

READING PASSAGE 3

You should spend about 20 minutes on **Questions 27-40**, which are based on Reading Passage 3 below.

Let's all be friends

New research shows how our social ties can influence us for better—and worse: making us fatter, more likely to smoke, marry, divorce and even vote. Governments should take heed.

If friends of your friends begin to put on weight, you are likely to do the same—even if you don't know the people in question, and even if they live hundreds of miles away. Obesity spreads like a fad; it is contagious.

This striking finding about how obesity spreads through social networks was the result of a 30-year study in Massachusetts, as Nicholas A. Christakis and James H. Fowler note in their new book, *Connected: The Surprising Power of Social Networks and How They Shape Our Lives* (HarperPress). Research shows that the same is true for smoking, and a range of other behaviours and attitudes like drinking, depression, charitable giving, sexual practices—even the decisions to marry, divorce, reproduce, or vote.

Why is this important? Because from healthcare to climate change, governments today face a range of problems where they must persuade people to change their behaviour. But instead of relying on their powers of persuasion, politicians should consider taking a class in “network science.” True, many claims for the power of social networks are based on the hype surrounding websites like Facebook. But the basic idea is simple: people join together in groups with particular patterns of ties, and these patterns then have important effects on the way they behave.

The shape of these networks has surprising effects. Take an unlikely example: Broadway musicals. Brian Uzzi is a sociologist at Northwestern University in Chicago. He is also a big music hall fan. From *Cats* to *Spamalot*, musicals have been big business for decades, but investors have to guess which shows will be a hit. *Bye Bye Birdie*, a profitable 1960 production starring Dick Van Dyke, ran for 607 nights. *Bring Back Birdie*, its 1981 sequel, was a flop and closed after just four.



Intrigued, Uzzi used network science to find out why. He put together a data set of the 321 musicals that launched on Broadway between 1945 and 1989, paying particular attention to whether the top team of producers, director, choreographers and writers had worked together before. After crunching the statistics, he discovered something remarkable. Teams who had never worked together, perhaps unsurprisingly, fared poorly: their “weak” networks meant a lack of creative vision, and lots of duds. And at the other extreme, teams that had worked together successfully also tended to produce flops. Sometimes, lacking outside creative input, the team just rehashed the same ideas that worked the last time; sometimes, lacking newcomers, they “developed” their vision in daft ways. Either way, lightning rarely struck twice.

But, in between, Uzzi found a point of balance. Groups with exactly the right mix of new and old participants reliably produced hits. This variation in the “density” of the ties allowed easy communication and fostered greater creativity—new ideas from the outsiders meshed with the experience of the insiders. It didn’t matter if a musical was about cats or roller-skating trains, or who starred in it. Its success came down to the structure of the network binding its team together. The same thing has been found to be true of scientific invention or business innovation.

Bring these two insights together—that information flowing along social networks can change behaviour, and that the shape of networks dramatically changes outcomes—and there are some intriguing implications for policy. Take health. We know teenagers are more likely to smoke if their friends smoke. But network science shows that they are more likely to smoke if friends of their friends (whom they don’t know) smoke too. That said, the same can be true in reverse. Here, governments could make budget savings. Let’s say the NHS has £100, and wants to get ten people to quit smoking. If it spends £10 on each, one at a time, perhaps one might stop. But imagine if it brought them together in a new network. Spend £100 on this new group, and three might quit. Or, spend £20 on the most connected person, or a person ideally located in a network with just the right density of ties to other people, and their decision to quit could influence many others. Outcomes improve, for the same (or less) amount of money.

David Cameron’s Tories have already recognised part of this possibility, saying in their January 2010 “A Healthier Nation” green paper that “social norms are much more important than policymakers have traditionally assumed,” and announcing plans to try to create new, better norms (which, by definition, spread by social networks). It’s a start, but other areas also seem ripe for a “network policy” approach.

If you can make musicals profitable by properly configuring the makeup of the team at the top, why would the same not work for those who run schools, hospitals, even a government department? And if you can target anti-smoking measures to take account of people's ability to influence others, there is no obvious reason why the same network-centric techniques could not be used to cut problem drinking, tackle obesity, or foster workplace safety.

More generally, if creating the right type of social networks helps people get on in life, shouldn't the state seek to help people build such links? Experts in "social capital" theory have pushed this for years, to little practical effect. But they do have a point: governments should try to build new social systems that support social ties, and design policies to take them into account.

How might this work? Families with young children, if they had better social links, could save money on childcare by relying on friends, or band together to hold schools to account, or even set up their own. Why then should schools, or Sure Start early years centres, not try to introduce more parents to each other? Elsewhere, we know that prisoners who keep good social links to the outside world find it easier to rehabilitate. So helping them keep in touch with people outside should be a specific aim. Even if some prisoners do use Facebook to misbehave, or to influence others, the decision by the justice secretary Jack Straw in February to ban some prisoners from using the site was probably a move in the wrong direction.

Why stop here? Networked policies won't solve the budget crisis, but they could help spark some new types of growth to help us out of recession. Business innovation is strongly influenced by the network structure of project teams and by communication between trading partners or scientists. Policies could tap into this, just as they could try to set up new social norms for domestic energy conservation.

Perhaps the most exciting prospect is ending social isolation. In 2009 Geoff Mulgan, head of the Young Foundation think tank, launched a report arguing that Britain suffers from a quiet epidemic of loneliness. He noted that 500,000 British pensioners spend Christmas alone. In the US, researchers have asked people whom they like to spend free time with, or discuss personal matters. It turns out that the average American has 4.3 such social contacts (including spouses, siblings and friends), but over 4 per cent of adults—or perhaps as many as 10m people—report having not one such person. A comparable figure for Britain would suggest that more than 2m people are chronically alone.

Other research shows that being friendless, or even just being part of a poor network, can exact a shocking toll: a teenage girl whose friends do not get on with each other is more likely to contemplate killing herself than a second girl whose friends do like each other—regardless of how well she gets on with them, or who the friends are.

All of this suggests that new, network-infused policies can help governments unpick pressing problems on a tight budget. They might even help to bridge the divide between left and right. Conservatives have traditionally concerned themselves with individual freedoms, while social democrats have worried about the wellbeing of social groups. Network science shows such a distinction to be at least overly simplistic. Shine a light on how individuals assemble into groups and you'll also see how group membership affects individuals. Taken together, this might not just improve policy and save money, but help our politicians to be more persuasive—in the right sort of way.

References

Crabtree, J., & Christakis, N. A. (2010, February 24). *Let's all be friends*. *Prospect*, (168).

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