily the same as a *triangle*.) Of course, a triad is made up of three pairs (or *dyads*), but Simmel's argument is that this is more than an additive accumulation. A basic point to his argument is that a triad is the simplest social configuration that permits a majority and a minority. Simmel argued that this enabled control and advantage in ways that were not available in a dyad. It is easy to see how a structuralist perspective can emerge from this argument. The majority and minority possibilities of a triad exist, irrespective of the psychologies of the three individuals.

Yet the story is not quite so simple. For instance, Simmel described a person who linked two otherwise unconnected individuals. That person was potentially in a position of advantage and could draw from one or the other person as needed, but alternatively the person could also mediate between the two and bring them together.

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Here was an implicit acknowledgement of difference in outcome due to motivational differences of a key individual. The outcome for the triad differed depending on the motivations of the central person. Both psychological and structural features were then necessary to understand the processes within different triads. The structural interests of social network researchers, however, led to a concentration on the structural features and a serious downplaying of the psychology. Empirical network researchers invoked Simmel's name in measuring the relationships within triads, but seldom took the time to observe the motivations of the individuals.

A similar process of shedding the inconvenience of psychological aspects occurred with the concept of *balance*. Heider's (1946) Balance Theory is explicitly social psychological, and supposes that individuals seek "balanced" relationships with others, wherein, for instance, a positive relationship between two persons will be accompanied by similar attitudes to various "objects" of importance to them both. This theorization sets up a triad among two persons and an object. Imbalanced triads were assumed to induce stress in the individuals concerned (a kind of dissonance effect) and hence to lead to change towards balance, either by change in relationships or change in attitudes.

The structural balance theorists (Cartwright & Harary, 1956) took this social psychological theory and converted it to a more mathematical and sociological version by supposing that the "objects" were persons themselves, in which case the theory became one of triads of individuals involving relationships of positive and negative ties. Patterns of positive and negative ties within triads were assumed to be balanced or imbalanced and the global consequences for the network of individuals concerned were derived. This was nice mathematics, but by stripping away the dissonance and stress aspects of the explanation, the explicit psychological aspects were disregarded. Of course, structural balance theorists often justified their initial postulates by reference to Heider and to possible motivations resulting from stress, but as the construct of stress played no explicit part in their theory, this was a post hoc justification. The result was a formal mathematical system describing social relationships among a set of individuals. The system of relationships can be considered self-organizing in that ties that are part of imbalanced triads are unstable, whereas balanced triads tend to be stable. Explanations for why this might be so were

flimsy, or even considered unnecessary. No wonder that empirical evidence was slight (Doreian & Krackhardt, 2001).

Self organization versus structural position

Theories of self organizing networks became increasingly attractive to structuralists. They were given a fillip by Granovetter's (1973) famous arguments about *strong* and *weak* ties. Granovetter noted that paths of strong ties tended to *close* into triangles. There are a variety of simple processes whereby this might occur. People tend to introduce their family and friends to each other; alternatively, simply through a person spending more time with strong tie partners, it is more likely that these partners will come into contact with each other; further, balance processes, and hence triangulation, might be supposed to be stronger when the relationships are stronger. Granovetter noted that these arguments did not apply – or at least not with the same force – to weak ties. He inferred that strong tie partners tended to *cluster* into closed clique-like structures of people, and that these cliques tended to be connected by weak ties. Global network connectivity was provided by weak ties, which were also the conduits for new information and different resources not available within cliques.

Granovetter's theory has been highly influential in network research, especially given good empirical support for the importance of weak ties (e.g. Granovetter, 1973, 1982). Moreover, the theory continues to have echoes in much more recent network approaches on ostensibly different topics. For instance, Watts's small world theory (Watts & Strogatz, 1998) imagines a social world of clique-like structures connected by "short-cuts" that serve the function of weak ties in Granovetter's formulation and shorten otherwise long network paths, the topic of Watts's interest. What these accounts have in common is that the network comes into being through the self-organization of ties: in Granovetter's case through a distinction between strong ties and weak ties, and different structural processes applying to each; in Watts's case through a random "rewiring" of a certain number of ties that would otherwise be given over to cliques. There is no need for psychology in these theories, and the individual nodes get passively dragged into new network neighborhoods as the ties pattern themselves. Much of modern network research in the physics literature is of this nature. For instance, Barabási's well-known

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preferential attachment model (Albert & Barabási, 2002; Barabási & Albert, 1999) simply asserts that popular nodes become more popular and seeks to derive the consequences in terms of network topology. Proponents of this tradition have no need for psychology: entire social systems are reduced to “the rich get richer”, with richness here not an individual attribute but a Facebook-like accumulation of countless “friends”.

More subtle arguments were possible. Burt (1992) provided an influential integration of Granovetter’s strong and weak ties theory with Simmel’s earlier ideas about triads. He stepped back from the argument that weak ties were the sources of network connectivity. What was important, rather, were that some ties – whether strong or weak – could *bridge* between denser, clique-like regions of the network (akin to Watts’s shortcuts). Burt described the absence of a bridging connection between two denser regions as a *structural hole*. An individual who *occupied* the structural hole by building connections to each of the two regions would be in an advantageous position, precisely in the same way that Simmel argued that an individual with ties to two unconnected others in a triad was advantaged. This individual could *broker* arrangements between the two groups of people and thereby extract advantage. These people were *network entrepreneurs*.

There is an interesting shift in scale between Granovetter’s theory and Burt’s structural holes. Whereas Granovetter was interested in the global outcomes of the different structural processes applying to strong and weak ties, Burt focused on individuals who may or may not occupy structural holes. The global outcomes are unimportant in this account, whereas the individual outcomes are paramount. The other interesting difference is that this is an individualistic explanation – individuals seek advantage by occupying certain network positions – so it cannot be a theory that relies solely on network self organization. It is for this reason that Burt began to engage with the idea of possible individual differences that could lead to certain individuals seeking out structural holes. For a time, he proposed the notion of an “entrepreneurial personality” (Burt, Janotta & Mahoney, 1998), a construct that did not attract wide empirical or theoretical support but one that emphasized the need for a psychological (or other) explanation to complete structural hole theory.

In considering structural holes, Krackhardt (1992) drew on balance theory ideas to argue that bridging structural holes need not always create a position of

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advantage but could indeed be one that occasioned stress and difficulty. So structural hole theory, and arguments elaborating it, explicitly led to the return of various psychological factors: the entrepreneurial personality as a precursor of bridging, and stress as an individual-level outcome.

Kalish and Robins (2006) attempted a more systematic study of these various possibilities within an egocentric network study, using a range of well-established and psychometrically sound psychological instruments. They concluded that there was evidence within their data for both Granovetter-like network self organization based on strong and weak ties, and the presence of strong tie bridging of structural holes. They found personality correlates that were broadly consistent with the notion of an entrepreneurial personality but that also implicated neuroticism, which may in fact be an indicator of stress. The implication is that these various theories are not necessarily competing but may represent social processes that occur simultaneously; that there are no empirical grounds for supposing that network self organization or psychological accounts are the sole explanations for network structure; and that accounts that rely on one at the cost of the other may be incomplete. These are not the only indicators of the importance of interactive effects between psychological factors and network structure. For instance, early work on identity and networks (Lomi, Lusher, Pattison & Robins, 2007; McFarland & Pals, 2005) suggests that well-established identity processes can occur simultaneously with network structural effects, and that they may interact with each other.

This type of study, however, remains rare in social network research. The impetus to study network topology alone is an implicit claim that only self organization processes count, and that the psychology of the individuals within the network is simply not important to an understanding of global network structure. Of course, researchers who study network structure need not subscribe to this extreme position, but they need to recognize that their account of social process as topology alone is likely to be incomplete. The claim that only structural processes matter is a very strong one, one that has never been substantiated empirically. But the short history above indicates that, to make such a claim, at the same time as to allow, for instance, the possibility of strong tie bridging across structural holes, or “rewiring” of short-cuts in small worlds, is potentially to leave something out of the explanation.

Social networks, social cognition, and Asian social psychology

Social scientists draw their intuitions from their everyday living. The socio-cultural processes in which they participate and the life experiences that they draw from their participation become food for thought in their research activities, theories that they develop, and academic discourse that they span. It is inevitable that the researchers' socio-cultural backgrounds shape their research. The historical circumstances of social psychology as a scientific discipline provided a basis for Asian social psychology; it is also inevitable that the socio-cultural circumstances of social psychologists in Asia can draw on intellectual resources that their cultures can afford. It is our contention that Asian researchers' implicit or explicit understandings about them can play a major role in bridging the gap between the individualist social cognition and the structuralist social network approaches to socio-cultural processes.

The case in point is *methodological relationalism* (Ho, 1998) and the cultural practice of *guanxi* (relations or connections in Mandarin Chinese; see Hwang, 1987; Bian, 2001). First, Ho's methodological relationalism is a system of conceptual tools with which to guide social psychological research. It is methodological in the same sense that Durkheim's (1966) *The rules of sociological method*; that is, it is a method for conceptual analysis and theorizing, rather than a method of data analysis (though clearly they intertwine as the earlier part of this paper explained). According to Ho, methodological relationalism takes the view that the unit of analysis is "not the individual or the situation alone, but *person-in-relations* (focusing on a person in different relational contexts) and *persons-in-relation* (focusing on persons interacting within a relational context). [It] acknowledges that the social 'presence' of others is always entered into social calculations. [T]he process is bidirectional. It recognizes the individual's embeddedness in the social network (p. 3; emphasis in the original)"

These assumptions lead Ho to suggest that a psychological analysis of an individual's action must include:

- (a) actions by the individual, either self-initiated or in response to those of others;
- (b) actions by other people closely associated with the individual;
- (c) actions directed at the individual by people with whom the individual is interacting;

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(d) actions directed at the individual by people closely associated with those with whom the individual is interacting; and

(e) actions directed at people closely associated with the individual by those with whom the individual is interacting directly or indirectly (pp. 3-4).

To put it simply, methodological relationalism directs researchers to theorize about an individual's action while including the workings of the individual's egocentric local network in its analytical scope. More importantly, it dictates that *both the individual and the social network* be incorporated in a theoretical analysis, a clear suggestion to bridge the gap between the individualist and the structuralist approaches to sociality.

If methodological relationalism is a set of explicit principles available in Asian social psychology, the cultural practice of *guanxi* work (including building, maintaining, and utilizing *guanxi*) is its embodiment as a set of implicit procedural knowledge that Asian social psychologists can marshal to bridge the gap between the individualist social cognition and the structuralist social network analysis. Although *guanxi* is variously conceptualized (see Bian, 2001), it may be broadly understood for the present purpose as a relational context in which individuals interact with each other. According to Hwang (1987), *guanxi* may have both instrumental and expressive components, so that an individual may treat his or her relation with another individual (*guanxi* relation) as a means to achieve some desirable outcome, or an intrinsically significant end in and of itself. Depending on the type of *guanxi*, the individuals regulate their interpersonal behaviors differently. Bian's (1997; Bian & Ang, 1997; Bian, Breiger, David, & Galaskiewicz, 2005) sustained research on *guanxi* social networks have shown its importance and resilience in culturally Chinese societies regardless of their political and economic institutional arrangements and degrees of urbanization. As reasonably competent practitioners of the *guanxi* practice, researchers familiar with it should have implicit procedural knowledge that enables them to perform it. Such cultural competence should be an intellectual asset to engage in programs of research that may bridge the gap between the individualism and the structuralism.

In combination, methodological relationalism and *guanxi* are explicit and implicit knowledge structures that Asian social psychology can bring forward as intellectual resources. Methodological relationalism may guide Asian social psychology's self-conscious attempt to direct its research efforts. The *guanxi* practical

knowledge may help researchers to engage in the practice of research activities, in generating hypotheses, designing studies, and interpreting results.

To be sure, it is yet unknown whether the *guanxi* practice exists as a culturally specific practice in Chinese societies, or more widely distributed across East Asia and broadly around the world. As well, as Ho (1998) himself acknowledged, methodological relationalism is a contemporary abstraction of Confucian thought, a system of social philosophy spawned by Confucius's words and deeds. Its availability may be localized mostly in East Asia – China, Korea, Japan, and other countries strongly influenced by the Chinese tradition – and may not be as strongly rooted in other regions of Asia. Yet, as an abstract conceptual apparatus, methodological relationalism may be more transferable than Confucianism to contemporary social psychology regardless of the researchers' cultural backgrounds and the availability of the implicit *guanxi* knowledge. It remains to be seen whether these cultural assets can help bridge the perennial gap between the individualism and the structuralism, and provide a solution to the micro-macro problem in social science.

Conclusion

To our mind, it is futile to depict social psychological and social network explanations as competitors. There have been few enough studies that combine both, but in our experience, whenever individual and network effects are examined in the one study, they have independent and also frequently interactive effects. Some examples of such studies are given above and in this special issue. Individual-level processes and endogenous structural effects occur simultaneously. For human social systems, there is no one Newtonian law of gravitation that universally applies. Social science deals in complex explanation.

Our call, then, is for a stronger integration of social psychology and social network theory. We are not alone in making such arguments. For instance, Emirbayer and Goodwin (1994) criticized network approaches for giving insufficient theoretical attention to individual action and also to global cultural effects; and Abbott (1997) provided a radical critique of analytical methods that implied decontextualization of sociality. Of course, it is simple to make such calls, but not straightforward to describe how they might be implemented in practice. There are challenges for the integration we propose. For a start, theory is not easy for multi-scale explanations,

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although we could be guided by the serious efforts to write multi-level theory in the organizational psychology literature (e.g. Klein & Kozlowski, 2000). Some network/organizational researchers have argued not just for multi-level, but also multi-theoretical explanations (Contractor, Wasserman & Faust, 2006; Monge & Contractor, 2003). At the start of this more integrated endeavor, we need to be broad-minded and possibly eclectic.

Moreover, data are not always easy to obtain. Network-based data may be difficult to collect and so for cost reasons there is often resort to case study approaches of individual organizations or simple social systems. Standard sampling procedures are not appropriate. Network researchers will need to pay more attention to appropriate individual-level measurement and not rely on poorly constructed instruments. Analysis of data will not be simple.

Because these challenges are substantial, we are not suggesting for one minute that social psychologists or social network researchers should cease what they are currently doing and take up a new joint program. Most research will continue within each area, and rightly so. But at some point, and in some studies, the results of the labors within the respective disciplines need to be brought together. Both explicit and implicit knowledge structures available for Asian social psychologists may be usefully deployed. Despite the challenges, we are at a point of knowledge where such combined studies are possible. Methods of data collection, new sophisticated analytical approaches, and new theory are being developed. New possibilities are in reach: for instance, simulation studies provide a whole new method for a serious examination of complex theory.

In conclusion, of course we admit that it is possible to study social psychology without bothering about networks, and it is possible to do social network research without considering psychology. Our argument is, however, that these two approaches can fill theoretical and methodological gaps for each other, gaps that are implicit – and sometimes become explicit – once we carefully dissect themes within these two areas. Our call is for the two areas to cease talking past each other, to seek at some appropriate level to integrate their findings and knowledge, and thereby to permit a richer understanding of how humans operate within the complexities of the modern social world. By the look of this special issue, our call is being heeded.

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