



COLLECTIVE ACTION

Social norms as solutions

Policies may influence large-scale behavioral tipping

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Climate change, biodiversity loss, antibiotic resistance, and other global challenges pose major collective action problems: A group benefits from a certain action, but no individual has sufficient incentive to act alone. Formal institutions, e.g., laws and treaties, have helped address issues like ozone depletion, lead pollution, and acid rain. However, formal institutions are not always able to enforce collectively desirable outcomes. In such cases, informal institutions, such as social norms, can be important. If conditions are right, policy can support social norm changes, helping address even global problems. To judge when this is realistic, and what role policy can play, we discuss three crucial questions: Is a tipping point likely to exist, such that vicious cycles of socially damaging behavior can potentially be turned into virtuous ones? Can policy create tipping points where none exist? Can policy push the system past the tipping point?

In small groups, social norms can facilitate

cooperation (1). Solutions can be specific to context (e.g., small-scale irrigated rice paddies in Nepal) and local in nature. Yet social norms can affect behavior on larger scales, e.g., cessation of smoking in public places (2, 3), abandonment of foot-binding in China (4), and changed fertility norms (4)—all striking large-scale transformations of social (dis)approval and behavior.

The concept of social norms varies across disciplines [e.g., psychology (5) and economics (4)] and that creates an obstacle to interdisciplinary communication. We define a social norm as a predominant behavioral pattern within a group, supported by a shared understanding of acceptable actions and sustained through social interactions within that group (1). We focus on recurrent behavioral patterns that are widely conformed to but are also widely perceived as the right thing to do. Social feedback helps make norms self-reinforcing and thus stable.

When norms do change, however, that can happen abruptly. Ecologists have developed a thorough understanding of tipping points—and the role feedbacks play in crossing them—that is highly relevant

to understanding social norm changes (6). Here, we try to integrate these views.

IS THERE A TIPPING POINT?

For vicious and virtuous behavioral cycles to arise, people must be more willing to choose a behavior the more widespread it is. The tipping point is where a vicious cycle turns into a virtuous one, or vice versa. Social, economic, and technical factors often invoke a need for people to coordinate their behavior. Striking cases are provided by network externalities, in which a good's value to the individual increases with the frequency of others consuming that same type of good. For example, if few own electric cars, charging stations are rare and few will buy electric cars; if most cars are electric, gas stations are rare, and few buy gas-fueled cars.

Similar coordination benefits occur in social life. Diet variation across countries cannot be fully explained by prices, incomes, and nutrition content (7); it appears that other forces, like norms, are involved. Differing diets make cooking shared meals cumbersome. If people tend to prefer the foods they are used to, sticking to the most common diet is convenient. The availability and quality of particular foods in stores and restaurants may increase with demand. Hence, if a less meat-intensive diet became the norm, individuals might conform partly owing to social pressure or a wish to be environmentally friendly; but a primary motive may simply be to enjoy pleasant and convenient joint meals.

When behavior is easily observable (e.g., smoking), social sanctioning can create tipping points. If norm followers sanction norm violators, the social sanctioning of violators increases as the share of followers grows (2). Other mechanisms inducing people to act like others include conditional cooperation—an often observed willingness to cooperate more when others cooperate more (8)—and social learning of personal moral responsibility through observing the behavior of others (9).

Social, economic, and other feedbacks can be intertwined and hard to disentangle. What matters for behavior is their combined effect. For example, recycling of household waste with curbside collection requires little cost and effort and is easily observable by neighbors. A modest social feedback, like conformity, may thus suffice to create a tipping point. In other cases, counteracting factors dominate: Misuse of antibiotics is not easily observed by peers, and perceived medical benefits can be substantial. Firms' and individuals' greenhouse gas emissions originate from a plethora of actions; many of which are

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barely observable and yield considerable material benefits. In such cases, there may be no tipping points.

In some cases, policy can make tipping points arise even where none were initially present (10). Policy can make individual choices more interrelated, e.g., by increasing visibility. Customers of a major electric utility were much more likely to participate in a program preventing blackouts when their neighbors could tell who signed up (11): Observability tripled participation, strongly outperforming a cash incentive of \$25. If reinforcing social feedbacks are present but dominated by other incentives, policy can modify the latter through, e.g., taxes, subsidies, or infrastructure investments, like bicycle lanes. If new bicycle lanes are increasingly likely to be constructed when more people are cyclists, the policy itself adds reinforcing feedback.

PASSING TIPPING POINTS

Unlike ecological processes, human behavior is affected by expectations of others' behaviors and attitudes (4). When people prefer to act like most others, beliefs can be self-fulfilling—and changed expectations of what others will do can produce abrupt behavioral changes (4). Thus, a potentially powerful role of policy is to provide reasons for people to change their expectations (4). This is different from attempting to persuade people to change normative values.

Experiments confirm that expectations are crucial for cooperative behavior and that they are affected by variables like framing, communication, moral suasion, and ability to be identified (8). Although formal enforcement of Norway's 1988 anti-smoking laws was limited, smokers began expecting stricter social sanctions, going outdoors to smoke even in unregulated areas like private homes. Nonsmokers became less accustomed to passive smoking, strengthening their negative reactions, until the new norm of not smoking indoors was nearly universal in regulated and unregulated areas (2). Even so, psychological phenomena like expectations are hard to steer: In Greece, antismoking laws did not seem to affect expected social sanctions sufficiently, and smoking prevailed (3).

Nevertheless, costly public investments, like bicycle lanes or charging points for electric cars, provide strong indications that a policy (and behaviors supported by the policy) will prevail. A policy that changes material incentives indicates to everyone that others' incentives are changed, not just their own, making expectations of behavioral changes reasonable. Making behaviors visible to peers can strengthen expected social reactions (8), but visibility can also

create beliefs that others expect stricter social sanctions and thus will change their behavior. Simultaneous or well-sequenced introduction of several policy instruments may support the psychological perception of a major change. Norway has the world's highest per capita number of electric cars following multiple policy measures, such as bus lane access, exemption from road tolls, and reduced taxes (12).

Even temporary policies can be effective (2). If behaving like the crowd (e.g., not smoking) is easier or more convenient, substantial permanent external pressure (e.g., smoking ban or social sanctions) may no longer be needed once the tipping point has been passed.

DIFFUSION, FEASIBILITY, COLLABORATION

Theory on innovation diffusion (13) describes how a critical mass of connected people adopting a new behavior can spread a norm change through a social network. For example, encouraging a small set of randomly selected students in 56 U.S. schools to take a public stance against bullying reduced reported student conflicts by

“...a potentially powerful role of policy is to provide reasons for people to change their expectations.”

30% in a year (14). Pioneers may invent a better (nonconformist) practice or perform new behavior just to deviate from the crowd (anticonformist). If others recognize an individual benefit of this behavior (5), a local cluster of adopters may emerge. The more socially infectious this group is and the more visible and easy to copy the new behavior, the faster and more widely the behavior spreads (14). Role models are critical in this process. The tipping point occurs when sufficient positive social feedback emerges, causing the new behavior to become cool and ultimately normal.

Information on what others do can affect behavior via direct messaging; metrics, such as fuel-efficiency labels; or other feedback (5, 15). Before the tipping point is reached, however, awareness of others' nonadoption tends to work against change. For example, telling students that a majority of their peers drink more alcohol than they do may increase drinking (15). The potential impact of policy is also observed in negative examples. If not compatible with local social norms, legal and institutional measures may turn virtuous cycles into vicious ones (1).

Political feasibility may itself be part of a vicious or virtuous cycle that limits policy-makers' ability to act. If a high birth rate insures parents against poverty in old age, public pension systems can reduce preferred family size by providing alternative insurance. However, a high birth rate may itself limit political support for public pension schemes, because families with more children are less in need of pensions and less able to pay taxes. Without voter support, there may be little scope for policy change.

Judging whether patterns of socially or environmentally detrimental behaviors may be broken by changed social norms is not easy. When looking for tipping points, the following questions are useful: Is the behavior observable? Does it involve coordination benefits? Are tastes likely to be shaped by behaviors (e.g., preferring foods one is used to)? Is the alternative behavior low cost? If the answers are negative, policies may be used to change some of them. If answers are positive, the next step is to look for ways to break self-fulfilling expectations, by providing reasons for people to believe that others will take up less damaging behaviors.

The potentials and limits of social norm changes as a means to solve large-scale problems are not yet fully understood. Key issues we did not engage here but which require continued study include group norms, social identity, norm internalization, and the role of new technologies and social media. Active communication and collaboration between disciplines are key for success. ■

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