Social Norms, Cultural Competition, and Welfare Reform:
Scant Hope for the Collapsing Family

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Abstract: Taking the case of lone parenthood, the paper examines an argument that has exerted extraordinary influence on recent policymaking, and finds that it is probably not correct. The argument holds that limiting cash benefits for lone parents, and strengthening their communities, will discourage lone parenthood in two ways: directly, by raising the price of lone parenthood, and indirectly, by making norms against lone parenthood more harsh. The norm effect is often held to be more important than the price effect. Using a simple model of policy and endogenous social norms, however, this paper shows that cutting welfare and empowering communities makes norms more tolerant, not less. The reason is simple: both policies lower the net benefit of having a harsh norm against lone parenthood. Cutting welfare lowers the anti-tax benefit of such a norm, while strengthening communities increases its enforcement cost. Everyone desires softer norms; competition among cultural leaders forces them to call for tolerance. The tolerance effect can be strong enough to overwhelm the price effects, so that lone parenthood can increase rather than decrease.

In its methods, the paper contributes a new approach to predicting short-run cultural change. Culture is a coordination problem, solved by the suggestions of those in positions of cultural leadership. Competition for office restricts the discretion of those who win. As a result, cultural markers like norms and symbols gravitate toward common sense. Here, "common sense" is interpreted as the median of the distribution of ideal coordination equilibria. As policies affect the benefits and costs of different equilibria, it changes this distribution and hence, through cultural competition, the equilibrium that is ultimately selected.

I. Welfare Reform and Cultural Change

In recent years, many social observers have concluded that the weakness of community life in the U.S. has allowed social problems to grow out of control (Putnam, 1995; Ehrenhalt, 1995; Kaus, 1992; Wilson, 1991). Among economists and policy scholars, such perceptions have led to growing interest in the relationship between policy and culture (Aaron, Mann, and Taylor, 1993; Lindbeck, 1994). They have also exerted considerable influence on public policies, especially those concerning the breakdown of the family (Ermisch, 1990; Sawhill, 1995). Welfare reform proposals on both left and right share a broad strategy: to limit cash assistance for lone parents, and to strengthen communities (Congressional Quarterly, 1996; Peirce, 1996).[1]

Limiting welfare reduces cash incentives, while empowering communities makes people more dependent on one another, raising the cost of violating norms against lone parenthood. Thus, both policies raise the price of lone parenthood and therefore should decrease it. Proponents rely on more than price effects to make their case, however. It is claimed that the low-cash, strong-village approach to welfare reform will not only enforce standing norms better, it will move norms toward less tolerance of lone parenthood. Going under names like "restoring values," the indirect norm effect is thought to be more fundamental than any price effects.[2] Because the two effects work in the same direction, lone parenthood rates are presumably certain to fall under this strategy, and possibly most of the decline will be due to norms rather than welfare cuts or community interdependence. Though plausible, the argument has not been presented in formal terms.

The theory presented here, however, shows that the argument is probably not true. Restricting cash grants and building communities does cause the norm system to change, but not

so as to discourage lone parenthood. Rather, norms become more tolerant, not less. The low-cash, strong-village strategy thus has direct price effects that are opposed by indirect norm effects. As a result, it is not certain that this strategy will reduce lone parenthood.

The logic behind this finding is straightforward. Norms against socially costly behavior produce benefits by discouraging costly behavior, but they produce costs because they have to be enforced by someone. If norms tend to reflect the middle-ground interests of the citizens, a policy that lessens the social costs of "bad" behavior will make norms softer. A policy that makes people more interdependent, and thereby raises the costs of enforcing the norm, will also make norms softer. A low-cash, strong-village approach to welfare reform does both of these, and therefore will induce softer norms, not tougher ones.

Moreover, the paper shows that norm systems may be extremely and unintuitively sensitive to small policy changes. Thus while it is not impossible to reduce lone parenthood using welfare reform proposals now being considered, it will be more difficult than proponents realize, in two senses. It will be more difficult because the norm system will resist policy intent, and because the norm system introduces considerable uncertainty about ultimate policy effects.

The paper makes its argument in eight sections. Section II provides an overview of the theory and its connections existing literature. Section III presents a lone parenthood model with fixed social norms. Section IV introduces cultural competition over the placement of such a norm. Section V derives the distribution of ideal norms in the population under the assumption of linear utility. Section VI analyzes the implications of the model for lone parent cash assistance policies. Section VII considers the effects of stronger communities. Section VIII draws broader conclusions. An appendix proves the existence of the equilibrium in Section IV.[3]

II. Overview: Policy In A Theory of Cultural Change

A. Formal theories of conformity. The emergence and stability of social conformity has been the subject of many theoretical papers (Akerlof, 1980; Bernheim, 1994; Hardin, 1990; Boyd and Richerson, 1990; Bikhchandani et al., 1992; Young, 1993; Kandori, 1992; Kandori, Mailath and Rob, 1993), yet the literature has not concerned itself with policy questions and, understandably, is not well suited to do so. Moreover, much of the focus is on very long-run dynamics, and in the very long run policies are endogenous.

Adopting a short-run focus allows the analysis of exogenous policies, but it raises the issue that culture is a coordination problem with no obvious theoretical solution (Kreps, 1990, Bird, 1995). Precedents and signals solve these problems by moving particular cultural markers into prominence (Greif, 1994; Calvert, 1992; Schelling, 1960). Signals, especially, play an important role: those who can communicate common-knowledge suggestions can create expectations that the suggested acts will be done by all. Such expectations then induce equilibrium on the suggested behavior.

The existence of property rights over the technology of common-knowledge suggestion allows a role for policy in the evolution of culture. Presumably, such rights can be transferred, and therefore competition will dissipate the power of suggestion. For example, though the President has great power to shape culture through the bully pulpit, electoral pressures limit the suggestions that can actually be made while retaining that power.[4] The influence of policies on these limits has not yet been explored, but some such influence seems implicit in recent welfare reform debates. The basic goal of this paper is to develop a formal model which identifies the effect of specific welfare reform proposals on cultural change.

B. Basic principles. Such a model can be built up from a few uncontroversial assumptions about the operation and purpose of norms in society. First, norms produce social benefits by discouraging behavior that is socially costly. Second, they produce costs because they have to be enforced by someone. Generally, punishments are costly for both the giver and the receiver. Third, the balance of these benefits and costs is respected by cultural leaders because of the competition they face. Lastly, policies affect the benefits and costs of norms and thereby the conditions under which cultural competition proceeds. Through this sequence of interests and institutions, policies change norms.

C. Formal model: Overview. In a large society, citizens choose whether or not to be lone parents on the basis of their private benefits and costs. Single parenthood imposes extra costs, but some citizens gain positive utility from it. If poor, lone parents also receive a government grant. This creates a social cost of taxation, borne by the non-poor.

To help reduce this burden, the non-poor have erected a norm against lone parenthood. The norm states that those who are "too poor" to support a child should not be lone parents. The definition of "too poor" (i.e. the income cut-off below which lone parenthood is considered "wrong") is a coordination problem, because any income level within a certain range serves equally well. To solve this coordination problem, the citizens look to elected leaders, who, from the bully pulpit, announce a common-knowledge signal that defines "too poor." The leaders are constrained by election pressures to announce the definition that maximizes the well-being of the median voter.

Once the norm is determined, the citizens enforce it during repeated prisoner's dilemma (RPD) encounters with one another. Anyone who encounters someone who has violated the

social norm will play "Always Defect" against them, creating costs for both violator and punisher. The median voter, who is a taxpayer on the one hand and a neighbor or friend on the other, faces a trade-off between these norm-enforcement costs and the benefit of reducing tax burdens. Public policies affect the size of these costs in two ways: by changing the size of welfare grants, and by building or destroying community (i.e. changing the RPD payoffs). These policies have a direct effect on behavior, but they also change the preferences of the median voter, which changes norms and indirectly changes behavior. To examine specific policy changes, the paper relies on a piecewise linear utility version of the model with two marginal utilities of income, poor and non-poor.

III. Lone Parenthood Decisions Under a Fixed Norm

A. Lone parenthood decisions. Society consists of M people, indexed i = 1, ..., M, M large and odd, each endowed with an exogenous income y_i. Income provides utility according to the function u(y), with u' > 0, u" < 0. Each person may choose to be a lone parent (choose $\sigma_i = 1$) or not ($\sigma_i = 0$). Compared to other states, lone parenthood is more expensive, with cost c. At the same time, lone parenthood increases utility for some and decreases it for others; let the utility increment of lone parenthood be s_i. The population is distributed uniformly and independently on [y1, y2] and [s1, s2], with s1 negative, s2 positive, and y1 approximately zero.[5]

Lone parents with income below the poverty line, π, receive a welfare grant g; both are exogenous. This policy emulates the main U.S. low-income support program, Aid to Families with Dependent Children (AFDC), which primarily helps only low-income lone parents. Studies of AFDC recipients show that its grants are not so generous that it is possible to make money by having children (Jencks, 1992), so assume c > g. Those with incomes above the poverty line pay

a lump-sum tax, τ, to cover the costs of welfare. If there are L poor lone parents, the total tax burden is Lg. Of the M individuals in the population, P are poor and R are non-poor. The poverty rate p equals P/M; let r = 1-p. Let l = L/N be the poverty lone-parenthood rate. With these definitions, the lump-sum tax on the non-poor is $\tau = gl/r$.[6]

The non-poor will choose lone parenthood if $s > u(y-\tau) - u(y-\tau-c)$. The poor will do so if $s > u(y) - u(y-c+g)$. Each income y is associated with a single parenthood utility s(y), such that an individual with income y and utility s(y) will be indifferent to single parenthood. The function s(y) is discontinuous at $y = \pi$. Figure 1 illustrates. The dotted box shows the bounds of the population distribution; let the area of this box, (y2-y1)*(s2-s1), be normalized to equal 1. The lone parenthood rate in the entire population is equal to the area of regions R1 and R2. The rate among the poor is the area of R1. An increase in AFDC grants shifts s(y) downward when income is below the poverty line; lone parenthood in R1 increases.

B. Norms against lone parenthood. Now consider the possibility that a norm indicates when lone parenthood is "right" and when it is "wrong." Drawing on formal definitions of norms offered elsewhere (Crawford and Ostrom, 1995; Coleman, 1990), let the norm be exogenous, discrete, and defined in terms of one characteristic, income.[7] Then, people with incomes below some income level ϕ will be doing something "wrong" if they become lone parents. This kind of norm structure reflects a view that lone parenthood can become "wrong" only if it creates burdens for society at large, as, for example, when low-income single parents need cash assistance.

Being defined on income, the norm is a point in [y1, y2]. It is reasonable, however, to assume $y1 \leq \phi \leq \pi$.[8] The higher the value of ϕ, the harsher the norm in the sense that the label "wrong" would be applied to the decisions of a larger number of people. It is important to

distinguish the softening of the norm from a change in the power of enforcement. A harsh norm may or may not be strongly enforced; a strong norm may or may not be harsh. Harshness is a function of the position of the norm, while strength is a function of the costs of violation.

The existence of the norm creates two groups of lone parents among the poor. For those with incomes between ϕ and π, lone parenthood is not "wrong" but is *tolerated.* If Q is the number of tolerated lone parents among the poor, then $q = Q/M$ is the poverty tolerated lone parenthood rate. For those with incomes below ϕ, lone parenthood is "wrong" and lone parents are *violators* of the social norm. Similarly, if there are V violations, then $v = V/M$ is the population violation rate. The rate of poverty lone parenthood is $l = v + q$. To reduce verbiage in what follows, the term "lone parenthood" will be used instead of "poverty lone parenthood."

C. Neighborhoods. Though the norm exists somewhere between y1 and π, it does not automatically have an effect on behavior (in particular, it is not internalized and is not a part of preferences). Rather, society enforces the norm through interdependent interactions ("neighborhoods"), much as in Calvert's community of rational actors (1991). Let ϕ be common knowledge and consider the following game. In Stage 0, all members of society observe ϕ, and choose whether or not to be single parents. Then, nature draws $N < M$ individuals randomly from the joint distribution of incomes and single parenthood utilities; these N individuals form that person's neighborhood.[9] Each player observes the incomes and parenting choices of all the other players in her neighborhood. In Stage 1, each player plays the following prisoner's dilemma game simultaneously with each of her neighbors:

		Column Player	
		Cooperate	Defect
Row Player			

Cooperate	z, z	-1, 2z
Defect	2z, -1	0, 0

The first entry in each cell is row's payoff, and z > 0. Stages 2, ..., ∞ repeat Stage 1. To keep strategies simple in this repeated prisoner's dilemma (RPD), mixed strategies and strategies that depend on actions taken in games between other players are not allowed. An RPD which results in perpetual cooperation yields Z = z/(1-δ), where δ is the time preference rate, identical for all players. RPDs which result in perpetual defection yield 0. If x percent of a player's neighbors cooperate and 1-x percent defect, the player receives
(1-x)NZ utils from her neighborhood.

Two parameters measure the importance of community for each person. If a person is isolated, has few neighbors (in the sense of people close enough to observe income with some accuracy), or is largely independent of others, then N is small. If the typical interactions one has with one's neighbors are not very important, then Z is small.[10]

D. Equilibria. 1. Objective functions. Payoffs are received at the end of a given stage. For the non-poor, the objective function in the game is

$$U_{ir} = u(y_i - c\sigma_i - \tau) + s_i\sigma_i + \sum_{j=1}^{N} w_{ij} \qquad \textbf{(1)}$$

where w_{ij} equals the discounted payoff of the RPD game between i and another player j. For the poor, the objective function is:

$$U_{ip} = u(y_i - (c-g)\sigma_i) + s_i\sigma_i + \sum_{j=1}^{N} w_{ij} \qquad \textbf{(2)}$$

2. Equilibrium concept. Standard equilibrium concepts applied to this game will require

Box 1. Cultural Coordination Equilibrium Enforcing A Fixed Norm

Stage 0: $y_i < \phi$: Choose $\sigma_i = 1$ iff $s_i > u(y_i) - u(y_i - (c - g)) + (1-v_i)NZ$

$\phi \leq y_i < \pi$: Choose $\sigma_i = 1$ iff $s_i > u(y_i) - u(y_i - (c - g))$

$y_i \geq \pi$: Choose $\sigma_i = 1$ iff $s_i > u(y_i - \tau_i) - u(y_i - c - \tau_i)$

Stages 1, 2, ...

If i is a conformist: Play 'Tit for Tat' against conformists and 'Always Defect' against violators. If i is a violator: Play 'Always Defect' against everyone.

Expectations:

$v_i = v$, all i, where v is the actual violation rate that results from stage 0 strategies.

$\tau_i = \tau$, all i, where τ is the actual tax that results from stage 0 strategies.

that strategies should be best responses under rational expectations (common expectations that are not systematically wrong).

3. Strategy spaces. Because each RPD game is assumed to proceed independently of all others, strategy spaces are simplified.[11] Let $\Phi = [y1, \pi]$ be the set of possible norms; let $\Psi = [0, 1]$ be the set of possible lone parenthood decisions; let $\Omega = [y1, y2]$ be the set of possible incomes; let $\Delta = \{\text{Cooperate, Defect}\}$ be the set of possible choices in each stage of an RPD. The history of play with respect to a given opponent at the beginning of stage t is denoted h_t, an element of the set H_t. For $t > 0$, $H_t = \Phi \times \Psi^2 \times \Omega \times \Delta^{2(t-1)}$. A strategy with respect to a given opponent consists of two elements: a map from Φ into Ψ in stage 0, and a sequence of maps from H_t into Δ in stages 1 and higher. Each player develops N such strategies, each calling for the same move in stage 0.

4. Equilibrium selection. The game obviously has many equilibria, including "ignore norms": parenting strategies ignore RPD strategies, and RPD strategies ignore parenting strategies. The strategies and expectations in Box 1, however, constitute an equilibrium in which norms matter. It makes use of a number of new definitions and symbols:

a) *Status definitions.* Let any player with $\sigma = 1$ and $y < \phi$ be a *violator* of the norm. A *conformist* is not a violator.

b) *Symbols for expected values*. In stage 0, player i expects the violation rate to be v_i and the tax burden of lone parenthood to be τ_i.

c) *RPD strategy definitions.* The RPD strategy 'Tit for Tat' requires cooperation in the first stage. In each stage thereafter, the player does what her opponent did in the previous stage. The strategy 'Always Defect' requires the player to defect in each stage.

5. Sketch of proof. As is well known, 'Tit for Tat' and 'Always Defect' are mutual best responses. Two players in 'Tit for Tat' equilibrium cooperate forever; they receive a discounted RPD payoff of Z. Two players perpetually defecting receive 0. At the start of an RPD, conformists expect 'Tit for Tat' from conformists (a status that can be observed) and 'Always Defect' from violators, to which the assigned strategies are best responses. Violators expect 'Always Defect' from everyone; they find it best to play 'Always Defect' against everyone. Each neighborhood is a random draw from the population, therefore the objective expected rate of violation in each neighborhood is v. The RPD provides total payoffs of (1-v)NZ to conformists, and 0 to violators. In Stage 0, potential violators (those with incomes below the norm) use a parenting strategy that reflects the expected payoff difference: the utility threshold required to induce lone parenthood is higher by $(1-v_i)NZ$. A full proof requires that expected violation rates and tax burdens equal the actual outcomes. It will be deferred until after section IV.

E. Discussion. This fixed-norm equilibrium matches our intuition by putting a social price on lone parenthood when income is "too low." The price is the result of breakdowns in cooperative arrangements between a norm violator and those she encounters. When greatly

tolerated, lone parenthood creates high tax burdens (gl/r) but low norm enforcement costs (vNZ). When not tolerated, it creates low tax burdens but high enforcement costs.[12]

IV. Endogenous Norms and Cultural Competition

Members of society have an interest in balancing the enforcement costs of harsh norms against the tax costs of soft norms. That interest gets expressed through mechanisms of cultural competition.

A. Norms as coordination problems. At heart, cultural competition is a struggle for the power to induce coordination equilibria. Leaders of various institutions (government, arts, media, religion) own rights to the technology of common-knowledge suggestions that induce cultural coordination, including social norms. Competition over this access encourages suggestions that are not too extreme, so that norms gravitate toward "common sense." Common sense, in turn, balances the benefits of norms against their costs. Each person's utility function tells us the norm that they would prefer. There is a distribution of such ideal norms; cultural competition pushes the effective social norm toward its center.[13]

B. Electoral competition. These ideas can be implemented in a simple way through the median-voter theorem. Two new players, A and B, are candidates for election to the office of "Leader." At the beginning of the game, both candidates make simultaneous announcements of norms somewhere between y1 and y2. These announcements are common knowledge. After the announcements, all the other players cast a vote for A or B. The candidate who wins receives a payoff of 1. The candidate who loses receives 0. Announcements and candidacy are otherwise costless. Once in office, the Leader has no influence on anyone's utility during the remainder of play. In particular, the Leader has no influence over policy parameters, which remain

exogenous.[14] As a result, voting strategies only take account of the one observable difference between the candidates, their norm announcements.[15] Let voters be sincere; all vote for the candidate whose announcement maximizes their well-being given the voting, parenting, and cooperation strategies of the other players.

C. Strategy spaces and strategies. The stages of the game now are as follows.

Stage 0: A and B make announcements α and β; α and β are common knowledge.

Stage 1: Players vote for A or B. The candidate with the most votes wins the election. The election outcome is common knowledge.

Stage 2: Players choose single parenthood, or not.

Stages 3, 4, ... ∞: Players meet with N randomly-selected other players, observe their incomes and parenting choices, and play RPDs with them.

The candidates' strategy space is Ω. For players, let the space of possible votes be $\vartheta = \{A, B\}$. For t = 1, the set of possible histories is $H_1 = \Omega^2$; for t = 2, it is $H_2 = \Omega^2 \times \vartheta^M$. In the first RPD stage, history is an element of $H_3 = \Omega^2 \times \vartheta^M \times \Psi^2 \times \Omega$. At all later stages of a given RPD game, history is an element of $H_t = \Omega^2 \times \vartheta^M \times \Psi^2 \times \Omega \times \Delta^{2(t-1)}$.

For candidates, a strategy is simply a choice in Ω. For players, a strategy with respect to a given opponent now consists of three parts: a map from H_1 into ϑ in stage 1, a map from H_2 into Ψ in stage 2, and a stream of maps from H_t into Δ in stages 3 and higher. As before, each player develops N such strategies.

D. Equilibrium selection. Applying the same equilibrium requirements as in Section III, there are again some interesting and some uninteresting equilibria. The strategies and expectations in Box 2 constitute an equilibrium that supports the intuition that the winners of

Box 2. Cultural Coordination Equilibrium Under Cultural Competition
Stage 0: $\alpha = \phi_A^e$, $\beta = \phi_B^e$.

Stage 1: Vote for A if $U_{in}(\alpha) > U_{in}(\beta)$; vote for B if $U_{in}(\alpha) < U_{in}(\beta)$; vote for A with probability 1/2 if $U_{in}(\alpha) = U_{in}(\beta)$, all i, and n = r,p.

Stage 2: $y < \lambda$: Choose $\sigma_i = 1$ iff $s_i > u(y_i) - u(y_i - (c - g)) + (1-v_i)NZ$;
$\lambda \leq y < \pi$: Choose $\sigma_i = 1$ iff $s_i > u(y_i) - u(y_i - (c - g))$;
$y \geq \pi$: Choose $\sigma_i = 1$ iff $s_i > u(y_i - \tau_i) - u(y_i - c - \tau_i)$, for all i.

Stages 3, 4, ... : If player i is a conformist: Play "Tit for Tat" against conformists and "Always Defect" against violators. If player i is a violator: Play "Always Defect" against everyone.

Expectations:
$\phi_j^e = \phi^*$, j = A, B; implies $\lambda = \phi^*$.
$v_i = v$, $\tau_i = \tau$, all i.

competitions for cultural power are also the ones who set the norms. The equilibrium uses the definitions and symbols of the equilibrium in Section III. It also makes use of the following:

1. *Expected medians in stage 0.* Let ϕ^* be the median of the distribution of norms that maximize the utility of the players, conditional on the equilibrium strategies. Let ϕ_j^e, j = A, B be candidate j's stage 0 expectation of ϕ^*, conditional on the strategies of the voters.

2. *Expectations when voting in stage 1.* Let $\tau(\alpha)$, $\sigma_i(\alpha)$, and $w_{ij}(\alpha)$ respectively be the stage 1 expectations of the tax burden, parenting decision, and payoff against opponent j that will occur in subsequent stages, conditional on all strategies and the event that candidate A's announcement becomes the social norm. For the non-poor, let $U_{ir}(\alpha) = u(y - c\sigma_i(\alpha) - \tau(\alpha)) + s\sigma_i(\alpha) + \Sigma w_{ij}(\alpha)$ be player i's stage 1 expected utility conditional on this event. Let $U_{ip}(\alpha) = u(y - (c - g)\sigma_i(\alpha)) + s\sigma_i(\alpha) + \Sigma w_{ij}(\alpha)$ be expected utility for the poor. Define $U_{ir}(\beta)$ and $U_{ip}(\beta)$ similarly.

3. *Stage 2 status given voting outcomes.* Let λ be the social norm announced in stage 0 by

the candidate who receives a majority of the votes in stage 1. Conformists and violators are defined with respect to λ. Expectations v_i and τ_i similarly are a function of λ.

E. Sketch of proof. The argument presented in section III made the claim that strategies in stages 2 and above are best responses with rational expectations for a fixed norm. Here, that norm is identified as λ, which in turn depends on strategies in stages 0 and 1. Voter strategies require them to vote for the candidate whose announced norm would maximize their utility. If norm preferences are single-peaked, announcing the median of the distribution of ideal norms is the only equilibrium strategy. Therefore both candidates announce the median norm. Voters are indifferent and vote randomly; regardless of who wins, the median norm becomes the effective social norm in stages 2 and above. The appendix contains a complete existence proof.

V. Ideal Norms

1. Linear utility: A graphical illustration. To develop intuition about how the equilibrium works, let the utility function u(.) be piecewise linear. For the non-poor, utility is $u(x) = \rho x$; for the poor, it is $u(x) = \gamma x$, with $\gamma > \rho$.

Figure 2 shows the equilibrium strategies. The dotted box shows the distribution of the population; for simplicity, assume y1 = 0. The horizontal lines indicate the level of lone-parenthood utility that makes individuals indifferent between being a lone parent and not. For the non-poor, linear utility implies $s(y) = u(y - \tau) - u(y - c - \tau) = \rho c$. This is indicated in Figure 2 by the horizontal line at ρc between π and y2. Non-poor individuals whose mix of lone parent utility and income puts them in region R5 will be lone parents; those in R6 will not.

For poor individuals, lone parenthood requires greater incremental utility because of the higher marginal utility of income, but lower because of the presence of lone parent support, so

s(y) = γ(c-g). (The figure assumes the income effect dominates the grant effect.) People with incomes below the norm must also overcome the loss of cooperation, so that s(y) = γ(c-g) + (1-v)NZ. These restrictions indicate that poor people in regions R1 and R3 will be lone parents; those in R2 and R4 will not.

2. Violation rates and the social feedback effect. The violation rate is the ratio of the area of R1 to the area of the entire box (which has been normalized to one):

$$v = \phi(s2 - \gamma(c - g) - (1 - v)NZ) \quad \textbf{(3)}$$

while the tolerated lone parenthood rate is the area of R3:

$$q = (\pi - \phi)(s2 - \gamma(c - g)) \quad \textbf{(4)}$$

Note that, in (3), norm violation feeds on itself: as more people violate the norm, more norm violation is encouraged. The closed-form solution for the violation rate is

$$v = \frac{\phi(s2 - \gamma(c - g) - NZ)}{1 - \phi NZ} \quad \textbf{(5)}$$

The quantity φNZ > 0 is the *social feedback multiplier*, which measures the intensity with which norm violation encourages further norm violations. If the multiplier is near 0, small changes in parameters cause small changes in the violation rate; if it is near 1, they cause large changes and the norm system is unstable.

3. Ideal norms for the non-poor. With these formulas we can derive the distribution of ideal norms in the population. The non-poor, all conformists, achieve total utility U = ρ(y - cσ - τ) + sσ + (1-v)NZ.[16] Two aspects of utility respond to the norm, the costs of norm enforcement

(vNZ) and the tax burden $\tau = gl/r$. Maximizing utility with respect to ϕ yields the first order condition

$$\frac{\partial U}{\partial \phi} = -\frac{\rho g}{r}\frac{\partial l}{\partial \phi} - NZ\frac{\partial v}{\partial \phi} = 0 \qquad \textbf{(6)}$$

Using equations (4) and (5) and the fact that $l = v + q$, we have

$$\frac{\partial l}{\partial \phi} = -\frac{NZ}{(1-\phi NZ)^2} + [s2 - \gamma(c-g)]\left[\frac{1}{(1-\phi NZ)^2} - 1\right] \qquad \textbf{(7)}$$

and

$$\frac{\partial v}{\partial \phi} = \frac{s2 - \gamma(c-g) - NZ}{(1-\phi NZ)^2} \qquad \textbf{(8)}$$

Using these formulas, solving (6) for ϕ yields ϕ^*, the ideal norm of the non-poor voter. In the linear case, ϕ^* does not depend on any individual-specific parameters, hence ϕ^* is common to all non-poor citizens.

The ideal norm solution to equation (6) balances two effects involving tax burdens and enforcement costs. The first term is the *tax benefit* of increasing the norm. In the usual case, raising the norm discourages lone parenthood ($\partial l/\partial \phi < 0$ - see below), and this lowers tax burdens on the non-poor. The second term is the *norm enforcement cost* of increasing the norm. Raising the norm increases violation rates ($\partial v/\partial \phi > 0$ - see below), and this generates more cooperation breakdowns for the non-poor. Each non-poor player desires a norm that equates these costs. Since norms below 0 do nothing more to reduce enforcement costs while norms above poverty do nothing more to reduce tax burdens, ϕ^* lies on $[0, \pi]$.

4. Ideal norms for the poor. Poor people bear no tax burden, so raising the norm offers

them no tax relief. Lowering the norm decreases enforcement costs and, for those who choose to be single parents, can switch status from violator to conformist. Therefore decreases in the norm always raise utility. The ideal norm for the poor is always 0.

Overall, the distribution of ideal norms is degenerate at zero if (6) yields a corner solution at 0. If (6) yields a solution greater than zero, the distribution is bimodal at 0 and some number ϕ^* greater than 0 but no greater than the poverty line.[17] Assuming that fewer people are poor than non-poor, the bimodal case puts the median norm at ϕ^*. The degenerate case puts the median at zero.

5. Comparative statics: Signing key derivatives. To determine the net impact of changes in lone parent support and community-building on lone parenthood, it is necessary to compare the direct effects on individual incentives with the indirect effects that operate through changes in the social norm. Under linear utility, (6) can be solved for ϕ, but the expression is unwieldy and unintuitive. Better understanding can be obtained by taking the derivative of the first-order condition with respect to the parameters of interest (g and Z). The sign of these cross-derivatives yields the sign of $\partial\phi^*/\partial g$ and $\partial\phi^*/\partial Z$.[18] The strategy requires signs for equations (7) and (8) as well as a number of second derivatives. The exercise also reveals an inherent instability of norm systems.

$\partial v/\partial\phi$: Assuming a large upper bound on single parenthood utility (having s2 large is sufficient for existence of the equilibrium; see the appendix), equation (8) is positive; raising the norm increases violation. This makes sense because a harsher norm is harder to follow, so more people will violate it, and these violations will feed back into even more violations. In Figure 2, movements of ϕ to the right increase the violation region R1 along its right and lower boundaries;

the lower boundary effect is social feedback.

$\partial l/\partial \phi$: These same effects, however, produce an ambiguous change in the total rate of lone parenthood, given by regions R1 and R3 combined. Movements of ϕ to the right reduce lone parenthood by expanding R2 at the expense of R3, but increase it by expanding R1 at the expense of R2. Thus if feedback (the R2 to R1 effect) is strong, making norms more harsh leads to *increases* in lone parenthood. This can also be seen in equation (7): the first term is the direct effect of movement from R3 into R2, the second is the feedback effect from R2 into R1. As the quantity ϕNZ approaches zero, however, the feedback term vanishes, leaving the intuitive result that harsher norms reduce lone parenthood.

Most of the analysis from this point will rely on the following:

Assumption 1: ϕNZ is small enough that $\partial l/\partial \phi < 0$.

The assumption can always be met by increasing the upper bound on income: Through the normalization of the population space to 1, increases in y2 generate arbitrarily small values for ϕ. Still, in real life the assumption may fail, and this has important policy implications. Large feedback means both high and counterintuitive sensitivity of norms to small shocks. Rates of lone parenthood are high enough in some societies (Sawhill, 1995) to suggest that high-feedback regimes are possible.

Second derivatives: From equations (7) and (8), we have:

a. $\partial^2 l/\partial \phi \partial g > 0$

b. $\partial^2 v/\partial \phi \partial g > 0$

c. $\partial^2 l/\partial \phi \partial Z < 0$ when Assumption 1 holds, otherwise > 0.[19]

d. $\partial^2 v/\partial \phi \partial Z < 0$

Here we see a second consequence of feedback, in that it introduces non-linearity, even here in the linear utility version: the second derivative terms above explode as the feedback term ϕNZ approaches one from below. Further implications of instability will be discussed in the conclusion. From this point, however, analysis will focus on stable systems, so second derivative terms will be considered small.

VI. The effect of lone-parent support on norms and lone parenthood

We can now examine the impact of policy changes on lone parenthood. Consider first the effect of lone parent support on the norm. The derivative of (6) with respect to g is

$$\frac{\partial^2 U}{\partial\phi\partial g} = -\frac{\rho}{r}\frac{\partial l}{\partial\phi} - \frac{\rho g}{r}\frac{\partial^2 l}{\partial\phi\partial g} - NZ\frac{\partial^2 v}{\partial\phi\partial g} \qquad \textbf{(9)}$$

The first term is positive, the *primary tax effect* of grants on norms. Increasing grants raises single parenthood, which raises the tax burden. The median voter responds by calling for higher, harsher norms. The second term is negative, a *secondary tax effect*: increasing grants reduces the power of the norm to reduce tax rolls; as the norm's anti-tax effectiveness weakens, the median voter becomes more reluctant to use it; hence, the second term works against the first and could dominate it. The third term, also negative, is a *secondary enforcement cost effect*: raising grants increases violations, which raises the cost of enforcing norms; as this cost rises, the cost of using norms to fight taxation rises. The median voter becomes more reluctant to raise the norm in order to reduce taxes; hence, the third term works against the first and also could dominate it.

Assuming stability, the second derivative are small and $\partial^2 U/\partial\phi\partial g > 0$, which implies $\partial\phi^*/\partial g > 0$: grant decreases lead to softer norms. The result is intuitive. The median voter balances enforcement costs against tax costs; when grants fall, tax costs fall; in equation (6), tax costs fall

below enforcement costs; lowering the norm increases tax costs and decreases enforcement costs; the norm is lowered until the two costs are again equal.

Still assuming stability, now consider the total effect of grant changes on lone parenthood. First, from (4) and (5), the lone parenthood rate can be rewritten as

$$\pi(s2 - \gamma(c - g)) - \frac{\phi NZ}{1 - \phi NZ} + \phi[s2 - \gamma(c - g)][(1 - \phi NZ)^{-1} \quad \textbf{(10)}$$

The third term vanishes as social feedback (ϕNZ) goes to zero; under Assumption 1 its impact will be small and can be ignored for ease of exposition.[20] Taking the derivative of (10) with respect to g,

$$\frac{\partial l}{\partial g} = \pi\gamma - \frac{NZ}{(1 - \phi NZ)^2}\frac{\partial \phi^*}{\partial g} \quad \textbf{(11)}$$

The first term is positive, the *direct tax price effect* of a grant increase: increased lone parent support encourages lone parenthood for all under the poverty line, at an intensity determined by the marginal utility of income. The second term is negative because $\partial\phi^*/\partial g > 0$; this is an *indirect norm effect* indicating that raising grants causes a harsher norm, which in turn reduces lone parenthood. In effect, the norm system softens the impact of the grant increase, and may reverse it if the norm effect is strong enough.

Though intuitive, this dynamic is precisely opposite that assumed in the course of recent welfare reform debates. There, welfare cuts are supposed to help discourage lone parenthood by making norms tougher. Such an argument requires that welfare cuts toughen norms. This requires $\partial\phi^*/\partial g < 0$, which requires that secondary effects in (9) dominate the primary effect.

This is not impossible, of course, but an argument for it is hard to construct. For example,

one way to get large secondary effects is to have large second derivative terms, which occurs when social feedback is high. High feedback, however, violates assumption 1, so that harsher norms increase lone parenthood. If so, then the way to use norms to reduce lone parenthood is to make them softer, not tougher. With $\partial\phi^*/\partial g < 0$, making norms softer means welfare has to be increased, not cut. Welfare cuts being the argument's premiss, the argument has led to a contradiction.

A more plausible and coherent argument would hold that real-world systems are usually stable, in which case secondary effects are small. Then, welfare cuts soften norms, discouraging lone parenthood directly but encouraging it indirectly.

VII. The effect of community-building on norms and lone parenthood

The two community parameters, N and Z, appear in all the equations together. Therefore, a policy of strengthening community will have the same effect whether it focuses on increasing the number of interactions people have (N), or on making those interactions more important (Z). The following concentrates on the latter.

The derivative of (6) with respect to Z gives the effect of community on norms:

$$\frac{\partial U^2}{\partial\phi\partial Z} = -N\frac{\partial v}{\partial\phi} - NZ\frac{\partial^2 v}{\partial\phi\partial Z} - \frac{\rho g}{r}\frac{\partial^2 l}{\partial\phi\partial Z} \qquad \textbf{(12)}$$

The first term is negative, the *primary enforcement cost effect* of community strength. This effect captures a simple idea: Greater interdependence makes enforcing a norm more costly for the enforcers, because the cooperation one sacrifices is more important. To reduce the enforcement costs, the median voter desires a lower norm. The second term is positive, a *secondary enforcement cost effect*. It says that raising interdependence strengthens the impact of a change in

the norm on violation. Potential violators face bigger punishments, therefore a smaller change in ϕ is necessary to arrive at the new violation rate called for by the primary effect. This secondary effect therefore weakens the power of the primary effect on the norm. The third term is a *secondary tax effect*. Its sign depends on the sign of the second-derivative term, which is negative under assumption 1 (see above). In that case, the secondary tax effect is positive: bigger punishments for violators strengthen the power of the norm against lone parenthood, and hence lower tax burdens. Having a stronger anti-tax weapon in hand, the median voter seeks to use it, and is therefore reluctant to drive ϕ all the way down to the point called for by the primary enforcement cost effect.

Assuming stability and hence small secondary effects, $\partial^2 U/\partial\phi\partial Z < 0$, which implies $\partial\phi^*/\partial Z < 0$. Increasing interdependence makes norm enforcement costs bigger in equation (6); lowering the norm reduces enforcement costs and increase tax burdens; therefore the median voter calls for a lower norm until the two costs balance again. Stronger communities choose softer norms; weaker communities choose harsher norms.

In a stable system, the total effect of community on lone parenthood can be found by taking the derivative of (10) with respect to Z (again ignoring the third RHS term as above):

$$\frac{\partial l}{\partial Z} = \frac{-\phi N - \frac{\partial \phi^*}{\partial Z} NZ}{(1 - \phi NZ)^2} \qquad \textbf{(13)}$$

The first term in the numerator is negative, the *direct enforcement price effect* of an enhanced community. Stronger communities create higher costs of norm violation, which strengthens norms and hence reduces lone parenthood. Because $\partial\phi^*/\partial Z < 0$, the second numerator term is

positive, the *indirect norm effect*. Because stronger communities relax their norms, the impact of any community-building policy is weaker that the direct effect would indicate. As with welfare limits, the norm system resists policies.

Also as above, current welfare reform debates assume different dynamics, namely that stronger communities will adopt tougher norms. They will do so only if the secondary effects dominate in (12), so that $\partial\phi^*/\partial Z > 0$; this can happen under instability and high feedback; but high feedback violates assumption 1 and implies that harsher norms increase rather than decrease lone parenthood; in which case the way to cut lone parenthood is to weaken norms, not strengthen them; with $\partial\phi^*/\partial Z > 0$, this requires weaker communities, not stronger ones; the argument again contradicts itself. The only coherent argument holds that stronger communities in a stable norm system will have stronger but softer norms.

VIII. Summary

The paper has found flaws in the standard argument that limiting cash assistance to lone parents and building their communities will toughen norms against lone parenthood. The result emerges from a model that formalizes several intuitive assumptions about the operation of social norms: they create benefits and costs; cultural equilibria are induced by competing cultural leaders; and competition ensures that actual norms balance benefits and costs for citizens in the middle of the distribution of normative values. When these assumptions hold, a low-cash, strong-village approach to welfare reform will soften, not toughen, norms against lone parenthood.

Moreover, there is no support here for general arguments that informal norm systems provide important assistance to formal policy efforts. Rather, norm systems often work against policy intent, and they may be unstable. Instability is a function of social feedback. When one

person's norm violation induces many violations by others, small policy changes produce large norm changes, and theoretical predictions can be reversed. There are no policies which can be said to decrease lone parenthood with theoretical certainty. Thus, norms constitute a source of resistance and disruption in policy design and management.

This is not to say that a strategy of limiting welfare and empowering communities cannot possibly reduce lone parenthood and other social problems. It can, but only if direct price effects dominate indirect norm effects, and then only if the norm system is stable.

These findings challenge the broader debate about community, policy, and social problems to consider different causal models. The current model, that growing cash grants and weakening communities led to soft norms which has led to social problems, appears to be based on spurious correlations between these events, since the first step does not appear to be true. Norms have indeed softened, but probably for other reasons. In equation (6), increasing prosperity (y) and upward shifts in the underlying taste for socially costly behavior (s2) also soften norms. Both events probably explain some of the post-war growth in social problems, but they lead only to controversial policy proposals: Reduce incomes (clearly not the answer), or subsidize institutions that build character.

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Appendix

Existence proof for the equilibrium in Section IV.

Overview.

The proof uses backward induction, in 5 steps: A. RPD strategies are best responses given the norm and the status of any two opponents as "conformists" and "violators." B. Parenting strategies maximize utility given the norm and the associated RPD payoffs. C. Sincere voting is undominated for all but the player at the median of the preferred norm distribution induced by RPD payoffs and the frequency of lone parenthood. For the median player, sincere voting is optimal. D. Given sincere voting, the preferred norm of the median voter is the optimal announcement of both candidates. E. There exist parameters such that the candidate's expectation of the median ideal preferred norm is the actual median, and such that the induced tax levels and violation rates are equal to their expectations.

I use the shorthand "TFT" for the "Tit for Tat" strategy ("Cooperate in the first stage; then do what your opponent did in the previous stage."). "D" stands for the "Always Defect" strategy.

A. Optimality of RPD strategies. Because announcements and election outcomes are common knowledge, and because incomes and parenting choices are common knowledge between two RPD opponents, status as "conformist" or "violator" is accurately observed as of stage 3. (One could extend the model by having a probability of observation here. It is easier, however, to admit observation problems as a case in which the number of common-knowledge partners, N, is small.) As is well known, both D and TFT are best response strategies, and all players know who will play what against them. Violators expect D from everyone, and therefore

do best to play D always. Conformists expect D from violators and so play D against them. They expect TFT from other conformists and so play TFT against them. This yields an RPD payoff of 0 per opponent for violators and $Z = z/1-\delta$ per conformist, 0 per violator, for conformists.

B. As of Stage 2, norm announcements and the election outcome are common knowledge; the winner of the election announced the norm λ. However, the identity of future RPD opponents is unknown. Since these are a random selection from a uniform population, they will also be distributed uniformly on the same space as the population. If the expected rate of violation in the population is v_i, then each player expects that v_iN of her future opponents will be violators. A conformist's expected RPD payoff is thus $(1-v_i)NZ$. Moreover, if the expected rate of lone parenthood is l_i, then $\tau_i = gl_i/r$ is the expected tax burden. Given these expectations, the decision rules in stage 2 do maximize utility as defined in equations (1) and (2).

C. Given the RPD payoffs assigned to conformists and violators, and given the parenting decisions that result, in Stage 1 the players can form expectations about the total utility they would receive under each candidate's announced norm. The norm of the candidate with the most votes will take effect (λ). Under majority rule with sincere voting, the median voter is pivotal if preferences are single-peaked (see below); in this large population, the probability of being pivotal is virtually zero; therefore sincere voting is undominated. For the pivotal voter, obviously, sincere voting is the optimal strategy. If both candidates announce the same norm, random voting is undominated.

Preferences over the norm will be single-peaked if $\partial^2U/\partial\phi^2 < 0$. (The proof will only identify sufficient conditions.) The violation rate is

$$v = \frac{\phi(s2 - NZ) - \int_0^{\phi} u(y) - u(y - (c-g))\, dy}{1 - \phi NZ} \qquad \textbf{(A1)}$$

(assuming y1 = 0 without loss of generality). For s2 sufficiently large, $\partial v/\partial\phi > 0$ and $\partial^2 v/\partial\phi^2 > 0$. The poverty lone parenthood rate is:

$$l = v + \int_{\phi}^{\pi} s2 - (u(y) - u(y - (c-g)))\, dy \qquad \textbf{(A2)}$$

with $\partial l/\partial\phi = \partial v/\partial\phi + \mu$, where $\mu = u(\phi) - u(\phi - (c-g)) > 0$. Hence $\partial l/\partial\phi > 0$. Also, $\partial^2 l/\partial\phi^2 = \partial^2 v/\partial\phi^2 + \partial\mu/\partial\phi$. Again for s2 sufficiently large, $|\partial^2 v/\partial\phi^2| > |\partial\mu/\partial\phi|$ so that $\partial^2 l/\partial\phi^2 > 0$.

A non-poor voter's total utility is

$$U(\phi) = u(y_i - c\sigma_i - \frac{gl(\phi)}{r}) + s_i\sigma_i + (1 - v(\phi))NZ \qquad \textbf{(A3)}$$

The first derivative of (A3) is

$$\frac{\partial U}{\partial\phi} = u'(y_i - c\frac{\partial\sigma_i}{\partial\phi} - \frac{gl(\phi)}{r})(-\frac{g}{r}\frac{\partial l(\phi)}{\partial\phi}) - NZ\frac{\partial v(\phi)}{\partial\phi} \qquad \textbf{(A4)}$$

According to the equilibrium strategies, $\partial\sigma/\partial\phi = 1$ if $s_i = u(y_i\text{-}c\text{-}\tau) - u(y_i\text{-}\tau)$, 0 otherwise; the proof holds regardless. For those not indifferent, the second derivative of utility is

$$= (\frac{g}{r}\frac{\partial l(\phi)}{\partial\phi})^2 u''(y - \frac{gl(\phi)}{r}) - u'(y - \frac{gl(\phi)}{r})(\frac{g}{r}\frac{\partial^2 l(\phi)}{\partial\phi^2}) - NZ \qquad \textbf{(A5)}$$

which under the assumptions above, is negative for sufficiently high s2. Thus, a sufficiently high upper bound on single-parenthood utility exists such that preferences are single-peaked.

D. Candidates. Given sincere voting and single-peaked preferences, then, the median voter theorem holds. Announcing the expected ideal norm of the median voter is a best response for both candidates.

E. Expectations. It remains to show that all expectations are rational, that is, held commonly by all the relevant actors, and equal to the actual outcomes produced by the equilibrium. I impose the former requirement and then show that parameters exist in which the latter requirement is met.

Stage 0 (announcements): Let both candidates form a common expectation of the median of the ideal norm distribution, so that $\phi^e_A = \phi^e_B = \phi^e$. Let each voter's ideal norm solve $\partial U/\partial\phi = 0$ (see equation A4). Note that as M goes to infinity, the mass of the indifference frontier (those with $\partial\sigma/\partial\phi \neq 0$) shrinks to zero. Therefore M large implies that utility as defined in (A4) incorporates all player strategies and expectations as a function of ϕ. Candidates thus can solve (A4) for each y, and thereby derive the distribution of $\phi^*(y)$. Denote the median ϕ^* and set $\phi^e = \phi^*$. Because it was derived from voter strategies and expectations, ϕ^* will indeed be the median, and candidate expectations will be rational.

Stage 1 (voting): Carrying out the same calculations, all voters are aware that ϕ^* is the median ideal norm. They also know that both candidates have announced ϕ^*. Regardless of the outcome of subsequent stages, voters will receive the same utility from both announcements. Therefore the expectation $U(\alpha) = U(\beta)$, held by all, is consistent with actual outcomes.

Stage 2 (lone parenthood): It only remains to show that the expected rate of violation (v_i) and the expected tax burden (τ_i) at the start of stage 2 will cause parenting decisions that produce a violation rate $v = v_i$ and taxes $\tau = \tau_i$, all i. The expected tax burden is a simple function of the

expected lone parenthood rate, however; hence it is equivalent to require $l = l_i$, all i, where l_i is the expected lone parenthood rate.

Assume for the moment that a rational expectation of the violation rate exists, and call it v^*. Then the rational expectation of l is $l_i = l^*$, all i, where

$$l^* = v^* + \int_{\phi}^{\pi} s2 - (u(y) - u(y - (c - g)))\, dy$$

The integral term depends only on the norm, which is known, and model parameters.

To check for rational expectations regarding violation, first impose commonality, so that $v_i = \delta$, all i. With these expectations, the rate of violation will be

$$v = \phi(s2 - (1 - \delta)NZ) - \int_{0}^{\phi} u(y) - u(y - (c - g))\, dy \qquad \textbf{(A7)}$$

A rational expectation of v will exist if there is a solution to (A7) when $\delta = v$. Note that $v'(\delta) > 0$, and $v''(\delta) = 0$. Note further that $v(1) < 1$ since the size of the population has been normalized to 1, and some households - the non-poor - cannot violate the norm. Finally, for sufficiently large s2, $v(0) > 0$. Therefore a unique value v^* exists such that $v^* = v(v^*)$, and $0 < v^* < 1$. The expectation $v_i = v^*$, all i, is therefore rational. **#**

Endnotes

1. Welfare limits and community empowerment occupied center stage in the 1996 State of the Union address of U.S. President Bill Clinton: "The Congress and I are near agreement on sweeping welfare reform. We agree on time limits, tough work requirements, and the toughest possible child support enforcement." Later in the same speech: "Tonight I am pleased to announce that a group of prominent Americans is ... forming an organization that will support grass-roots community efforts all across our country in a national campaign against teen pregnancy." (State of the Union address, January 23, 1996).

2. These claims were made by candidates on both left and right in the course of the 1996 presidential campaign. On the right, Republican nomination candidate Phil Gramm: "Government programs established to help our people have changed the way we behave, corrupted our values and diminished our virtue" (comments on February 24, 1996 at http://politicsusa.com/PoliticsUSA/Issues/isel.cgi). On the left, President Clinton: "For too long our welfare system has undermined the values of family and work, instead of supporting them" (State of the Union address, January 23, 1996).

An alternative interpretation of these arguments is that they seek to change individual preferences. Assessing the role of policies in changing tastes is beyond the scope of the paper, however. Here, it will be assumed that policies are targeted at short-run changes in social understandings of morality, rather than long-run changes in individual values.

3. It should be stated at the outset that the objectives of the paper do not include building a realistic model of the decisions that lead to low-income lone parenthood. That is a very complex affair, involving choices of childbirth, marriage, work, and education, under no small amount of uncertainty. Yet it is clear, and is implicit in the entire policy discussion from which this paper draws its purpose, that the probability that one person becomes a lone parent does depend to some extent on that person's decisions. Taking this as given, the paper assumes that some people are poor while others are not, that some people choose to be lone parents while others do not, and that the decision to be a lone parent depends on whether or not you are poor. Without any loss of generality, such simplicity brings the basic issue here into sharpest relief, which is that people can reduce the costs they impose on others if they wish, and whether they do so is influenced by social norms and social policies. Norms, policies, their interaction, and their ultimate influence on behavior are the real objects of interest here; to keep them in focus, the choice theory has been kept simple.

4. Social critics in the Habermas tradition (e.g. Knight, 1992; see Johnson, 1993) focus on the power of elites to induce coordination equilibria, and overlook the fact that competition for elite status must impose limits on this power.

5. I assume uniform distributions to facilitate the calculation of lone parenthood rates, which involve integrals over the population. Using more realistic distributions would not fundamentally alter the character of the results.

6. In this model, lone parenthood creates only one social external cost, the tax. However, one could think of τ as a measure of the total social external costs. These costs are what make lone parenthood a policy problem; implicit in this approach is the assumption that lone parenthood among the rich is not a social problem. In 1992, U.S. Vice President Dan Quayle criticized the TV character Murphy Brown not because he believed her baby would cause problems for others, but because the show sent a signal to people with fewer resources than Murphy Brown that lone parenthood is not "wrong." Quayle and the show's writers were evidently in a competition over lone parenthood norms, much like that modeled in Section IV. According to some reviews, Quayle was right (Whitehead, 1993), but one could not say that he won the competition. As of this writing, he seems to have remained less popular than Murphy Brown.

7. One could define the norm more realistically. The degree of "wrongness" could rise continuously as income deviates from ϕ; "wrongness" could be defined in terms of other characteristics than income; it could be associated with other behaviors. In the real world the pattern of social rights and wrongs is far more complex than it is here. Moreover, in the real world there is a distinction between social rights and wrongs and each person's perception of objective Right and Wrong (if any). Non-consequentialist morality is not ignored here, however. Rather, such values can be thought of as a random term in each person's utility over norms. Since the random term is non-consequentialist, it cannot be related in any systematic way to the strategies of the various players. Thus, policies affect cultural equilibria only through the consequentialist aspects of individual morality (see note 13).

8. See Section IV.

9. Assume sampling with replacement, so that the distribution of income and utilities in the neighborhood is also uniform on $[y1, y2] \times [s1, s2]$. In the case of one neighbor being chosen more than once, the RPD payoffs of that interaction are multiplied. This person simply becomes an important neighbor.

An interesting extension of the paper would allow endogenous neighborhoods. So long as sorting results in less than perfect isolation, however, it will be true that violating the common norm across neighborhoods will be costly. One way to think of isolated subcultures in the context here is to think of the "neighborhood" as the group of outsiders with whom one has regular contact. If there are few of these, then N is small.

10. One could allow these parameters to vary according to income, but it is not obvious that the rich systematically interact more with one another than the poor, or vice versa. The little empirical evidence we have suggests that social capital has declined throughout the income distribution, but that these declines hurt the poor more than others (Putnam, 1995). Keeping the parameters constant replicates this stylized fact, however, by making community more important to the poor relative to their lower incomes.

11. It would be interesting to allow strategies in one matched pair to depend on strategies in another. One approach to this would be to treat a neighborhood as a network of interacting strategies. Another interesting change would have the neighborhoods clustered by income.

Neither innovation would change the results derived from this equilibrium, however. Networking would increase the importance of community enforcement and could be treated here simply as an increase in Z. Income sorting would not affect the strategies explored in this particular equilibrium, with its single norm, but in future work it could be used to explore equilibria in which different neighborhoods have different norms ("sub-cultures"). Both innovations would increase the complexity of the model significantly and would be beyond the scope of the paper, however. Moreover, endogenous sorting into subcultures may not create norm-shaping pressures fundamentally different from the endogenous sorting allowed here, into one of two electoral camps. Exploring more sophisticated institutions of cultural competition is surely a good area for future work.

12. In this, the RPD mechanism matches well with research on social stigma. Welfare recipients, for example, report significant psychic costs but these do not appear to be caused by specific incidents of scolding by strangers. Rather, recipients come to feel uncomfortable in their surroundings and out of step with society (Rank, 1994). Though some of this might be purely cognitive, surely much of it results from strained relationships between the stigmatized and the community (Goffman, 1963).

13. This does not require that everyone is a utilitarian, only that everyone's ethical dispositions consider benefits and costs in a neutral way. Including non-consequentialist ethics, the ideal norm distribution is found by making utilitarian calculations, then adding a random variable to each person's ideal norm. If the random term has a zero median (as it must if it is truly non-consequentialist), the median of this new distribution will be the same as that of the pure utilitarian distribution.

14. This is intended to capture the idea that the set of policymakers is different from the set of cultural leaders. For example, in the U.S., the Congress has far more authority over the structure of lone-parent support policies than the President, yet the President has far more power to command the nation's ear. It also replicates the property that policies usually have longer public lives than their designers.

15. Limiting voting preferences to one issue dimension greatly reduces the problems inherent in voting schemes as social choice mechanisms, of course. In the real world, the presence of other issues would give candidates a great deal more discretion over the norms they announce; they would not be automatically forced to announce the median voter's ideal norm. The same would be true if candidates cared about the norm in addition to the desire to gain office. Yet even here cultural competition will restrict the range of values by changing the nomination of candidates for office. The median voter mechanism is just a simple way to capture the intuition that competition dissipates cultural power.

16. $\partial\sigma/\partial\phi = 0$ for all except those with $y = s(y)$. With M large, the indifferent population is negligible; see appendix.

17. In the nonlinear case, the distribution will be mixed: a spike at zero connected to a smooth continuous pdf, with potentially another spike at π.

18. To see this, think of equation (6) as $F(\phi,x) = 0$ where x is a parameter of interest. Because $\partial\phi/\partial x = -F_x/F_\phi$, and $F_\phi < 0$, $\text{sign}(\partial\phi/\partial x) = \text{sign}(F_x)$. For $F_\phi < 0$, see the appendix; this is just the second order condition of the norm maximization problem.

19. To see this, consider $\partial l/\partial\phi$, equation (7). Assumption 1 asserts that ϕNZ is small, which means that the second RHS term in (7) is small. The derivative of (7) with respect to Z is therefore dominated by the first RHS term, whose effect is negative. Note that $\phi NZ < 1$.

20. Its derivative with respect to g is positive; it strengthens the direct price effect of a grant increase.