

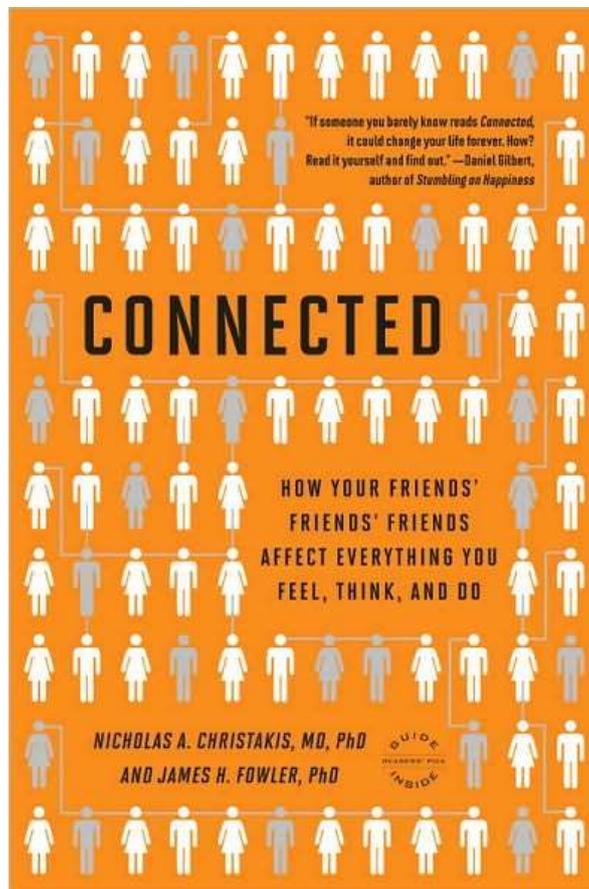
A summary of the book

Connected

The amazing power of social networks and how they shape our lives

By Nicholas Christakis & James Fowler

Summary by Kim Hartman



This is a summary of what I think is the most important and insightful parts of the book. I can't speak for anyone else and I strongly recommend you to read the book in order to fully grasp the concepts written here. My notes should only be seen as an addition that can be used to refresh your memory after you've read the book. Use the words in this summary as anchors to remember the vitals parts of the book.

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Description from amazon

Harvard professor and health care policy specialist Christakis (Death Foretold: Prophecy and Prognosis in Medical Care) became interested in social connectivity when observing that the mortality rate of spouses spike after a partner passes away. Christakis sought out a collaboration with Fowler, a health systems and political scientist, and together they compare topology (the hows of a given structure) across different social networks to better explain how participation and positioning enhances the effectiveness of an individual, and why the "whole" of a network is "greater than the sum of its parts." Five basic rules describe the relationship between individuals and their networks-including mutual adaptation, the influence of friends and friends' friends, the network's "life of its own"-but the results do more than promote the good of the group: they also spread contagions; create "epidemics" of obesity, smoking and substance abuse; disseminate fads and markets; alter voting patterns; and more.

Chapter 1: In the thick of it

Social network can be conduits for altruistic acts in which individuals pay back a debt of gratitude by paying it forward.

Beyond our own social horizons, friends of friends of friends can start chain reactions that eventually reach us.

What is a group of people: A group can be defined by an attribute (woman, democrats, long-distance runners etc.) or as a specific collection of individuals to whom we can literally point (those people over there, waiting to get into the concert).

What is a network: While a network, like a group, is a collection of people, it includes something more: a specific set of connections between people in the group. These ties, and the particular pattern of these ties, are often more important than the individual people themselves. They allow groups to do things that a disconnected collection of individuals cannot. The ties explain why the whole is greater than the sum of its parts. And the specific pattern of the ties is crucial to understanding how networks function.

Network community: A network community can be defined as a group of people who are much more connected to one another than they are to other groups of connected people found in other parts of the network.

Social networks evolve organically: In a basic sense, a social network is an organized set of people that consists of two kinds of elements: human beings and the connections between them. Real, everyday social networks evolve organically from the natural tendency of each person to seek out and make many or few friends, to have large or small families, to work in personable or anonymous workplaces.

When your family and friends become better connected, it increases your level of connection to the whole social network. We say it makes you more central because having better-connected friends literally moves you away from the edges and toward the center of a social network.

Network topology: A network's shape (structure, topology) is a basic property of the network. The network is connected until there are no strings left. Some nodes will have many nodes connected, and some groups of nodes will be connected to each other but separated from each other. These groups are called components.

Rules of life in the network

There are two fundamental aspects of social networks.

- There is a connection, which has to do with who is connected with to whom. Ties can be causal or intense, personal or anonymous.

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- There is a contagion, which pertains to what, if anything, flows across the ties. It could be buckets of water or whatever.

Rule 1: We shape our network. Homophily is the tendency to associate with people that are like us. We seek out the people that share our interests, histories, and dreams. We choose the structure of the network in three important ways:

1. We decide how many people we are connected to
2. We influence how densely interconnected our friends and family are
3. We control how central we are to the social network

Ex. If you know Alexi, and Alexi know Lucas, and Lucas know you, this relationship is transitive – the relationship forms a triangle.

Rule 2: Our networks shape us. Having an extra friend may create all kinds of benefits for your health, even if the other person doesn't actually do anything for you. Being more central makes you more susceptible to whatever is flowing within the network.

Rule 3: our friends affect us. What actually flows across the connections is also crucial. Social networks transport all kinds of things from one person to another. One fundamental determinant of flow is the tendency of human beings to influence and copy one another. Each and every tie to different people offers opportunities to influence and to be influenced.

Rule 4: Our friend's friend's friends affect us. Hypdyadic spread is the tendency of effects to spread from person to person to person, beyond an individual's direct social ties. The usual way we think about contagion is that if one person has something and comes into contact with another person, that contact is enough for the second person to get it. Like getting infected with a germ. But some things – like norms and behaviors – might not spread this way. They might require a more complex process that involves reinforcement by multiple social contacts.

Ex: If we wanted to get people to quit smoking, we would not arrange them in a line and get the first one to quit and tell him to pass it on. Rather, we would surround a smoker with multiple nonsmokers.

Rule 5: The network has a life of its own. Social networks can have properties and functions that are neither controlled nor even perceived by the people within them. These properties can be understood only by studying the whole group and its structure, not by studying isolated individuals.

Ex: you cannot understand a traffic jam by interrogating one person fuming at the wheel of his car, even though his immobile automobile contributes to the problem.

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Group of interconnected people can exhibit complicated, shared behavior without explicit coordination or awareness.

An excitable medium: Flips from one state to another depending on what others around it are doing.

Collective intelligence: behavior that does not reside within individual creatures but, rather is a property of groups. Each bird contributes a bit, and the flock's collective intelligence choice is better than individual birds would be.

Emergent properties: Are new attributes of a whole in a social network that arises from the interaction and interconnection of the parts. A cake, for example, has a taste not found in any of its ingredients. The taste of the cake transcends the simple sum of its ingredients.

Six degrees of separation: People are all connected to one another by an average of six degrees of separation.

The three degree influence rule: Social networks obey this rule. Our influence gradually dissipates and eases to have noticeable effect on people beyond the special frontier that lies at three degrees of separation. We are generally influenced by friends within 3 degree but general not by those beyond.

Word of Mouth: WOM tend to spread 3 degrees as well.

The intrinsic-decay explanation: When information reaches your friends friends friends friends, that person may no longer have accurate or reliable information on what you actually did.

The network instability explanation: Influence may decline because of an unavoidable evolution in the network that makes the link beyond 3 degrees unstable. Friends stop being friends, etc.

The evolutionary-purpose explanation: Biology's part; in our past, there was no one who was four degrees removed from us.

Connection and contagion is the structure and the function of social networks. They are the anatomy and physiology of the human super organism.

In a kind of social chain reaction, we can be deeply affected by events we do to witness that happen to people we do not know.

A solid network is like a commonly owned forest; we all stand to benefit from it, but we must also work together to ensure it remains healthy and productive.

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A person with many friends may become rich and then attract even more friends. This means that social networks can reinforce 2 different kinds of inequality in our society: situational inequality and positional inequality.

The powerful effects of social networks on individual behaviors and outcomes suggest that people do not have complete control over their own choices.

Chapter 2: When you smile, the world smiles with you

Emotions have a collective and not just an individual origin. How you feel depends on how those to whom you are closely and distantly connected feel.

1. We usually have a conscious awareness of our emotions
2. Emotions typically affect our physical state: our faces, our voice, our posture.
3. Emotions are associated with specific neurophysiological activity; if you show a scary picture, the flow of blood to structures deep in your brain instantly changes. Finally, emotions are associated with visible behaviors like laughing, crying etc.

People's emotions and mood are affected by the emotional states of the people they interact with.

Emotions origin: Early humans had to rely on one another for survival. Their interactions with the physical environment (weather, predators etc.) were modulated or affected by their interactions with their social environment.

Emotions for groups: The development of emotions in humans, the display of emotions, and the ability to read the emotions of others helped coordinate group activity by three means:

- Facilitating interpersonal bonds
- Synchronizing behavior
- Communicating information

Emotional contagion: emotions spread from one person to another because of two features of human interaction: we are biologically hardwired to mimic others outwardly, and in mimicking their outward displays, we come to adopt their inward states. Reading the expressions of others was probably a key step on the way toward synchronizing feelings and developing the emotional empathy that underlies the process of emotional contagion.

Affective afference: People imitate the facial expressions of others and as a direct result, they come to feel as others.

Mirror neuron system: Makes emotions contagious. Our brains practice doing actions we merely observe in others, as if we were doing them ourselves.

Mass psychogenic illness: When an emotion spread from person to person and affects a large number of people. A single reaction in one person can sometimes cause many others to feel the same thing, creating an emotional stampede.

The Proust phenomenon: Memories invoked by smell induce stronger emotions than those evoked by verbal descriptions of the same odor. Words are powerful, but one familiar whiff can jolt the mind into the past with more emotional intensity than can a signal from any other sense (pp.45).

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The experience-sampling method: Uses a series of alerts/signals at unexpected times to prompt subjects to document their feelings, thoughts and actions while experiencing them.

The influence of happy friends: Unhappy people cluster with other unhappy people and vice versa. Unhappy people seem more peripheral; they are much more likely to appear at the end of a chain of social relationships or at the edge of the network. A person is about 15% more likely to be happy if a directly connected person is happy. So having happy friends seem to be a more effective predictor of happiness than earning more money. Even people that you have never met can have stronger impact on your personal happiness than a wad of hundreds in your pocket.

Once we control for the emotional states in one happy friend, having more friends isn't enough – having more happy friends is the key to our emotional well-being. The more friends your friends have, the more likely you are to be happy.

Happy people do not tend to become more central so a wide social circle doesn't have to make you happier. But being happy widens your social circle. Being in the middle of the network leads to happiness.

Hedonic Treadmill: after a lottery win or something else that made you happy people tend to return to their previous level of happiness. It doesn't last. We appear to have a set point for personal happiness that is not easy to change.

Long term happiness depends 50% on a person's genetic set point, 10% on their circumstances (where they live, how rich they are etc.), and 40% on what they choose to think and do.

Loneliness: Loneliness is a complex set of feelings experienced by people whose core needs for intimacy and social connection are not met. Loneliness also spread three degrees.

Battle loneliness: If we are concerned about combating the feeling of loneliness in our society, we should aggressively target the people at the periphery with interventions to repair their social networks. By helping them, we can create a protective barrier against the loneliness that will keep the whole network from unraveling.

Different beliefs, same feelings: people over the world have different ideas, beliefs and opinions, but they have very similar, if not identical, feelings.

Chapter 3: Love the one you're with

The majority of people find spouses and partners by meeting friends of friends and other people to whom they are loosely connected.

Relative versus absolute standing: People often care more about their relative standing in the world than their absolute standing. People are envious. Many consumer demands arise not from innate needs but from social pressure. People assess how well they are doing not so much by how much money they make or how much stuff they consume, but rather by how much they make and consume compared to other people they know.

You don't need to be the most beautiful or wealthiest person to get the most desirable partner; you just need to be more attractive than all the other women in your network. Many people may be more attractive than we are, but our only real competitors are the people in our intended social network. One study showed that women ranked married men higher than unmarried.

The connection of marriage: It also showed that married people lived longer. After the spouse died, the mortality rate for the one that was left rose with 40% during 6 months and then went back to normal. This could be because they both lived unhealthy, something in the environment where they lived, or because there is a true causal relationship between marriage and health. Being married adds 7 years to a man and 2 years to a woman.

Being near a familiar person can have effects as diverse as lowering heart rate, improving immune function, and reducing depressions. Spouses provide social support to each other and connect each other to the broader social network of friends, neighbors and relatives.

The bigger the age differences between an older husband and a younger wife, the better for both when it comes to health benefits of marriage.

Multiplexity: The tendency to have several kinds of relationships. Multiplex networks overlap – we can be friends and lover with same persons.

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Chapter 4: This hurts me as much as it hurts you

People randomly assigned to seats next to strangers who eat a lot wind up doing the same.

Large social networks: Have communities within them, and these communities can be defined not only by their interconnections but also by ideas and behaviors that their members come to share.

Imitation: When people are free to do as they please, they usually imitate. This is one way obesity might spread from person to person. Imitation can be both cognitive (something we intentionally think about) and physiological (a natural biological process)

A norm: A shared experience about what is appropriate that spreads from person to person. People can reinforce particular norms so that directly and indirectly connected people share an idea about something without realizing that they are being influenced by one another.

More connections within groups (concentrated networks) can reinforce a behavior in the groups, but more connections between groups (integrated networks) can open up a group to new behaviors and to behavioral changes.

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Chapter 5+6

No notes from these chapters.

Chapter 7: It's in our nature

The most important feature of the human environment is the presence of other members of our species. Because we lack any real predators, the only major threat to humans is other human.

We deliberately choose to form social connections with specific individuals, with whom we share greater or lesser intimacy and affection, for brief or lengthy periods of time

Our desire to form connections depends partly on our genes. Evolution likely plays a role in the way we connect to one another because the very act of connection is itself subject to natural selection.

People often ignore their selfish tendencies when interacting with people to whom they are connected. Across a wide variety of laboratory experiments that study dilemma in altruism and cooperation, people choose to help other people about half the time, even people they will never interact with again.

Direct reciprocity: If you have several opportunities to cooperate with the same person, one way to get that person to help you is to promise future cooperation. Robert Axelrod showed that a cooperative strategy called "tit for tat" often is more effective than always cooperating or always being selfish. In tit for tat, you cooperate the first time you meet someone, and thereafter simply copy what that person did the last time you interacted with him.

Punishers: Cooperation can emerge because we can do more together than we can apart. But because of the free-rider problem, cooperation is not guaranteed to succeed. To deal with free riders, another type of person is needed: punishers. Cooperators connect to others in order to create more: free riders connect in order to leach of those who create; and punishers connect in order to drive away free riders.

Because we are connected to others, and because we have evolved to care about others, we take the wellbeing of others into account when we make choices about what to do. We want what others to whom we are connected want.

Cooperation, altruism, punishment and free riding are written into our DNA. There is evidence that diversity in these social preferences may be at least partly a result of our genetic evolution.

Lonely vs. being alone: Feeling lonely is not the same thing as being alone. Feelings of loneliness can arise from the discrepancy between our desire for social connection and our actual social connections. Half of the variation in whether a person feels lonely or not depends on his genes.

The number of possible relationships grows exponentially with group size.

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Dunbar's number: Dunbar examined the relationships between brain size and group size in a variety of primates and by extrapolation posited that the expected size of social groups in human, based on our big brains, should be about 150. Dunbar argued that language emerged among humans, in part, to replace grooming. Basically, language is a less yucky and more efficient way to get to know our peers since we can talk to several friends at once but only groom them one at a time. The social perspective on language suggests that it evolved as a means of maintaining group cohesion.

Groups: Human conversational groups should be about four people – 1 speaker and 2, 8 listeners.

Chapter 8: Hyper connected

Advantages of good looks: Our physical appearance affects the way others treat us. For example, people attract more friends, are paid a higher wage for the same work, and are often seen as more deserving of treatment by health care workers when they are tall or good looking.

Social network sites: The distinctive features of social network sites are that it makes our web of connections visible to the user and to others. Moreover, unlike other sorts of online groups or communities like wikis and listservs, social network sites are organized around people, not topics.

At their core, social network sites primarily reflect offline interactions. Although they allow us to maintain contact with people whom we would otherwise be tied only weakly, they are not organized around the introduction of strangers.

The internet makes possible new social forms that are radical modifications of existing types of social network interactions in four ways:

- **Enormity.** A vast increase in the scale of our networks and the numbers of people who might be reached to join them.
- **Communality.** A broadening of the scale by which we can share information and contribute to collective efforts.
- **Specificity.** An impressive increase in the particularity of the ties we can form.
- **Virtuality.** The ability to assume virtual identities.

Online networks do not appear to expand the number of people with whom we feel truly close, nor do they necessarily enhance our relationships within our core groups.

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Chapter 9: The whole is great

Collective intelligence: Social networks can manifest a kind of intelligence that augments or complements individual intelligence, the way an ant colony is intelligent even if individual ants are not. Networks can have this effect regardless of the intelligence of the individual members.

Trust in networks: In many cases, it is not just that the people in your network are more trusting, or even that their trusting behavior engenders trust in you; rather, the network facilitates this trust and changes the way individuals behave.

Social networks are often self-annealing. One person might step out of a bucket brigade, but then the two people he was connected to will move closer to each other, forming a new connection to fill the gap. As a result, water will continue to flow.

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