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Dan M. Kahan
Yale Law School

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THE LOGIC OF RECIPROCITY: TRUST, COLLECTIVE ACTION, AND LAW

*Dan M. Kahan**

I. INTRODUCTION

The *Logic of Collective Action*¹ has for decades supplied the logic of public-policy analysis. In this pioneering application of public choice theory, Mancur Olson elegantly punctured the premise — shared by a variety of political theories — that individuals can be expected to act consistently with the interest of the groups to which they belong. Absent externally imposed incentives, wealth-maximizing individuals, he argued, will rarely find it in their interest to contribute to goods that benefit the group as a whole, but rather will “free ride” on the contributions that other group members make. As a result, too few individuals will contribute sufficiently, and the well-being of the group will suffer.² These assumptions dominate public-policy analysis and public policy itself across a host of regulatory domains — from tax collection to environmental conservation, from street-level policing to policing of the internet.

But as a wealth of social science evidence now makes clear, Olson’s *Logic* is false. In collective-action settings, individuals adopt not a materially calculating posture but rather a richer, more emotionally nuanced *reciprocal* one. When they perceive that others are behaving cooperatively, individuals are moved by honor, altruism, and like dispositions to contribute to public goods even without the inducement of material incentives. When, in contrast, they perceive that others are shirking or otherwise taking advantage of them, individuals are moved by resentment and pride to withhold their own cooperation and even to engage in personally costly forms of retaliation.

This set of dynamics — which I propose to refer to as the “logic of reciprocity” — suggests not only an alternative account of when collective-action problems will arise, but also an alternative program for solving (or simply avoiding) them through law. Whereas the con-

* Elizabeth K. Dollard Professor of Law, Yale Law School. B.A. 1986, Middlebury; J.D. 1989, Harvard. — Ed. I am grateful to Herbert Giatir and to workshop participants from Seaton Hall Law School, the University of Southern California Law School, and Harvard Law School for comments.

1. MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION* (1965).

2. *See id.* at 1-2.

ventional logic of collective action counsels the creation of appropriate external incentives, the logic of reciprocity suggests the importance of promoting *trust*. Individuals who have faith in the willingness of others to contribute their fair share will voluntarily respond in kind. And spontaneous cooperation of this sort breeds more of the same, as individuals observe others contributing to public goods and are moved to reciprocate. In this self-sustaining atmosphere of trust, reliance on costly incentive schemes becomes less necessary. By the same token, individuals who lack faith in their peers can be expected to resist contributing to public goods, thereby inducing still others to withhold their cooperation as a means of retaliating. In this self-sustaining atmosphere of distrust, even strong (and costly) regulatory incentives are likely to be ineffective in promoting desirable behavior.

Indeed, such incentives may well undermine the conditions of trust necessary to hold collective-action problems at bay. Conspicuous rewards and punishments can imply that others *aren't* inclined to cooperate voluntarily, a message that predictably weakens individuals' commitment to contributing to public goods. In addition, incentive schemes tend to mask the extent to which individuals are inclined to contribute to public goods voluntarily, thereby weakening the tendency of observable cooperation to generate reciprocal cooperation by others. In short, manipulating material incentives may not only be an inefficient regulatory strategy for solving collective-action problems; it may often be a self-defeating one.

This Essay will elaborate upon and apply these claims. It begins by distilling from the reciprocity literature a set of behavioral dynamics pertinent to societal collective-action problems. It then shows how these dynamics can be used to analyze and improve policymaking in various regulatory fields, with a particular emphasis on tax compliance, the siting of noxious facilities, the production of ideas and technology, and the policing of street crime.

II. THE LOGIC OF RECIPROCITY

Accepted for decades on a combination of faith and anecdote, the premises of the conventional theory of collective action have only recently been subjected to sustained and rigorous empirical examination. This research suggests an alternative theory — the logic of reciprocity — that differs from the conventional position in four important respects, each of which merits specific attention.

FIGURE 1
Two Theories of Collective Action

	Conventional Theory	Reciprocity Theory
Individual Actors	Rational wealth maximizers	Emotional/moral reciprocators
Collective Behavior	Unique Equilibrium	Multiple Equilibria
Regulatory Policy	Incentives	Trust
Variability of Preferences	Homogeneous	Heterogeneous

A. Agents: Wealth Maximizers vs. Emotional/Moral Reciprocators

The first pair of contrasting elements in Figure 1 relates to the nature of individuals’ utility functions. The conventional theory assumes that individuals in collective-action settings — ones that take the form of a standard prisoner’s dilemma — behave like wealth maximizers. That is, they refuse to contribute to collective goods and instead free ride on the contributions made by others, who, as wealth maximizers, also contribute nothing. The reciprocity theory, in contrast, sees individuals as moral and emotional reciprocators. Most persons think of themselves and want to be understood by others as cooperative and trustworthy and are thus willing to contribute their fair share to securing collective goods. By the same token, most individuals loathe being taken advantage of. Accordingly, if they perceive that most other individuals are shirking, they too hold back to avoid feeling (or being) exploited.

Individuals who care only about maximizing their wealth are at best *weak reciprocators*. If a rational wealth maximizer anticipates that she will be engaged in repeat transactions with another identifiable agent over a sufficiently long period of time under circumstances where both can observe and keep track of one another’s actions, then her best strategy is to reward cooperation with cooperation and defection with defection in a “tit for tat” pattern.³ Emotional and moral reciprocators, in contrast, are *strong reciprocators*: they will condition their contributions to collective goods on the contributions of others even in fleeting transactions with multiple actors whose behavior they cannot keep track of and whose identities they can’t even discern.

3. This conclusion is elegantly demonstrated by a variety of different means in ROBERT AXELROD, THE EVOLUTION OF COOPERATION (1984).

The prevalence of this sort of strong reciprocity is supported by a considerable body of evidence. Much of it is experimental in nature. So-called “public-goods experiments” — laboratory constructs designed to simulate collective-action problems — have consistently shown that the willingness of individuals to make costly contributions to collective goods is highly conditional on their perception that others are willing to do so.⁴ Empirical studies of real-world behavior corroborate this finding. For example, individuals have been shown to reciprocate the disposition of others to give (or not) to charity,⁵ to refrain (or not) from littering,⁶ and to wait their turn (or not) in lines.⁷ Indeed, individuals behave like reciprocators even in markets: econometric and other forms of field research, for example, suggest that when firms compensate their workers more generously workers reciprocate by voluntarily working harder.⁸

B. *Collective Behavior: Unique vs. Multiple Equilibria*

The second pair of contrasts concerns collective behavior. In typical collective-action settings, the conventional theory treats defection or free riding as the dominant strategy for every individual. Accordingly, that theory predicts a single collective behavioral equilibrium: universal noncooperation.

Under the reciprocity theory, in contrast, there is no “dominant” individual strategy. Individuals prefer to contribute if they believe others are inclined to contribute, but to free ride if they believe others are inclined to free ride.

4. See Ernst Fehr & Simon Gächter, *Reciprocity and Economics: The Economic Implications of Homo Reciprocans*, 42 EUR. ECON. REV. 845 (1998).

5. See Peter H. Reingen, *Test of a List Procedure for Inducing Compliance with a Request to Donate Money*, 67 J. APPLIED PSYCHOL. 110 (1982); see also ROBERT B. CIALDINI, *INFLUENCE: SCIENCE AND PRACTICE* 96-97 (3d ed. 1993) (describing techniques used to create impressions of widespread charitable giving).

6. See ELLIOT ARONSON, *THE SOCIAL ANIMAL* 29-30 (Richard C. Atkinson et al. eds., 7th ed. 1995); Robert B. Cialdini et al., *A Focus Theory of Normative Conduct: Recycling the Concept of Norms to Reduce Littering in Public Places*, 58 J. PERSONALITY & SOC. PSYCHOL. 1015 (1990).

7. See Stanley Milgram et al., *Response to Intrusion into Waiting Lines*, 51 J. PERSONALITY & SOC. PSYCHOL. 683 (1986) (summarizing experiments finding that individuals standing in line will defend against intruders under a variety of conditions); Bernd H. Schmitt et al., *Intrusions into Waiting Lines: Does the Queue Constitute a Social System?*, 63 J. PERSONALITY & SOC. PSYCHOL. 806 (1992) (same).

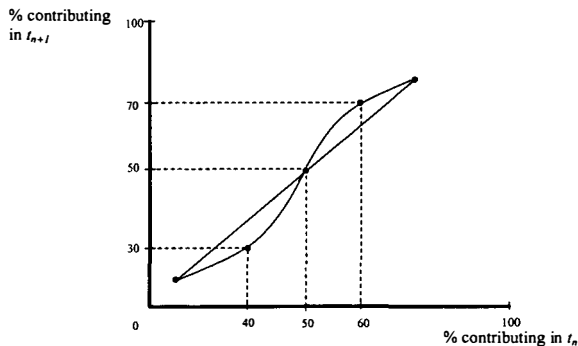
8. See George A. Akerlof, *Labor Contracts as Partial Gift Exchange*, 97 Q.J. ECON. 543 (1982); WILLIAM T. DICKENS & LAWRENCE F. KATZ, *INTER-INDUSTRY WAGE DIFFERENCES AND THEORIES OF WAGE DETERMINATION* 25-26 (Nat'l Bureau of Econ. Research, Working Paper No. 2271, 1987); Lawrence F. Katz & Lawrence H. Summers, *Industry Rents: Evidence and Implications*, in 1989 BROOKINGS PAPERS ON ECON. ACTIVITY, MICROECONOMICS 209. See generally EFFICIENCY WAGE MODELS OF THE LABOR MARKET (George A. Akerlof & Janet L. Yellen eds., 1986).

Such interdependencies tend to generate patterns of collective behavior characterized by multiple equilibria punctuated by tipping points.⁹ If, for whatever reason, some individuals conclude that those around them are inclined to contribute, they'll respond by contributing in kind, prompting still others to contribute, and so forth and so on until a highly cooperative state of affairs takes root. But if some individuals conclude that others are free riding, then they will respond by free riding too, spurring others to do the same, and so forth and so on until mass noncooperation becomes the norm.

This dynamic, too, has been empirically documented. In multi-round public-goods experiments, for example, contribution levels tend to migrate steadily toward or away from the social optimum depending on whether subjects behaved relatively cooperatively or noncooperatively early on.¹⁰ Scholars have also documented that the incidence

9. These patterns can be illustrated graphically.

FIGURE 2
Multiple Equilibria and Tipping Points



In this particular representation, there are three equilibria. One (selected arbitrarily for illustration) is around 50%: if participants in a collective-action setting perceive that about half of the other participants are contributing in the period t_n then about half will choose to contribute in the period t_{n+1} , which means that about that many will contribute in the period t_{n+2} , and so forth and so on. But this middle equilibrium is relatively unstable. If as a result of some exogenous shock, *more* than 50% are induced to contribute in t_n (say, 60%), then an even higher percentage than that will be willing to contribute in t_{n+1} (70%), leading to a still higher percentage in t_{n+2} , and so forth and so on until contribution levels top out at the high-cooperation equilibrium at the upper-right-hand corner. Similarly, if for some reason *less* than 50% contribute in t_n (say, 40%), then an even smaller percentage will contribute in t_{n+1} (30%), leading to a lower contribution level in t_{n+2} , and so forth and so on until contributions bottom out at the low-cooperation equilibrium at the lower-left-hand corner. The corner equilibria, moreover, are relatively stable: exogenous shocks may result in temporary boosts or drops in contributions but unless they are big enough to push the contribution level back across the 50% tipping point, collective behavior will quickly settle back into the corner equilibrium from which it started. See generally THOMAS C. SCHELLING, *MICROMOTIVES AND MACROBEHAVIOR* (1978) (developing formal model of tipping points and feedback effects); Randal C. Picker, *Simple Games in a Complex World: A Generative Approach to the Adoption of Norms*, 64 U. CHI. L. REV. 1225 (1997) (same).

10. See generally Armin Falk & Urs Fischbacher, *A Theory of Reciprocity* (Feb. 1999) (unpublished manuscript, on file with author).

of littering, recycling, smoking in public, safe sex, and other types of behavior that affect collective welfare are likewise subject to feedback effects and multiple equilibria — generating dramatic variations in their incidence across space and over time.¹¹

C. *Promoting Cooperation: Incentives vs. Trust*

The third contrast between the conventional theory of collective action and the logic of reciprocity has to do with policy prescriptions. The conventional theory sees incentives as the solution to collective-action problems: because wealth maximizers can't be counted on to contribute to public goods, they must be prodded to do so with either rewards or punishments that align their individual and collective interests.

The reciprocity theory suggests an alternative policy, namely, the promotion of trust. If individuals can be made to believe that others are inclined to contribute to public goods, then they can be induced to contribute in turn, even without recourse to incentives. When permitted to communicate during play, for example, subjects in multiround public-goods experiments tend to assure one another that they'll contribute rather than free ride. Although unenforceable, such assurances do in fact prompt subjects to make larger contributions, which they quickly increase toward the social optimum as they observe others doing the same.¹² In sum, face-to-face assurance giving builds trust, which in turn generates reciprocal cooperation.

Indeed, field and laboratory research suggests that incentives, far from solving collective-action problems, can sometimes actually magnify them by dissipating trust. The simple existence of an incentive scheme can be seen as a *cue* that other individuals are not inclined to cooperate voluntarily: if they were, incentives would be unnecessary. This inference can in turn trigger a reciprocal disposition to withhold voluntary cooperation and thereby undercut, if not wholly displace, the force of the incentive. In addition, the existence of incentives can *mask* voluntary contributions to public goods, thereby diluting the power of such contributions to trigger reciprocal cooperation. Relatedly, incentives can *crowd out* dispositions such as altruism by extin-

11. See, e.g., Robert Cooter, *Normative Failure Theory of Law*, 82 CORNELL L. REV. 947, 976-77 (1997) (discussing smoking and compliance with "pooper scooper" laws); Timur Kuran & Cass R. Sunstein, *Availability Cascades and Risk Regulation*, 51 STAN. L. REV. 683, 687-89, 746 (1999) (discussing safe sex, smoking, and environmental concerns); Cass R. Sunstein, *On the Expressive Function of Law*, 144 U. PA. L. REV. 2021, 2033-36 (1996) (discussing smoking, unsafe sex, firearm use, and other forms of risk-creating behavior).

12. See John O. Ledyard, *Public Goods: A Survey of Experimental Research*, in THE HANDBOOK OF EXPERIMENTAL ECONOMICS 111, 156-58 (John H. Kagel & Alvin E. Roth eds., 1995); Elinor Ostrom, *Collective Action and the Evolution of Social Norms*, 14 J. ECON. PERSP. 137, 146 (2000).

guishing the opportunity of individuals to demonstrate (to themselves and to others) that they are willing to sacrifice material gain for the public good. And if, for any of these reasons, the advent of a material incentive induces even a few individuals to contribute less to a public good, reciprocity dynamics will likely induce still others to contribute less, thereby inducing others to do the same, and so forth and so on until collective behavior settles into a new, noncooperative equilibrium — one that is likely to be impervious to the subsequent removal of material incentives.¹³

It would be a mistake, though, to conclude that material incentives invariably diminish trust. They are most likely to have that effect, research suggests, when individuals start out with the belief that most other individuals are inclined to contribute to some public good voluntarily; it's when individuals expect voluntary cooperation that the advent of material incentives creates the greatest risk of adverse cueing, masking, and crowding out. But the situation will likely be different if individuals start out with the belief that most other individuals are inclined to shirk or free ride. In that case, the advent of a credible reward or penalty can work — not just by changing individuals' material incentives but by changing in a positive way their impression of the willingness of other individuals to behave cooperatively in a collective-action setting.

An example is the power of higher-than-average wages to elicit higher-than-average productivity in the workplace.¹⁴ Workers naturally suspect their firms of being unwilling to share a fair portion of the surplus generated by the workers' labor. But when a firm offers workers a wage that exceeds the industry average, workers are likely to infer that that particular firm *is* willing to divide the surplus fairly; they therefore respond by voluntarily working more productively, which inclines firms to maintain or even raise their wages. The result is a self-sustaining form of reciprocal cooperation that obviates the need for costly performance-monitoring regimes.

13. See BRUNO S. FREY, NOT JUST FOR THE MONEY: AN ECONOMIC THEORY OF PERSONAL MOTIVATION (1997); RICHARD M. TITMUS, THE GIFT RELATIONSHIP (1971) (finding incentives suppress donation of blood); Bruno S. Frey & Reto Jegen, *Motivation Crowding Theory*, 15 J. ECON. SURVEYS 589 (2001); Uri Gneezy & Aldo Rustichini, *A Fine Is a Price*, 29 J. LEGAL STUD. 1 (2000) (finding that fine increased rather than decreased abuse of day-care-center rules by parents); Uri Gneezy & Aldo Rustichini, *Pay Enough or Don't Pay at All* (Apr. 1999) (unpublished manuscript, on file with author) (finding that incentives decreased rather than increased performance of individuals soliciting charitable donations).

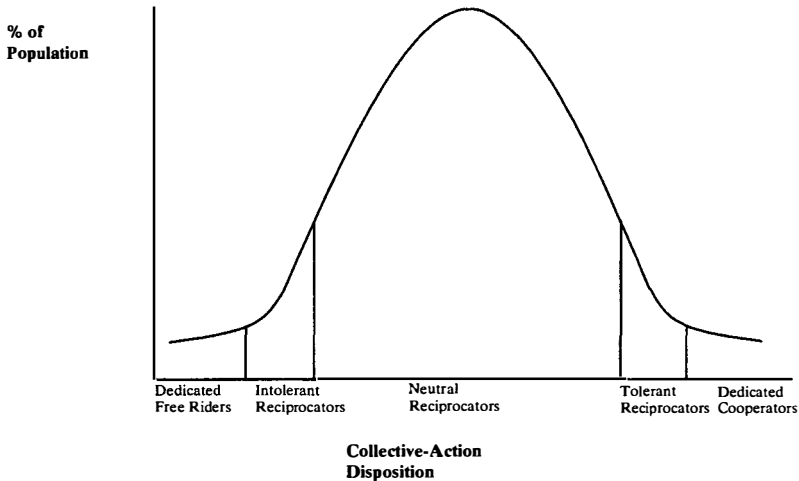
14. See *supra* note 8.

D. *Variability of Preferences: Homogeneous vs. Heterogeneous*

Finally, the conventional theory and the reciprocity theory differ on the variability of preferences across individuals. The conventional theory imagines that the disposition to free ride in collective-action settings is relatively uniform. In contrast, the evidence on which the reciprocity theory rests suggests that the disposition to cooperate varies. In public-goods experiments that generate multiple equilibria, for example, neither universal cooperation nor universal defection is the final resting point.

It makes more sense, then, to envision a distribution of cooperative dispositions across the population.

FIGURE 3
Heterogeneity of Collective Action Dispositions



Some relatively small fraction of the population (consisting, perhaps, of those who've been trained in neoclassical economics) consists of committed free riders, who shirk no matter what anyone else does, and another small fraction (maybe those who've read too much Kantian moral philosophy) consists of dedicated cooperators, who contribute no matter what. But most individuals are reciprocators, who condition their cooperation on the willingness of others to contribute. Moreover, some reciprocators are relatively intolerant: they bolt as soon as they observe anyone else free riding. Others are relatively tolerant, continuing to contribute even in the face of what they see as a relatively modest degree of defection. And a great many more — call them the neutral reciprocators — fall somewhere in between.

Under these circumstances, individuals are unlikely fully to overcome collective-action problems through reciprocity dynamics alone. No matter how cooperative the behavior of others, the committed free riders will always free ride if they can get away with it. Indeed, the committed free riders' shirking could easily provoke noncooperative behavior by the less tolerant reciprocators, whose defection in turn risks inducing the neutral reciprocators to abandon ship, thereby prompting even the tolerant reciprocators to throw in the towel, and so forth and so on. If this unfortunate chain reaction takes place, a state of affairs once characterized by a reasonably high degree of cooperation could tip decisively toward a noncooperative equilibrium in which only the angelic, Kantian, unconditional cooperators are left contributing (probably futilely) to the relevant public good.

Maximum cooperation, then, probably requires that reciprocity dynamics be supplemented with appropriately tailored incentives, most likely in the form of penalties aimed specifically at persistent free riders. Although trust and reciprocity elicit cooperation from most players, some coercive mechanism remains necessary for the small population of dedicated free riders, who continue to hold out in the face of widespread spontaneous cooperation, thereby depressing the contributions made by some relatively unforgiving reciprocators. In the face of a credible penalty, however, the committed free riders fall into line. The existence of such penalties in turn assures the less tolerant reciprocators that their cooperation won't make them into chumps; they thus continue to cooperate, less out of material interest than out of positive reciprocal motivations. And because the less tolerant reciprocators contribute, so do the neutral and tolerant reciprocators, generating an equilibrium of near-universal cooperation. Again, these dynamics are borne out by empirical evidence, particularly public-goods experiments that allow subjects to retaliate against defectors.¹⁵

The uneven effect of penalties in promoting and dissipating trust calls attention to the *expressive* dimension of incentives. Incentives do more than affect individuals' calculations of the costs and benefits of particular forms of conduct; they also shape their impressions of the attitudes and intentions of those around them.¹⁶ Laboratory and real-world schemes that use generally applicable incentives convey the message that noncooperation is the norm, and thus stifle the reciprocal motivations of even neutral reciprocators, whose defection predictably spills over onto even the most forgiving ones. Targeted retaliation, in contrast, conveys a very different message. Because all individuals are

15. See Falk & Fischbacher, *supra* note 10; Ernst Fehr & Simon Gächter, *Cooperation and Punishment in Public Goods Experiments*, 90 AM. ECON. REV. 980 (2000).

16. See generally Dan M. Kahan, *Social Influence, Social Meaning, and Deterrence*, 83 VA. L. REV. 349 (1997).

aware from social experience that there are some committed free riders out there, no one is surprised or disappointed to see penalties aimed at *those types*; accordingly, such penalties don't create the cueing, masking, or crowding-out effects associated with more generalized incentive regimes. On the contrary, penalties understood to be necessitated only by the existence of committed free riders have a trust-enhancing effect, for they imply that *most* individuals are *not* inclined to shirk. Targeted retaliation works, in sum, because it simultaneously coerces dedicated free riders, calms unforgiving reciprocators, and avoids confusing or demoralizing neutral and forgiving reciprocators.

III. TAX COMPLIANCE

Tax compliance is the consummate collective-action problem from a public-policy point of view. Society collects taxes to finance a variety of goods — from education to highways to national defense — that benefit its members collectively. Nevertheless, it is in the individual material interest of every citizen to free ride on her fellow citizens' contributions to these goods by withholding any contribution of her own. Accordingly, the conventional theory predicts that individuals, as wealth maximizers, will evade their taxes unless furnished with incentives — in the form of threatened penalties — that make the expected return from evasion smaller than the expected return from compliance.¹⁷

This account of tax evasion is embarrassingly ill supported by empirical evidence. Econometric studies have concluded that the expected penalty for evasion explains little if any of the variation in compliance across space or over time.¹⁸ Survey measures also find only very modest correlation between reported compliance and individuals' subjective perception of the expected penalty for evasion.¹⁹ Finally, laboratory experiments that simulate the decision to evade suggest that probability and severity of detection can influence individual decisions to evade, but only when they are set at levels far in excess of those associated with actual policies.²⁰

17. See generally Michael G. Allingham & Agnar Sandmo, *Income Tax Evasion: A Theoretical Analysis*, 1 J. PUB. ECON. 323 (1972).

18. See James Andreoni et al., *Tax Compliance*, 36 J. ECON. LIT. 818, 842 (1998); FRANK A. COWELL, CHEATING THE GOVERNMENT: THE ECONOMICS OF EVASION 74 (1990); Steven Klepper & Daniel Nagin, *The Criminal Deterrence Literature: Implications for Research on Taxpayer Compliance*, in 2 TAXPAYER COMPLIANCE 126, 142 (Jeffrey A. Roth & John T. Scholz eds., 1989).

19. See, e.g., Harold G. Grasmick & Wilbur J. Scott, *Tax Evasion and Mechanisms of Social Control: A Comparison with Grand and Petty Theft*, 2 J. ECON. PSYCHOL. 213, 225 & 226 tbl.4 (1982).

20. See James Andreoni et al., *Tax Compliance*, 36 J. ECON. LITERATURE 818, 841 (1998).

What explains a lot more, empirical research suggests, is a complex of factual beliefs and emotional dispositions. Thus, an individual's perception of the extent of evasion powerfully predicts compliance behavior: the higher an individual believes the rate of tax cheating to be, the more likely he or she is to cheat too.²¹ So too are the prospects of shame (or potential stigma) and guilt. The more strongly she anticipates being condemned by others should she be caught, the more likely an individual is to refrain from evading. By the same token, the more regret or remorse an individual believes she'd experience for engaging in evasion, the less likely she is to do so.²²

These are exactly the factors one would expect to influence tax compliance were individuals behaving like moral and emotional reciprocators. An emotional and moral reciprocator wants to understand herself and be understood by others as fair, but she loathes being taken advantage of. With tax collection as with other collective-action settings, the extent to which others appear to be contributing to the good in question determines which of these sensibilities comes into play. *If* most other individuals seem to be paying their taxes, then evasion will provoke either guilt, shame, or both in the reciprocator who covets the respect of others and of herself. If, in contrast, most individuals appear to be evading, then complying *won't* make her feel guilty or ashamed at all; it will make her feel like a sucker.

This interpretation of the data is confirmed by an experiment that tested how the 1986 Tax Reform Act affected compliance levels.²³ One hypothesis, suggested by the conventional theory, was that individuals would become more or less willing to evade depending on whether the Tax Reform Act had increased or decreased their relative tax burden. The study found no such correlation. What *did* shift patterns of compliance, the researchers found, were the types of interactions that individuals had with other taxpayers in the months leading up to the reform: those who encountered others who expressed a positive attitude toward, and commitment to complying with, the Tax Reform Act displayed greater commitment to complying with it themselves, whereas those who encountered others who expressed *negative* atti-

21. See Robert B. Cialdini, *Social Motivations to Comply: Norms, Values, and Principles*, in 2 TAXPAYER COMPLIANCE, *supra* note 18, at 200, 215; James P.F. Gordon, *Individual Morality and Reputation Costs as Deterrents to Tax Evasion*, 33 EUR. ECON. REV. 797 (1989); Klepper & Nagin, *supra* note 18, at 144; Steven M. Sheffrin & Robert K. Triest, *Can Brute Deterrence Backfire? Perceptions and Attitudes in Taxpayer Compliance*, in WHY PEOPLE PAY TAXES 193 (Joel Slemrod ed., 1992).

22. See, e.g., Grasmick & Scott, *supra* note 19, at 226 tbl.4; Wilbur J. Scott & Harold G. Grasmick, *Deterrence and Income Tax Cheating: Testing Interaction Hypotheses in Utilitarian Theories*, 17 J. APPLIED BEHAV. SCI. 395, 403 tbl.1 (1981).

23. Marco R. Steenberg et al., *Taxpayer Adaptation to the 1986 Tax Reform Act: Do New Tax Laws Affect the Way Taxpayers Think About Taxes?*, in WHY PEOPLE PAY TAXES, *supra* note 21, at 9.

tudes displayed less commitment.²⁴ This effect, moreover, was explained completely by variation in the shame and guilt that the two groups of taxpayers anticipated for failing to pay their taxes.²⁵ In other words, as moral and emotional reciprocators, these individuals naturally felt guilt and shame for failing to contribute to the public good of tax payment in proportion to their perception that others were or were not contributing.

The conventional theory of collective action is just as weak at explaining variance in tax compliance across nations as it is in explaining variance in compliance across individuals. Tax compliance rates vary dramatically across nations. Essentially none of this variance, however, can be explained by differences in the expected penalty for evasion. More important, researchers have concluded, are differences in public attitudes toward tax laws. In some nations (including the United States), individuals tend to view paying their taxes as an important civic obligation, and are highly motivated to pay for that reason. In other nations (including many in Western Europe), individuals regard tax obligations much more casually (akin, say, to traffic regulations in the United States), and display no particular moral aversion to evading them if they feel they can safely do so.²⁶

Varying national "tax cultures" of this sort are perfectly understandable under the reciprocity theory. Because individuals are reciprocators, their decisions in a collective-action setting feed on and reinforce each other, generating multiple high- and low-cooperation equilibria independent of the material payoffs associated with cooperating or defecting. If individuals believe those around them are inclined to pay their taxes, they will (as a result of guilt, shame, pride, and the like) be more likely to comply, thereby strengthening the collective perception that individuals are generally inclined to pay. If, in contrast, individuals believe that those around them are inclined to evade, resentment will inhibit them from complying, strengthening the collective perception that most individuals are inclined to cheat. In other words, what we should expect to see under the reciprocity theory is exactly what we do see — namely, competing and relatively durable norms toward tax compliance.²⁷

The empirical evidence also bears out the trust theory's anxiety about the self-defeating effect of material incentives. Experimental

24. *See id.* at 29-30.

25. *See id.*

26. *See* COWELL, *supra* note 18, at 102-03; James Alm et al., *Economic and Noneconomic Factors in Tax Compliance*, 48 KYKLOS 3 (1995).

27. *See* Sheffrin & Triest, *supra* note 21, at 194-95 (suggesting interdependence of taxpayer decisionmaking should generate multiple behavioral equilibria); *see also* COWELL, *supra* note 18, at 112-13 (developing a theoretical model that predicts multiple compliance equilibria based on interdependence of taxpayers' decisions to evade).

evidence suggests that when taxpayers are exposed to information highlighting the penalties for evasion, they respond in much the same way that subjects in public-goods experiments do when furnished with generalized material incentives to contribute — namely, by contributing *less*.²⁸ Researchers have also found that highly politicized auditing campaigns tend to provoke a *higher* incidence of tax cheating rather than a lower one.²⁹

The mechanism for these effects appears to be social cueing. When government engages in dramatic gestures to make individuals aware that the penalties for tax evasion are being increased, it also causes individuals to infer that more taxpayers than they thought are choosing to cheat. This distrust of one's neighbors triggers a reciprocal motive to evade, which dominates the greater material incentive to comply associated with the higher-than-expected penalty.³⁰

Is there a way for tax enforcers to *bolster* taxpayers' trust in one another? One policy that seems to do so is simply to advise citizens that the vast majority of taxpayers *are* in fact complying. In a study sponsored by the Minnesota Department of Revenue, researchers sent letters to a group of individuals stating that tax compliance rates were in fact much higher than what public opinion polls suggested citizens believed them to be. Those individuals thereafter reported more income and claimed fewer deductions than did individuals in a control group. This is exactly what the phenomenon of reciprocity would predict: when they learn that others are in fact disposed to contribute their fair share, individual taxpayers, just like individuals in public-goods experiments, cooperatively respond in kind. Likewise consistent with the reciprocity theory — and at odds with the conventional economic one — the Minnesota study found that individuals advised of high compliance rates paid more tax than did individuals who received letters advising them that their returns would be subject to a greater rate of auditing!³¹

Another policy that appears to promote trust and hence bolster reciprocal cooperation is the enactment of widely supported reforms. As the study of the 1986 Tax Reform Act demonstrates, such reforms promote the expression of positive views toward the law. When they hear others defending the law, individuals infer that others are inclined to comply. That conclusion in turn triggers the disposition to reciprocate. In effect, the enactment of popular reforms generates an environment of face-to-face assurance giving that builds trust, and a

28. See Richard D. Schwartz & Sonya Orleans, *On Legal Sanctions*, 34 U. CHI. L. REV. 274, 298 (1967).

29. See Sheffrin & Triest, *supra* note 21, at 209-14.

30. See *id.*

31. See STEPHEN COLEMAN, *THE MINNESOTA INCOME TAX COMPLIANCE EXPERIMENT: STATE TAX RESULTS* (1996).

resulting disposition to cooperate, in much the same way that discussion does in public-goods experiments.

The contribution that reciprocity makes to tax compliance doesn't imply that the IRS should disavow punishments for evasion altogether. That would be foolhardy because of the variability of individual dispositions to cooperate in collective-action settings. With no risk of punishment, evasion would become commonplace among dedicated cheaters, whose defections could in turn unleash a contagious form of demoralization among the vast run of reciprocity-minded taxpayers.

The difference between effective incentives and ineffective ones, experimental and other empirical data suggest, lies in the social meanings they express. Enforcers should therefore carefully select cases to nourish the perception that evaders are deviants, not normal citizens.³² It is already common belief that a certain number of exceptionally venal individuals will evade even when nearly all the rest of us are complying. The existence of coercive incentives understood to be aimed at *those* persons, then, doesn't dispel trust; on the contrary, it helps to assure the honest multitudes that they are not being exploited when they choose to pay their taxes. A model case, in this sense, was the tax-fraud prosecution of hotel magnate Leona Helmsley, who expressed open contempt for income taxes as something that "only the little people pay."³³

In addition, officials should always juxtapose trust-enhancing information with penalties. Auditing crackdowns and other high-profile modes of enforcement risk backfiring, the evidence suggests, because they function as a cue that evasion is widespread. To counteract this inference, enforcers should be sure that the good news that the vast majority of citizens voluntarily comply always gets at least equal billing with the bad news that a small minority don't. They should take advantage of the attention that high-profile prosecutions naturally attract to publicize positive information akin to that shown to generate even higher rates of compliance in the Minnesota Tax Experiment.

Unfortunately, public officials often do just the opposite. Competing with other agencies and programs for appropriations, the IRS routinely exaggerates the inadequacy of its own enforcement powers and the resulting extent of evasion.³⁴ Usually timed to be reported on the media the week before personal income taxes are due, IRS-generated stories of the agency's own inefficacy in enforcing the law

32. See Cialdini, *supra* note 21, at 215.

33. See *The Wicked Witch Who Has Poisoned the Big Apple*, *TIMES* (London), Sept. 3, 1989 ("'She deserves everything she gets, she's scum,' said one of hundreds of people who waited outside the federal courthouse in Manhattan on Wednesday to jeer at Leona.").

34. See, e.g., David Cay Johnston, *A Smaller I.R.S. Gives up on Billions in Back Taxes*, *N.Y. TIMES*, Apr. 13, 2001, at A1.

predictably generate resentment in those who routinely obey.³⁵ “Are You a Chump?” a *Forbes* magazine cover story asked its tax-paying readers as the magazine reported on the supposed decimation of the IRS’s enforcement capacity.³⁶

The United States enjoys a relatively high compliance rate. But like other high-cooperation equilibria sustained by reciprocity dynamics, the disposition of Americans voluntarily to pay their taxes surely could be “tipped.” If by rattling its saber one day and pleading poverty the next, the IRS succeeds in inducing enough taxpayers to believe that cheating is indeed widespread, setting off a self-reinforcing wave of evasion. The result could be a new, low-cooperation equilibrium that, as the durability of Europe’s disobedient tax culture attests,³⁷ can be very difficult to reverse. Ironically, by embracing the conventional-theory strategy of “incentives, incentives, and more incentives,” the IRS risks making tax compliance into exactly the type of intractable collective-action problem that the conventional theory envisions it to be.

IV. “NOT IN MY BACKYARD”

Various types of public facilities — including highways, airports, prisons, hazardous waste dumps, and the like — impose disproportionate burdens (noise, perceived physical danger, health risks) on persons who reside near them. Accordingly, even when they recognize the benefits of these facilities for society at large, individuals often resist the siting of these facilities within their own communities, a phenomenon that political scientists refer to as the “not in my backyard” phenomenon or “NIMBY.”³⁸

The conventional theory of collective action sees NIMBY as another expression of individuals’ propensity to withhold costly contributions to public goods and instead to free ride on the contributions of others. Accordingly, the standard model proposes an incentives-based solution: that the communities best situated to host a particular facility be compensated for the burden associated with it, presumably

35. See, e.g., Tom Brazaitis, *Wimpy IRS Emboldens Cheats*, PLAIN DEALER (Cleveland, Ohio), Apr. 18, 2001, at 11B; Amy Feldman & Joan Caplin, *Should You Cheat on Your Taxes?*, MONEY, Apr. 2001, at 108.

36. Janet Novack, *Are You a Chump?*, FORBES, Mar. 5, 2001, at 122.

37. See sources cited *supra* note 26 and accompanying text.

38. See generally BARRY G. RABE, BEYOND NIMBY: HAZARDOUS WASTE SITING IN CANADA AND THE UNITED STATES 1-2 (1994); Don Munton, *Introduction: The NIMBY Problem and Approaches to Facility Siting*, in HAZARDOUS WASTE SITING AND DEMOCRATIC CHOICE 1 (Don Munton ed., 1996).

out of the proceeds of a tax imposed on individuals who benefit from the facility but who reside elsewhere.³⁹

This incentives-based strategy, however, has an unimpressive track record. Twenty years after Massachusetts enacted a widely lauded compensation scheme, not a single community had accepted — or been forced to accept — a facility siting.⁴⁰ The results have been the same in numerous other states and Canadian provinces that have tried to induce siting with compensation.⁴¹

Indeed, there is evidence that compensation schemes sometimes make the NIMBY problem worse. According to some studies, residents often bridle at “compensation offers . . . as attempts to buy them off or bribe them.”⁴² The potential of incentives to backfire in this way has been confirmed experimentally by Swiss economists Bruno Frey and Felix Oberholzer-Gee, who showed that a compensation offer dramatically reduced (from just over 50% to less than 25%) the number of laboratory subjects willing to assent to the siting of a nuclear-waste storage facility in their community.⁴³

It would be a mistake, however, to conclude that compensation schemes never work. At least some opinion studies have shown that offers of compensation can significantly increase willingness to accept the siting of a noxious facility.⁴⁴ Moreover, compensation in one form

39. The classic statement of this analysis is Michael O'Hare, “*Not on My Block You Don't*”: Facility Siting and the Strategic Importance of Compensation, 25 PUB. POL'Y 407 (1977).

40. See KENT E. PORTNEY, SITING HAZARDOUS WASTE TREATMENT FACILITIES 28 (1991); RABE, *supra* note 38, at 36-37; Rutherford H. Platt & Peter B. Klejna, *Recent Developments in Massachusetts Groundwater Law*, Water Resources Update (Univ. Council on Water Res., Carbondale, Ill.), Spring 1991, at 22, 23, available at http://131.230.120.111/updates/pdf/V85_A5.pdf.

41. See RABE, *supra* note 38, at 39-44.

42. Munton, *supra* note 38, at 17.

43. See FREY, *supra* note 13, at 69-75. In the experiment, investigators measured the willingness of subjects to accept the siting of a nuclear-waste storage facility in their community, first without compensation and then with it. They found that individual willingness to accept the site was initially relatively high overall (just over 50%). When subjects were told that the community in which the site was to be located would receive monetary compensation, however, overall willingness to accept the site dropped dramatically (to less than 25%). By measuring the respondents' perceptions of the dangers of nuclear-waste storage before and after the experiment, moreover, Frey and Oberholzer-Gee were able to exclude the explanation that the compensation offer had induced respondents to revise upward their assessment of the risk associated with the facility. Rather, the compensation offer had created resistance, the experimenters concluded, by changing the moral significance of accepting the siting. *See id.* at 69-75.

44. See Howard Kunreuther & Doug Easterling, *The Role of Compensation in Siting Hazardous Facilities*, 15 J. POL'Y ANALYSIS & MGMT. 601, 605-06 (1996); Howard Kunreuther et al., *Public Attitudes Toward Siting a High-Level Nuclear Waste Repository in Nevada*, 10 RISK ANALYSIS 469, 480 (1990).

or another has nearly always been a part of successful waste-facility-siting efforts in the United States and Canada in recent decades.⁴⁵

Although failures predominate, it's fair to conclude that "studies show a high degree of variability in the ability of compensation to change public opinion" toward siting.⁴⁶ But precisely because they are *not* uniformly positive, these results furnish little support for the conventional theory's account of NIMBY. Clearly, something more than the weighing of material costs and benefits is going on when communities decide whether to resist or to accept noxious facilities.

That something more, opinion analyses suggest, is the moral and emotional reaction of residents to siting proposals. Individuals who interpret the decision to impose a site on their community as signifying the low social status of its residents — who believe they are being "dumped on," symbolically as well as literally — are more likely to resist.⁴⁷ Those who distrust government institutions are also less likely to tolerate the siting of a noxious facility in their vicinity,⁴⁸ as are those who believe that societal benefits and burdens in general, and the burdens associated with the facility in question in particular, are being distributed inequitably.⁴⁹ The perception that the community's racial composition is playing a role in that process can create intense opposition in minority communities, which historically have been least able to muster the political resources necessary to resist forced sitings.⁵⁰

These are the sorts of factors one would expect to influence the reactions of individuals who behave like moral and emotional reciprocators with respect to civic obligations. When called upon to accept risks or inconveniences in the interest of the public good, individuals who believe that societal benefits and burdens are being inequitably distributed by fundamentally unjust political institutions unsurprisingly answer, "No."

Reciprocal motivations also explain another factor relevant to acceptance of toxic waste facilities: the origin of the wastes. A wealth-maximization model suggests that waste source should be irrelevant: home-grown wastes are every bit as hazardous as out-of-town ones.

45. See Munton, *supra* note 38, at 16; Douglas J. Lober, *Beyond NIMBY: Public Attitudes and Behavior and Waste Facility Siting Policy 124-25* (1993) (unpublished Ph.D. dissertation, Yale Univ., School of Forestry & Env't Stud.) (on file with author).

46. Kunreuther & Easterling, *supra* note 44, at 605.

47. Lober, *supra* note 45, at 120; *see also* Kunreuther et al., *supra* note 44, at 470; Paul Slovic et al., *Perceived Risk, Stigma, and Potential Economic Impacts of High-Level Nuclear Waste Repository in Nevada*, in *RISK, MEDIA, AND STIGMA 87* (James Flynn et al. eds., 2001).

48. See Robin Gregory et al., *Incentive Policies to Site Hazardous Waste Facilities*, 11 *RISK ANALYSIS* 667, 672 (1991); Kunreuther et al., *supra* note 44, at 472; Lober, *supra* note 45, at 140-42.

49. See Kunreuther & Easterling, *supra* note 44, at 601-02; Lober, *supra* note 45, at 145.

50. See RABE, *supra* note 38, at 21; Lober, *supra* note 45, at 145.

But in fact, individuals are much more likely to accept disposal facilities for wastes produced locally.⁵¹ This makes sense insofar as individuals are likely to accept a waste-disposal facility in a spirit of positive reciprocation when they understand the waste to have been generated by beneficial local activities.

The uneven effect of compensation schemes also conforms to the logic of reciprocity, which implies that the effect of incentives in dissipating or promoting trust depends critically on citizens' moral and emotional priors. Imagine a society whose citizens begin with the belief that societal burdens are being equitably distributed through a just political process. We might expect those individuals, as reciprocators, to be relatively accepting of the siting of noxious facilities in their community. But if authorities try to purchase acceptance with incentives, these same individuals might revise their views, inferring that other communities must in fact be unwilling to accept such impositions voluntarily. As a result of this perverse cueing effect, the NIMBY phenomenon will grow in strength when incentives are offered, as individuals reciprocate the perceived resistance to such facilities by strengthening their own resistance to them.

This reaction plausibly explains the results in the Frey/Oberholzer-Gee experiment.⁵² Homogeneous, democratic, and small, Switzerland has an admirable history of resolving disputes over the allocation of societal benefits and burdens through a fair process of deliberative give-and-take. The Swiss subjects in the experiment therefore interpreted the offer of a cash payment as evidence that the norm of mutual accommodation had broken down in the case of nuclear wastes and became predictably indignant at attempts to buy their assent to a risk that others refused to endure.

But now imagine the perhaps more typical U.S. or Canadian case of a community whose residents start off with the belief that society's resources are being inequitably distributed as a result of a fundamentally unjust political system. As reciprocators, they are likely to resist the nearby siting of a noxious facility. Yet in that climate, there is at least some potential for compensation to work: not only does compensation help to offset the material inconveniences or risks associated with the facility; the very offering of it conveys a degree of respect that previously had been lacking in the community's political life.

Case studies suggest that this result is most likely when incentives are part of a negotiated, bottom-up siting regime rather than a centrally administered top-down one.⁵³ Even with compensation, the

51. See RABE, *supra* note 38, at 44; Lober, *supra* note 45, at 126.

52. See *supra* note 43.

53. See RABE, *supra* note 38, at 59; Kunreuther & Easterling, *supra* note 44, at 618; Munton, *supra* note 38, at 19-20.

imposition of a site by a centralized bureaucracy is likely to provoke negative reciprocal motivations. The authority of administrators to dictate the site location suggests that others are unwilling to accept the facility voluntarily, a signal that is reinforced by the offer of compensation. When voluntary acceptance is solicited, however, communities that historically have been disadvantaged are likely to feel respected and empowered; the offer of compensation no longer insults them but instead reinforces the signal that authorities genuinely respect the sovereignty of the host community. In addition, the process of negotiation is likely to create a climate akin to the face-to-face discussions in public-goods games: when local communities are able to discuss the situation with remote political authorities, and are granted veto power, local communities are likely to be assured that others are willing to contribute their fair share to dealing with the problem. Accordingly, they reciprocate positively by being more receptive to placement of the facility.

These effects, case studies suggest, feed on each other, generating multiple behavioral equilibria. Again, in Massachusetts, which enacted a top-down, dictate-plus-compensation regime in the 1980s, one community after another fought off attempts to site hazardous waste facilities within its borders. In contrast, in Wisconsin, which has a bottom-up, negotiated-compensation scheme, a succession of communities have come forward to accept such facilities.⁵⁴ Provinces in western Canada have had similar strings of successes with the negotiated-compensation strategy.⁵⁵

The key to solving NIMBY, in short, is trust. Various sources of evidence suggest that individuals can be made receptive to the siting of noxious facilities in their communities *if* they can be made to believe that society is committed to treating their interests with respect. Appropriately structured bottom-up, negotiated-compensation schemes — ones framed to emphasize respect for the interests and autonomy of prospective host communities — are one way to reverse deep-seated resentments and thus excite a reciprocal openness to siting decisions. If individuals cannot be made to believe that the burden of accepting a noxious facility is being fairly reciprocated either in kind or by like sacrifices, the current of resentment that fuels NIMBY will be difficult to reverse, even with financial incentives.

54. See Kunreuther & Easterling, *supra* note 44, at 618; Lober, *supra* note 45, at 222-23.

55. See RABE, *supra* note 38, at 61-81; Geoffrey Castle & Don Munton, *Voluntary Siting of Hazardous Waste Facilities in Western Canada*, in HAZARDOUS WASTE SITING AND DEMOCRATIC CHOICE, *supra* note 38, at 57.

V. IDEAS AND TECHNOLOGY

Ideas are a classic collective good. We all benefit from useful inventions, engaging works of literature, effective medicines for disease, and the like. But why should any one of us endure the cost associated with producing them when we can freely avail ourselves of the inventive labors of others? The conventional theory again resorts to incentives, in the form of intellectual-property rights, that are deemed to motivate invention by permitting inventors to condition use of their ideas on payment of a fee.⁵⁶

But the logic of reciprocity suggests an alternative solution. If individuals behave in this collective-action setting as they do in others — that is, as moral and emotional reciprocators — then they will contribute to the common pool of ideas not only when they expect material reward, but also when they observe other individuals contributing to it and when they anticipate that sharing the fruits of their own creativity will induce others to do the same.

The possibility of a reciprocal alternative to proprietary production is not merely a matter of theoretical conjecture. The prime example of such a regime is *the university*. Academics freely exchange ideas by teaching, attending conferences, and most importantly by publishing books and articles. This exchange, moreover, is deeply reciprocal. Self-consciously building on the published works of their predecessors, and publishing works that will be extended by their successors, physicists delineate the laws of nature, mathematicians solve intricate formal problems, philosophers construct theories of justice, and so forth and so on.⁵⁷

Reciprocal exchange is in fact integral to the structure of scholarly production. In Thomas Kuhn's well-known account,⁵⁸ activity within scholarly disciplines⁵⁹ is cyclical: fairly stable periods of "normal science," in which scholars conform their work to a widely shared set of assumptions or "dominant paradigm," are punctuated by "scientific revolutions," in which the dominant paradigm is overthrown and

56. See generally Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS 609 (Nat'l Bureau of Econ. Research ed., 1962).

57. See generally WARREN O. HAGSTROM, THE SCIENTIFIC COMMUNITY (1965); ROBERT K. MERTON, *The Normative Structure of Science*, in THE SOCIOLOGY OF SCIENCE (1973).

58. See THOMAS S. KUHN, THE STRUCTURE OF SCIENTIFIC REVOLUTIONS (2d ed. 1970).

59. Although Kuhn developed his account as an explanation of how knowledge develops in the natural sciences, his model has since been applied to other disciplines, including the social sciences and the humanities. See generally BARRY BARNES, T.S. KUHN AND SOCIAL SCIENCE (1982); STANLEY FISH, *Rhetoric*, in DOING WHAT COMES NATURALLY 471, 486 (1989); Steven M. Wise, *Hardly a Revolution: The Eligibility of Nonhuman Animals for Dignity-Rights in a Liberal Democracy*, 22 VT. L. REV. 793, 826 n.171 (1998).

replaced by a new one — which underwrites the next period of normal science. As scholars contribute incrementally to a body of work generated by like contributions from others, reciprocal exchange is the rule during periods of normal science. But it is no less significant a force during periods of scientific revolution. Because new paradigms are inevitably forged in opposition to old ones, scientific revolutionaries are ironically indebted to the work amassed by normal-science apparatchiks; and as they launch their assault, the revolutionaries predictably benefit defenders of disciplinary orthodoxy, who are enlivened by the sudden opportunity to say something new and pertinent in defense of their work.⁶⁰

The reciprocal nature of scholarly production helps to reconcile competing stereotypes of the academic enterprise. One view sees it as highly collaborative. Sociologists of science, for example, assert that the production of knowledge in the university is guided by a norm of “communism” or sharing of ideas.⁶¹ Another view, though, sees the academic enterprise as highly competitive: scholars strive to demonstrate that their ideas are better than everyone else’s.⁶² The truth is that scholarly production is simultaneously collaborative and competitive. Scholars do compete, fiercely, for the recognition and status that is accorded to those who make academic discoveries that either extend understanding within the dominant paradigm or overthrow that paradigm altogether.⁶³ In the regime of intellectual production characteristic of the university, competition and collaboration are yoked in a harness of reciprocal exchange.

The nexus between status and reciprocal exchange helps to explain how nonfinancial rewards operate to generate intellectual production within the university. Obviously, many individuals are drawn to the university because they get immense personal satisfaction simply from participating in shared intellectual endeavors. But many of those types also covet the special extrinsic rewards conferred upon those who excel in academic fields — namely, recognition and status, both within the university and within a larger society that esteems intellectual accomplishment. The desire for these goods impels individuals to behave like reciprocal producers insofar as the ideas most likely to gain widespread admiration are ones that draw on and enable the work of other scholars.⁶⁴

60. See KUHN, *supra* note 58.

61. See, e.g., MERTON, *supra* note 57, at 273-75.

62. See ROBERT K. MERTON, *Priorities in Scientific Discovery*, in *THE SOCIOLOGY OF SCIENCE*, *supra* note 57, at 286-324.

63. See *id.* at 293-94.

64. See ALFONSO GAMBARDILLA, *SCIENCE AND INNOVATION: THE US PHARMACEUTICAL INDUSTRY DURING THE 1980S* 8-9 (1995); Partha Dasgupta & Paul A. David, *Information Disclosure and the Economics of Science and Technology*, in ARROW

Indeed, the desire for recognition and status makes monetary reward secondary, if not completely irrelevant, in the development of ideas. It's true that university professors get paid to produce. But what's significant is how little they get paid relative to what they could have made outside the university. Natural scientists, economists, and — of course — law professors forgo commercial employment opportunities in which they could make salaries many times larger than the ones they earn from teaching and publishing. Even scholars whose specialties don't involve highly marketable skills (say, professors of eighteenth-century English literature) typically *could have* chosen educational paths known to lead to more remunerative destinations (e.g., Madison Avenue advertising firms). The difference between what these scholars make and what they could make, or could have made, in private-sector positions reflects at least in part how much they value the unique, nonmaterial rewards associated with participating in a system of reciprocal intellectual production.

Sociologists of science sometimes sharply distinguish between the scientific or university mode of intellectual production and a commercial or proprietary one. The former is driven by the intrinsic and reputational rewards associated with collaborative intellectual production, which presuppose norms of publicity and sharing. The latter is said to be driven by profit, and thus to depend on norms of secrecy that enable producers to extract fees for access to their ideas.⁶⁵

The contrast, however, turns out to be overstated. The commercial mode of production often incorporates the university mode. In the telecommunications, pharmaceutical, and computer industries, firms frequently organize their research-and-development teams on a university model, encouraging employees not only to share their work with one another but also to attend academic conferences, publish scholarly papers, and otherwise exchange ideas with outsider academic and commercial researchers.⁶⁶ The most famous example is AT&T's Bell Labs, which for decades offered positions that were as highly coveted as professorships at elite universities and which published a respected peer-reviewed research journal.⁶⁷

Economists have regarded the emulation of the university model by private firms as a puzzle, particularly insofar as the disclosure of

AND THE ASCENT OF MODERN ECONOMIC THEORY 519, 528-31, 534 (G.R. Feiwel ed., 1987) [hereinafter Dasgupta & David, *Information Disclosure and the Economics of Science and Technology*].

65. See HAGSTROM, *supra* note 57; MERTON, *supra* note 57.

66. See GAMBARDELLA, *supra* note 64, at 17, 82-83, 86, 103; Partha Dasgupta & Paul A. David, *Toward a New Economics of Science*, 23 RES. POL'Y 487, 495 (1994) [hereinafter Dasgupta & David, *Toward a New Economics of Science*].

67. See generally JEREMY BERNSTEIN, *THREE DEGREES ABOVE ZERO: BELL LABS IN THE INFORMATION AGE* (1984); NARAIN GEHANI, *BELL LABS: LIFE IN THE CROWN JEWEL* (2003).

ideas is thought to vitiate the competitive advantage afforded by firms' research investments.⁶⁸

The phenomenon of reciprocal creativity suggests a possible explanation. Suppose researchers who desire to participate in collaborative invention and to gain recognition for intellectual accomplishment are on average more creative and productive than those motivated only by financial inducements. If so, the former will be particularly in demand within industry. But to attract these individuals, firms will necessarily have to offer them an opportunity to satisfy their distinctive preference to participate in the open, reciprocal mode of production characteristic of the university, particularly if the firms are competing with universities to hire them.⁶⁹ Firms can be expected to offer this nonmonetary species of compensation so long as the losses they endure as a result of permitting bright researchers to disseminate their ideas are offset by the gains the firm reaps from having such persons on their research teams.

This account turns out to be well supported in fact. Firms in information-intensive industries in fact *say* that they tolerate (and indeed encourage) their researchers openly disseminating their ideas, particularly to university scholars, in order to attract the most talented researchers.⁷⁰ And empirical evidence confirms a direct correlation between the productivity of firms in the pharmaceutical industries and the frequency with which their researchers publish in academic journals.⁷¹

The final and most significant example of the reciprocal mode of intellectual production is the advent of "open-source" software projects. Where a programmer employs an open-source license, she authorizes anyone to use her software product free of charge so long as the user agrees not to disguise the identity of the programmers who have contributed to the product's development, and to distribute for free any additions or modifications the user makes to the program herself.⁷² The conventional theory of collective action predicts that

68. Douglas Lichtman et al., *Strategic Disclosure in the Patent System*, 53 VAND. L. REV. 2175 (2000) (describing phenomenon and suggesting signaling solution); Gideon Parchomovsky, *Publish or Perish*, 98 MICH. L. REV. 926 (2000) (suggesting patent-preemption motivation).

69. See GAMBARDELLA, *supra* note 64, at 46-47; JOSH LERNER & JEAN TIROLE, *THE SIMPLE ECONOMICS OF OPEN SOURCE* 24 (Nat'l Bureau of Econ. Research, Working Paper No. 7600, 2000), available at <http://www.nber.org/papers/w7600>.

70. See, e.g., GEHANI, *supra* note 67, at 16-20, 45, 58-59, 70-72.

71. See GAMBARDELLA, *supra* note 64, at 82-83, 86; Rebecca Henderson & Iain Cockburn, *Measuring Competence? Exploring Firm Effects in Pharmaceutical Research*, 15 STRATEGIC MGMT. J. 63 (1994). These studies, of course, control for other influences on productivity, including firm size.

72. See generally GLYN MOODY, *REBEL CODE: LINUX AND THE OPEN SOURCE REVOLUTION* (2001). The Open Source Initiative, a nonprofit corporation that coordinates

open-source products will be few in number and low in quality, since neither the individual who creates such a program nor anyone who thereafter improves it can recover any commercial benefit for her efforts. But in fact, the open-source license has spawned an immense collection of extremely popular and dynamic products. Linux, the premier open-source operating system, for example, is widely regarded as superior to commercially produced operating systems. Apache is the most popular web server, enjoying a dominant share in a market in which it competes with the products of numerous commercial firms including Microsoft.⁷³

Open-source programming is fueled by the same individual motivations that generate reciprocal intellectual production within both the university and commercial firms that emulate the university model. Like other collaborative producers, open-source programmers — typically students and commercial programmers working in their spare time — enjoy participating in the collaborative process for its own sake. In addition, many of the most productive open-source programmers covet the status accorded to those who are recognized as having made the most valuable modifications to popular open-source products.⁷⁴ Producing and distributing valued program enhancements (the authorship of which cannot be obscured under the typical open-source license) is thus a condition of enjoying these ends. In addition, even program users who do not attach particular value to participating and gaining status within this form of collaborative intellectual production are often motivated by the reciprocal motive of gratitude to share with other contributors any enhancements they make to an open-source product.⁷⁵

More significant than what open-source programming confirms about the motivation of individuals to participate in schemes of reciprocal intellectual production is what it implies about the increasing economic feasibility of such activity. Historically, individuals who might otherwise have freely lent their efforts to reciprocal modes of production would have had to pay a dauntingly high price — not just in terms of the costs associated with production itself, but also in terms

open-source standards and collects information on open-source products and developments, defines the terms of such licenses at <http://www.opensource.org/docs/definition.php>.

73. See LAWRENCE LESSIG, *THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD* 54-57 (2001); MOODY, *supra* note 72.

74. The immense fame enjoyed by Linus Torvalds, who designed the “kernel” of the Linux operating system, the name of which reflects his own, is a conspicuous case in point. Jim Kerstetter, *The Linux Uprising*, *BUS. WK.*, Mar. 3, 2002, at 78.

75. See Peter Kollock, *The Economies of Online Cooperation: Gifts and Public Goods in Cyberspace*, in *COMMUNITIES IN CYBERSPACE* 220, 227-29 (Marc A. Smith & Peter Kollock eds., 1999); KARIM LAKHANI & ERIC VON HIPPEL, *HOW OPEN SOURCE SOFTWARE WORKS: “FREE” USER-TO-USER ASSISTANCE* 31 (MIT Sloan Sch. of Mgmt., Working Paper No. 4117, May 2000).

of the costs associated with simply locating other producers willing to reciprocate their efforts and distributing information to them. But with the ubiquity of the personal computer and the comprehensive networking furnished by the internet, these constraints are disappearing, making it possible for increasingly large numbers of individuals to participate in collaborative production.⁷⁶ In addition, the more individuals who find it *possible* to participate, the more who find it *valuable* to participate: the benefits from participating and gaining status in collaborative production are a function of the number of individuals with whom a creator can collaborate, and from whom she can earn esteem.⁷⁷ Like other forms of behavior governed by the logic of reciprocity, spontaneous intellectual production feeds on itself.⁷⁸

The reality of the reciprocal production of ideas has important policy implications. Because intellectual laborers can't live on reciprocal utility alone, regimes of reciprocal production are unlikely to be completely self-sufficient. University scholars draw a salary, however modest; researchers at Bell Labs and other industrial campuses get compensated not just with opportunities to publicize their inventions but also with cash; open-source programmers, too, tend either to be employed or, if they are students, to be seeking employment either by universities or by firms in the computer industry. But because creative individuals get at least some utility from participating in reciprocal intellectual production for its own sake, there is less need to rely on intellectual property rights to spur creativity than the conventional theory implies. And less is better, since intellectual-property regimes, like other forms of material incentives — particularly those that confer monopoly power on producers — generate deadweight losses.⁷⁹

Consider the benefit that firms in high-tech industries gain from interactions between their researchers and university scientists. To promote such contacts, some commentators favor construing patent

76. See Yochai Benkler, *Coase's Penguin, or, Linux and the Nature of the Firm*, 112 YALE L.J. 369, 404-05 (2002).

77. See LERNER & TIROLE, *supra* note 69, at 15-16.

78. Open-source licensing does not prohibit commercial marketing of products that contain open-source code. A Linux package, for example, is successfully distributed by the firm Red Hat. See MOODY, *supra* note 72, at 96-98. The existence of commercial distributors, which combine the product with relatively user-friendly installation programs as well as support services, does not detract from the point that the individuals who are in fact creating the product that is being so distributed do so without being commercially compensated for their efforts. Indeed, the tendency of open-source products to generate ancillary commercial opportunities furnishes commercial firms with incentives to subsidize open-source development — as, for example, Compaq Computer Corp. and IBM both have for Linux, *see id.* at 222-36 — thereby reinforcing the economic feasibility of this nonproprietary mode of intellectual production.

79. See generally William M. Landes & Richard A. Posner, *Indefinitely Renewable Copyright*, 70 U. CHI. L. REV. 471, 476-77 (2003); Stewart E. Sterk, *Rhetoric and Reality in Copyright Law*, 94 MICH. L. REV. 1197, 1205-09 (1996).

law broadly to protect academic works published by these firms' researchers.⁸⁰ This suggestion, however, ignores how reciprocity influences the economics of commercial intellectual production. Because the most talented researchers demand the opportunity to disseminate their work to academics as a form of compensation, competitive pressures often drive firms in the pharmaceutical, computer, and telecommunications industries to permit such exchange even at the expense of those firms' proprietary control over their researchers' work. Consequently, there's no need subsidize this form of idea production with intellectual-property protections.

Indeed, more property rights than are necessary to support reciprocal production is likely to be self-defeating, the logic of reciprocity suggests, insofar as material incentives can impede reciprocal motivations. In a reciprocal system of production, creators naturally produce and share ideas that other creators are likely to find useful in order to obtain recognition and respect. In a proprietary system, however, creators gain a competitive advantage by concealing their ideas from one another and releasing their work only at a point, and in a form, in which they can charge a fee for it. This refusal to collaborate can be expected to generate resentment among reciprocally motivated producers, who will in turn grow less willing to share their own ideas. Indeed, when they see others conspicuously cashing in on inventions enabled by their work, those who *do* publicize their ideas for free are more likely to feel exploited than honored by their peers. By reversing the emotional payoff associated with spontaneously adding one's ideas to the common stock, material incentives effectively crowd out nonmaterial reciprocal ones.⁸¹

The negative impact of property rights on reciprocal production is likely to be self-reinforcing. Some individuals who are only weakly motivated by reciprocity will find the advent of material reward a reason to join the system of proprietary production instead. As the number of individuals engaged in reciprocal production dwindles, the participatory and reputational benefits associated with collaborative production will naturally decline too, stifling interest among creators whose reciprocal inclinations are more moderate in strength. Finally, as more and more individuals opt out, even the individuals most strongly devoted to a collaborative system of production will find the occasions for reciprocating the free exchange of ideas increasingly scarce — and the occasions for spitefully reciprocating covetous behavior by proprietary producers increasingly common. The advent of unnecessary incentives, then, can tip a reciprocal system of production from a highly cooperative equilibrium into a highly noncoopera-

80. See, e.g., GAMBARDELLA, *supra* note 64, at 48.

81. See Benkler, *supra* note 76, at 439-41.

tive one, in which expansive — and socially costly — property rights are all the more necessary.⁸²

This is, in fact exactly what some commentators believe has happened in the natural sciences. In 1980, Congress enacted the Bayh-Dole Act, which enlarged the eligibility of universities to obtain patents on so-called “basic research.” Intended to promote collaboration between university scientists and commercial biotechnology firms, the Act instead undermined norms of reciprocal collaboration among university scientists themselves. In response to the Act, a number of major universities instituted “intellectual property transfer” departments to encourage faculty to conduct their research in a manner consistent with their institutions’ interest in licensing patents to commercial firms. As a result, scientists at other institutions began to find themselves denied access to many of the most essential materials and processes in their fields — including gene sequences, cell lines, assays, and genetically engineered experimental mice — which were either patented or held close by scientists anxious not to forfeit their competitive advantage in patent races. Indeed, for many scientists, the successful filing of patent applications overtook the publication of articles as a measure of professional success. Many other scientists resented the erosion of the traditional university norms of openness and publicity. But eventually even they grew wary of casually placing into the public domain discoveries that nonreciprocating “colleagues” were likely to appropriate for commercial gain.⁸³

Reciprocal production on the internet is even more vulnerable to excessive property rights. The internet makes it dirt cheap for reciprocal producers to access information — the raw material that fuels their creative efforts — and to disseminate their works among themselves. The internet’s effect on information-access costs, however, is being reversed by liberal interpretations of existing intellectual-property rights and by the legislative creation of new ones, which stifle internet distribution of software codes, databases, and conventional literary works. Its effect on dissemination costs is being threatened by the attempted proprietization of standardized protocols for the software essential to accessing and using the internet.⁸⁴ By raising the cost of

82. See Dasgupta & David, *Information Disclosure and the Economics of Science and Technology*, *supra* note 64, at 535-37; Dasgupta & David, *Toward a New Economics of Science*, *supra* note 66, at 513-15.

83. See Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 *SCIENCE* 698 (1998); Robert P. Merges, *Property Rights Theory and the Commons: The Case of Scientific Research*, in *SCIENTIFIC INNOVATION, PHILOSOPHY, AND PUBLIC POLICY* 145 (Ellen Frankel Paul et al. eds., 1996); Arti Kaur Rai, *Regulating Scientific Research: Intellectual Property Rights and the Norms of Science*, 94 *NW. U. L. REV.* 77 (1999).

84. See generally Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 *CAL. L. REV.* 1889 (2002); Mark A. Lemley & Lawrence Lessig, *The End of*

obtaining and distributing information, these developments risk pricing out many casual open-source programmers.⁸⁵ And as the number of open-source creators declines, additional ones will find it harder and less satisfying to participate in this form of reciprocal production as well.

The logic of reciprocity implies, here as elsewhere, that it makes more sense to nourish trust than to alter material payoffs. Policymakers can do this, in part, by simply clearing the path for established and emerging systems of collaborative intellectual production. Where, as in the university and in many information-intensive industries, reciprocity dynamics are already spurring invention, policymakers should steer clear of the potentially toxic imposition of property rights. By appropriately narrow interpretations of existing intellectual-property provisions, policymakers can also head off the demoralizing prospect of materially motivated actors exploiting the fruit of reciprocal production for commercial gain.

Ultimately, though, the government will likely need to take a more active stance in promoting reciprocity. As the examples of the university, the industrial campus, and open-source programming all illustrate, collaborative intellectual production depends on ancillary systems of material compensation for reciprocal producers. Private actors — including philanthropists in the case of universities, and commercially motivated firms in the case of industrial campuses — will be motivated to contribute part of what it costs to operate such systems, but they are unlikely to contribute the optimal amount. Indeed, government subsidization has traditionally played a vital role in securing the societal benefits of reciprocal production in the university. Similar efforts of public support — perhaps in the form of tax benefits for firms that invest in open-source technologies — are likely to be necessary to realize the full potential of the internet as a catalyst of reciprocal production.

Nonproprietary collaborative production has historically played a major role in the creation of ideas. Guided by the logic of reciprocity, it has the potential to play an even larger one as in the future.

VI. OTHER APPLICATIONS

The reciprocity theory has implications for a broad range of policy problems in addition to tax collection, the siting of noxious facilities,

End-to-End: Preserving the Architecture of the Internet in the Broadband Era, 48 UCLA L. REV. 925 (2001).

85. See Yochai Benkler, *Intellectual Property and the Organization of Information Production*, 22 INT'L REV. L. & ECON. 81 (2002); James Boyle, *The Second Enclosure Movement and the Construction of the Public Domain*, LAW & CONTEMP. PROBS., Winter/Spring 2003, at 33.

and the production of ideas. It's possible to sketch several in broad outline.

A. *Fraud and Corruption*

Like individuals' disposition to engage in tax evasion, individuals' disposition to engage in fraud or corruption appears to depend on whether they think other individuals are engaged in such behavior.⁸⁶ This implies that high-profile campaigns to crack down on such behavior, like high-profile crackdowns on tax evasion, can backfire.⁸⁷ Indeed, when government invests more to deter fraud, individuals have less incentive to invest in credibly signaling to others that they are trustworthy and honest, and hence reliable as trade partners. Because individuals reciprocate honesty with honesty, the suppression of individuals' efforts to display honesty to others will predictably reduce the disposition of individuals to behave honestly, thus making penalties for dishonesty less effective. A better policy, again, is to make citizens aware that those around them are basically honest.

Or at least that is the best policy where individuals are in fact generally honest. In a condition of pervasive distrust — such as that which obtains in many former Eastern bloc nations — strong penalties for fraud and dishonesty may be the only thing that works. Moreover, in such a climate, penalties for dishonesty may in fact promote rather than undermine trust. Individuals who resent fraud and corruption are likely to interpret the advent of credible penalties as evidence that others around them now feel the same way and are prepared to do something about it. Some of those individuals will be moved to reciprocate by behaving more honestly themselves, inducing still others to do the same, and so forth and so on, until a new condition of self-reinforcing cooperation is reached — at which point maintenance of high penalties may be less necessary.⁸⁸

B. *Democracy*

The application of the conventional model of collective action to democratic politics yields public choice theory. According to that theory, citizens, because they are self-interested wealth maximizers, will forgo public-spirited deliberation and instead organize themselves

86. See JON ELSTER, *THE CEMENT OF SOCIETY: A STUDY OF SOCIAL ORDER* 268-70 (1989); Peter H. Huang & Ho-Mou Wu, *More Order Without More Law: A Theory of Social Norms and Organizational Cultures*, 10 J.L. ECON. & ORG. 390 (1994).

87. ELSTER, *supra* note 86, at 270.

88. See generally SUSAN ROSE-ACKERMAN, *CORRUPTION AND GOVERNMENT: CAUSES, CONSEQUENCES, AND REFORM* (1999).

into interest groups for the purpose of extracting rents.⁸⁹ To combat this dynamic, policy analysts have proposed a wide variety of structural devices — from campaign-finance laws⁹⁰ to term limits⁹¹ to line-item vetoes⁹² to budget-process reforms⁹³ — all of which seek to raise the cost or reduce the benefits of organizing into special-interest pressure groups.

The reciprocity theory suggests a different analysis. As a positive matter, it points to a substantial body of empirical research suggesting that the behavior of elected representatives is limited by informal norms that discourage unconstrained efforts to redirect public resources toward one's own constituencies.⁹⁴ Thus, reciprocity dynamics make at least some contribution to containing special-interest politics.

As a prescriptive matter, the reciprocity model warns us not to assume that structural reforms will invariably reinforce reciprocity norms in this setting. Policies designed to counteract public choice pressures do more than change political actors' incentives to engage in rent-seeking; they also broadcast to citizens and their representatives that we *expect* political actors to engage in rent-seeking behavior whenever it is in their interest to do so. Because individuals are reciprocators, they are likely to respond to this message by displaying even less restraint in the pursuit of their material interests in democratic political life. Thus, reforms aimed at reducing incentives to behave in a self-interested fashion might well dissipate reciprocity-based norms that now hold such behavior at least partially in check, and thereby increase special-interest rent-seeking on net. The reciprocity model thus underscores the anxiety that too readily accepting the public choice picture can make it the reality of our political life.⁹⁵

At the same time, however, the reciprocity theory underscores how reforms that reflect different assumptions might stimulate public spiritedness. For example, scholars have proposed that the state award

89. OLSON, *supra* note 1, is again the foundational work. See also JAMES M. BUCHANAN & GORDON TULLOCK, *THE CALCULUS OF CONSENT: LOGICAL FOUNDATIONS OF CONSTITUTIONAL DEMOCRACY* (1962).

90. See, e.g., Ian Ayres & Jeremy Bulow, *The Donation Booth: Mandating Donor Anonymity to Disrupt the Market for Political Influence*, 50 STAN. L. REV. 837 (1998).

91. See generally Elizabeth Garrett, *Term Limitations and the Myth of the Citizen-Legislator*, 81 CORNELL L. REV. 623 (1996) (critiquing use of term limits to counteract public choice dynamics).

92. See Elizabeth Garrett, *Accountability and Restraint: The Federal Budget Process and the Line Item Veto Act*, 20 CARDOZO L. REV. 871 (1999).

93. See Elizabeth Garrett, *Rethinking the Structures of Decisionmaking in the Federal Budget Process*, 35 HARV. J. ON LEG. 387 (1998).

94. See generally DONALD P. GREEN & IAN SHAPIRO, *PATHOLOGIES OF RATIONAL CHOICE THEORY: A CRITIQUE OF APPLICATIONS IN POLITICAL SCIENCE* (1994).

95. See JERRY L. MASHAW, *GREED, CHAOS, AND GOVERNANCE: USING PUBLIC CHOICE TO IMPROVE PUBLIC LAW* (1997).

citizens two types of monetary grants: “stakes” that they can use as they see fit upon adulthood, and “patriot dollars” that they can contribute to the political campaigns of their choice.⁹⁶ The first expresses society’s commitment to assuring individuals a fair chance to realize their life plans, the second its commitment to assuring them a fair chance to influence the political process, irrespective of their personal wealth. It’s plausible to believe that many citizens will reciprocate the goodwill embodied in these schemes by contributing more readily to the well-being of society and by refraining from purely self-seeking political behavior. And when they observe public-spirited behavior of this sort, still more citizens will be moved to behave in the same way. These proposals, then, are another example of how appropriately expressive law — even in the form of cash subsidies — can be expected to heighten reciprocal cooperation.

C. *Street-Level Policing*

The conventional theory sees crime prevention as just another collective-action problem. As a society, we are all better off when we universally refrain from theft and like forms of predation. But as individuals, each one of us is better off free riding on whatever restraint our neighbors display while engaging in as much looting and pillaging as possible. The obvious solution is to create incentives that align individual interests with collective ones — hence, the threat of severe criminal punishments for those who break the law.⁹⁷

Far from curing the pathology of inner-city crime, however, the reliance on severe penalties has been shown to be one of the pathologies. Such penalties convey distrust and animosity on the part of law-enforcement authorities toward inner-city residents. Inner-city residents predictably reciprocate by displaying less willingness to cooperate with law-enforcement authorities and less willingness to obey the law more generally — making it necessary to enact even more severe penalties, which depress reciprocal cooperation all the more.⁹⁸

Again, the reciprocity theory suggests the importance of promoting trust, here between citizens and the police. At least certain forms of community policing are geared toward doing exactly that. By giving citizens a say in how policing is carried out, programs that vest citizens

96. BRUCE ACKERMAN & ANNE ALSTOTT, *THE STAKEHOLDER SOCIETY* (1999); BRUCE ACKERMAN & IAN AYRES, *VOTING WITH DOLLARS* (2002).

97. This is, of course, the economic conception of the “deterrence” theory of criminal punishment. See generally Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169 (1968).

98. See George Akerlof & Janet L. Yellen, *Gang Behavior, Law Enforcement, and Community Values*, in *VALUES AND PUBLIC POLICY* 173 (Henry J. Aaron et al. eds., 1994); Tom R. Tyler, *Trust and Law Abidingness: A Proactive Model of Social Regulation*, 81 B.U. L. REV. 361, 368-69 (2001).

with significant authority to supervise and participate in law enforcement evince respect for citizens, who reciprocate by cooperating more with the police. Increased cooperation by citizens in turn fosters police officers' impression that citizens do in fact trust them, a perception that the police reciprocate by regarding citizens as more trustworthy. The result is a collaborative style of interaction that ultimately strengthens a community's crime-fighting capacity.⁹⁹

D. *Good Samaritanism*

Breaking with the traditional Anglo-American position, several states have recently enacted laws that oblige individuals to assist strangers in need when they can do so without risk to themselves. Such laws are intended to counter the supposed growing indifference of Americans — particularly urban-dwelling ones — toward the well-being of strangers.¹⁰⁰

But the reciprocity theory warns that such laws may do more to construct than to remedy such indifference. Some individuals could see the apparent necessity of a penalty for nonassistance as confirmation that most citizens don't genuinely care about strangers' well-being; those individuals, the reciprocity theory predicts, will respond by showing less concern themselves. Financial incentives to assist are also likely to obscure *morally* motivated acts of assistance, thereby diluting a signal of good intentions that would otherwise have moved individuals to reciprocate in kind.

Substantial experimental evidence suggests it simply is not the case that Americans are disinclined to render assistance to strangers in need.¹⁰¹ The way to strengthen citizens' resolve to render such assistance, the reciprocity theory implies, is to correct the misperception that others lack such resolve, a goal that can be achieved through public commendations of individuals who engage in heroic behavior.

CONCLUSION

The main — indeed, only — selling point of the conventional theory of collective action is its asserted behavioral realism. Individuals, it tells us, are inherently self-seeking. Accordingly, we can't count on them voluntarily to subordinate their material interests to the good

99. See generally WESLEY G. SKOGAN & SUSAN M. HARTNETT, *COMMUNITY POLICING, CHICAGO STYLE* (1997).

100. See Daniel B. Yeager, *A Radical Community of Aid: A Rejoinder to Opponents of Affirmative Duties to Help Strangers*, 71 WASH. U. L.Q. 1 (1993).

101. See BIBB LATANÉ & JOHN M. DARLEY, *THE UNRESPONSIVE BYSTANDER: WHY DOESN'T HE HELP?* (1970) (reporting experimental results showing that failure to intervene is attributable to errors in perception especially likely to occur in group settings).

of society; rather we must alternately bribe and threaten them through a costly regulatory apparatus, the maintenance of which not only depletes our common resources but itself creates myriad opportunities for advantage seeking by self-interested individuals and groups. It is hard to imagine a less inspiring account of our motives and our prospects. But if the ugly picture the conventional theory paints is right, then we'd be fools to avert our eyes from it.

It turns out, however, that the conventional theory *isn't* right. Individuals in collective-action settings might not behave like saints, but they don't behave like fiends either. They *can* be counted on to contribute to collective goods, the emerging literature on reciprocity shows, *so long as they perceive that others are inclined to do the same*. Bribes and threats are not nearly so necessary as the conventional theory would have us believe; the law can instead enlist our cooperation by furnishing us with grounds to *trust* one another to contribute our fair share to society's needs. Indeed, when the law relies only on bribes and threats, it breeds the impression that citizens can't trust one another to contribute to collective goods voluntarily, thereby undermining their motivation to reciprocate one another's public spiritedness. Whatever truth there is in the conventional theory is an artifact of the common acceptance of that theory's bleak assumptions.

So we should now reject them. To replace the conventional theory of collective action, we should construct a new and more appealing one founded on our nature as reciprocators. The logic of reciprocity not only reflects a more realistic understanding of individual emotional and moral commitments. It makes the hope that citizens will be morally and emotionally committed to contribute to the common good more realistic.