

ONLY CONNECT **Nicholas A Christakis**

What networks can teach us about drug use

Ideas and habits related to the use of legal and illegal drugs can spread from person to person to person

When doping scandals burst on the scene in professional sports—cycling, cricket, football, and, most recently, US baseball and, in Britain, the Dwain Chambers case—they often elicit wide ranging, sanctimonious commentary regarding fair play, role models for young people, and corruption, not to mention preposterous news headlines. Yet such scandals can provide a valuable new way of understanding the clinical and public health aspects of licit and illicit drug use.

The December 2007 Mitchell Report in the United States examined the use of performance enhancing drugs in major league baseball—a scandal that continues to reverberate this month with high profile Congressional hearings and implausible denials by professional athletes. The report highlights many standard explanations for the widespread use of these drugs, but it also alludes to one that warrants much broader attention: the role of social networks. Human beings are influenced by the behaviour of others to whom they are connected, and this influence flows through social networks, like electricity in a power grid.

This perspective, it turns out, can help us to understand the epidemic of illegal drugs. Fashions, information, behaviours, norms, and germs flow through social networks. People start getting tattoos when their sexual partners start getting tattoos. Students start studying when their room mates start studying. People gain weight when their friends gain weight. So why should we be surprised when sports people start using drugs when their team mates start using them?

The mechanism can be direct, as when one player gives dope or information to other players or even injects them. Or it can be more subtle, as when norms about drug use spread from person to person. These norms might involve the idea that “the authorities are lax” or “steroids are

harmless” or “everyone does it.”

A key insight, though, is that pairs of people emulating one another can coalesce to form large groups comprising tens, hundreds, or even thousands of individuals. People embedded in networks can therefore come to be influenced by people beyond their social horizon—by people they do not even know. If your friend’s friend’s friend starts using drugs, this has consequences for you even if you do not know that person.

Recent research shows that social networks can be used to understand not only the spread of legal drugs used in illegal ways (as in doping scandals) but also the use of legal drugs used in legal ways. For example, whether elderly people with arthritis use certain kinds of drugs for pain relief may depend on whether acquaintances or friends are doing the same. Drugs used for preventive care, such as aspirin to prevent heart attacks, might follow similar patterns of use. And whether a doctor prescribes a drug may depend on whether doctors he or she knows—and whether doctors they in turn know—are prescribing it. The spread of drug use from patient to patient lies at the root of viral marketing campaigns that many advertising firms and drug companies actively seek to exploit. Moreover, illegal drugs can be used in legal ways, and networks can play a role here too, as in the case of clubs providing medical marijuana.

But perhaps the most important aspect is that social networks can be used to understand the spread of illegal drugs used in illegal ways. There is a long tradition of using “snowball samples” in the study of illicit drugs, an approach that involves asking one user who they inject drugs with and then asking those other users to identify still others. Researchers already use this technique to map social network ties and to understand the spread of pathogens such as HIV



PAUL SCHMITTACHER

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and hepatitis C in communities of substance misusers.

But this kind of approach can also be used to map the spread of something equally deadly: the inclination to use drugs in the first place or the knowledge of where to acquire them or how to use them. The approach can be used among teenagers and the general population no less than among sports teams.

Hence there are ways to understand the epidemic of drug use that go beyond the usual approaches deployed in the war on drugs. Many commentators have argued that we have lost this war. If so, this begs the question of why drug use is so intractable. Of course, drugs are addictive on the individual level. But the problem is that drug use has become part of the fabric of our society, entrenched in our social networks.

Drug use is not about isolated individuals deciding to use drugs themselves but about groups of people reinforcing this behaviour and about such norms spreading from person to person. Therefore we need to realise that when we get one person to stop using drugs others around them are also more likely to stop, meaning that every dollar spent on treatment goes much further than we ever thought. We also need to realise that collective interventions—targeting groups of people all at once rather than one at a time—are more likely to be successful.

People are connected, and so their health is connected. The sooner we acknowledge the wide ranging ramifications of this simple fact, the sooner we’ll be able to foster the health not only of professional athletes but also the rest of us.

Nicholas A Christakis is professor of medical sociology, Harvard Medical School, and attending physician, Mt Auburn Hospital, Cambridge, Massachusetts
christak@hcp.med.harvard.edu