Connected in a Worldwide Web of Intentions, Stakeholders, and Results

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In *Connected: How Your Friends' Friends' Friends Affect Everything You Feel, Think, and Do*, Nicholas Christakis and James Fowler address the question of how human beings have come together to achieve results (goals) we could not obtain alone. (p. XIV) They note social relationships, including the number of them, have been limited by geography, socioeconomic status, technology, and even by our genetic makeup. (p. XV)

The authors observe natural social networks are generally not organized from the top (p. 13) and they assert, "Organic networks have a structure, complexity, function, spontaneity, and sheer beauty not found in organized networks …" (p. 15) However, those distinctions may be an artifact of the immaturity of the organizations we have contrived thus far in our geologically brief existence. Given enough time and experience, perhaps we might be capable of learning to organize more organically.

Delving deeper, Christakis and Fowler highlight two fundamental aspects of social networks: *connection* and *contagion*, the latter of which concerns what is transmitted across the connections. (p. 16) "An *excitable medium*," they note, "is one that flips from one state to another … depending upon what others around it are doing." (p. 25) "There is no central control of the movement of the group, but the group manifests a kind of collective intelligence … they move in a way that accounts for the intentions of all …" (p. 26) Moreover, "… social networks have emergent properties. *Emergent properties* are new attributes of a whole that arise from the interaction and interconnection of the parts." (p. 26)

In *Incognito: The Secret Lives of the Brain*, David Eagleman also addresses the concept of *emergence*, in which combinations of large numbers of pieces and parts result in something greater than their sum. While he does not use the words "contagion" or "excitable medium," his conceptualization of the brain as a "team of rivals" essentially describes those terms.

Eagleman asserts most of what we think and do is out of our control. (p. 4) He also suggests, "To the extent consciousness is useful, it is useful in small quantities and for very particular kinds of tasks." (p. 57) On the other hand, he allows, "much of the knowledge stored in the depths of the unconscious brain began life in the form of conscious plans." (p. 69) Moreover, he says, the "trick of burning tasks into the circuitry is fundamental to how brains operate: they change the circuit board of their machinery to mold themselves to their mission." (p. 73) Nor is such circuitry monolithic. Indeed, "the continuous networks of neural circuitry accomplish their functions using multiple, ***independently discovered strategies***." (p. 130, emphasis added. See reference to "efficiency diversity" below.)

In short, Eagleman suggests, to the limited degree that consciousness plays a role, it is "to control – and to distribute control over – automated alien systems." (p. 140) Thus, he believes it is inappropriate to ascribe blame to those who behave badly, even those who commit murder, for example. (p. 175) However, he hints at a contradiction in his logic with the following observations:

> Although real-time feedback involves cutting-edge technology, that should not distract from the simplicity of the goal: to enhance a person's capacity for long-term decision making. The goal is

> to give more control to neural populations that care about long-term consequences. To inhibit impulsivity. To encourage reflection. (p. 184)

In *Things That Make Us Smart*, published in 1993, Donald Norman said of the various dangers associated with the ill design and misuse of cognitive tools the one that poses the greatest peril is that of "experiencing when one should be reflecting ... where entertainment takes precedence over thought." (p. 27) While his assertion predated widespread usage of the Web, his logic applies equally to it and perhaps even more so because its usage is now so pervasive.

In any event, while minimizing the role of consciousness in human action, Eagleman inadvertently highlights the flaw in his argument in the following words of his own conclusion: "consciousness seems to be about setting goals for what should be burned into the circuitry, and it does little beyond that." (p. 194) What could be more worthy of blame than repeatedly setting one's self up for failure, by avoiding the establishment of good habits and wallowing in bad ones, i.e., having the time and opportunity to do better and choosing not to do so? Such behavior gives new meaning to the term "repeat offender".

In the *User's Guide to the Brain: Perception, Attention, and the Four Theaters of the Brain*, John Ratey allows, "We do have free will, in a sense, for everything we do affects everything that follows …" (p. 11) The goals we set for ourselves hold the potential to change our lives. Thus, he says, "neurological self-awareness is the most important first step we can take." (p. 12)

As conceptualized in the Fundamental Attribution Error (FAE), we are all subject at risk of moral failure by placing ourselves in situations likely to produce bad behavior. However, it takes extra effort to behave badly and often enough to encounter the criminal legal system. Moreover, we are collectively worthy of blame when we stand idly by and allow circumstances to influence such behavior by others. With "friends" and "protectors" like that – including public officials and elected representatives – who needs enemies?

That question takes on an ironic meaning in the context of Christakis and Fowler's observation that, for good or bad, "Social networks have value … because they can help us to achieve what we could not achieve on our own." (p. 31) In short, regardless whether we choose to engage in self-destructive or self-improving behavior, it helps to associate with those similarly motivated.

The key, the authors suggest, "is to look beyond your direct connections but not so far away that you no longer have anything in common with your contacts." (p. 69) Indeed, they assert, "… the surprising power of social networks is that they bring likes together and serve up soul mates in the same room." (p. 71) However, the Internet enables us to reach far beyond our direct connections to engage those with common and complementary objectives anywhere on earth. In the context of the Web, physical location may be largely irrelevant, and while social networks may still be important for social purposes, they no longer need be nor should they be limiting factors in the accomplishment of business objectives.

The authors observe that large social networks encompass smaller communities defined not only by interconnections but also shared ideas and behaviors. (p. 108) In contrast to social networks, business networks should be defined not by social connections per se but, rather, by common and

complementary business objectives. Indeed, the influence of personal connections on business transactions is commonly viewed as corruption of the market. While associations may be defined by "ideas and behaviors" peculiar to a profession, what makes such groups valuable is the sharing of information and resources required to achieve business objectives. The personal connections formed in professional associations are a natural byproduct of pursuing such goals.

As the basis for interpersonal connections, Christakis and Fowler note that imitation can be both cognitive as well as physiological. They assert, "It is deeply rooted in our biological capacity for empathy and even morality, and it is connected to our origins as social species …" (p. 112) "What spreads from person to person," they say, "is what social scientists call a *norm*, which is a shared expectation about what is appropriate… people can reinforce particular norms so that directly and indirectly connected people share an idea about something without realizing they are being influenced by one another." (p. 113)

Social norms and personal values strongly influence, if not directly determine the goals and objectives that predominate in each culture. Ratey says "values are the basic biases and tendencies that allow an individual to give meaning to experiences." They are important for the evolution of consciousness and help to explain why people perceive the same circumstances very differently. (p. 142) However, the name commonly given to being influenced by forces outside our awareness is brainwashing, which is generally considered to be undesirable. While the norms of any particular culture may be as good as those of any other, at least it seems we should be aware of them and decide for ourselves whether they are compatible with our personal values and, if not, why not.

Christakis and Fowler caution that rational behavior by individuals can lead to irrational behavior by groups and social networks can aggravate problems because they enable those who panic early to influence others. In short, they say, "The wisdom of crowds can quickly turn to folly." (p. 140) Moreover, small differences among us can have disproportionate impacts upon our ability to work together to solve problems. (p. 153) On the other hand, while strong ties bind individuals together in groups, weak ties are vital to the efficient dissemination of information. (p. 157)

There is only so much time and our attention spans are quite limited as well. So it is only natural that the number of strong, personal ties we can maintain is constrained. However, the Internet changes the dynamics of the spread of information. Our ability to engage others to achieve our objectives need no longer be constrained by social ties. The objectives themselves can become the basis for connections. Indeed, what could be more important to giving meaning to our lives than connecting with those who share our deeply held personal values, not merely to feel the warmth of their emotional support but to live our lives more productively together in pursuit of our common objectives? Is life not too short and too valuable to do otherwise?

The authors note the richness of weak ties as sources of new information we can leverage to improve our own circumstances. While we may trust socially distant people less, their information and contacts are potentially more valuable because we cannot access them directly. (p. 158) Moreover, as President Reagan famously observed, trust without verification is a fool's errand. What matters is results that can be measured, tracked, reported, and subjected to feedback by those affected. That is equally true

regardless of how "close" we are to others, physically as well as socially. The only difference is how well we can keep track of the impact of their actions upon us and others and, as human beings, our capacity is limited in that regard. (See reference Dunbar's number below.)

Christakis and Fowler note that networks are dynamic. Within them the flow of information and actions takes on a life of its own, changing over time. They suggest wealthy people and large businesses shape their networks to serve their financial and economic goals and, in turn, the shape of their networks strongly influences whether they achieve their goals. (p. 159) However, the same is true of anyone, regardless of economic circumstances. Luck certainly plays a part. Relatively speaking most people are not "wealthy" and most businesses are not large, if for no other cause than probability, the bell curve (normal distribution), and the iron law of regression to the mean. However, to some degree, wealthy individuals and big businesses have those attributes (wealth and scale) by virtue of doing a better than average job of determining their goals and engaging those whose support is needed to achieve them.

Among the seven habits of highly successful people identified by Stephen Covey is beginning with the end in mind. Another is to seek first to understand (what others want and need) and only then to be understood. People are successful not merely because they know what they want and are self-centered (focused) enough to get it but because they have greater understanding of the needs and wishes of others.

Indeed, Steve Jobs, who died as one of the richest people on earth, famously suggested it is not even the customers' job to know what they want; rather, it is the role of entrepreneurs to anticipate and even drive consumer desires. While Jobs' view may be accurate with respect to present-day realities, whether it represents the optimal state for which we should be aiming in the future seems highly doubtful – unless we choose to delegate to lesser gods the role commonly ascribed to religion in the ultimately "large-world" network context of the unknowable limits of the universe of time, space, and perhaps other as yet undiscovered (and perhaps undiscoverable) dimensions.

Addressing the issue from the other end of the continuum, Christakis and Fowler note that "small-world" networks have two key features: low average path length and high transitivity. The former means people can easily reach others through a small number of intermediaries (short paths) and the latter means most of a person's contacts are connected to each other, thus sharing information through multiple paths (i.e., efficiency diversity, as explained below). (p. 162)

The Internet makes the entire world small in the sense of being able to connect with anyone who shares our objectives. Potentially, such connections might be discovered via a single intermediary service like Google but, practically speaking, two or three might be needed – one to enable discovery of those with broad, common goals anywhere in the world and a second to enable direct interaction to share resources and coordinate efforts to achieve explicit, measurable objectives. Depending upon the uniqueness of the knowledge, skills, and resources required, a third-level intermediary may also be needed to enable highly specialized (non-commodity) connections. However, relatively few objectives encompass such specialized knowledge and skills that, among the seven billion people on earth, multiple contacts might not be capable of providing them.

With respect to the creativity required to produce unique, non-commodity goods and services, the authors cite evidence that small-world networks amplify talent and are more successful. They suggest breakthroughs occur in collaborative circles. (p. 163) Moreover, although physical separation is becoming less of a constraint, they say, "scientific collaboration works best in small-world forms of organizations that make it easy to work with a mix of people …" (p. 164)

With reference to "mixes" of people, James Surowiecki says the four conditions required for crowd wisdom include: 1) Diversity of opinion – Each person must have some private information, even if it is just an eccentric interpretation of known facts. 2) Independence – People's opinions must not be determined by the opinions of those around them. 3) Decentralization – People must be able to specialize and draw upon local knowledge. 4) Aggregation – Some mechanism must exist to turn private judgments into collective decisions.

Regarding such mechanisms, Christakis and Fowler suggest, it may be valuable to create explicit links in networks or to organize them in ways consistent with the tasks at hand. In support of economic stimulus initiatives, for example, they say, "government should create structured channels of communication between agencies in addition to whatever informal channels may already exist. In other words, the government should foster small-world connections." (p. 166) Theoretically, government could do that but, politically speaking, it may be impossible for politicians to allow it to happen. Indeed, it may be difficult for candidates to be elected to office on a platform of divesting power away from the themselves and placing responsibility back in the hands of the voters themselves, via truly "small-world" connections.

In any event, tasks should center on the achievement of explicitly documented objectives, with clearly specified metrics. In the case of the U.S. government, a law – section 10 of the GPRA Modernization Act – already requires federal agencies to publish their goals and objectives in machine-readable format on the Web. When they begin to comply with that requirement, it will become relatively easy for value-added intermediaries to establish explicit links and enable structured communications among those whose actions are required as well as those who are intended to benefit. Indeed, another law – the eGov Act – already requires agencies to work together to link their performance goals to key groups, including citizens, businesses, and other governments, as well as internal Federal Government operations.

However, in light of the virtual certainty of politically motivated corruption of the system, the degree to which government and particularly a single, centralized bureaucracy should be involved in structuring communications channels should be considered with skepticism. So long as the Internet remains relatively free of political influence, it holds the potential to enable small-world connections attuned to the interests and objectives of individuals. However, government institutions are creatures of politics and, by definition, the bigger and more centralized they become, the less they are aligned with the small-world values of individuals.

Indeed, the implications are even wider than that. Karl Marx famously asserted that religion is the "opium of the people," lulling them into a false sense of security. However, in the era of "modern" social welfare democracies, government has increasingly taken on that role. In *The Welfare of Nations*,

James Bartholomew has catalogued many ways in which well-intentioned public policies have led to adverse consequences, as welfare becomes more profitable than work, thereby making millions of people perpetually dependent upon the "system" and, thus, guaranteeing the eventual failure of the very system upon which they have come to rely. Although Bartholomew's book was published in 2016, the problem has been well known for many years. For example, in *The Oz Principle: Getting Results Through Individual and Organizational Accountability*, published in 1994, Roger Connors, Tom Smith and Craig Hickman said the American character is in crisis due to the cult of victimization, which is "an odd combination of ducking responsibility and telling everyone else what to do."

Politics – and voting in particular – serves all three of those purposes:

- fostering a false sense of security and entitlement in having done our "duty" in support of our tribe (in-group),
- avoiding responsibility for doing that which we can and should more efficiently and effectively do for ourselves, and
- creating scapegoats to whom blame can be deflected (i.e., not only the elected officials themselves but also the out-group members of other political tribes).

Moreover, the degree political polarization may be considered to be a problem, it is an inevitable result of larger, more centralized and intrusive government. Polarization is generally considered to be a problem only by those who are unable use politics to gain the upper hand so as to impose their will upon others. Beyond that, the two-party system has always been viewed as a strength of the American political system. Polarization is a symptom of the problem; the root problem itself is the growth of government. "Progressively" speaking, the more people are forced to accept that with which they disagree, they more they will resent their oppressors – even if they may not be so adamantly opposed to any particular policy were it not imposed upon them. A great way to exacerbate opposition is to deny people any choice in the matter. (See "Judgmental Biases in Conflict Resolution and How to Overcome Them".)

The struggle for power to impose one side's will on the other has grown so contentious that politicians and political pundits are now immune to embarrassment for the hypocrisy of switching rhetorical sides to use the very same arguments as their opponents, depending upon whether they are in or out of the more powerful position. In a sense, that is entirely understandable, since it is results that matter (consequentalism). Reason and logic are mere means to ends. The desired ends are considered to be self-justifying. Thus, so too are any means justified. However, such logic suggests we should dispense with the self-righteous arguments and simply admit that the purpose of voting and politics is a pure power play – to over-ride the will of others and *deny* them the right of self-governance.

Christakis and Fowler cite the *minority-power effect*, through which small groups of well positioned individuals can consistently impose their will upon others. (p. 167) Indeed, that seems to be an apt description of the power of voting in modern social democracies, whereby relatively small minorities are empowered to select candidates most disliked by others, who are then left with the choice either of not voting or voting against the candidate they dislike most. How could anyone not be frustrated by such as system? How could it not be polarizing?

Winston Churchill observed that democracy is the worst form of government … except for all the others that have been tried. However, that truism posits a false, win/lose, all-or-nothing choice. Indeed, it meets Robyn Dawes' definition of psychotic reasoning, which is the failure to consider a sufficient number of alternatives – including the possibilities that: a) too much power is being vested in too few people and particularly a single person, and b) voting is antithetical to the concept of self-governance.

Christakis and Fowler observe that social networks distribute risk and help groups cope with unexpected events. (p. 169) Insurance companies and social benefit societies are clear examples and, theoretically, government and large companies serve those roles as well. However, by their very nature, large institutions are depersonalized and thus "anti-social" networks, regardless of how they are ideologically categorized, e.g., capitalism, socialism, communism, democracy, etc.

Psychologically speaking, depersonalization is the third most common malady affecting individuals. Those experiencing it "feel divorced from their own personal self by sensing their body sensations, feelings, emotions, behaviors etc. as not belonging to the same person or identity." Socially, economically, and politically speaking, that is an apt description of how many people now feel about our institutions, including institutions of so-called "higher learning," which are falling far short of their ideal of being bastions of free thought and speech. While many of us hold our own elected representatives in reasonably high regard, very few regard Congress as a whole favorably, perhaps as few as one in ten. According to Gallup polling, Congress and big business are at the bottom of the heap in terms of trust. Indeed, only three institutions – the military, small business, and the police – inspire confidence in more than 50 percent of the poll respondents.

Is anyone cynical enough to truly believe that is the best we can do? For business and political purposes, must we accept the de-personalization of our networks? Does de-emphasis of personal values not imply de-valuation of networks? Is de-personage good, much less necessary, for efficient and effective business, markets, and governance? Does "corporate personhood" really make sense? Are we not all worthy of consideration as a "personages" within our own social and business networks? Should the institutions we form not dynamically conform to the attributes and personal values of the people they are organized to serve, rather than forcing people to conform to the inflexible, bureaucratic attributes of the institutions themselves?

Pointing the way toward a potentially more productive future, Christakis and Fowler cite the Grameen Bank in Bangladesh as an exemplar. Under the bank's rules, five people are generally required to form a group. After all members of the group are trained in business skills and pass a test, two may apply for loans. If those loans are repaid, two more can apply. Finally, if those are also repaid, the fifth member can apply. (p. 169) Explaining why the system works they quote Muhammad Yunus: "Subtle and at times not-so-subtle peer pressure keeps each group member in line… A sense of intergroup and intragroup competition also encourages each member to be an achiever." (p. 169)

Christakis and Fowler also suggest another important aspect is the bank's focus on lending to women. (p. 169) However, as a blatant example of gender discrimination, that policy seems to imply nearly half of the human race is being written off as a lost cause, as if men are immune to the potentially beneficial

effects of peer pressure in virtuous, values- and goal-driven small-world networks. That seems to be a self-fulfilling prophecy in low-income communities. (In the context of U.S. politics, Senator Rand Paul has been quoted as saying, "if there was a war on women, I think they won.") However, the authors note that similar programs are starting to be used for college students and other low-income individuals. (p. 170) Indeed, they observe:

> Similar institutions that capitalize on social ties have emerged throughout history. For example, rotating credit associations, also known as solidarity groups or money-go-rounds, are comprised of people who voluntarily assemble into a group that meets periodically to contribute to a fund that is given in whole or in part to one of the contributors in rotation. These organizations are typically self-organizing; they do not rely on formal institutions and typically lack a leader. These types of organizations are found all over the world … and they are often used by immigrant groups in the United States to pool capital for entrepreneurial activities. (p. 170)

Critically, Christakis and Fowler note what such programs all have in common is that "social connections function to prevent defection" after anyone has benefitted from them. The benefits circulate in the group and everyone knows where everyone else is in the event they may try to engage in free-ridership and escape personal responsibility for the collective well-being of the group. (p. 171)

Interestingly, democracy and voting in particular does not seem to be a key aspect of such programs. Instead, the focus is on individual action and responsibility to the group. By contrast, in large, centralized bureaucracies, just the reverse seems to be true: no one is responsible for anything and everyone feels entitled to everything, immediately, regardless of whether they've done anything to earn it or not. The thought they might need to work, save, invest, and wait to obtain what others have earned is considered to be patently unfair.

Moreover, with respect to voting in large-world networks, Christakis and Fowler aver that each vote *doesn't* count, rationally speaking, with *rationality* as being composed of three aspects: "First, rational people have preferences and know them… Second, rational people's choices are consistent… And third, rational people are goal oriented." (p. 174 & 175) In short, what matters is not voting but, rather, acting consistently and persistently to achieve clearly specified goals. However, research by Daniel Kahneman and others has demonstrated that we human beings are not very rational.

Indeed, by definition, each vote cannot count in win/loss propositions, such as democratic elections. Under majoritarian rule, one side wins and the other(s) may be largely irrelevant, except as "obstructionists". Indeed, in the wake of the 2016 U.S. presidential election, many entertainment celebrities are proudly and vociferously embracing that role and calling upon others to assume it as well, as a moral obligation. That's despite the fact many of those same self-righteous entertainers not only bemoaned the efforts of others to oppose policies they viewed as harmful to the country under the previous administration but also accused those concerned citizens of being un-American for not unconditionally accepting the results of the election with which they disagreed. Hypocrisy, it seems, knows no limits. Like other tactics, it is simply a means to a self-justified end.

As has been said, “elections have consequences” and, consequently, we should take much more critical view of which issues truly warrant giving any group the power to dictate to others. The number or proportion of people on the other side makes little difference to those whose views are being over-ridden by force. The only difference is how much power they may need accumulate to overthrow the mob on the other side and win the right to assume the role of dictator themselves.

Christakis and Fowler note that studies of voting behavior consistently show people tend to self-segregate into like-minded groups. Thus, most social ties engage people who already share the same interests. Even worse, “When people with ideological or class-based interests are not surrounded by like-minded individuals in their physical neighborhoods and workplaces, they tend to withdraw and form relationships outside those environments.” (p. 185) Indeed, “networks can become so transitive that norms and information simply circulate within groups rather than traveling between them.” (p. 188) While there is nothing wrong with having common interests, failing to seek the benefit of new information and different perspectives impedes progress and is tantamount to a self-imposed handicap on our potential for success.

With respect to information sharing and collective action, the authors assert cooperators outperform loners, but when cooperation becomes common, free riders emerge and cooperation may no longer be a successful strategy. Thus, besides a balance of loners and cooperators a third type of person is required – those willing and able to punish free riders. (p. 220) While their point is well taken about the need for accountability and negative rewards for free riders, usage of the term “loner” could be interpreted as a pejorative reference to introverts, who Susan Cain suggests may comprise a third to as many as half of all Americans. (*Quiet: The Power of Introverts in a World That Can’t Stop Talking,* p. 3)

Research has shown that interacting groups with decentralized networks perform better on complex tasks, while co-acting groups with centralized networks do well on simple tasks. Interacting groups work closely together on tasks. Co-acting groups work on tasks independently (as “loners”) while linked through some form of central coordination. Too often, groups working on complex tasks are either treated as co-acting groups and over-controlled or they are not supplied with the tools to work effectively together via decentralized networks. (See http://ambur.net/Cult&Tech.htm & http://ambur.net/reflectionjournal625.htm)

Co-actors do not need to be controlled, because their tasks are simple. All that is required is to turn them loose to be productive, while measuring and reporting their outputs to the intended beneficiaries. Moreover, centralized control is counterproductive for complex tasks. Thus, absolving actors from responsibility for self-control is inappropriate for both kinds of tasks.

However, by the very nature of the beast, large, bureaucratic institutions enforce centralization. Thus, the tasks for which coaction is directed and coerced should be more carefully considered, including the size and scope of the institutions we form to achieve our collective objectives. Merely, helping politicians get re-elected and making corporate officials wealthier should not be taken as sufficient justifications for centralized control. Instead, greater attention should be paid to creating widely distributed, non-politicized business networking tools and applications to:

1) enable more effective interaction among groups working together on complex problems they cannot solve alone, and
2) free those working independently upon simple tasks from having to re-invent the wheel in proprietary data and software stovepipe systems in order to achieve their objectives more efficiently.

As far as the simple tasks of documenting and sharing information about goals, objectives, and stakeholders are concerned, StratML is the applicable open, machine-readable, international voluntary consensus data standard required to support business networking services.

Christakis and Fowler suggest "cooperation would happen frequently in a world where it was possible to monitor and punish free riders and where there was variation in the tendency of people to join groups." (p. 221) A StratML-enabled Web could be such a place, where both contributions and lack thereof could be made readily apparent. People would be free to join as few or as many groups as they desire. Free riders would not be welcome but introverts would play a key role in offsetting the impulsive, group-thinking herd mentality.

The authors assert cooperation occurs because "the choices of the individuals involved are *incentive compatible* …" (p. 221) That's fancy academic jargon meaning people have common personal values and shared objectives. When organizations, groups, and individuals document their objectives on the Web in an open, standard, machine-readable format like StratML, it will be relatively easy for value-added intermediaries to help us identify others with whom we are "incentive compatible."

Note also that the term "free rider" may also be pejorative, in the sense that the individuals so described may simply disagree with the "ride" on which others want them to communally embark. Given a say in the matter, they may prefer that no one travel the prescribed route but, at least, they may want the right to refrain from doing so themselves. For example, workers may want the right to earn a living without being forced to join a union whose policies they oppose.

In any event, Christakis and Fowler assert "cooperation, altruism, punishment, and free-riding are written into our DNA." While acknowledging the influence of life experiences, they suggest diversity in such social preferences may result partly from our genetic evolution. (p. 232) In support of that observation, Eagleman avers:

> The brain cares about social interaction so much that it has evolved special programs devoted to it: primitive functions to deal with issues of entitlement and obligation. In other words, your psychology has evolved to solve social problems such as detecting cheaters – but not to be smart and logical in general. (p. 86)

Indeed, research has shown we will attempt to punish those we perceive as cheating even at some cost to ourselves. While that may not be "smart" and it may be irrational, it seems to account for much of what passes for self-governance in politics as currently practiced in "modern" social welfare democracies. It seems we may prefer for everyone to be poorer rather than to accept the notion that some might be wealthier. If they have played by the rules, that might be taken as prima facie evidence

the rules must be changed, even if unintended consequences may ultimately be negative for all concerned. With respect to the evolutionary dynamics leading us to this point, Christakis and Fowler observe:

> Traits that are always adaptive tend to reach what geneticists call fixation in the population: in the long run, everyone becomes the same. But when there are conflicting pressures – under some circumstances, a trait is beneficial, but under others, it is not – then it is possible to maintain diversity in the population in the face of natural selection… if only one kind of social network and location within it were optimal, we would all have the same kind of social networks and be located in identical positions within them. (p. 235)

Perhaps that might explain the existence of introverts in a world dominated by extroverts. In any event, as technology advanced and social structures became more complex, the need for specialization arose in terms of diversity of personal skills. On the other hand, the authors point out, "while networks depend upon their members, they are also inherently stable, and new members can come and go as part of the normal process by which networks evolve and survive." (p. 240) No one is indispensable. "Once humans form particular social groups with particular social-network ties, they can then transmit their knowledge to others near and far." (p. 241) Skills are transferrable.

As a social group, Internet users can theoretically transmit their knowledge to any other user and ties to other users may facilitate such transmission. However, personal ties may also be a needless constraint on the transmission of information explicitly related to one's own objectives. With regard to the longevity and efficiency of the exchange of information, Christakis and Fowler suggest, "One way to make social networks stable is to arrange them so that everyone is connected to a node than can never be removed. There would then be a short path from each person to every other person through this particular node." (p. 243)

For many people, government bureaucracies, political parties, and less formally organized political "protest" movements have increasingly replaced God and religious values in serving that purpose. However, the Internet holds the potential to become the "node" that connects us all, within which common and complementary objectives become the basis for actual, realized connections, in accordance with our own, individual personal values.

Regarding the number of people with whom we might be naturally wired to connect, Christakis and Fowler cite the work of Robin Dunbar, who posited the expected size of human groups should be about 150, based upon the size of our brains in relation to other social primates. (p. 247) With reference to what is now known as *Dunbar's number*, the authors note:

> … census of hunter-gatherers showed three types of social groupings: the "overnight camp," the "band or village," and the tribe. The mean sizes for these were 38, 148, and 1,155 people respectively. Hence, remarkably, the size of a band or village matched Dunbar's number… while tribe and overnight camp-size varied widely, the size of a band or village was much more consistent, suggesting that it is a more fundamental grouping. (p. 248)

Thus, the authors observe it appears a community of 150 may be the maximum size that can be maintained by peer pressure alone. For larger groups, police forces and hierarchical structures become necessary. (pp. 248 & 249) Christakis and Fowler say those group dynamics are functions of "the human mind's ability to track social relationships, to form mental rosters that identify who is who, and to form mental network maps that track who is connected to whom and how strong or weak, cooperative or aggressive, those relationships are." (p. 249)

With respect to our mental social maps, the authors note Dunbar's observation that the emergence of language had the unintended consequence of enabling interaction on a grand scale, including tribes and nations. Language supports large-scale interactions in at least two ways:

> First, it makes it easy for us to categorize people and interact with them as types rather than individuals…
>
> Second, it allows us to teach others how they should behave with certain types of individuals. (p. 251)

Today, however, supported not just by oral language but by information technology, Christakis and Fowler note "we can form connections over much larger ranges than our hominid ancestors did, and we find a greater variety of individuals with whom to do so for a greater variety of purposes." (p. 266)

On the other hand, categorizing people is also known as discrimination and it is explicitly prohibited by law with respect to certain "protected classes". Although the creation of such "classes" is itself discriminatory, the common wisdom has been that doing so is necessary to right past wrongs, for the greater good. However, as others have pointed out, discrimination is discrimination, regardless of the classes of people to whom it is applied. By definition, it cannot be selectively eliminated; the only way to avoid it is to avoid it entirely.

Rather than categorizing people based upon personal characteristics, what should be catalogued are their values, goals, and objectives – each of which can be evaluated on its own merits, without discrimination on the basis of fixed attributes over which individuals have no control.

StratML is an XML-based, written language. Combined with information technology services, it enables interaction on a worldwide scale, not by categorizing people and institutionalizing discrimination against "unprotected classes" but by facilitating discovery of potential performance partners in order to achieve common objectives. However, by inference, people can be categorized by the nature of their objectives, from which their implicit values can also be interpreted. (Indeed, it has been suggested that is what Google does by translating user queries into personalized ads.) In turn, personal values define an individual's theory of life, regardless of whether they realize it or not.

With reference to circumstances in which basic human values have been grossly abused, Christakis and Fowler note Stanley Milgram offered two explanations for the blind obedience he observed in his experiments:

> First, people are indeed motivated by conformity. They have the tendency to relinquish their decision making to a group and to its hierarchy, especially when they are under stress.
>
> Second, people are able to dissociate from their actions and come to see themselves as instruments of another person's will; hence, ***they do not consider themselves responsible for their actions***. (p. 259, emphasis added)

The growth of government supports that dynamic. Even as people have less faith and trust in government, they are enabled to excuse themselves from accountability. Not only do they consider themselves blameless for what occurs but they do not even perceive a role for themselves in much of what happens. (See the negative interpretation of the term "enablement".)

In logic countervailing against the inexorable centralization of power and growth of government, Dietrich Dorner posits the concept of "efficiency diversity." He says, "A situation is characterized by high efficiency diversity if it offers many different possibilities ('diversity') for actions that have a high probability of success ('efficiency'). Efficiency diversity can be pursued even when the final goal cannot be." (*The Logic of Failure: Recognizing and Avoiding Error in Complex Situations,* pp. 53-54)

Such diversity is among the strengths of open markets, in which producers and consumers freely interact. Valid criticisms of market economies include imbalance of information (suppliers have more than consumers) and failure to account for "externalities" (factors not directly addressed in the transaction itself). However, both of those factors can be addressed by publishing the necessary information openly on the Web in a standard, machine-readable format like StratML and empowering other stakeholders to provide input and feedback on factors not otherwise considered by the parties to the transactions themselves.

Efficiency diversity is also a valuable attribute of a republican form of government, in which power and responsibility are dispersed, as opposed to being centralized in a single cadre of legislative and bureaucratic elites. Indeed, as neuroscience fosters increasing understanding of the brain, Eagleman cautions one of the landmark problems is how to prevent government from meddling with it. (p. 182)

The purpose of the StratML standard is to enable the formation of connections facilitating the achievement of objectives requiring the engagement of others – on a widely distributed, highly diverse basis. To the degree that people may decide to publish their objectives on the Web in StratML format, efficiency diversity can potentially be optimized on a worldwide scale. As Christakis and Fowler point out, the Internet enables new, radically different types of social-network interactions in four ways:

1. *Enormity*: a vast increase in the scale of our networks and the numbers of people who might be reached to join them.
2. *Communality*: a broadening of the scale by which we can share information and contribute to collective efforts.
3. *Specificity*: an impressive increase in the particularity of the ties we can form.
4. *Virtuality*: the ability to form virtual identities. (p. 275)

With implicit reference to Dunbar's number, Christakis and Fowler observe that how we interact is strongly influenced by the medium in which we do so. In online networks, they suggest we not only manage our direct relationships but we also monitor their relationships with one another. (p. 277) By contrast to physical networks, virtual networks vastly expand our performance tracking capabilities. For example, the authors suggest Wikipedia works so well because social networks emerge around each topic. (p. 280) Consider, however, the potential of an emerging standard like StratML to enable the formation of networks not merely around general, encyclopedic topics but, rather, the achievement of explicit business objectives. Indeed, the authors suggest:

> … what we see online is what might have been happening at the dawn of human civilization… We do not cooperate with one another because a state or central authority forces us to do so. Instead, our ability to get along emerges spontaneously from the ***decentralized actions*** of people who form groups with connected fates and a ***common purpose***. (p. 280, emphases added)

In many instances, it seems online interaction has had the opposite effect, i.e., further hardening our differences in social, economically, philosophically, and politically divergent tribes. However, it is also true that the Internet enables those with common purposes to coalesce far more rapidly, efficiently, and effectively around longer-term goals and near-term objectives. Supported by value-added intermediary services, the StratML standard embodies the potential to turbocharge management by objectives (MBO) on a worldwide scale.

Christakis and Fowler sum up their thesis in the following key points:

- … cooperative interactions are hallmarks of most major evolutionary leaps that have occurred since the origin of life … (p. 290)
- Social networks can manifest a kind of intelligence that augments or complements individual intelligence … (p. 290)
- Like a worldwide nervous system, our networks allow us to send and receive messages to nearly every other person on the planet. (p. 292)
- The ability of networks to create and sustain our ***collective goals*** continues to strengthen. And everything that now spreads from person to person will soon spread further and faster, prompting new features to emerge as the scale of interaction increases. (p. 292, emphasis added)

We can begin to capitalize more effectively on that potential by documenting our goals on the Web in StratML format, thereby enabling value-added intermediaries to facilitate the necessary interaction and achieve economies of scale in the pursuit of common objectives. To the degree we may share our goals and objectives openly on the Web, we will be contributing to what social scientists call a *public good*. A public good can be consumed without harming the interests of others, and without reducing others' ability to use it. By contrast, owners can prevent others from consuming *private goods* and once they have been consumed such goods cannot be consumed again. (p. 292)

Christakis and Fowler point out that public goods are difficult to create and maintain. No one is motivated to manage and care for them but they are often generated as by-products of the actions of individuals acting in their own self-interest. (p. 293) Moreover, the value of some public goods increases in parallel with the volume of their production and consumption. (p. 293) As the authors note, social networks are public goods. Everyone is free to choose their own connections but the process creates an increasingly complex network, a resource that no one controls but from which all participants may mutually benefit, at little or no cost to anyone else. (p. 293)

Of course, as the authors also note, "not all networks create something that is useful, valuable, and shared, let alone something that is positive." They caution, "networks can function as conduits for pathogens or panic. Indeed, social networks can be exploited for bad ends." (p. 294) However, the worthy purpose of social networks is to enable achievement of positive and desirable outcomes. (p. 295) For business purposes, that implicit purpose of "social" networks can be sharpened and focused in networking services designed to support the achievement of explicitly documented *business* objectives.

Christakis and Fowler optimistically opine that "we give to sustain the network, and it is the network itself that we value. Our social ties repay us for our gifts. Generosity binds the network together, but the network also functions to foster and determine generosity." (p. 300) That may be true in small-world networks, in which we can keep track of the contributions and consumption of others in our heads. However, as the authors themselves point out, the system breaks down as the network grows beyond Dunbar's number and free riders take advantage of the willingness of others to cooperate unconditionally.

The theory of the firm suggests businesses form when the cost of transactions become too high without them. While the theory is subject to criticism, it is certainly true that we voluntarily engage businesses and participate in markets to freely exchange value in transactions through which the trading partners all feel they have received a good, or at least a fair, deal. The efficiency with which we are able to do so will be vastly increased as business networking services emerge to facilitate the free and open exchange of better, more accurate and complete information on goals, objectives, and performance indicators – particularly price/performance value ratio information. It will become far easier for value shoppers to determine when the so-called "best," market-leading products and services may not actually be the best choices for them. So-called "winners" will have a harder time establishing monopolies and claiming disproportionate shares, if not complete domination of entire winner-take-all markets. Meanwhile, those who are willing and able to pay a premium to psychologically distinguish themselves from the trifling masses will be free to do so, regardless of the lack of utilitarian cause for such purchasing behavior.

President Carter famously lamented that life is not always fair but argued it is not the role of government to erase all distinctions among income classes, particularly when moral issues are involved, upon which people may strongly and sincerely disagree. However, Christakis and Fowler assert that *positional inequality* occurs not because of who we are but, rather, to whom we are connected. Our connections determine our positions in social networks and the authors suggest "they often matter more than our race, class, gender, or education." (p. 300) Indeed, they note network inequality creates and reinforces inequality of opportunity. (p. 301)

Ratey says blaming ourselves for the physiological shortcomings of our brains is misdirected energy, better focused on changing our habits and lifestyles to live the most productive lives of which we are capable. (p. 13) The same is true of blaming others for the circumstances in which we find ourselves.

To the degree the so-called Digital Divide may be overcome and everyone has access to the Internet, the inequalities built into other networks can be minimized. Everyone can have greater opportunity and what will come to matter is the quality of the results produced by individuals, groups, and organizations. Indeed, the Christakis and Fowler assert:

> To address social disparities … we must recognize that our connections matter more than the color of our skin or the size of our wallets… To reduce poverty, we should focus not merely on monetary transfers or even technical training; we should ***help the poor form new relationships with other members of society***. (p. 302, emphasis added)

While socialization and diversity may be worthwhile for their own sake, in a business sense, relationships are valuable for the results they produce, including increasing wealth (reducing poverty). Toward that end, the authors reiterate, "Interconnections between people give rise to phenomena that are not present in individuals or reducible to their solitary desires and actions." (p. 303) They also note, "although human beings are individually powerful, ***we must act together to achieve what we could not accomplish on our own***." (p. 304, emphasis added)

Christakis and Fowler conclude, "… we must first understand how and why we are all connected." (p. 305) However, Simon Sinek has suggested we should "start with why" and, by that, he means our purposes, causes, or beliefs. In short, we should be connected by shared values and common objectives.

As we begin to use business networking services supporting the StratML standard, we will be empowered to act far more efficiently together to achieve our objectives far more effectively than ever before possible. As Christakis and Fowler note, for no one is that more important than those who are faring poorly under existing, outmoded social, economic, and political systems.