Nan Lin and Social Support[*]

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Abstract

The celebration of Nan Lin's pioneering and significant contributions to the social support literature is overdue. After drawing the trends of the social support research and clarifying the theoretical relationships between social support and another two related concepts—social resources and social capital—in Lin's social network research, I summarize Lin's important and persistent five-stage research efforts on social support, discuss his critical research impacts, and propose crucial future research directions his work enlightens. Lin is a theorist, methodologist, and empirical researcher. His work has stimulated the systematic development and rise of social support, theoretically, methodologically, and empirically. He perspicaciously foresaw the importance of social support and has been standing at the very forefront of its four-decade long research tradition. He defines social support from the social network theoretical perspective, and distinguishes it from other network-based concepts. His social resources theory, one of the first and few theories on social support, advances the conceptualization, typologization, and operationalization of social support and the theoretical modeling of its structural causes and complicated functions. His original measurement efforts have encouraged generations of scholars to construct social support scales. His rigorous and advanced research designs, data collection, and analysis have laid the solid foundation for our causal and dynamic understanding of social support.

Key Words: Health, Nan Lin, Social Capital, Social Resources, Social Support

Nan Lin and Social Support

A social network is a structure of social relationships linking actors, directly and indirectly (Lin, Dean, and Ensel 1981; Lin, Vaughn, and Ensel 1981; Mitchell 1969). Among various levels of complex social structures, social networks serve as a crucial mediating layer (Bian 1997; Burt 1992; Cook and Whitmeyer 1992; Lin 1990, 2001a; Song 2013b; Song and Pettis 2018). Traced back to the classic sociological work by Durkheim, Simmel, and Tönnies, the social network perspective has empowered researchers to identify various network properties and theorize and analyze their causes and consequences for thirteen decades. Among other network-based factors, the concept of social support has been given voluminous research attention especially for its diverse roles for health for more than four decades (for reviews see Barrera 2000; Berkman et al. 2000; Song, Son, and Lin 2011; Thoits 2011; Turner and Brown 2010; Turner and Turner 2013; Uchino 2009; Umberson and Montez 2010). It has been claimed to be one possible fundamental social determinant of health (Link and Phelan 1995).

As a popular Chinese idiom says, "when you drink water, remember to think of its source." It is the pioneering efforts of several health scholars, including sociologist Nan Lin, in the mid and late1970s that have stimulated the systematic development and rise of social support into a popular and powerful theoretical tool (Caplan 1974, 1976; Cassel 1974, 1976; Cobb 1974, 1976; Dean and Lin 1977; Henderson 1977; Kaplan, Cassel, and Gore 1977; Lin et al. 1979; Chapter 6; Rabkin and Struening 1976; see Chapter 11 in this book for Lin's reflection on his research journey on social support). It has been overdue, however, to celebrate Lin's four-decade-long groundbreaking contributions to the social support literature. Lin is a theorist, methodologist, and empirical researcher. He perspicaciously foresaw the importance of social support and has been standing at the very forefront of its four-decade long research tradition. He defines social support from the

social network theoretical perspective, and distinguishes it from other network-based concepts. His social resources theory, one of the first and few theories on social support, advances the conceptualization, typologization, and operationalization of social support and the theoretical modeling of its structural causes and complicated functions. His original measurement efforts have encouraged generations of scholars to construct social support scales. His rigorous and advanced research designs, data collection, and analysis have laid the solid foundation for our causal and dynamic understanding of social support.

In this chapter, I first draw the trends of the social support research. Then I clarify the theoretical relationships between social support and another two related concepts—social resources and social capital—in Lin's social network research. Next, I focus on Lin's important and persistent five-stage research efforts on social support, and discusses his critical research impacts. Finally, I propose crucial future research directions enlightened by Lin's work. Note that many scholars have provided confusingly diverse definitions of social support. As reviewed below, I adhere to a recent, strict, network-based definition from Lin and colleagues: help or aid from social networks (Song and Lin 2009; Song, Son, and Lin 2010, 2011).

TRENDS

Social support is a sociological phenomenon and concept by its nature. At least as old as the discipline of sociology, social support is rooted in classic sociological work. Comte (1875 [1852], p. 314), who coined the term sociology, states that "all mental action depends on social support." Another three forerunners of sociology—Durkheim, Simmel, and Tönnies—also mention the support or aid from social relationships in their seminal studies. Considering these sociological

classics as well as thousands-year-old religions or philosophies such as Confucianism and Mohism emphasizing graded or universal love toward others (Fei 1992[1947]), we concur with House (1981, p. 14) that "in some ways social support is really old wine in a new bottle" or with Turner (1981, p. 357) that social support "hardly reflects discovery of a new idea." Despite its long recognition, however, this old wine (or idea) was not handpicked with serious appreciation out of the gigantic wine cellar (or the enormous treasure of theoretical concepts) for explicit conceptualization and systematic analysis in social science until the mid-1970s Caplan 1974, 1976; Caplan 1979; Cassel 1974, 1976; Cobb 1974, 1976; Dean and Lin 1977; Henderson 1977; Kaplan et al. 1977; Lin et al. 1979; Chapter 6; Rabkin and Struening 1976). Lin is one of these perspicacious scholars. He and colleagues foresee social support as "the most important concept for future study" (Dean and Lin 1977, p. 408).

We can picture the more than four-decade-long research tradition on "social support" and/or "health" using two databases: the Social Sciences Citation Index (SSCI) in Web of Science and the China Knowledge Resource Integrated Database (CKRID). The SSCI can search articles published mainly in English since 1900 (see Figure 5.1), and the CKRID social scientific articles published in Chinese since 1915 (see Figure 5.2).

Insert Figure 5.1 Here

Insert Figure 5.2 Here

Two observations from the search results deserve some discussion. First, there is roughly a two-decade publication gap between articles in English and those in Chinese. The social support

research took off in the mid-1970s in the English world and in the mid-1990s in China. This long publication gap may be in large due to the shifting state policies in contemporary China. It is as early as the late 1940s that Fei Xiaotong, one of the founders of sociology in China, theorizes the importance of help from discrete social circles, even though not explicitly using the term "social support" (Fei 1992[1947]). Sociology as a discipline, however, lost its political legitimacy and was abolished together with all its courses in 1952. It did not regain its legitimacy until 27 years later in 1979. Yanjie Bian applauds Lin's contributions to the rebirth of sociology in China in Chapter 8 in this book. Lin himself has not written in detail about his various forms of social support for the reestablishment of sociology in China. His own version will be crucial for us to understand the history of sociology in China and deal with current and future challenges the discipline of sociology faces in and beyond China.

The second observation can really disappoint sociologists. Sociology deserves but lacks visibility in the existing literature. The SSCI subsumes less than three percent of the social support literature under the category of sociology, and the CKRID groups about twenty percent of the social support studies under the category of sociology and statistics. Also, health and education studies respectively dominate the social support literature in English and Chinese. We must repeat the three-decade-old call from House and colleagues for sociologists to play a more central role in the advancement of future studies on social support (House et al. 1988). We also must bang the drum for the four-decade-old emphasis from Lin and colleagues on social support as "the most important concept for future study" (Dean and Lin 1977, p. 408).

LIN: ONE HEART, TWO DIRECTIONS, AND THREE CONCEPTS

Lin is first and foremost a seminal social network scholar. At the heart of his substantive work is the social network theoretical perspective. In his broad theoretical framework, he emphasizes mesolevel social networks as the vital link mediating the reciprocal dynamic relationship between macrolevel social structures and microlevel individual actions (1983, 1990, 2001a). Also, from the very beginning, Lin's original passion for social network research takes two different directions: instrumental and expressive actions (Lin 1982, 1986a, 1999b, 2000, 2001a, 2008; Lin, Dayton, and Greenwald 1978; Lin and Dean 1984; Lin and Ensel 1989; Lin et al. 1979; Chapter 6; Lin, Woelfel, and Light 1985). These two actions will be introduced in detail later in the summary of his social resources theory. As his brief author biography in one of his earliest publications clearly states, Lin "is conducting research on the instrumental and expressive uses of social relationships as indicated in the process of status attainment, and in the buffering role of social support between stress and illness" (Lin et al. 1978, p. 166). Furthermore, in a chronological research order, Lin's social network research focuses on three network-based concepts: social resources, social support, and social capital (see Chapter 2 in this book for Ronald S. Burt's review of Lin's work on social capital).

The theoretical relationships among social support, social resources, and social capital have been dynamic in Lin's intellectual journey (see Figure 5.3). When commencing his two separate research paths respectively on the concepts of social resources and social support in the 1970s, Lin focused on the impact of social resources on instrumental actions (i.e., instrumental search and occupational status attainment) and that of social support on expressive actions (i.e., mental health) (Dean and Lin 1977; Lin et al. 1977, 1978; Lin et al. 1979; Chapter 6; Lin, Ensel, and Vaughn 1981; Chapter 3; Lin, Vaughn, and Ensel 1981; Lin, Dean and Ensel 1981; Lin and Ensel 1984).

Then, Lin subsumed social support as well as both instrumental and expressive actions under his social resources theory, and used social support to indicate social resources (Lin 1982, 1983, 1990, 1992, 1999b; Lin et al. 1985; Lin and Ensel 1989; Lin and Westcott 1991). He still reserved the concept of social support for expressive studies, and used general terms such as help, helpers, and resource borrowing for instrumental studies. Next, returning to the bifurcated beginning, these two concepts—social support and social resources—were employed separately again in expressive and instrumental studies (Lin 1999a, 2001a; Lin and Ao 2008; Lin and Peek 1999; Lin, Ye, and Ensel 1999; Chapter 7; Lin et al. 2001; Lin, Ao, and Song 2009).

Lin redeveloped social resources theory into social capital theory in the late 1990s (1999a). Social capital is constructed as a concept at the general theoretical level. Social resources change from a theoretical concept into a concept at the empirical and research levels. Although less visible in social capital theory, social support serves as a downstream mechanism. Lin defines social capital as resources embedded in social networks and specifies it mainly as accessed status and connections (network members' hierarchical status and social ties) and mobilized status and connections (hierarchical status and social ties of network members one contacts for help). In his monumental monograph, *Social Capital: A Theory of Social Structure and Action* (2001a), Lin chooses to focus on instrumental returns to social capital, and does include expressive returns into his theoretical model of social capital (Lin 2001a). One out of the six propositions on returns to social capital, the strength-of-strong-tie proposition, is related to expressive actions. As it states, social capital accessed from stronger ties can promote expressive actions more successfully. The book does not examine this proposition. But as reviewed below, this proposition is built upon Lin's prior work on social support and health, which demonstrates that social support from stronger ties is more protective of health. The book acknowledges "social support" explicitly once and relates

that concept to expressive returns. As Lin explains why the book pays limited attention to expressive returns to social capital (2001a, p. 243), "I chose to focus on the instrumental aspect of social capital and thus shortchanged its expressive aspect, not that my research efforts have ignored the latter. There is a substantial and thriving literature on the effects on mental health and the well-being of social support, social networks, and social resources. To do justice to the expressive aspect of social capital would require perhaps another monograph of comparable size." In his book, Lin also mentions one form of social support—emotional support—once as one pathway for instrumental and expressive returns to social capital (2001a, p. 20). More recently, with his social capital theory extended to health outcomes, Lin and colleagues highlight social support as one main pathway for both instrumental and expressive returns to social capital (Lin 2008; Song and Lin 2009; Song 2011; Song et al. 2010, 2011).

Insert Figure 5.3 Here

In brief, the position of social support has been changing in Lin's network-based theoretical frameworks. It transfers from an indicator of social resources in his expressive or health studies to a pathway for the positive function of social resources in his social capital theory. Following Lin's steps, the following review of his work on social support will focus on his expressive or health studies, and draw upon his instrumental studies when relevant (see Chapters 2 and 8 in this book for Ronald S. Burt and Yanjie Bian's focused reviews of Lin's instrumental studies). I roughly group his efforts on social support and health into five stages.

FIVE-STAGE WORK ON SOCIAL SUPPORT AND HEALTH

Stage One: A Critical and Fundamental Review as a Blueprint

Lin began his journey on social support forty-two years ago. In spring 1976, he and colleagues from the Department of Sociology at the State University of New York at Albany and Albany Medical College had a series of meetings to discuss collaborative opportunities (see the preface in Lin, Dean, and Ensel 1986). As they found out, what they had in common in terms of research interests was social determinants of mental health. After a thorough review of the relevant literature, they narrowed down their research interests into the concept of social support. "We felt that a concerted and systematic effort in teasing out the various components of social support and how they affected the stress process would be an invaluable contribution to the field" (Lin et al. 1986, p. xiii). Their feeling at that time has turned out to be true.

In December 1977, their first article on social support was published, titled "The Stress-Buffering Role of Social Support," (Dean and Lin 1977). It is a critical and solid review of the two-decade-long literature on the established stress-illness relationship. It sharply pins social support into the stress-illness relationship. It discerns the "suggestive and useful" evidence for the emerging idea of social support as a mediator or buffer for the stress-illness relationship. It points out the theoretical, methodological, and empirical problems surrounding the concept of social support. It foresees the importance, urgency, and challenge of future research. It labels social support as "the most important concept for future study," draws our attention to the need for "more theoretical meaningful and penetrating" measures of social support, but also recognizes social support as "the most difficult task for instrumentation" (p. 408). In addition, it provides advanced research strategies to address these identified problems.

This review criticizes prior work for the neglect of social support, the absence of theoretical explanations for its role, and the lack of clear conceptualization. The review then conceptualizes social support and proposes hypotheses on its function. When conceptualizing social support, this review emphasizes social support as the principle functions of strong ties, that is, the primary group or primary relationships. It uses the family as the example of the primary group and operationalizes social support functions as the following features of the family: "a) emphasis on mutual responsibility, caring and concern; b) strong mutual identification; c) emphasis upon the person as a unique individual rather than upon his/her performance; d) face-to-face interaction and communication; e) intimacy; f) close association and bonds; and g) provision of support, affection, security and response" (p. 407). This review distinguishes two forms of functions the primary group fulfills: instrumental (i.e., "the fulfillment of tasks") and expressive functions ("the satisfaction of individual needs and the maintenance of solidarity") (p. 407). It emphasizes expressive functions as the main purpose of the primary group. It also encourages future efforts on the "mutual interaction" between the two functions (p. 407).

When theorizing the function of social support, this review proposes three principal hypotheses: 1) negative interaction with social stressors; 2) generalization of the interaction effect into different illness histories; and 3) social stressors as an antecedent of social support. The first hypothesis contains a moderating-effect subhypothesis: the moderating role of social support depends on the type or severity of social stressors. The third hypothesis has two competing subhypotheses: social stressors may decrease or increase social support.

This review recognizes methodological shortcomings in the existing studies: the lack of direct, reliable and valid instruments, and the lack of longitudinal designs and conclusive evidence. It warns against the indirect measurement of social support as social integration indicators such as

marital status. It lists a couple of existing scales as the beginning, emphasizes the importance of a rigorous pretest of future scales, and suggests the necessity of employing clustering analysis in the exploration of the multidimensionality of social support. It criticizes existing studies for the lack of causal inferences and generalizability in their findings due to their case control designs and focus on patient population. It encourages future research to use longitudinal data from representative samples of normal population, conduct ideally three-wave cross-lagged path analysis to test the causal directions in the relationships among social stressors, social support, and illness, and compare the relative strength of all paths.

The 1977 review is at the forefront of the social support research tradition. It has three strengths in comparison with other forerunning work (Caplan 1974, 1976; Cassel 1974, 1976; Cobb 1974, 1976; Henderson 1977; Kaplan et al. 1977; Rabkin and Struening 1976). First, other forerunning work recognizes the main effect of social support but emphasizes more its negative moderating effect on the stress-illness relationship. As Cobb states, "social support facilitates coping with crisis and adaption to change. Therefore, one should not expect dramatic main effects from social support…it is in moderating the effects of the major transitions in life and of the unexpected crises that the effects should be found" (1976, p. 302). In other words, other forerunning work constrains social support to go after social stressors as a reliever of their detrimental impacts. In comparison, the 1977 review conceives of social support as "a dynamic variable" (p. 411; see Gore 1981). Its proposed hypotheses and cross-lagged three-wave path analysis model draw a reciprocal line between social support and social stressors, and guide us to model not only the main and moderating effects of social support but also its three other effects: indirect effect through social stressors, and two mediating effect on the stress-illness relationship. Second, earlier work underscores emotional support more. The 1977 review discusses both

expressive and instrumental support, and lists their interaction as a future research direction. The term "expressive" is similar to the term "emotional." Lin prefers the former term "in order to stress its social (interaction and confiding) rather than its psychological nature" (1986a, p. 20). In addition, the 1977 review offers a systematic methodological critique and an advanced future research design, which is missing in other forerunning work.

Stage Two: The First Systematic Study, Panel Design, and Instrumentation

In the second stage, using representative community data of normal population, the 1979 article is the first to systematically examines both the main and moderating effects of social support in the social dynamics of health and another three effects related to the reciprocal relationship between social support and social stressors (Lin et al. 1979; Chapter 6). Other empirical studies at that time are limited to the main and moderating effects of social support (Andrews et al. 1978; Gore 1978). Also, in this stage, Lin and colleagues make one of the first attempts to instrument social support and to design a longitudinal survey that addresses their objectives in the 1977 review.

In the 1979 article, social support is defined from a social network perspective as "support accessible to an individual through social ties to other individuals, groups, and the larger community" (p. 109). Its structural sources extend beyond strong ties emphasized in the first stage to include multi-layer relationships in social networks. Noticing the lower explanatory power of social stressors in existing work, this article proposes the independent effect hypothesis that social support should be negatively associated with illness net of social stressors. Two mechanisms are discussed: norms and reacting capabilities. Also, this article theorizes the reciprocal relationship between social support and social stressors in more detail than the 1977 review, and develops three hypotheses: stress prevention, support mobilization, and support deterioration. The stress

prevention hypothesis expects social support to protect health through deterring the occurrence of social stressors. The support mobilization hypothesis states that social stressors have an indirect positive association with health through triggering the mobilization of social support. The support deterioration hypothesis maintains that social stressors have an indirect negative association with health through weakening available social support. Furthermore, the 1979 article offers some additional interaction-effect arguments for future research. The effects of social stressors on social support can vary by socioeconomic status. Social stressors may be more likely to trigger social support for higher-status people who possess more reacting capabilities, and to deteriorate social support for lower-status people. The functions of social support can further vary by its source (primary vs. secondary group) and purpose (instrumental vs. affective).

Using cross-sectional data from a representative community sample of the Chinese-American adult population in Washington, D.C., this 1979 study makes "a reasonable first scaling attempt" to measure social support using a scale of nine items (p. 113). These nine items capture people's social interactions and involvement with friends, neighbors, and the Chinese communities and their subjective feelings about the neighborhood, people nearby, and job. Multivariate and path analysis of psychiatric symptoms shows evidence for the stronger direct explanatory power of social support relative to that of social stressors, some inconclusive evidence for the support mobilization hypothesis, but no evidence for other hypotheses (support deterioration, stress prevention, and stressor-support interaction).

The inception of the four-wave Albany Area Health Survey project took place in fall 1977 (Lin et al. 1986). In August 1978, Lin and colleagues conducted a pretest to field test four different social support scales, including their own original 26-item and later revised 28-item instrumental-expressive support scale (Lin, Dean, and Ensel 1981). After the reliability and validity tests on

these scales, the four waves of longitudinal survey data were collected respectively in 1979, 1980, 1982, and 1994 (Lin et al. 1986; Lin and Dean 1984; Lin and Ensel 1984, 1989; Lin et al. 1999; Chapter 7). Such a longitudinal initiative was really rare at that time (Turner 1981; Henderson, Byrne, and Duncan-Jones 1981).

Stage Three: Social Resources Theory, Refined Modeling, and Longitudinal Analysis

In the third stage, Lin builds fuller theoretical, methodological, and analytical frameworks on social support, in particularly as illustrated in the edited book, *Social Support, Life Events, and Depression* (Lin et al. 1986). He is one of the first to develop and apply a specific theory (i.e., social resources theory) to define, typologize, operationalize, and theorize social support (Lin 1982, 1983, 1986a; Lin, Dean, and Ensel 1981; Lin and Dean 1984; Lin and Ensel 1989; Lin et al. 1985). Also, although the embeddedness of social support in social networks has been recognized in earlier work including Lin and colleagues' earlier work (Caplan 1974; Cobb 1976; Dean and Lin 1977; Gottlieb 1978; Henderson 1977; Kahn and Antonucci 1980; Kaplan et al. 1977; Lin et al. 1979; Chapter 6; Wellman 1981), Lin is the first to conceptualize the internal structure of social support from an interrelated, multilayer, social network perspective (1986a, 1986c). Furthermore, going beyond the 1979 study, Lin and colleagues contribute a richer list of theoretical models (Lin 1986b; Lin and Ensel 1989). In addition, they use first-hand longitudinal data from the Albany Area Health Survey, employ their instrumental-expressive social support scale as well as other scales, conduct advanced statistical analysis of diverse hypotheses, and achieve stronger causal inferences.

Lin began his construction of social resources theory in his small world experiment on packet forwarding in the late 1970s (Lin et al. 1977, 1978). Analyzing people's instrumental use

of social ties in delivering packets and later in job search, Lin identified "relations as resources" and proposed the idea of social resources (Lin et al. 1978, p. 150; Lin et al. 1977; Lin, Ensel and Vaughn 1981; Chapter 3; Lin, Vaughn, and Ensel 1981). As "resources embedded in one's social network," social resources are operationalized as "the wealth, status, power, as well as social ties, of those persons who are directly or indirectly linked to the individuals" (Lin 1982; Lin, Vaughn, and Ensel 1981, p. 1163). Identifying "the lack of an integrated theory" on the role of social support for health, Lin extends social resources theory to social support (Lin 1982, 1983, 1986a; Lin, Dean, and Ensel 1981; Lin and Dean 1984; Lin and Ensel 1989; Lin et al. 1985, p. 248). As Lin assumes, constrained by the hierarchical macrostructures of a society, most actions individuals take at the microstructural level are dichotomized into instrumental and expressive actions in terms of their purposes. Instrumental actions aim to "achieve an end" or search and obtain additional or new resources, while expressive actions intend to preserve and maintain existing resources and protect again resource loss (Lin 1982, 1983, 1986, 1990, 1992; Lin and Dean 1984; Lin, Dean, and Ensel 1981, p. 76; Lin and Dumin 1986; Lin, Ensel, and Vaughn 1981; Chapter 3; Lin, Vaughn, and Ensel 1981). Correspondingly, respectively on the instrumental and expressive dimensions, Lin distinguishes two types of interactions, relationships, and support functions (Lin 1982; Lin et al. 1978; Dean and Lin 1977; Dean et al. 1981; Lin, Dean, and Ensel 1981; Lin et al. 1979; Chapter 6). He further specifies three forms of returns to instrumental actions (economic, political, and social returns) and three forms of returns to expressive actions (physical health, mental health, and life satisfaction) (Lin 1999b, 2000, 2001a). He maintains that "the relative frequency and intensity of instrumental and expressive interactions in a society, I believe, hold the key in determining the dynamics of stability and change" (1982, p. 145).

Lin proposes two tie-purpose matching propositions: the strength of weak and heterophilous ties for instrumental actions, and the strength of strong and homophilous ties for expressive actions (1983). Successful instrumental actions need diverse and nonredundant social resources which are most available from weak and heterophilous ties. Successful expressive behaviors, however, require interaction with contacts sharing similar characteristics and resources, and such contacts are most reachable through strong and homophilous ties. Lin reminds us that the application of social resources theory to expressive actions was "not an exact mirror image" of its application to instrumental ones (1983, p. 14). Expressive actions are more complicated than instrumental ones for three reasons: the dependence of certain expressive actions on both instrumental and expressive support, strong ties sometimes as the sources of stress, and the dynamics of strong ties (1983, 1992). Lin also points out that instrumental actions are more costly as interactions with weak and heterophilous ties require more effort (2001a).

Assuming that the maintenance and promotion of health, in particular mental health, requires expressive actions, Lin later provides an operational definition of social support as "access to and use of strong and homophilous ties" (Lin 1986a; Lin and Dean 1984, p. 87; Lin et al. 1985). This definition overlaps with one statement in the first stage that emphasizes strong ties as the major sources of social support for expressive needs. Applying social resources theory, Lin states that social support thus conceived and operationalized should play an independent protective effect on health net of social stressors and other factors. Note that apart from the tie-purpose matching propositions, social resources theory contains one important proposition on the positive effect of accessed status on instrumental actions (Lin 1982, 1983, 1990). This proposition later becomes the social resources proposition in Lin's social capital theory (2001a). Lin and colleagues do not extend this proposition to expressive actions until the fifth stage.

Apart from his strong tie-based operational definition of socials support, Lin reviews existing definitions and gives a synthetic conceptual definition, which, similar to the one in the second stage, is not limited to strong and homophilous ties. Social support is "the perceived or actual instrumental and/or expressive provisions supplied by the community, social networks, and confiding partners" (1986a, p. 18). This definition emphasizes certain forms of support differentiated on two dimensions: subjectivity or objectivity (actual or received versus perceived or cognitive support) (Caplan 1979), and content (instrumental versus expressive support).

From an interrelated, multilayer, social network perspective, Lin conceptualizes the internal structure of social support (1986a, 1986c). He decomposes social support into two components: the social (structural) component or support resources, and the support (processing) component or support processes. Support resources precede support processes, and involve three interrelated layers of social relations: belonging or community relations, bonding or network relations, and binding or intimate relations. The first layer bolsters the other two and the second one promotes the third one. The third layer in turn influences support processes, which contain social support on two dimensions: subjectivity or objectivity, and context (routine versus crisis). The two dimensions together generate four interconnected forms of social support. The content dimension is also integrable into the support processes. Using this conceptual framework, the Albany Area Health Survey collected information on social support in four ways: community support, network support, confident support, and instrumental-expressive support (Lin 1986b).

Furthermore, Lin considers all three possible temporal sequences of social support and social stressors, and constructs a list of twelve models using depression as the outcome (1986b). A previously ignored positive causal flow from social support to social stressors (i.e., stress induction) is added to the reciprocal relationship between social support and social stressors. When

social support precedes social stressors, four models are possible: negative interaction or reduced protection of social support, stress prevention, stress induction, and independence. When social support and social stressors are measured simultaneously, four models are possible: contemporaneous negative interaction, contemporaneous mutual deterrence, contemporaneous mutual reinforcement, and contemporaneous independence. When social support is subsequent to social stressors, four models are possible: negative interaction or reduced damage of social stressors, support deterioration, support mobilization, and independent compensation.

Using the longitudinal data from the Albany Area Health Survey, Lin and colleagues use advanced longitudinal analytical methods such as the path analysis models and structural equational models to extensively examine the role of social support in the stress-depression relationship. Most of their studies apply social resources theory and measure social support from strong and homophilous ties, and some of their studies employ diverse social support scales including the instrumental-expressive support scale (Dean and Ensel 1982; Ensel and Lin 1991, 1996, 2000, 2004; Lin and Dean 1984; Lin 1986b; Lin et al. 1986; Lin and Ensel 1984; Lin et al. 1985). In brief, they find strong evidence for the strength-of-strong-tie proposition, but mixed evidence for the strength-of-homophilous-tie proposition. Also, consistent with Lin's propositions on the integral structure of social support, strong tie support and instrumental-expressive support is more predictive than community and network support. Furthermore, they find strong evidence for the independence model and the support deterioration model, moderate evidence for the stress prevention model, but little evidence for the interaction model. The explanatory power of these models varies by other factors including age, gender, marital status, social class, and illness histories. In addition, the independence model and the support deterioration model are applicable

when physical symptoms serve as the outcome and when both distal and proximal social stressors are examined. Finally, social support can mediate the effect of psychological resources.

In this stage, two more studies make theoretical and methodological contributions (Lin 1989; Lin and Ensel 1989). The study by Lin and Ensel (1989) expands the theoretical framework on the stress-illness relationship. It examines physical health, and treats depression, the primary outcome of interests in prior studies on the stress-illness relationship, as an antecedent of physical health. Theoretically, this study extends the six-model life stress process proposed by Dohrenwend and Dohrenwend (1981). From a temporal-causal perspective, it formulates the broadest conceptual model ever in the prediction of physical health, which involves both resources and stressors from all three environments: social, psychological, and physiological. This conceptual model allows the formulation of additional hypotheses beyond the original six models in the life stress process. Also, this study refines the definition of social support as "the process (e.g., perception and reception) by which resources in the social structure are brought to bear to meet the functional needs (e.g., instrumental and expressive) in routine and crisis situations" (Lin and Ensel 1989, p. 383). This definition uses the term social structure to imply the three-layer structural components of social support, and contains different forms of social support on three dimensions (subjectivity/objectivity, content, and context). Methodologically, this study measures strong tie support. Analysis of the three-wave data from the Albany Area Health Survey shows no evidence for the independent effect of social support as social resources but strong evidence for its interactive role. It interacts with both social stressors and depression, while psychological resources only with depression.

Although not directly related to social support, Lin's 1989 study is the first to construct a depressive symptom scale for the population in China. It lays a methodological foundation for

future mental health research in China and future comparative research involving China. As Lin notices, prior studies on depression are limited to Chinese societies outside China, report different distributions of depression, and lack rigorous reliability and validity tests beyond the translation of the 20-item CES-D scale (the Center for Epidemiological Studies Depression Scale) established in the west. Collaborating with the Tianjin Academy of Social Sciences and the City Government of Tianjin, Lin collected representative adult data in Tianjin in 1986. His reliability and validity tests support a 22-item Chinese Depressive Symptom Scale (CDS-22). This scale removes the four positive items in CES-D and adds another six items on relational problems people experienced during the Cultural Revolution. Excluding these six items, a shorter version, CDS-16, can be used for comparative studies on China and other societies.

Stage Four: Structural or Network Embeddedness of Social Support

In the fourth stage, Lin and colleagues continue refining their social network perspective on social support, and extending our knowledge of the complicated "structural embeddedness" of social support or "a nested support system" (Lin and Peek 1999; Lin et al. 1999, p. 344, p. 347; Chapter 7; Son, Lin, and George 2008). They are among the first to systematically examine the relationships among social network, social support, and health (Lin et al. 1999; Chapter 7).

Lin criticizes prior studies on social support for describing structure using sociodemographic factors, and advocates a social network perspective on our interpretation of structure. Lin and colleagues have long highlighted social networks as a structural antecedent of social support (Dean and Lin 1977; Lin et al. 1979; Chapter 6; Lin, Dean, and Ensel 1981). As in his 1986 conceptual framework on social support, Lin identifies two components of social support: a three-layer support structure and support functions. In their network theory on the relationship

between marital status and health, Lin and Westcott (1991) emphasize social support as the crucial downstream explanatory mechanism. Lin and Peek (1999) later conduct a thorough review on the impact of social network properties on mental health, but find inconsistent results. They speculate that social network properties as upstream structural sources of social support affect mental health more indirectly and thus more inconsistently. Their speculation is consistent with results from their analysis of the three-wave data from the Albany Area Health Survey (Peek and Lin 1999). Strong-tie support affects depression more directly than social network compositions.

It is Lin, Ye, and Ensel (1999; Chapter 7) that elaborate and systematically examine Lin's 1986 conceptual framework on social support (1986a, 1986c). Based on the belonging-bonding-binding formulation for the three layers of structural support, they hypothesize that each outer layer builds up each inner layer, and all three layers boosts support functions with the inner layers exerting greater effects. Also, they expect support functions to decrease depressive symptoms more directly and strongly than structural support, and structural support to do so both directly and indirectly with the inner-most layer exerting the strongest effect. Methodologically, they integrate eight forms of support functions jointly classified on three dimensions emphasized in Lin's 1989 conceptual framework: subjectivity/objectivity, context, and content. Their structural equation modeling analysis of these support functions generates a three-level factor structure. They choose to examine the effects of perceived versus actual support in terms of instrumental versus expressive support. Results from their analysis of data from the 1993 Albany Area Health Survey support their hypotheses. Note that among four forms of social support, only perceived expressive support plays an independent protective role. Additional interaction effect analysis finds that the impacts of support structures and support functions do not vary by sociodemographic factors such as age,

gender, and income. Nine years later, Son, Lin and George (2008) replicate the structural analysis by Lin, Ye, and Ensel using representative data from Taiwan, and report in general similar findings.

Although not involving social support, another study in this stage embeds the stress-illness model in broader social and cultural contexts, and demonstrates the varying detrimental impacts of social stressors across culture and society (Lin and Lai 1995). Lin and Lai investigate the stressor-depression relationship using the aforementioned Tianjin data as well as the 1982 Albany Area Health Survey data. Their results support the stress-illness model. But one work-related social stressor—work conflict—is detrimental only in the Tianjin sample. They attribute that finding to two institutional factors in urban China: the centrality of work units and the cultural norm of interpersonal harmony.

Stage Five: Distinction from and Relationship with Other Network-Based Concepts

More recently, Lin and colleagues have taken on two challenges to address some critical and controversial issues on social capital and social support. One challenge is the lack of confidence in the explanatory power of social capital, and the other one the conceptual distinction and relationships between social support, social capital, and some other network-based concept. Lin and colleagues address these two challenges and clarify the conceptual distinction of social support from social capital and other network-based concepts, and their theoretical and empirical relationships with each other in the social dynamics of status attainment and health.

The first challenge appears when the explanatory power of Lin's social capital theory is questioned. The theory expects resources from social networks to advance status attainment. But its expectation is challenged by the puzzling facts that a big proportion of participants in the labor market reports no job search and a big percentage of job seekers uses no personal contacts. Facing

this challenge, some lose confidence in the causal effect of social capital on job search and status attainment. Lin does not. He offers an intriguing proposition called the invisible hand of social capital (2000). He argues that individuals can receive useful information without actively seeking it if they access more social capital or live in resource-richer networks. In 2004, Lin and colleagues launched an unprecedented two-wave, three-society (the United States, urban China, and Taiwan) representative survey project, titled "Social Capital: Its Origins and Consequences." (Lin, Fu, and Chen 2014). To my knowledge, this survey project is the first to collect longitudinal data on social capital simultaneously from multiple societies. It focuses on causes and consequences of social capital, and contains questions on the invisible hand of social capital, that is, unsolicited job leads (information on job possibilities, openings, or opportunities received without asking). Lin and colleagues analyze the U.S. sample and find strong evidence for the invisible hand proposition (Lin and Ao 2008). Accessed status is positively associated with the receipt of unsolicited job leads, which in turn is positively associated occupational status and income. Following this study, Lin and colleagues further demonstrate the unequal access to unsolicited job leads by gender and race/ethnicity (McDonald, Lin and Ao 2009). White men are advantaged in receiving unsolicited job leads in comparison with women and minorities.

Lin and colleagues' work on causes and consequences of unsolicited job leads expand the theoretical frameworks not only on the stratified mechanisms linking social capital to status attainment but also on the structural causes of social support. Although not explicitly called as social support in their work, unsolicited job leads represent one specific form of unsolicited support, that is, help passively obtained without asking. On the solicitedness dimension (i.e., whether support is received with or without active seeking), health scholars have long classified received or actual support into two subtypes: solicited (sought and obtained) versus unsolicited support

(Barrera 1986; Eckenrode and Wethington 1990; Kessler et al. 1985; Pearlin and McCall 1990; Thoits 1995). But health scholars do not take the causes of unsolicited support into much consideration. The three-society social capital survey project is the first to collect information on unsolicited support from nationally representative samples. Lin and colleagues' work on the invisible hand of social capital is the first to demonstrate accessed status as one crucial structural cause of unsolicited support, and further expands Lin's structural analysis of social support in the fourth stage.

The second challenge emerges when social resources theory and social capital theory are extended into health outcomes. As summarized earlier, Lin develops social resources theory originally for instrumental actions, and then he and colleagues extend social resources theory into health and indicate social resources using social support. Lin later builds his social capital theory upon his social resources theory, focuses on the application of that theory into instrumental actions, and reserves social support mainly for expressive studies. As a result, the relationship between social support and social capital is blurred. Also, social capital has become a burgeoning term in the past three decades, but its definitions are diverse and controversial (for reviews see Lin 2001a; Pevalin 2003; Song 2013a; Song, Frazier, and Pettis 2018; Song et al. 2010; Webber and Huxley 2004). Some equalize social capital with social support and other related network-based concepts. Such an equalization is criticized for pouring old wine into new bottles (Kawachi et al. 2004). Note that a couple of praiseworthy studies take into consideration simultaneously the concepts of social resources, social capital, and social support, but they do not clearly articulate the distinction and relationship between these concepts (Acock and Hulburt 1993; Drentea and Moren-Cross 2005). Before social resources theory developing into social capital theory, one quantitative study is the first to extend the social resources proposition to expressive actions, and demonstrates the positive

health effect of accessed status (Acock and Hulburt 1993). It also examines the tie-purpose matching propositions, treating the positive health effects of strong and homophilous ties as evidence for the flow of social support and those of weak and heterophilous ties as the demonstration of social resources theory. One qualitative study applies Lin's arguments on the rise of social capital in the form of networks in cyberspace to social support or communications at a mothering board on a parent's website (Drentea and Moren-Cross 2005; Lin 1999, 2001a).

Lin and colleagues urgently recognize the danger of such entangled conceptualizations in jeopardizing the unique heuristic utility of these network-based concepts and confounding their causal relationships with each other. They have made careful efforts to differentiate social support from other related network-based concepts (Lin 2008; Song and Lin 2009; Song et al. 2010, 2011). Aiming to clarify the theoretical relationships between these network-based concepts, Lin and colleagues choose to favor a strict, neutral, network-based definition of social support: help or aid from social networks (Song 2011; Song and Lin 2009; Song et al. 2010, 2011). This definition allows us to understand and realize the nature and potential of social support more clearly and fully than before. First, this definition anchors the sources of social support firmly within social networks, and narrows the "support" part down into a specific relational content. Thus defined, social support is separated from its preceding social structures, in particular more upstream network-based concepts. Also, this definition is not limited to certain forms and functions of support, and is not based on health effects. It leaves vast space and freedom for researchers to operationalize and investigate various and richer forms and functions of support and to examine nonhealth outcomes.

This strict definition overcomes two main shortcomings many previous conceptual attempts suffer from to different degrees: lack of precision and health-focused functionalist

assumption (Caplan 1979; House 1981; Shinn, Lehmann, and Wong 1984; Shumaker and Brownell 1984; Song et al. 2011; Thoits 1982). Imprecise definitions can lead to broad and, even worse, inconsistent and invalid operationalizations and measurements, and further mixed and inconclusive findings. Some, for example, do not explain the meaning of support (Cassel 1974, 1976; Lin et al. 1979; Chapter 6). Some explain the meaning of support but use more abstract or upstream concepts (e.g., social interaction, integration, relations, ties, and bonds) of and/or downstream mechanisms (e.g., information, and meaning) for support (Caplan 1974; Cobb 1974, 1976; Kaplan et al. 1977; Henderson 1977; Lin and Ensel 1984; Pearlin et al. 1981; Thoits 1982, 2011; Turner and Brown 2010). Some constrain social support to involve only two types of actors, the provider and the recipient, or as a form of "interpersonal transaction" (House 1981; Kahn and Antonucci 1980; Shumaker and Brownell 1984). They ignore the possible complicated long chain in the mobilization of certain social support, which can involve both direct and indirect ties (Chen 2014; Bian 1997; Lin 2001c, 2004; Lin et al. 1977, 1978). Some nail down the nature of social support as an exchange (Shumaker and Brownell 1984), and neglect that social support is not always symmetric (Lin 2001a; Nahum-Shani, Bamberger, and Bacharach 2011). Some argue against social networks as the sources of social support in order to include strangers as support providers (Shumaker and Brownell 1984). But social networks contain both strong and weak ties, and strangers may exemplify extreme weak ties (Granovetter 1973). With the rise of information technologies, receiving support from strangers in the cyberspace has become normal (Lin 1999b, 2001a; Wellman et al. 1996; see Cotton et al. 2011; Drentea and Moren-Cross 2005; Song and Chang 2012; Yin, Song, and Malin 2017). Finally, the strict definition is similar to that from Berkman (1984), but it does not list specific supportive contents as in hers in order to avoid the underestimation of the complexity in supportive contents.

The other shortcoming some prior definitions share is the health-focused functionalist assumption, based on which they define social support in terms of its protective health effect (e.g., Caplan 1974, 1976; Cobb 1974, 1976; Cohen, Gottlieb, and Underwood 2000; Kaplan et al. 1977; Henderson 1977; Shumaker and Brownell 1984). Some scholars hold this assumption partly because social support emerged as a post-hoc speculative explanation for the salubrious effects of relational factors found in human and animal studies in the 1970s, and partly because health scholars are primarily interested in disease prevention and health promotion. Health-focused functionalist definitions, however, have three problems. First, they mix social support with its consequences, and fall into the trap of functionalist tautology. Tautological definitions make operationalization and measurement difficult and render hypothesis testing impossible (Lin 1999b, 2001a). Second, functionalist definitions simplify the complexity and variability of social support and weaken its theoretical breadth and depth by neglecting the existence of dysfunctional or harmful support. As we now know, the receipt of social support is not always supportive or effective, and sometimes can be null and even harmful to recipients' health (Barrera 1986, 2000; Bolger and Amarel 2007; Deelstra et al. 2003; Ross and Mirowsky 1989; Song 2014a; Song and Chen 2014; Wortman and Lehman 1985). In addition, health-focused functionalist definitions constrain the theoretical utility of social support for non-health research areas, and hinder us from more fully examining its causes and consequence. Social support tends to be reserved for health studies. A SSCI search for review articles on social support finds 125 results, 122 of which focus on health and well-being. Social support is one major pathway linking various more upstream network properties to not only expressive but also instrumental outcomes (Song and Lin 2009; Song et al. 2011). But the exact term of "social support" is missing in main network-based theories on social stratification and mobility (e.g., social capital theories by Bourdieu [1983] 1986 and

Coleman 1990; structural hole theory by Burt 1992; weak ties theory by Granovetter 1974). We are in great need of the bridging efforts like Lin's to fully recognize the varying potential of social support for both instrumental and expressive outcomes.

Using the strict definition, Lin and colleagues have made efforts to distinguish social support from another four related but different network-based concepts: social networks, social cohesion, social integration, and social capital (Song 2011; Song and Lin 2009; Song et al. 2010, 2011). In brief, social networks represent not a theory but a theoretical perspective (Mitchell 1974). From this perspective, we identify various network-based concepts or theories such as social cohesion, social integration, social capital, and social support. Social cohesion is the degree of social bonds and social equality within social networks, indicated by trust, norms of reciprocity, and the lack of social conflict (Kawachi and Berkman 2000; Sampson, Raudenbush and Earls 1997). Social integration is the extent of participation in social networks, indicated by active engagement in social roles and social activities, and cognitive identification with network members (Berkman et al. 2000; Brissette et al. 2000; Moen, Dempster-McClain, and Williams 1989). Social capital represents resources embedded in social networks, measured as network members' structural positions and social connections (Lin 2001a). Thus conceived, social cohesion as a norm is more upstream and can influence other network-based factors. Social integration affects the quality and quantity of social capital and social support. Social capital is a direct determinant of social support as it is network members' resources that can be drawn for various supportive purposes. Social support is a downstream factor subsequent to the operation of the other three network features. Certain indicators of social integration and social capital may act as proximate measures of social support. Note that the relationship between these network-based factors can be indeed reciprocal and dynamic from a longitudinal perspective.

Furthermore, Lin and colleagues integrate social support and social capital into their theoretical and empirical analysis. One study explicitly investigates the joint health effects of social support and social capital using representative data from the 1997 Taiwan Social Change Survey (Song and Lin 2009). Applying social capital theory, it extends the four mechanisms Lin proposes for instrumental returns to accessed status to hypothesize the independent protective effect of accessed status on health: information, influence, social credential, and reinforced identity. It also proposes two competing hypotheses—compensation effect and cumulative advantage—for the interaction effect between social and personal capital. It examines two health outcomes: depressive symptoms and self-reported health. It uses two network instruments (the position generator and the name generator) to measure social capital as accessed status (network members' occupational status) and social support as tie strength. Results replicate the protective independent effect of social support, as measured through the name generator, on both outcomes. Consistent with social capital theory, accessed status measured through the position generator has direct salubrious effects on both outcomes, while its effect size is smaller than that of social support. As the compensation effect hypothesis predicts, accessed status negatively interacts with education in the estimation of depression. These findings suggest that accessed status and social support are two independent network-based causes of disease and require different network instruments. Similar to the speculation in Lin and Peek (1999), the weaker explanatory power of accessed status relative to that of social support may reflect its more upstream position as a structural determinant of social support and its less direct health effects.

RESEARCH IMPACTS

As a pioneer, Lin is one of the most highly recognized and cited contributors in the field of social support and health. The work of Lin and colleagues has stimulated this research field to transition from primitive and intuitive definitions and lack of theoretical explanations to clearly refined definitions and complicated theoretical models (containing reciprocal and competing hypotheses), and from lack of valid and reliable instruments, lack of panel and comparative survey designs on normal populations, and suggestive evidence to proliferating sophisticated measurement scales on multiple dimensions, longitudinal and multi-society representative surveys, and direct and longitudinal evidence with strong causal inferences. Lin's work has significant impacts, both theoretically and methodologically.

The theoretical impacts take six directions: the buffering effect of social support, the tie-purpose matching propositions, the multilayer network structure of social support, the competing propositions on the reciprocal relationship between social support and social stressors, the invisible hand or unsolicited support, and the relationship between social support and social capital. First, the work of Lin and colleagues sparks the debate over and substantial research on the buffering effect of social support (for reviews see Aneshensel 1992; Barrera 2000; Thoits 1982; Wheaton 1985). Some pioneers, including Lin and colleagues, use the term buffering or cushioning to refer to the speculative protective effect of social support in the face of social stressors (Cassel 1974, 1976; Dean and Lin 1977; Kaplan et al. 1977; Rabkin and Struening 1976). The metaphorical stress buffering model versus the independent main effect model has dominated the social support and health literature since then. Scholars, however, diverge on the theoretical meanings and statistical modeling of the buffering role of social support (for reviews see Barrera 2000; Cohen and Wills 1985; Gore 1981; House et al. 1988; Kessler and McLeod 1985; Lin 1986b; Wheaton

1985). Lin clarifies three interpretations in terms of the breadth of the meanings of buffering (Lin 1986b; Lin et al. 1985). In the most restrictive and also the most popular interpretation, the buffering effect refers to only the reduced damage model or the negative moderating effect of social support on the positive relationship between social stressors and illness (Andrews et al. 1978; Cohen and Wills 1985; Gore 1978; Kahn and Antonucci 1980; House 1981; Thoits 1982; Turner 1981). The stress process paradigm, one of the most applied conceptual frameworks for social causes and health consequences of stressors, includes social support into the stress process mainly as a moderating element (Pearlin et al. 1981). In the less liberal view, the buffering effect contains two models: reduced damage and support deterioration (Lin et al. 1979; Chapter 6; Wheaton 1985). In the most liberal view, the buffering effect includes three models: reduced damage, support deterioration, and support mobilization (Lin 1986b; Lin et al. 1985; Lin and Dean 1984; Lin and Ensel 1984; Kessler and McLeod 1985). As Lin suggests (1986b), in order to avoid confusion, we discuss each specific model separately instead of using the word buffering. Hundreds of empirical studies have provided strong evidence for the independent protective effect of social support (especially perceived or emotional support) on health, in particular mental health, mixed evidence for the moderating effect of social support, and some evidence for the varying effects of social support by other social factors such as gender, marital status, and socioeconomic status (for reviews see Cohen and Wills 1985; Kessler and McLeod 1985; House et al. 1988; Song et al. 2011; Thoits 2011; Turner and Brown 2010).

Second, Lin's social resources theory has "immeasurably" advanced our understanding of social support (Berkman and Glass 2000, p. 144). The social support literature used to be disappointingly lack of theories. Pearlin is concerned that "social support should have the clearest and best established theoretical links to social theory. Somewhat surprisingly, however, this is not

the case. Perhaps one reason is that sociologists who are interested in social networks tend not to be the same as those working in stress and social support" (1989, p. 251). He calls for "joining the study of social support more closely to the study of social networks." As Pearlin also approvingly recognizes (1989), Lin is one of these sociologists who firmly integrate the social network perspective into social support research. Apart from the stressor-support interaction model and the independent main effect model, Lin's social resources theory contains two tie-purpose matching propositions on expressive actions (the strength of strong and homophilous ties) and a series of propositions on the multilayer network structure of social support.

Consistent with the aforementioned findings from Lin and colleagues, there is more consistent evidence for the strength-of-strong-tie proposition but mixed evidence for the strength-of-homophilous-tie proposition (Acock and Hurlbert 1995; Burt 1987; Kana'Iaupuni et al. 2005; Haines and Hurlbert 1992; Jackson 1992; Thoits 1984, Zhao 2008; for reviews see Lin and Peek 1999; Song et al. 2011; Thoits 1995). As the review from Lin and Peek concludes, "the simplest and most powerful indicator of social support appears to be the presence of an intimate and confiding relationship" in the protection of mental health (Lin and Peek 1999, p. 243). There are another three matching models in the stressor-support literature. Similar to Lin's tie-purpose matching propositions, the source-type matching model takes a social network perspective and emphasizes the importance of strong and homophilous ties (Thoits 2011). But different from Lin's general focus on tie strength and homophily, the source-type matching model specifically centers on primary relationships and experiential homophily. As it argues, primary group members and secondary group members with similar prior experience are two main categories of supporters and they can provide different forms of support to meet the need of recipients. The other two matching models do not take a social network perspective, and emphasize the match between the types of

support and the need of recipients (Cohen and McKay 1984; Cutrona 1990). Lin's propositions on the multilayer network structure of social support have inspired more application of the network-based structural perspective into social support (Pearlin 1989; Thoits 2011). Going beyond Lin's focus on three interrelated layers of social relations (belonging, bonding, and binding relations), network scholars have examined other network-based factors (e.g., role relationships, density, heterogeneity, heterophily, proximity, and multiplexity) as determinants of social stressors, social support, and health (Acock and Hurlbert 1993; Beggs et al. 1996; Burt 1987; Haines, Beggs, and Hurlbert 2011; Haines and Hurlbert 1992; Haines, Hurlbert, and Beggs 1996; Hurlbert, Haines, and Beggs 2000; Wellman and Wortley 1990).

Third, Lin develops two pairs of competing propositions on the reciprocal relationship between social support and social stressors in the social dynamics of health: the impact of social support on social stressors (stress prevention versus stress induction), and the effect of social stressors on social support (support mobilization versus support deterioration) (for reviews see Aneshensel 1992; Barrera 1986, 2000; Gore 1981). Guided by these propositions, health scholars are able to break the assumption on the temporal subsequence of social support to social stressors, and conduct "processual rather than static analyses" (Gore 1981, p. 215). Despite its repeatedly recognized theoretical and practical importance (Aneshensel 1992; Barrera 2000; Gore 1981), the dynamic relationship between social support and social stressors has received less research attention. One methodological reason is that its examination requires longitudinal data, ideally three-wave longitudinal data as Lin and colleagues suggest (Dean and Lin 1977; Lin et al. 1979; Chapter 6; Lin 1986b). Existing results are mixed partly due to differences in samples and measurement (for reviews see Aneshensel 1992; Barrera 2000). Aneshensel and Frerichs (1982), for example, report evidence for the support mobilization model. Kaniasty and Norris (1993) find

results consistent with the support deterioration model. Noh and Avison (1996), Russell and Cutrona (1991), and Snow et al. (2003) show findings supporting the stress prevention model. Turner and Noh (1988) find no significant results. Considering the aforementioned findings from Lin and colleagues, the stress prevention model seems more possible than others. The idea of social support as "a dynamic variable" should not be limited to the reciprocal relationship between social support and social stressors (Dean and Lin 1977, p. 411). The quantity and quality of social support can change over time. Such changes, positive or negative, can generate changes in health conditions. Among adolescents, for example, support growth protects mental health, while support decay does the opposite with an even greater effect size (Cornwell 2003). Note that there is a huge literature on the mobilization of formal help such as the utilization of health care from professionals, which is beyond the scope of this chapter (for a review see Pescosolido 2006). In the health literature, social support is traditionally and mainly used to refer to help from social network members, most (if not all) of whom are likely to provide informal nonprofessional assistance (Gottlieb 1978). Also note that instrumental actions such as the job search process or chain involve support mobilization but are also beyond the purpose of this chapter (see Chapters 2 and 8 in this book respectively for Ronald S. Burt and Yanjian Bian's reviews of Lin's relevant work).

In addition, Lin's invisible hand proposition has encouraged systematic research on health consequences of unsolicited support. Unsolicited support has long and repeatedly been recognized as a promising direction for us to understand and dissolve the persistent puzzle on the discrepant health effects of received support (Barrera 1986, 2000; Eckenrode and Wethington 1990; Kessler et al. 1985; Pearlin and McCall 1990; Thoits 1995). Despite its theoretical utility and its prevalence in ordinary social life, unsolicited support has been given limited theoretical and empirical

attention for its health consequences. A couple of existing empirical studies find evidence for the destructive effect of unsolicited support (Bolger and Amarel 2007; Deelstra et al. 2003). But they are conducted in experimental settings, and their results have limited generalization. Privileged by their access to Lin's three-society survey data, Lin's students have made the first attempts to systematically examine the health consequences of unsolicited support indicated by unsolicited job leads (Song 2014a; Song and Chen 2014). They develop a series of hypotheses on the effect of unsolicited support on depressive symptoms: a pair of competing hypotheses—distress reducing versus distress inducing—on its direct effect, a need contingency hypothesis on its negative interaction effect with financial stressors, a pair of competing hypotheses—stress prevention versus comparative reference group—on its indirect effect, and one institutional hypothesis— reinforced collectivistic norm—on the variation of its effect between individualistic and collectivistic culture. Findings from the urban China sample demonstrate the distress inducing hypothesis, and the comparative reference group hypothesis on the positive indirect effect of unsolicited support through financial dissatisfaction (Song 2014a). Results from the U.S. sample support the distress inducing hypothesis on the positive association between unsolicited job leads and depression, and the need contingency hypothesis (Song and Chen 2014). These findings imply that, depending on societal contexts, unsolicited support can damage mental health, directly and indirectly, and can moderate the detrimental effect of social stressors. As Song and Chen (2014, 157) concludes, "to extend House's classic statement, the objective of social support research is to investigate 'who gives what'—solicited or unsolicited, needed or not, visible or invisible—'to whom regarding which problems.'"

Furthermore, after the distinction and relationships between social support and social capital are clarified, a lot of studies across different societies have applied the social resources

proposition in social capital theory to examine the associations between accessed status and various health outcomes, and used social support as one of the major mechanisms for those associations (see Figure 5.4; for reviews see Song 2013a; Song et al. 2010; Song et al. 2018). Many studies demonstrate the social resources propositions (Moore et al. 2011; Moore, Daniel, Paquet, Dubé, and Gauvin 2009; Moore, Teixeira, and Stewart 2014; Song 2011; Song and Chang 2012; Yang et al. 2013; Verhaeghe and Tampubolon 2012; Verhaeghe et al. 2012). Some studies find evidence for the double-edged—protective and detrimental—role of accessed status for health outcomes, and further the variation of that role by gender, life domain, culture, and society (Lee and Kawachi, 2017; Moore, Daniel, Gauvin, and Dubé 2009; Song 2014b, 2015a, 2015b; Song and Pettis 2018; Song, Pettis, and Piya 2017). Song proposes social cost theory in contrast with social capital theory to theorize that double-edged role (Song et al. 2018; Song and Pettis 2018). In contrast with social capital theory emphasizing the bright side of accessed status as a resource source, social cost theory highlights the dark side of accessed status as a source of detrimental social expenses. Social cost theory proposes three main mechanisms for the harmful effect of accessed status, including the receipt of detrimental resources such as unsolicited social support, negative social comparison, and networking expenses. Based on relevant institutional arguments including Lin's arguments on guanxi culture and structural parameters, Song further develops three institutional explanations—collectivistic advantage, collectivistic disadvantage, and inequality structure—to interpret the varying double-edged health effects of accessed status by culture and society (Lin 2001a, 2001c; Song 2014b, 2015a, 2015b; Song and Pettis 2018).

Insert Figure 5.4 About Here

Among these studies on accessed status and health outcomes, two studies investigate and demonstrate the positive relationship between accessed status and social support. The first study analyzes the direct and indirect associations between accessed authority (knowing authoritative contacts in the workplace) and depression using the urban China sample from the three-society survey (Song 2015b). Consistent with social cost theory instead of social capital theory, accessed authority has indirect detrimental effects through unsolicited job leads and financial dissatisfaction. The other study examines accessed status as a structural source of social support mobilization using data from the 2004 General Social Survey (Song and Chang 2012). Consistent with social capital theory, accessed education is positively associated with the frequency of health information seeking, seekers' diversity of used sources, and seekers' frequency of use of three sources (friends or relatives, medical professionals, and the Internet).

Finally, the methodological impacts of Lin's work are manifested in three ways: social support typology and measurement, longitudinal research designs, and depression measurement. First, Lin and colleagues contribute to typologizing social support on two dimensions (instrumental versus expressive or emotional, routine versus nonroutine or crisis), drawing our attention to the lack of reliable and valid social support instruments, and constructing one of the earliest instruments, the instrumental-expressive support scale (for reviews see Barrera 1981, 1986, 2000; Gore 1981; Turner 1983). Instrumental and expressive support has been recognized as the "central" types of support, and the latter proves to be more protective of health (House 1981; Pearlin et al. 1990, p. 590; Turner and Brown 2010). In line with the concern of Lin and colleagues with people's different needs in routine versus crisis situations, for example, people with less educated network members are more likely to receive informal recovery support in a natural disaster as such network members possess more disaster-relevant occupational skills (Beggs, Haines, and Hurlbert 1996).

Responding to Lin and colleagues' urgent call for instrumentation efforts, Gottlieb (1978) publishes a classification scheme of twenty-six informal helping behaviors. Wellman (1981) derives five forms of social support from twenty-one interactional strands. Henderson and colleagues construct a 52-item Interview Schedule for Social Interaction scale (Henderson et al. 1981). Barrera and colleagues develop three scales: the six-category Arizona Social Support Interview Schedule, the 40-item Inventory of Socially Supportive Behaviors, and the six-item Barrera Social Support Scale (Barrera 1981; Barrera, Chassin, and Rogosch 1993). Sarason and colleagues offer a 27-item Social Support Questionnaire (Sarason et al. 1983). These scales are just a few examples. Various social support scales have been developed and reviewed elsewhere (for reviews see Barrera 2000; Cohen, Underwood, and Gottlieb 2000). Second, after Lin and colleagues' cry for longitudinal research designs for the purpose of stronger causal inferences, diverse longitudinal data sets have been collected and many longitudinal studies on social support and health have appeared (e.g., Aneshensel and Frerichs 1982; Blazer 1982; Henderson et al. 1981; Noh and Avison 1996; Thoits 1982, 1984; Turner 1981; Turner and Noh 1988; Williams et al. 1981). In addition, Lin's work on the measurement of depression in China has continued to bolster mental health research among and beyond Chinese populations (Lai 1995; Noh and Avison 1996; Ren and Treiman 2015; Wu et al. 2003; Xi, Hwang, and Drentea 2013).

FUTURE RESEARCH DIRECTIONS

Lin's work will continue to enlighten future research. Due to limited space, I discuss three promising future research directions here: the reciprocal relationship between social support and social stressors, the invisible hand or unsolicited support, and the integration of social support back into social capital theory.

First, based on the above literature review, we echo the need for more future longitudinal research on the reciprocal relationship between social support and social stressors (Aneshensel 1992; Barrera 1986, 2000; Gore 1981). This reciprocal relationship is theoretically intriguing. It involves two pairs of competing propositions: support mobilization versus support deterioration, and stress prevention versus stress induction. The existing limited studies report mixed results, and cannot help generate conclusive evidence yet. Related to this reciprocal relationship, an interaction effect proposition in Lin's earlier work has been given little attention (Lin et al. 1979; Chapter 6; Gore 1981). As it argues, stress is more likely to trigger support mobilization among high-status people but more likely to lead to support deterioration for low-status people. As Gore (1981, p. 219) recognizes, "further analyses of this kind are warranted to examine the tenuousness or conditional nature of support." Future research on this proposition can further advance our understanding of the social dynamics of and social inequality in the stress process (Pearlin et al. 1981). Low-status people may face a triple jeopardy. They may be more likely to encounter social stressors, experience difficulty in mobilizing social support, and lose social support in the face of social stressors.

Second, future research needs to make the invisible hand more visible and salient, and pay more systematic research attention to unsolicited support as well as solicited support. As mentioned earlier, solicited versus unsolicited support has long and repeatedly been discussed as one promising research direction for us to extricate the puzzling mixed health effects of received support (for reviews see Barrera 1986, 2000; Eckenrode and Wethington 1990; Thoits 2011; Turner and Turner 2013; Uchino 2009). Only a few experimental and survey studies have directly examined and demonstrated the detrimental health consequences of unsolicited support (Bolger and Amarel 2007; Deelstra et al. 2003; Song 2014a; Song and Chen 2014). These empirical studies

focus on unsolicited instrumental or informational support. Future research should investigate and compare different content areas of unsolicited support. Unsolicited job leads, for example, represent only one salient form of informational support. In comparison with other forms of support (e.g., instrumental, emotional, and appraisal), informational support has a less direct relationship with health because it is "not in and of itself helpful" but "helps people to help themselves" (House 1981, p. 25). Unsolicited recommendations on medical services may be more protective by directing recipients to better health care (Pescosolido 2006). Unasked-for provision of food and shelter in non-routine situations such as natural disasters can be lifesaving (Hurlbert et al. 2000). Unsolicited expression of "I love you" may be heartwarming for all recipients regardless of their need (Eckenrode and Wethington 1990). Also, future comparative research is needed to investigate the generalizability of existing findings to other societies and cultures. Inconsistent with the reinforced collectivistic proposition that unsolicited support is more likely to be experienced positively in collectivistic versus individualistic culture, the receipt of unsolicited job leads is negatively associated with mental health in both the United States and urban China, and moderates the stress-depression relationship only in the United States (Song 2014a; Song and Chen 2014). Whether the reinforced collectivistic proposition apply more to other content areas of social support remains an interesting research question. Furthermore, future research needs to analyze and compare instrumental and expressive returns to unsolicited support. Existing findings suggest that unsolicited job leads can advance status attainment but hurt mental health (Bolger and Amarel 2007; Deelstra et al. 2003; Lin and Ao 2008; Song 2014a; Song and Chen 2014). The opposite roles of unsolicited support for instrumental and expressive actions are consistent with Lin's earlier statement that expressive actions are more complicated than instrumental ones. In addition, the existing empirical studies examine the health and social consequences of receiving

versus not receiving unsolicited support. In order to achieve fuller comprehension of how solicitedness affects the health and social impacts of received support, future research needs to investigate and compare the impacts of solicited versus unsolicited support. Finally, note that visibility versus invisibility has been used in two different ways in the existing social support literature. Scholars like Lin uses the visible and invisible hands to refer to solicited versus unsolicited support. Some other scholars distinguish visible and invisible support based on whether recipients are aware or unaware of received support (Bolger and Amarel 2007). Future research on social support needs to further explore the interplay between these two different dimensions of visibility.

Third, future research needs to make the concept of social support more visible and prominent in network-based theories that have been applied mainly to instrumental actions (e.g., Bourdieu [1983] 1986; Burt [1992] 2009; Coleman 1990; Granovetter 1974). One fruitful line of future research will be to integrate the concept of social support more closely and systematically back into Lin's social capital theory. As introduced earlier, Lin used to subsume social support under his social resources theory, upon which he builds his social capital theory. The integration of social support back into social capital theory will be a win-win not only for both social support research and social capital research but also for both expressive and instrumental research. In the case of social support, this integration can embed it firmly within social capital theory, one of the most popular theories in the social networks literature, enrich the theoretical explanations on its causes and consequences, expand its structural analysis, remove its limitation to expressive or health outcomes, extend its application to instrumental or status attainment outcomes, and eventually achieve its potential more completely than before. In the case of social capital theory, this integration can help elaborate its theoretical arguments, refine its assumptions, and extend it

to health outcomes. Social capital is a relatively more upstream network-based concept, and social support a more downstream one. Being at a relative downstream position in the theoretical chain does not render social support any less important. It is quite the opposite. The coherent formulation and continuous development and refinement of social capital theory requires and relies upon clear and rigorous conceptualization, measurement, and empirical examination of social support. Social support is one of the fundamental pathways in Lin's theoretical framework on social capital. On the one hand, protective social support can link accessed and mobilized status to positive health outcomes. On the other hand, detrimental social support can link accessed and mobilized status to negative health outcomes. The double-edged role of social support cautions us the generalizability of the social resources assumption in social capital theory into health outcomes. The social resources assumption states that accessed and mobilized status indicates valuable protective resources. With the growing evidence for the detrimental health effect of accessed status, social cost theory is a possible rival theory for social capital theory (see Figure 5.4; Song et al. 2017; Song and Pettis 2018).

Bringing social support back to social capital theory can help bridge expressive and instrumental research. Scholars rarely pursue research on both instrumental and expressive actions simultaneously. But Lin does. He carefully distinguishes these two actions, and proposes separate propositions on the success of these two actions. With an extensive scope of vision, Lin develops broader network-based theoretical frameworks (social resources and social capital theories) that bridge a few main research traditions in sociology: social stratification and mobility (corresponding to instrumental returns) and medical sociology and mental health (related to expressive returns). As a proverb puts it, "he who chases two rabbits will catch neither." But this proverb does not apply here. Lin's broad theoretical view can help not only defend medical

sociology and sociology of mental health against the charge of being atheoretical but also integrate them with other sociological subdisciplines and even non-sociological disciplines (Pearlin 1992; Pescosolido 2006). Demonstrating Lin's earlier statement that expressive actions are more complicated than instrumental ones, existing relevant studies suggest that social support and accessed status tend to exert both protective and detrimental effects on health but mainly positive impact on status attainment and social mobility. These findings necessitate future research on the "complementarity as well as tension" between instrumental and expressive actions (Lin 1982, p. 145).

Lin's existing work on social resources, social support, and social capital has actually laid the solid foundation for us to welcome social support and its positive function back into social capital theory. Despite its lack of explicit use in Lin's work on social capital, the term of social support has always been used obviously but implicitly in Lin's theoretical arguments on social capital. Based on Figure 13.1 in Lin's social capital book (2001a, p. 246; also see Figure 1 in Lin 1999b), we may draw Figure 5.5 to tentatively conceptualize the simplified, mainly unidirectional relationship between accessed and mobilized status and social support with various factors at the micro, meso, and macro-levels serving as social antecedents and moderators (for studies on the three levels of antecedents and moderators, see Lin 2001a, 2001c; Song et al. 2018). In brief, seeking and soliciting social support mediates the relationship between accessed and mobilized status; providing social support, perceiving social support, and receiving unsolicited social support intervenes the relationships of accessed and mobilized status with instrumental and expressive outcomes; and receiving solicited social support links mobilized status with instrumental and expressive outcomes. Due to limited space here, Figure 5.5 takes into consideration only two reciprocal relationships. Mobilized status and solicited social support can be convertible into

accessed status over time. Due to limited space, I include social support only as one mechanism linking accessed and mobilized status to outcomes. Other mechanisms are beyond the scope of this chapter (see Figure 5.4). In his work, Lin highlights four major mechanisms through which accessed and mobilized status can advance instrumental and expressive returns: information, influence, social credentials, and reinforced identity (Lin 2001a). Information from network members represents one form of social support: informational social support (House 1981; Song 2014a; Song and Chen 2014). Also, influence, social credentials, and reinforced identity can all operate to directly trigger seeking social support and elevate perceived social support. Guided by Figure 5.5, future research can explore the diverse roles social support can play for both expressive and instrumental outcomes through its various forms of interplay with accessed and mobilized status.

Insert Figure 5.5 Here

The integration of social support back into Lin's social capital theory can also help us identify more dimensions of social support: the spacial dimension, the directedness dimension, and the resource source dimension. First, with the rise of the information technology, Lin has a high hope for the rise of social capital in the cyberspace (Lin 1999b, 2001a; Wellman 2001). The contrast between online support (support from social networks in the digital space) versus offline support (support from social networks in the real world) has become a burgeoning dimension to categorize social support (Cotton et al. 2011; Drentea and Moren-Cross 2005; Song and Chang 2012; Yin, Song, and Malin 2017). The operationalization and measurement of social capital (as well as social costs) in the cyberspace is now one challenge we need to overcome in order to clearly differentiate social capital from and coherently integrate it with the concept of online support. It is

difficult, for example, to directly capture cybernetwork members' resources or accessed status in usually anonymous online forums. Second, as Lin's small world studies on packet delivery and his studies on job search chains imply (Chen 2014; Lin 2001c, 2004; Lin 2004; Lin et al. 1977, 1978; Lin, Lee and Ao 2014), the process of seeking social support can be a complicated long chain. How social support from direct versus indirect ties and from short versus long chains can affect health similarly or differently deserves future research. Third, the resource source dimension focuses on the support providers' side. In his social capital theory (2001a), Lin distinguishes two components of social capital: network members' personal resources that are under their direct and absolute control, and their positional resources that they can control and are entitled to only through their positions in their organizations. In other words, people will lose their positional resources the moment they leave their positions. Empirically, it will be challenging to distinguish personal from positional resources. But theoretically, it will be intriguing and important to examine whether providers give support using their personal or positional resources and how these two different forms of support may affect expressive as well as instrumental actions, similarly or differently.

Lin's theoretical arguments on the costs in access to and use of social capital or network resources can guide future research to investigate various forms of costs involved in the mobilization and receipt of social support, and to achieve deeper understanding of the detrimental effect of social support. They can further help the development of social cost theory. Lin's theoretical arguments on access to and use of network resources contain two possible reasons for the detrimental side of receiving social support: investment beforehand and "commitments to reciprocity" afterwards (1983, 1992, 2001a, p. 51). As Lin argues, borrowing resources from social networks entails the investment of various forms of necessary parental and personal resources (e.g., time and efforts) in social relationships in advance. The investment can cost more if the targeted

social relationships are weaker and heterophilous. Such relational investment is a precondition for seeking and receiving social support. Also, Lin reminds us that the use of network resources can burden users with the obligation and indebtedness to repay the help and create upsetting over-reciprocating exchange (support received exceeds support given), in particular for those who possess less resources than their network members. Such a stressful burden is applicable to recipients of social support (Nahum-Shani et al. 2011; Shumaker and Brownell 1984; Song and Chen 2014). These two possible reasons for the harmful side of receiving social support serve as arguments for the dark side of accessed status in social cost theory (Song et al. 2018; and Pettis 2018).

At the very end, as one of Lin's students, I would like to end this chapter with a personal note. Lin exemplifies the unity of knowing and doing. He is not only a researcher on social support but also a generous and thoughtful provider of various forms of valuable social support to so many people, inside or outside his social networks, which are deeply and warmly appreciated but beyond the scope of this chapter. Lin does not hesitate to help others stand upon his shoulders and get them to reach higher in their intellectual endeavors. As an age-old motivational saying in Chinese states, "the master initiates the apprentices, but their training depends upon their own efforts." This saying does not apply to the life long relationship between Lin and his students (see Chapter 8 in this book for a short list of Lin's students). Lin's warm and encouraging support is always there for his students and does not decrease or cease after his students graduate. As Lin states in the very last three sentences in the 1986 book (1986c, p. 342), "there is a long list of items on the research agenda ahead. The tasks will be both exciting and difficult. Hopefully, stimulation, encouragement, and challenges provided by our colleagues in the research community, and by the users of the

research literature constitute the essential social support for those choosing to undertake these tasks."

Figure 5.1. Journal Articles in English with "Social Support," and "Social Support" and "Health" in topic (Social Sciences Citation Index, 1900-2017)
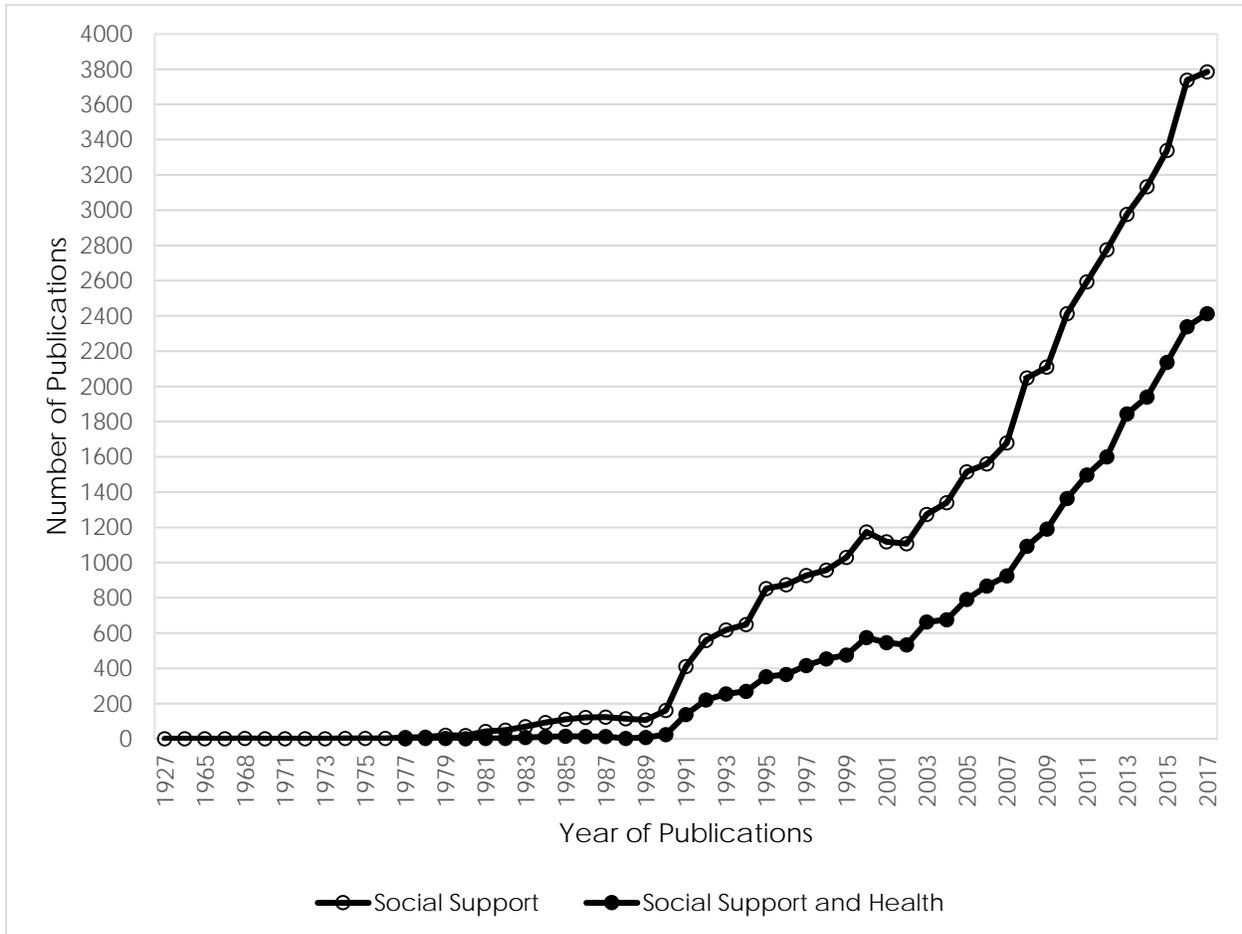
Figure 5.2. Journal Articles with "Social Support," and "Social Support" and "Health" in topic

(China Integrated Knowledge Resources Database, Chinese Articles, 1915-2017; Social

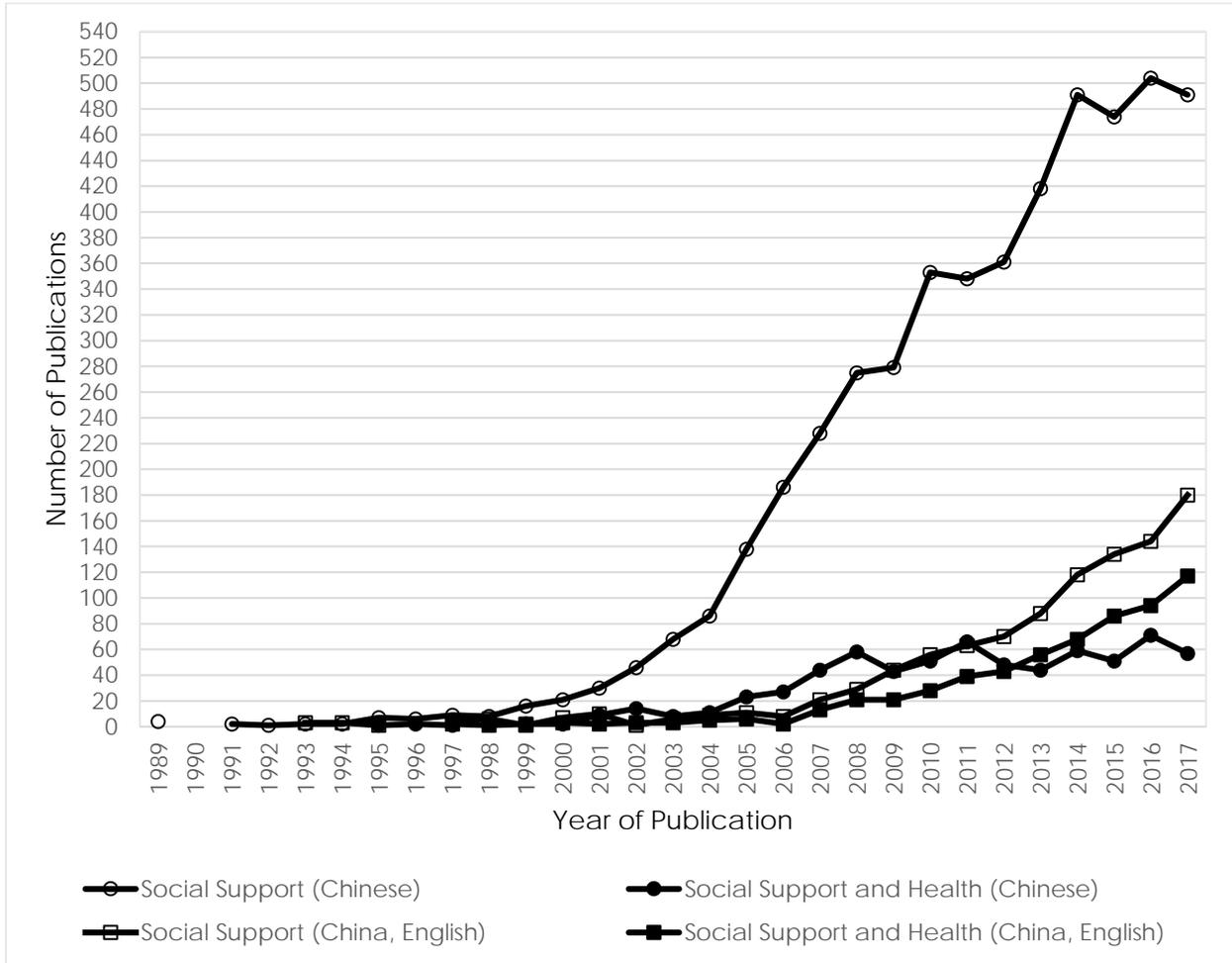Sciences Citation Index, English Articles on China, 1900-2017)

Figure 5.3. Lin's Social Network Research: Two Directions and Three Concepts

Social Resources Theory and Instrumental Actions

Lin, Dayton, and Greenwald 1977, 1978; Lin, Ensel, and Vaughn 1981; Chapter 3; Lin, Vaughn, and Ensel 1981

Social Resources Theory

Lin 1982, 1983, 1990, 1992, 1999b; Lin, Mary, and Light 1985; Lin and Ensel 1989; Lin and Westcott 1991

Social Capital Theory and Instrumental Actions

Lin 1999a, 2001a; Lin and Ao 2008; Lin, Fu, and Hsung 2001; Lin, Ao, and Song 2009; McDonald, Lin, and Ao 2009

Social Capital Theory

Lin 2008; Song and Lin 2009; Song 2011; Song, Son, and Lin 2010, 2011

Social Support and Expressive Actions

Dean and Lin 1977; Lin et al. 1979; Chapter 6; Lin, Dean and Ensel 1981; Lin and Dean 1984; Lin and Ensel 1984

Social Support and Expressive Actions

Lin and Peek 1999; Lin, Ye, and Ensel 1999; Chapter 7
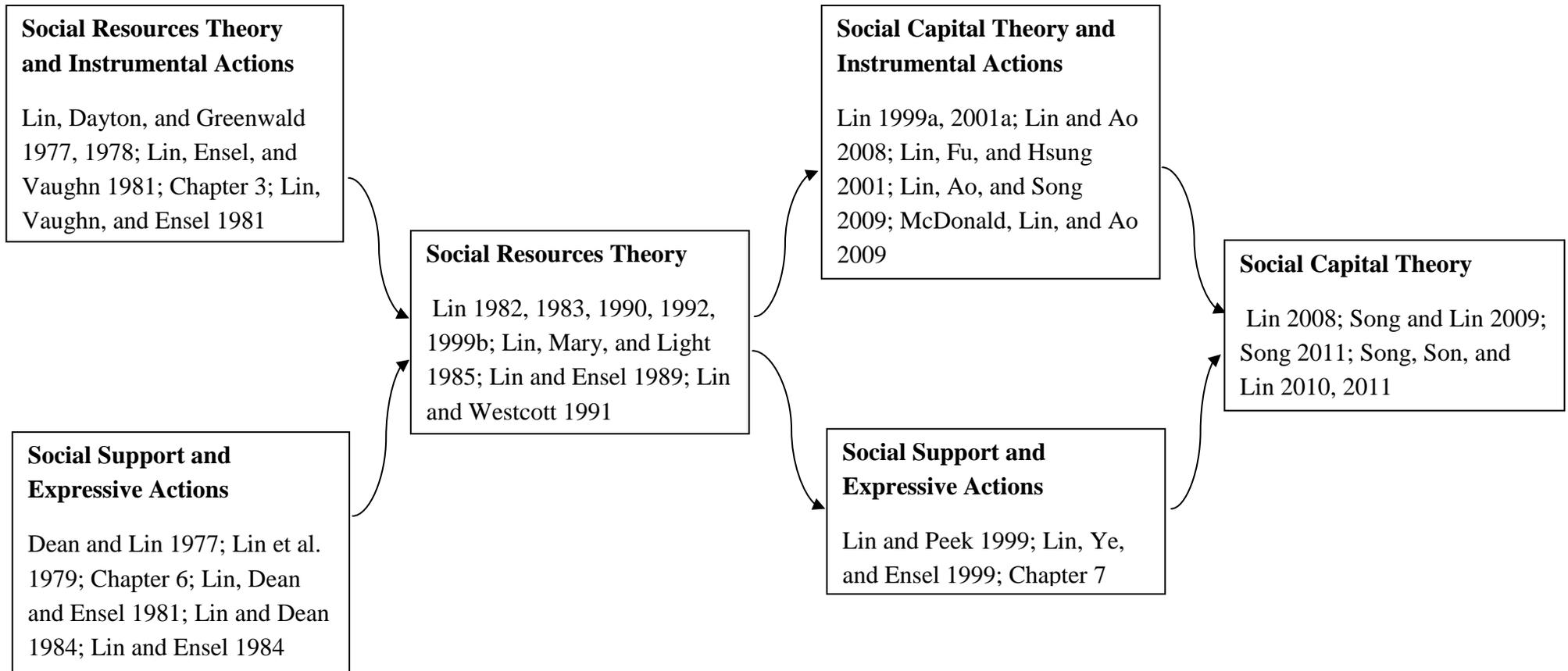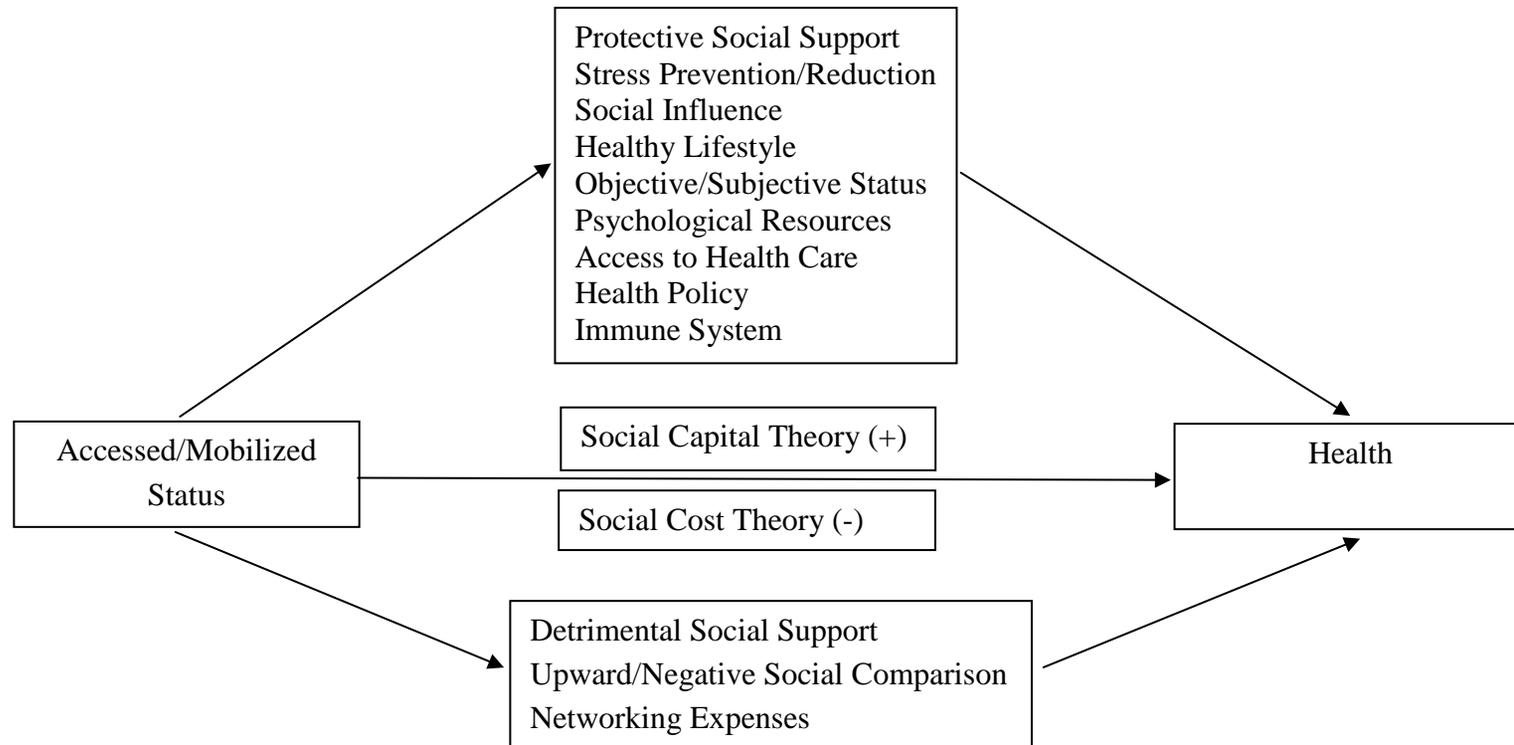
Figure 5.4. A Conceptual Model for the Double-Edged Role of Accessed and Mobilized Status for Health

Note: Based on Song and Pettis (2018); Song, Frazier, and Pettis (2018).

Figure 5.5. A Simplified Conceptual Framework linking Social Support (SS) with Accessed and Mobilized Status