Review Essay on Charles Kadushin 2012.
Understanding Social Networks: Theories, Concepts, and Findings.

Heng-Chien Liou

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Abstract

Understanding Social Networks by Charles Kadushin provides an accessible introduction to must-know ideas of social networks. In this review essay, I outline some important topics of Kadushin's text. In addition, I connect the original analysis to literature recently published and from other disciplines. I hope this essay can benefit potential readers on their journey to *understanding social networks*.

1 Introduction

The text *Understanding social networks,* by Charles Kadushin, is an unique overview of theoretical ground of social network analysis.

There are already some fantabulous texts introducing the studies around networks, social networks in some specific cases, to readers. In *Networks* (M. Newman 2010, 2018), Mark Newman drew a high standard of how to provide a mathematically rigorous introduction of networks. For those interested in economics, especially game-theoretical analysis, *Networks, crowds, and markets* (Easley and Kleinberg 2010) and *Social and economic networks* (Jackson 2010) serve as perfect starting points. Yet, before the publication of Kadushin's work, there is no single text covering major theoretical topics about social networks from sociological perspectives.

In *Understanding Social Networks*, Kadushin successfully connects sociological traditions to the studies of social networks. The discussion begins with basic terminology and psychological foundations, journeys through important topics of small groups, organization, diffusion, and summarized with theories of social capital.

This essay is not intended to be a comprehensive summary or a detailed analysis of the original text. Rather, I would want to bring this discussion to a broader context, and connecting this work with various other literature. The coverage of this review is inevitably selective and confined by my own knowledge available, yet I still hope that it can serve some values in the ongoing exploration of social networks.

2 Psychological Foundations

Kadushin grounded his discussion of social networks on psychological foundations of individuals. Both motivational and cognitive foundations are involved. In addition to Kadushin's discussion of these two axes of factors, we can specifically highlight the differential: how the effect of personality manifests in social networks or how people living under different cultural context exhibit different mentality with regards to the networks they are located in.

2.1 Motivational Foundations

Kadushin outlined the "three basic and deep-seated motivations to make contact and network" (Kadushin 2012, 72). Two of them are primary, in a sense that they "respond to primary needs", and the last one is "created by network itself" (56). Kadushin introduced (59) the theories proposed by Greenberg (1991) and by Haidt and Rodin (1999), to guide the discussion of safety and effectiveness. We can now discuss these three motives separately.

2.1.1 Safety

It is assumed by object-relation theory that "since other people are necessary to satisfy basic human needs, the seeking out of others is a primary human activity" (Kadushin 2012, 59). In Greenberg's conclusion, "there are two basic human forces: the safety drive and the effectiveness drive" (59).

Safety as an affiliative drive (59), is fundamental in the sense that "people will not risk either new kinds of behaviors nor new kinds of experience unless they feel safe enough to do so" (Greenberg 1991, 132-133), and "move people closer to their objects" (133).

2.1.2 Effectiveness

On the other hand, Greenberg characterize effectance with "a sense of self-sufficiency, autonomy and individuation" (137). He further described drive for effectance as "a sensation that begins in the body, probably in the muscles, and is initially experienced as pleasure in movement for movement's sake alone" (136). In this sense, Greenberg established his object-relation theory, without the use of aggression or the death instinct in Freud's analysis (Kadushin 2012, 60).

2.1.3 Status or Rank

The drive for status or rank can actually been seen as a special case of drive for effectance (65). "As long as there is a network containing at least one dyad, and that is true by definition of all networks, the other in the dyad is a referent." (65) Networks and the social and cultural system set two different aspects of this motives (65).

For networks aspects, there are two possible situations (Kadushin 2012, 65). One is the structural isomorphism in networks, another one is the authority pyramid (65). Kadushin point out how traditional sociological concepts are still relevant in social network studies: "[w]hile the network establishes who the referent is, the social generally establishes what one strives for." Yet, however, rank itself may also be a strong motive (65-66).

2.2 Cognitive Foundations

Compared to motivational aspects, Kadushin didn't say much about the cognitive factors, which length about only 2 pages (70-72). His discussion focuses on the limit to "the size of the networks that human can cognitively manage" (70). This limit is often referred as *Dunbar number*: the size of cognitively manageable group is limited by about 150, and so is the mean size for close personal relationship, with large deviation (71). This limit is related to neocortical volume in hypotheses, and hence the cognitive limit of human (71).

2.3 Psychological Difference in Social Networks

In previous parts, we discuss human psychology of social networks in terms of average type, yet indeed there are variances. And some of these differences are known to be related to other concepts in a tractable fashion. Two of them are culture and personality.

2.3.1 Culture

Kadushin introduced the well-known social psychologists, Markus and Kitayama, in his analysis of cultural differences in the basic motives. The *autonomous model* and *interdependent model* of personality might capture the difference within European and American versus Asian cultural contexts (Markus and Kitayama 1998). Later they introduced two models of agency: the *disjoint* and the *conjoint* (Markus and Kitayama 2003). Kadushin indicated that how these two models of agency correspond to the brokerage and closure discussed earlier (Kadushin 2012, 66).

In addition, Kadushin noticed that the drive for rank may also correlated with cultural contexts, yet it is not explainable by the interdependent and autonomous model. He hypothesize that it might correlated with *honor culture* or advanced market economics (66), while acknowledging more investigations are needed.

2.3.2 Personality

In his book, Kadushin made a short dicussion about how personality "attribute" to the fundamental drives in social networks (64). Using triad consensus, recent research shows that "[p]eople who opt for network closure are more social, energetic and skilled in handling social situations" (Kalish and Robins 2006,

79). It is also found that people with strong structural holes are more neurotic (Kadushin 2012, 64).

Beyond the discussion in Kadushin's text, recent investigation provides more profound findings with regards to personality in the context of relationship or social networks.

In the level of personal relationship, personality has been studied in the context of romantic relationship and friendship. Harris and Vazire (2016) summarized the result about how personality may be related to friendship formation and maintenance. They adopted the framework of big five personality (John, Srivastava, et al. 1999). They showed that agreeableness and neuroticism have consistent effects on friendship, while other three interact with friendship development more inconsistently.

In the level of social networks, there are tons of research about how personality is correlated with agents' roles or positions in networks, especially in the organization setting. Selden and Goodie (2018) comprehensively summarized the result by reviewing 30 relevant articles.

Identifying these two parallel trends, Liou and Hsieh (2020) attempted to bridge them by proposing a generative model for friendship networks with personality. Specifically, the effects of extraversion and agreeableness on friendship development are characterized, which further result to the network-level statistics as described in previous works (Liou and Hsieh 2020; Selden and Goodie 2018).

3 From Small Groups to Organizations

The study of groups and organizations, particularly in industrial setting, is one of the earliest concern of social network research (Freeman 2004).

We can consider two kinds of focus in this context: one is to focus on the small group, in which everyone knows each other, and the actions within it is visible to all (Kadushin 2012, 74); another one is to focus on more complex networks in organization, produced formally by the structure of organizations and "informally by office friendship and politics" (74).

3.1 Informal System

Kadushin's conception of informal system is based on Homans's "internal system" (Homans [1950] 2013), which is produced by the interaction-sentiment feedback loop (Kadushin 2012, 75-76). Kadushin also pointed out the inevitability that ranking systems develop in most informal systems, and leaders emerge (75-76).

Methodologically, it is important to identify the "pure informal systems" (77). The simplest ones are called the "networks in a box" (77), in which the boundaries are clear and hence "characterized by total visibility" (77). The interaction patterns in such a system, without the constraints of formal system,

are important to ground the analysis of network in organization (Kadushin 2012, 77). In this kind of system, the relationships are often symmetric (78).

3.2 Influence of the External System

In addition to pure informal systems, there are also hybrid systems that in which interaction is limited by the values of external system (77, 83). We can view hybrid systems as consequences of informal systems being embedded within the external systems (77). Under the influence of external systems, asymmetric situations are likely to emerge (78).

Gould (2002) assumed that "there is some distribution of judgments about the attractiveness or quality of members of the group" (Kadushin 2012, 83). These judgment is based on the external systems in which the group is embedded or the cultural values brought to the groups (83). The distribution then lead to Nash equilibria of asymmetric situations in groups (83). This theory is similar to Homans's ([1950] 2013) feedback loop (Kadushin 2012, 83-84).

3.3 Emergent Networks in Organizations

Finishing the discussion of small groups, Kadushin moved on to the discussion of organizations and networks (90). A formal organization, as a rational-legal system (Weber 1946), is characterized by chains of authority, in which informal system emerges (Kadushin 2012, 90-91).

One of the most earliest networks research concerned with a helping networks in the bank wiring room (92-94)[1]. In this example, although there is a prescribed assembly line, a complex informal network still emerges. Workers frequently traded their jobs, helped one another, and formed friendship cliques (93).

In information-driven organizations, emergent networks can changed the information flow prescribed by formal hierarchical system (94-100). For each individual in networks, the position occupied and associated power is also subject to this change. Specifically, Krebs (2004) proposed a Krebs Centrality Power Score to combine two centrality measures of betweenness and closeness; such a power score can be used to measure how the predetermined distribution of power is different from that under the influence of emergent networks (Kadushin 2012, 97-100).

4 The Small World, Power Law, and More

Quoting Kadushin's original sentence, "[w]e have been building up from small groups to organizations, and it is now time to address the entire social world" (108). The idea that we are all connected has fascinated lots of artists, writers, content creators, students, and even scientists. It has drawn lots of interest from within and outside the field of social science, for example, physics. The advance

1. See also Freeman (2004).

in this part of study is one of the main reason why the studies of networks rise in various disciplines.

4.1 The Small World

The idea of the small world can generally be described as follows: an arbitrary pair of individuals in the world is connected by a path with short enough length. One of the example, based on Milgram (1967), is the well-known "six degree of separation", although the number of six may not be universally applicable. Another important feature is the clustering or transitive observed in most human social networks.

Watts and Strogatz (1998) provided an elegant formal model to generate the small world phenomena. In the model, all agents are located in a grid, and connected to $k-$nearest neighbors. Then there is a probability p that a given link is rewired. In a specific range of p, the network will be in the state with short average shortest path L and high clustering coefficient C, reproducing the small world phenomena (Kadushin 2012, 119-122).

4.2 The Power Law

It is observed that, the numbers of people known by agents in networks, or the degrees, are not distributed according to the common normal distribution (110-113). Rather, the distributions seem to follow with degree raised to a negative power. The ideal of these kinds of distribution, is called the power law (113).

Barabási and Albert (1999) proposed the well-known Barabási-Albert model (BA model) with a mechanism called "preferential attachment" to generate networks with power law, which is indeed preceded by Price (1976) and what he termed as "cumulative advantage". This model and its precedents are influential, with various following studies based on or inspired by their mechanisms, including Liou and Hsieh's (2020) study of networks with personality as discussed before.

4.3 Social Circle and Clustering

As mentioned earlier, human social networks inevitably exhibit strong clustering. While some canonical models, for example, the BA model, cannot generate networks with clustering.

The concept of clustering can be connected to Georg Simmel theorizing of "social circle", and hence his view of society. In Simmel's sociology, the social reality "is that many network clusters are composed of cross-cutting smaller units built up into larger ones, which in turn overlap with one another" (Kadushin 2012, 124).

5 Influence, Diffusion, and Cascade

How behaviors spreads and how opinion prevails are also of great interests of sociologists, particularly for those adopting mathematical models as tools. The transmission of culture drives various other societal processes, such as social movements, institutional changes, and even revolutions.

5.1 Social Influence

When people make decisions, whether explicit or implicit, many social and cultural factors are involved. We focus on those influences cast by individuals and groups.

We can identify influencer and recipient. There are three potentially possible processes: the recipient soliciting for advice, the influencer trying to persuade the recipient, and the influencer being a model (Kadushin 2012, 141). Differentiate these three possibilities is important in relevant researches (141).Yet, in addition to focus on individual, impact of groups on people is also significant, particularly among adolescents (146).

5.2 Disease

Even in biological processes, social networks play roles. The contact networks characterize the possible spread of infectious disease. There is profound literature examining epidemics in network with particular characteristics, using the techniques from statistical physics (Pastor-Satorras and Vespignani 2001; M. E. Newman 2002). While there are lots of theoretical results developed, using social networks in the fight of disease is not yet practical. Many of these obstacles result from the disease-related stigmas and the privacy concerns (Kadushin 2012, 149).

5.3 Network Diffusion

Building on the understanding of personal influences and analogy from disease transmission, some sociologists have worked on to reveal how these influences aggregate in social networks. Christakis and Fowler (2013) examined survey data to reveal what kinds of characteristics and behaviors are transmittable in social networks. Other scholars proposed various models to characterize different kinds of cultural and social spread (Centola and Macy 2007; Goldberg and Stein 2018).

6 Social Capital

Kadushin introduced the concept of social capital to summarize his discussion of social networks (Kadushin 2012, 162). Under the premise of "social networks have value" (Putnam 2020), although social capital is a poorly-defined concept, it helps generate lots of insights (Kadushin 2012, 163-164).

In general, social capital reflects material resources, knowledge, and even trust available for individuals and social systems (Kadushin 2012, 164). We can respectively focus on these two kinds of social capital: of individuals and of social systems (168).

6.1 Individual-Level

Social support constitutes an important aspect of individual-level social capital (168). Social support is greatly related to illness- and health-related issues (169). For example, social support helps to cope with PTSD (170).

Social capital "has many observable correlates" (172). Occupational success, voluntary organizations participation are all correlated with social capital (172). Under the mechanisms of homophily and differential association, the distribution of social capital tend to be confined by prescribed advantages and disadvantages in social and economic status (172-173).

6.2 System-Level

Pierre Bourdieu was one of the first theorists to propose structural understanding of social capital (175), and James Coleman further provided functionalist discussion (176). Social structure can be appropriated and become social capital (176). Similar to individual-level social capital, systems-level or community-level social capital is also found to be correlated with health and illness of the members (179-181).

7 Ethics in Social Network Research

In addition to his main discussion on theoretical and methodological aspects of social networks, Kadushin also included a short discussion on the ethics in social network research. The ethical issues are much more complicated than traditional medical research.

For example, speaking of informed consent, respondents or informants may disclose information about others who have no ideas about the study (188). This kind of situations complicate the already difficult research ethics.

8 Conclusion

In this review essay, we go through some important topics covered by *Understanding social networks,* and connect them to literature from other disciplines. From actors to social structure, the conception of social networks provides a powerful framework to understand human experiences. I hope this essay can successfully serve as an companion of Kadushin's original text, and inspire some readers to begin their quest in social networks study.

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