



## Book Reviews

**Nickolas A. Christakis and James H. Fowler** (2009), *Connected: The Surprising Power of our Social Networks and How they Shape our Lives*, Little, Brown, New York, NY. 353 pages.

Have you ever thought that your wife's sister's boyfriend can make you gain weight? Or that your friend's friend's friend, whom you have never even met, can affect your happiness? Christakis and Fowler's work reveals social networks can influence every aspect of our lives, from voting to mate choice and from health attitudes to suicide.

The study of human nature has largely been confined to opposing views of behaviour, a debate which has been framed as nature versus nurture, cognition versus culture, genes versus environment, individual versus society, and so on. Challenging this dichotomy, Christakis and Fowler attempt to bridge these two perspectives, by inviting us to rethink the way human societies work. They propose an overarching network perspective, in an attempt to explain how the emergent properties of social networks accrue and how they shape the human condition. This perspective allows us to understand how the simplest social networks of all, dyads or pairs of people, can become the building blocks of the vast and intricate social network that is our world.

Social networks are driven by the forces of connection and contagion, that constitute their structure and function respectively. Each social group has a particular intricate arrangement of ties between its members, and our understanding of that group depends on which of those ties we emphasize, be it blood relations, geographic associations, economic exchanges, or ideological rapport. These ties facilitate the propagation of anything that flows across them, may that be money, fads, religious ideologies, or sexually transmitted diseases.

As individuals, we have the ability to shape our networks to a large extent. We decide what ties to create and which ones to maintain or brake; how many people we connect to, in what way, and to what degree; or which ones of our acquaintances we wish to connect to one another. All these choices lead to infinite possible configurations for the structure of our social network and our own position in it. On the other hand, as members of our networks, we are shaped by them. A person who has no friends probably has a very different life from a person with ten friends. But there can also be a big difference between having ten friends who have no friends and having ten friends who have ten friends each. In the first case, you are connected to ten people, while in the second case you are connected to ten people plus their one hundred friends plus their own friends, and so on. All those people can potentially influence your life both directly and indirectly, through their influence on others who in turn influence you. If we think about the small world experiments conducted by Stanley Milgram and others, suggesting that we are an average of six steps (or "degrees

of separation”) from any person on the planet, this would imply that we can influence and be influenced by anyone.

But there are, of course, certain limits to this spread of influence. Christakis and Fowler’s research shows that the influence of our actions and words tends to reach our friends, our friend’s friends, and our friend’s friend’s friends, but not much further (the Three Degrees of Influence Rule). This limitation can be due to the intrinsic decay of information as social distance increases, due to network instability as ties are constantly reconfigured, and due to our cognitive constraints as they have been shaped by our evolution.

The implications of this simple logic are important and wide-reaching. Christakis and Fowler put forth an epidemiological model, using an impressive array of studies by themselves and others, as well as large scale demographic data and meta-analyses to back their claims. Their argumentation is elegant and convincing, skillfully weaving evolutionary, cognitive and cultural factors into a coherent narrative fabric, as when they discuss the spread of emotions in social networks. Emotions evolved to fulfill important functions, such as communication of information, synchronization of behaviour and facilitation of interpersonal bonds. Similarly, our evolution has endowed us with innate capacities for empathy and mimicry, and we are thus directly and indirectly influenced by the affective states of those around us. As a consequence, emotions can spread within a network, flowing from person to person. Analyzing data from the Framingham Heart Study, Christakis and Fowler show that being connected to someone who is happy can have an effect on our own happiness, and that this effect increases at a predictable rate according to the degree of connection. Our social networks can also determine our sexual behaviour, how we meet our mates, and eventually who we marry. And those same networks can also explain the well-documented health benefits of marriage. Unfortunately, however, not all things that flow within a network are desirable. Sexually transmitted diseases, panic, smoking, obesity, and even suicide can also spread within social networks.

A network perspective can also shed light on some of the findings of behavioural economics, that sharply contradict traditional economic theory. As game theorists know very well, people very often do not act like rational choice economics would predict. And we can gain a much better understanding of human behaviour if we give up the notion of *Homo economicus*, the selfish, rational, profit maximizer, for the new notion of *Homo dictyous*, the connected, networked individual, which can help us address the origins of sociality, altruism, cooperation, punishment, and even religion. Our tendency to live in social networks has shaped the development of our species. Social networks placed special demands on our brains, which increased in size and evolved to facilitate language, empathy, Theory of Mind, and cooperative behaviour. In an impressive series of studies of identical and fraternal twins, Christakis and Fowler show that genes can affect our sociability as much as nurture. We are social animals, and social networks are part of our genetic heritage.

The study of social networks is particularly relevant in the modern age of hyper-connectivity and the World Wide Web, as technology has expanded and strengthened our social world and multiplied the power of social networks exponentially. More efficient forms of transport have hugely increased our mobility, while new forms of communication have boosted our connectivity at an unprecedented rate, resulting in the amplification of the power of social networks.

Social scientists have traditionally followed one of two paths in their attempt to understand collective human behaviour: They have either focused on individual choices and

actions, viewing society as nothing but the aggregate of its members, or dispensed with the individual altogether, placing exclusive emphasis on the group level and studying groups as conscious agents. To be sure, these two perspectives, methodological individualism and methodological holism, have been productive in more than one way in the study of culture, but they do not address a fundamental question, namely how one gets from the individual to the collective. Christakis and Fowler cogently show how the science of social networks can help address this question. “Interconnections between people give rise to phenomena that are not present in individuals or reducible to their solitary desires and actions. Indeed, culture itself is one such phenomenon.” (p. 303)

This idea of social networks governing individual behaviour and our actions and desires being driven by those of other people might sound to some as a deterministic and pessimistic view of human nature. If we are so much dependent on what others do, are we then nothing but mindless automata? If kindness, cooperation, honesty and healthy habits, but also theft, murder, drug abuse and obesity can simply be “contagious”, can we then be held accountable for our wrongdoings? Can we get credit for our achievements? What about liability and free will? Christakis and Fowler choose to see the glass as half-full and stress that the flow of influence is a two-way street. We influence others as much as we are influenced by them. Thus, our own actions have important implications and our impact can reach much further than we can see. The power of social networks is indeed surprising.

*Connected* is a true reference book, providing a new perspective on human behaviour and culture. Using an analytical and synthetic approach, based on a rich bibliography, persuasive argumentation and robust, large-scale quantitative data from the real world, Christakis and Fowler deliver what they promise to do at the outset of the book, which is no less than to change the way we think about human nature, by revealing the surprising power of our social networks.

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