

SHAPING SOCIETAL NORMS:
EXPERIMENTAL EVIDENCE ON THE NORMATIVE IMPACT OF FREE SPEECH LAW

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Abstract Do laws shape values? We explore this question by testing a model of law and norms within a legal realm - U.S. obscenity laws - where economic incentives are not the primary drivers of social change. Our randomized experiment had data entry workers transcribe news reports of either progressive or conservative legal decisions. This design allowed us to observe the impact of these laws on attitudes and norms. We found that exposure to progressive legal decisions resulted in the liberalization of sexual attitudes and a shift in norm perceptions, though not in self-reported behavior. These findings underscore the expressive power of law, with significant implications for decision-making in social and political settings, as well as for the empirical predictions of theoretical models within these domains.

Keywords: Law and norms, expressive law, cultural change

JEL codes: J12, Z1, N32

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“There ought to exist the fullest liberty of professing and discussing, as a matter of ethical conviction, any doctrine, however immoral it may be considered. ... If all mankind minus one were of one opinion, and only one person were of the contrary opinion, mankind would be no more justified in silencing that one person than he, if he had the power, would be justified in silencing mankind. ... The only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others” (*On Liberty*, Mill 1859).

“[t]he protection given speech and press was fashioned to assure unfettered interchange of ideas for the bringing about of political and social changes desired by the people ... But implicit in the history of the First Amendment is the rejection of obscenity as utterly without redeeming social importance.” (Justice Brennan in *Roth v. United States*, 354 U.S. 476 (1957)).

“If we accept the unprovable assumption that a complete education requires the reading of certain books, ... and the well nigh universal belief that good books, plays, and art lift the spirit, improve the mind, enrich the human personality, and develop character, can we then say that a state legislature may not act on the corollary assumption that commerce in obscene books, or public exhibitions focused on obscene conduct, have a tendency to exert a corrupting and debasing impact leading to antisocial behavior?” (Justice Berger in *Paris Adult Theatre I v. Slaton*, 413 U.S. 49 (1973)).

1 Introduction

Where do normative commitments come from and what are their effects? Different groups often have different views on what they think is right or just, which can lead to group conflict. From abolition of slavery, to women’s liberation, to environmentalism, law is speculated to play a key role in moral revolutions (Tushnet 2009; Appiah 2011; Bénabou and Tirole 2012; Acemoglu and Jackson 2014), yet little causal evidence exists to date. Laws do not shape values in neoclassical models of law and economics, where only deterrence drives the response to law (Becker 1968); yet a large body of work in psychology suggests that laws can affect people’s behaviors simply by telling them what is the right thing to do and that people internalize the law (Tyler 2006; McAdams and Nadler 2008). Whether laws shape preferences—and in which direction—is important for those conducting cost-benefit analyses of judicial decisions and for those who want to know whether the decisions accord with the democratic will of the people, especially if judicial decisions shape the democratic will. Judge Richard Posner (1998) has lamented that, “[judicial] opinions lack the empirical support that

is crucial to sound constitutional adjudication” and Justice Breyer (2006) has remarked, “I believe that a[n] interpretive approach that undervalues consequences, by undervaluing related constitutional objectives, exacts a constitutional price that is too high.”

In the U.S., a fundamental rationale in judicial decisions has been to protect what courts perceive as the moral fabric of society. Isolating the effects of laws from technological or other factors that facilitated norm change is challenging. In the U.S., the three-part *Miller* test and the *Roth* test before it has, for about 50 years, instructed the courts to define obscenity according to community standards. So, if free speech precedent gives people more room for sexually progressive expression and if more progressive community standards make it easier to subsequently challenge regulations that are deemed as restrictive, this dynamic could lead to multiple steady-states, in which abrupt shifts in normative commitments could occur, as laws mobilize individuals, are disseminated to the media, and are otherwise indirectly promulgated (Akerlof et al. 1996; Cooter et al. 2008).

When law causes what is viewed as moral to shift towards what the law values, we label this an “expressive effect”, and when law causes what is viewed as moral to shift against what the law values, we label this as “backlash”. Some economists have begun to model moral values and behavior. Confronted with mounting evidence that people are often pro-social, economic models were expanded under a broader rubric of incorporating fairness into economics (Rabin 1993), so that people care about more than the material consequences, but also the consequences for others (Fehr and Schmidt 1999), and what people think of one’s type or intentions (McCabe et al. 2003; Falk and Fischbacher 2006; Bénabou and Tirole 2006), and the social audience for one’s decision (Andreoni and Bernheim 2009). Just knowing that an observer will think badly of the decision-maker can be sufficient to compel moral behavior (Dana et al. 2006, 2007; Cilliers et al. 2015). “Homo Kantiensis”, whose preferences are ones that are socially optimal when everyone else also holds that view, is evolutionarily stable when preferences rather than strategies are the unit of selection (Alger and Weibull 2012). The Homo Kantiensis model implies that if people have “some positive degree of morality, then, in addition to ... taxes it may be effective to remind individuals of moral aspects of our conduct vis-a-vis the environment” (Alger and Weibull 2016). Other

papers have modeled the conditions under which Kantian behavior emerges (Falk and Tirole 2016). Values have been cited as a rejection of markets (Roth 2007) and deviations from optimal economic policy (Mankiw and Weinzierl 2010).

We are guided by the only theoretical model in the scientific literature that we are aware of that allows both expressive and backlash effects to occur in response to law (Bénabou and Tirole 2012). We present a simplified version below and apply it to the context of free speech law. The model assumes three motivations for human behavior: intrinsic motivations, extrinsic motivations (i.e., deterrence), and social motivations. Social motivations arise from individuals receiving honor or stigma for doing something that is outside the norm. People would like to signal their type (i.e., intrinsic motivations) and appear moral to gain honor or avoid stigma.

Legal decisions inform people about the social norms (i.e., as an information multiplier): Prohibitions cause people to think that the lawmaker sees a problem and that obscene activity is more prevalent. It is then easier for those who are motivated by intrinsic incentives to signal their honor to others. This expressive effect, however, only arises when a sufficient number of people perform law’s stigmatized activity. When only a few people conduct the stigmatized activity, the morality of stigmatized activities can increase substantially if the shift in beliefs about its prevalence cause stigmatized activities to become normalized. When the normalizing effect exceeds the signaling effect, backlash occurs. In our application, the court issues a sanction that also informs people that more people are conducting law’s stigmatized activity than they previously thought.

We report two experiments and the third in Chen and Yeh (2014a), all of which show, across a total of 1,345 subjects, the expressive effects of law. Data entry workers were assigned to transcribe newspaper summaries of free speech decisions that were randomized to be progressive or conservative. We then asked the same set of attitude and behavior questions as in population-level surveys like the General Social Survey. The first experiment recruited 197 workers from around the world. It found that those transcribing newspaper summaries of progressive free speech decisions were more likely to say homosexual sex was moral, but were no more likely to report progressive sexual behaviors. This difference suggests that self-

reported behavioral shifts in response to free speech decisions were not simply due to people's openness to discussing sexual behaviors. The second experiment restricted workers to being from the U.S. and surveyed attitudes and an important parameter for the model—beliefs about sexual norms. Among 548 workers, those transcribing newsreports of progressive free speech decisions were, again, more likely to say that homosexual sex was moral, and were also more likely to favor sex education in public schools. In terms of beliefs, these workers exposed to progressive laws reported believing a lower percentage of people having extramarital sex than those exposed to conservative laws, verifying the information multiplier proposed by Bénabou and Tirole (2012).

The theoretical model of Bénabou and Tirole (2012) also suggests that whether law has expressive or backlash effects depends on the underlying social norms. When law's stigmatized activities were relatively scarce, these activities became normalized when conservative free speech decisions caused people to update their beliefs that the stigmatized activities were more common than previously thought. This update in perceived prevalence, in turn, caused more people to do the stigmatized activity, which eventually becomes destigmatized. In an analysis of all free speech precedents pertaining to obscenity since 1958 (Chen and Yeh 2014b), a large number of free speech decisions occurred amid the sexual revolution and a large number were decided conservatively, greatly increasing the information multiplier. In the aftermath of the sexual revolution, progressive free speech decisions weaken the ability for individuals to signal intrinsic motivations. Progressive free speech decisions then have expressive effects.

Consistent with this prediction, in the early years, conservative judicial decisions led to backlash—an increase in the perceived morality of homosexual sex and an increase in the incidence of non-marital sexual behaviors. In the aftermath of the moral revolution, law had expressive effects (Chen and Yeh 2014b). Supporting evidence is found experimentally in Chen and Yeh (2014a). In communities where law's stigmatized activity is rare, progressive free speech precedent caused data entry workers to backlash, and also lowered their subjective well-being. The opposite occurred for individuals in communities where law's stigmatized activity is more common.

Our study focuses on the more basic and timeless question of whether laws influence conceptions of rights. A leading theorist of free speech articulated the primary value of guaranteeing free speech to be individual self-realization, from which follows liberty, autonomy, self-fulfillment, and human development (Redish 1982). If progressive free speech precedent liberalized sexual attitudes, behavior, crime, and disease, and increased subjective well-being in communities where law’s stigmatized activity is prevalent, then these effects would be consistent with these goals, at least for some communities.

Several studies have linked major court rulings with shifts in public attitudes (Hoekstra 2000). These studies suggest that the media plays a prominent role in these shifts.¹ The media and other information purveyors, such as community organizations, raise awareness of judgements (Weinrib 2012). After obscenity precedent, American Civil Liberties Union (ACLU) attorneys mobilized individuals towards a view that speech should be protected regardless of its social value. Social media also helps communicate and promulgate court decisions (Clark et al. 2014). We complement these studies with causal evidence of the potential impact of newspapers reporting on Circuit obscenity decisions. Specifically, we randomized whether we provided information on a progressive or conservative free speech decision. We show that changes in norms can also occur via the media.² The role of material penalties is unlikely to be significant in the short time frame of our experiments. This evidence is inconsistent with deterrence as sole mediator for the effects of law. It shows that laws shape values simply through information.

Our use of a paired lab-in-field design complements previous papers on law and norms in experimental economics that use exogenous variation in the rules of the games to mimic the law (Dal Bó et al. 2010; Galbiati and Vertova 2008; Bowles and Polania-Reyes 2012; Croson 2009). Our paper also builds on a large experimental literature using revealed preferences on social preferences and moral behavior: cooperation in moral dilemma games (Henrich et al.

¹See, for example, Julia C.Mead, “Village Can Shut X-Rated Store,” *The New York Times*, Section 14LI, Column 5, June 19, 2005; Joyce Price, “‘Community Standards’ ruling stands; On-line porn judged by download site,” *The Washington Times*, p. A6, February 16, 1996.

²Newspapers, advocates, and community organizers publicize Circuit Court decisions (Pastor 2007; Eagle 2007; Sandefur 2005). Public opinion is affected where the case originates (Hoekstra 2000). Municipalities increase or decrease regulations or modify existing ordinances in response to court decisions (Berliner 2003; Nader and Hirsch 2004).

(2010); Rand et al. 2012); bargaining over killing surplus lab mice (Falk and Szech 2013); fairness in non-market and market interactions (Smith 1962; Roth et al. 1991; Bartling et al. 2015; Hoffman et al. 1994; Ross and Ward 1995); and the imposition of negative externalities on other lab subjects (Plott 1983). Recent work uses variation in law’s obligations to measure the impact on intrinsic motivation and individual choice (Larcom et al. 2019). Different from this, we conduct a randomized experiment that measures an individual’s shift in attitudes and beliefs in response to information about law’s obligations. We also test a theoretical framework that postulates when law has expressive or backlash effects and we measure a key parameter of this framework: an individual’s beliefs about the prevalence of the sanctioned activity. By utilizing real legal verdicts, we demonstrate that individuals exposed to progressive legislation reported a perceived lower incidence of extramarital sex compared to those exposed to conservative laws. This confirms the information multiplier concept proposed by Bénabou and Tirole (2012).

The remainder of the paper is organized as follows. Section 2 provides historical and legal context. Section 3 details the theoretical framework. Section 4 presents the data entry experiment. Section 5 concludes.

2 Background

2.1 Historical and Legal Context Laws do not shape values in neoclassical models of law and economics (Becker 1968). A large body of work in psychology, however, suggests that laws can affect values (Tyler 2006). A fundamental rationale of free speech regulation has been to protect the moral fabric of society. Does obscenity law affect moral values and does it matter? We examine obscenity law in the U.S. as judges have frequently cited policy rationales to restrict free expression: breakdown of moral standards,³ sexual violence,⁴ child sexual abuse,⁵ and disease and drugs.⁶

First Amendment jurisprudence affects many aspects of society. Policies affected by these

³*Fort Wayne Books v. Indiana*, 489 U.S. 46 (1989)

⁴*Amatel v. Reno*, 156 F.3d 192 (D.C. Cir. 1998)

⁵*Ginsberg v. New York*, 390 U.S. 629 (1968)

⁶50 AM. JUR.2d §§ I, 2 (1995)

cases include the government's ability to regulate mail, magazines, books, movies, internet, and phone calls. The regulations of these media are typically studied one at a time. One study attributes 7% of births to portrayals of intimate relations on television (La Ferrara et al. 2012). A second study attributes 10% of divorce to broadcast television critical of traditional values (Chong and Ferrara 2009). A third study finds 52% more pregnancies and 8% greater acceptability of domestic violence to cable television (Jensen and Oster 2009). A fourth study attributes 25-30% more female oral contraception use after one Supreme Court decision (Bailey 2010). And a fifth study attributes 3.2% of rapes and 2.5% of sex crimes and child sex abuses to internet broadband (Bhuller et al. 2013).

Recent general equilibrium modeling attributes 50% of the sexual revolution to individuals' moral views on sexual rights (Fernandez-Villaverde et al. 2014). Peer effects generate positive feedback (Card and Giuliano 2011). If free speech precedent gives people more room for progressive expression and if more progressive community standards make it easier to subsequently challenge regulations that are deemed as restrictive, this dynamic could lead to multiple steady-states, in which abrupt shifts in norms can occur (Akerlof et al. 1996; Cooter et al. 2008).

Historical studies document backlash by conservatives to stop the Supreme Court from encroaching on state rights to control pornography during the 1950s and 1960s. From 1959 to 1966, bans on three books with explicit erotic content were challenged and overturned. Prior to this time, a patchwork of regulations, local customs, and vigilante actions governed what could and could not be published. For example, the United States Customs Service banned James Joyce's *Ulysses* (1922) by refusing to allow it to be imported into the United States. Different cities and organizations had their own rules for allowable content. The Warren Court (1953-1969) greatly expanded civil liberties and in *Memoirs v. Massachusetts* and other cases curtailed the ability of municipalities to regulate the content of literature, plays, and movies. For six years, it reversed summarily—without further opinion—scores of obscenity rulings by lower state and federal courts, culminating in the 1969 decision *Stanley v. Georgia* (394 U.S. 557), which held that people could view whatever they wished in the privacy of their own homes.

The last ruling led the U.S. Congress to fund the President’s Commission on Obscenity and Pornography. The 1970 Commission found that there was “no evidence to date that exposure to explicit sexual materials plays a significant role in the causation of delinquent or criminal behavior among youths or adults,” “no evidence that exposure to explicit sexual materials adversely affects character or moral attitudes regarding sex and sexual conduct,” and concluded that “legislation prohibiting the sale, exhibition, or distribution of sexual materials to consenting adults should be repealed.” These findings were roundly rejected and criticized by Congress. In the immediate aftermath, opposing groups authored minority reports that dissented with the Commission’s view, which was subsequently cited by the U.S. Supreme Court in later conservative decisions. When Chief Justice Warren was to be replaced by Justice Fortas, a conservative group led by Senator Strom Thurmond organized the “Fortas Obscene Film Festival” (featuring transvestites), which led to the resignation of Justice Fortas and the nomination of Justice Burger. By 1973 Justice Burger issued the *Miller* test which repudiated the “utterly without redeeming social value” standard from *Memoirs* in favor of the markedly less liberal “lacks serious literary, artistic, political, or scientific value” (Boyce 2008). See the Appendix for other major rulings.

To identify causal effects, the ideal experiment would randomize legal rules (Besley and Case 2000). There is a broad literature in law and economics that documents the cross-country association between legal rules and socioeconomic developmental outcomes (Glaeser and Shleifer 2002; Djankov et al. 2003; Anderson 2018; Ashraf et al. 2019). A companion paper analyzes all free speech precedents pertaining to obscenity since 1958 (Chen and Yeh 2014b). Throughout this period, Democrats have prioritized freedom of speech and expression while Republicans have prioritized minimizing the secondary harms of free speech. Conflicting policy goals have led judges to “weaponize” First Amendment jurisprudence, which governs much of U.S. free speech policy.⁷ Leveraging the quasi-random assignment of judges, as their biographies predict rulings, the paper shows that progressive free speech precedent increased progressive attitudes and behaviors. The current paper focuses on a mechanism experiment that examines the attitudes and beliefs of data entry workers randomly assigned to enter

⁷“How Conservatives Weaponized the First Amendment”, *New York Times*, 06/30/2018.

news reports of conservative or progressive decisions.

3 Theory

3.1 Conceptual Framework The law and norms model (Bénabou and Tirole 2012) assumes three motivations for human behavior: (1) intrinsic motivations, where people perform an action simply because they believe it is the right thing to do; (2) extrinsic motivations, where material incentives and deterrence influence actions; and (3) social motivations, where values, norms, and social sanctions affect actions. People accrue honor or stigma for actions outside the norm. Two different views of free speech emerge: (1) law shifts social motivations towards what the law values, i.e., it reinforces the potential deterrent effects provided by the legal sanction; or (2) law shifts social motivations away from what the law values and it undermines the law’s intention. As shorthand, we label the former as an expressive effect and the latter as backlash.

The intuition is that material penalties indicate that the judge sees a problem. The judge has information about some underlying activity and issues a penalty when he or she believes it should be deterred. Upon observing the precedent, community leaders and individuals update their beliefs about the underlying distribution. If the activity was very scarce, then backlash occurs. Previously stigmatized activities become normalized. If the activity is common, expressive effects occur. In Appendix A, we link the model to the empirical specification. The model is operationalized in the General Social Survey (GSS), where people respond to questions about the morality of particular actions. By reporting their perceived morality of an action, respondents report the difference in the social perception of someone who chooses an action vs. the social perception of someone who does not choose an action.

3.2 Model We present a simplified version of Bénabou and Tirole (2012). The model assumes three motivations for human behavior: (1) intrinsic motivations, where people perform an action simply because they believe it is the right thing to do; (2) extrinsic motivations, where material incentives and deterrence influence actions; and (3) social motivations, where values, norms, social sanctions provided by society affect actions. People accrue honor or

stigma for actions outside the norm. For example, if very few people use drugs, then drug users receive stigma; if very few people donate millions, then donors receive honor. Information is conveyed by legal decisions on the norms—the distribution of actions in the community. Two different views of free speech emerge: (1) law shifts social motivations towards what the law values, i.e., it reinforces the deterrent effects provided by the sanction, or (2) law shifts social motivations away from what the law values, i.e., it undermines the law’s intention. As shorthand, we call the former an expressive effect and the latter, backlash.

Individuals maximize the following utility function:

$$U(a) = (v_a + y)a - C(a) + e\bar{a} + \mu E(x | a)_s$$

where v_a is intrinsic motivation (over the range of $[\underline{v}, \bar{v}]$), y is extrinsic payoff, $C(a)$ is the cost of the action, $e\bar{a}$ is the public good aspect of the good, and μ is the positive weight agents put on social perceptions, $E(x | a)_s$, which is other people’s perception of the actor’s intrinsic motivations. Society uses a rule s to calculate their expectation of the actor’s intrinsic motivations based on his or her action a . In rational expectations equilibrium, society’s expectations will be correct and the last term will be $\mu E(v_a | a)$.

The principal—the social planner or judge—maximizes over the contract and y :

$$(1) \quad W(y) = f(\bar{U}(y)) + (1 + \lambda)ya(y) + \sigma_j\bar{a}$$

The judge set the costs and $\sigma_j\bar{a}$ represents the systematic component of judge j ’s decision-making that leads them to value the public good \bar{a} more or less than other judges. λ is the shadow cost of resources used as incentives, like enforcement costs.

Due to random assignment of judges with different σ_j , we have exogenous variation in y in our empirical application. So, we focus on the behavior of the agent.

In the simple example of two actions ($a = 0, 1$), the actor receives:

$$(2) \quad \begin{cases} \text{if } a = 1 : & U(1) = v_a + y - C(1) + e\bar{a} + \mu E(x | 1)_s \\ \text{if } a = 0 : & U(0) = -C(0) + e\bar{a} + \mu E(x | 0)_s \end{cases}$$

Exercising free speech rights corresponds to $a = 0$ and abstaining from free speech corresponds to $a = 1$. $e > 0$ captures judicial concerns that exercising free speech leads to some harm.

With two actions, the social perception of the actor's intrinsic motivations follows a cutoff rule. Normalize $c = C(1) - C(0) - y$, which is the extrinsic cost difference between the two actions; with ordinal utilities, we rewrite net utilities as:

$$(3) \quad \begin{cases} \text{if } a = 1 : & U(1) = v_a - c + \mu E(x | 1)_s \\ \text{if } a = 0 : & U(0) = \mu E(x | 0)_s \end{cases}$$

This expression provides a cutoff rule, since if a person chooses to take action $a = 1$ at some v_a , then the person also chooses $a = 1$ at any $v > v_a$, holding others' actions fixed in equilibrium. This is because the social motivation and the extrinsic motivation are fixed, while the intrinsic motivation increases. Thus the cutoff rule will satisfy:

$$(4) \quad v^* - c + \mu E(v_a | 1) = \mu E(v_a | 0)$$

The expression motivates a sufficient condition for a fixed point. The fixed point solves the equation:

$$(5) \quad v^* + \mu \Delta(v^*) = c$$

where we define:

$$(6) \quad \Delta(v) = E(v_a | v_a > v) - E(v_a | v_a < v)$$

At the cutoff value v , people choose action 1 if their v_a is bigger than v , and they choose action 0 if their v_a is smaller than v , so

$$(7) \quad \Delta(v) = E(v_a | 1) - E(v_a | 0)$$

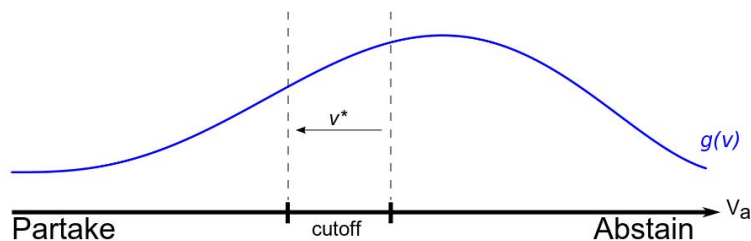
A sufficient condition for a fixed point is if $1 + \mu\Delta'(v) > 0$, in which case $[\underline{v}, v^*]$ share of the population exercise free speech.

To understand this sufficient condition, note that $v^* + \mu\Delta(v^*)$ is the marginal benefit of exercising free speech for people at the cutoff. The marginal benefit is the sum of intrinsic motivation and social motivation. c is the marginal cost. The intuition for the sufficient condition is as follows. If $1 + \mu\Delta'(v) > 0$, then as the cut-off increases, the marginal benefit will eventually equal the marginal cost c , which is constant, and that cutoff will be a fixed point. The more people who exercise free speech, the more honor associated with abstaining from free speech, which means the less others will exercise free speech. While $1 + \mu\Delta'(v) > 0$ is a sufficient condition for a fixed point, it is not a necessary condition. In particular, $\Delta'(v) < 0$ is possible, when a small perturbation leads to rapid social changes as society moves from one steady state to another.

See Figure 1 for a distribution of intrinsic motivations. Under Jewitt's lemma, the shape of Δ mirrors the density of v . Δ initially decreases, then increases. Intuitively, this is because adding a small mass around the cutoff will shift one truncated mean more than the other. When v^* is small (most people choose $a = 1$), raising v^* increases $E(v_a | 0)$ more than $E(v_a | 1)$, as $E(v_a | 0)$ includes very few points on the left tail of the v -distribution. Slightly increasing the support of the truncated distribution to the right adds a large share of individuals with high v 's. In contrast, $E(v_a | 1)$ is less affected.

In words, the more people who exercise free speech, the more normalized it becomes, so

FIGURE 1.— Distribution of Intrinsic Motivations



the more others will exercise free speech as well: $\Delta'(v) < 0$. Multiple equilibria can arise if complementarity is strong enough or μ is large enough. When $1 + \mu\Delta'(v)$ is negative, there may be unstable equilibria.

Explicit sanctions indicate that the judge sees a problem. The judge has information about v^* because of the *Miller* community standard test, which incentivizes litigants in an adversarial system to bring information on v^* to the judge. The judge issues a sanction when they believe v^* is too high. Upon observing the decision, community leaders and individuals update their beliefs about the underlying distribution. When exercise of free speech is common, v^* is on the right side of the distribution, so free speech decisions have expressive effects.

The model implies: (1) laws have expressive effects when v^* is high (the density of v is falling) and (2) laws have backlash effects when v^* is low (the density of v is increasing).

We map $\Delta(v)$ to the General Social Survey (GSS), where people respond to questions about the morality of particular actions. By reporting what is their perceived morality of an action, respondents report the difference in the social perception of someone who chooses $a = 1$ vs. the social perception of someone who chooses $a = 0$, which is a motivator for their action (behavior).

3.3 Outcomes Data The GSS measures attitudes (e.g., towards homosexual sex, extramarital sex, and premarital sex) and behavior (e.g., number of partners last year, extramarital sex, or paid sex).⁸ For attitudes, we constructed a binary indicator for the response “not wrong at all”.⁹ This binary indicator corresponds to $\Delta(v)$ in the law and norms theory. Since the Supreme Court has instructed the courts to define obscenity according to community standards, we also constructed a measure for community standards using the survey response to whether sexual materials lead to breakdown of morals, the closest proxy to the community standards in the model.

We employ data entry workers to transcribe newspaper summaries of free speech decisions, randomized to be progressive or conservative. Through three experiments we explore the effects of free speech precedent on 1,345 subjects. First, we should expect an effect on self-reported behaviors of data entry workers if the GSS results merely reflect openness in discussing topics (e.g., paid sex) previously considered to be private. Second, we measure attitudes. The role of material penalties is unlikely to be significant in the short time frame of our experiments. If we see an effect on attitudes of data entry workers, it would be consistent with informational effects of law. Third, we measure beliefs about the prevalence of underlying activity, which is the key mechanism of the law and norms model.¹⁰

4 Newsreports and Experiment

We implement a mechanism experiment (Ludwig et al. 2011). Djourelova (2020)) documents that media can have immediate and persistent effects, even on policy support. We randomly expose data entry workers to transcribe newsreports of obscenity decisions and assess their attitudes and behaviors using the same questions as in the General Social Survey. We hired 1,345 workers across three replications. We see marginally significant effects

⁸The GSS is an individual-level survey that was conducted annually from 1973 to 1994 (except for 1979, 1981, and 1992), and biannually from 1994 to 2004. For each year, the GSS randomly selects a cross-sectional sample of residents of the United States who are at least 18 years old. The GSS had roughly 1,500 respondents per survey year for 1973-1992 and roughly 2,900 respondents per survey year for 1994-2004, yielding a total of 44,897 individuals. We shift the survey responses by one year because people can be surveyed at any time during the year and the number of partners last year may include information from the previous calendar year.

⁹The other three response choices are “always wrong”, “almost always wrong”, “wrong only sometimes”.

¹⁰Our measures of second order norms, like the GSS, are not incentivized for accuracy (Chen and Yeh 2014a).

on acceptability of homosexual sex as worded in the General Social Survey and echoing the population-based analysis. We report the results of each experiment separately. The pooled results would be stronger.

The experiments also show that self-reported behaviors did not shift in response to progressive free speech precedents. The short timeframe of the study precludes actual behaviors from changing. Notably, exposure to conservative obscenity precedents increased perceived prevalence of extramarital sex by 2.5 percentage points. This result verifies the information channel in the law and norms theory: when legal authorities increase sanctions against a particular activity, people infer that more people are engaged in this activity. The third replication is reported in Chen and Yeh (2014a), which finds that liberal obscenity decisions liberalize individual and perceived community standards and increase utility. Yet religious workers become more conservative in their values, identify as more Republican, view community standards as becoming more liberal, and report lower utility. Workers update beliefs about the prevalence of sexual activities differently in response to liberal or conservative decisions.

We recruited workers through Amazon Mechanical Turk. We posted a single placeholder task containing a description of the work and a link for workers to follow if they want to participate. The subjects were then randomized, via stratification in the order in which they arrived at the job, to one of several treatment conditions. Treatment was not revealed at this early stage. All workers saw identical instructions.

We asked workers to transcribe paragraphs from a Tagalog translation of Adam Smith’s *The Wealth of Nations*, as well as English paragraphs of dictionary definitions. This task is sufficiently tedious that no one is likely to do it “for fun,” and sufficiently simple that all market participants can perform it. The source text was machine-translated to prevent subjects from finding the text elsewhere on the Internet. We minimize attrition through a commitment mechanism. In all treatment conditions, workers faced an identical “lock-in” task in order to minimize differential attrition before the treatment was revealed. The lock-in successfully reduces attrition.

1 of 3 Lock-in Tasks: Kaya sa isip o diwa na tayo ay sa mga ito, excites ilang mga antas ng parehong damdamin, sa proporsyon ng kasiglahan o dulness ng kuru-kuro. Ang labis na kung saan sila magbuntis sa kahirapan ng mga wretches nakakaapekto sa partikular na bahagi sa kanilang mga sarili ng higit pa sa anumang iba pang; dahil sa takot na arises mula sa kathang isip nila kung ano ang kani-kanilang mga sarili ay magtiis, kung sila ay talagang ang wretches kanino sila ay naghahanap sa, at kung sa partikular na bahagi sa kanilang mga sarili ay talagang apektado sa parehong miserable paraan. Ang tunay na puwersa ng mga kuru-kuro na ito ay sapat na, sa kanilang mga masasaktin frame, upang gumawa ng na galis o hindi mapalagay damdam complained ng.

The payment for each paragraph was 10 cents with workers able to receive much more in bonuses, including a 50-cent bonus for completing the survey from the GSS at the end. A paragraph takes about 100 seconds to enter, so the offered payment of 10 cents per paragraph is equivalent to \$86.40 per day. The federal minimum wage in the Unites States was \$58/day. In India, payment rate depends on the type of work done, although the "floor" for data entry positions appears to be about \$6.38/day.¹¹ An example paragraph was displayed on the first page of the external hosting site so workers were aware of the high payment prior to entering the study.¹²

After the lock-in task of three paragraphs, treatment was revealed. Original newspaper articles are available on request.

Treatment 1 (Conservative): A federal court has ruled that the North Carolina legislature may ban the sale of hardcore pornography in bookstores. The North Carolina legislature had enacted the ban as a nuisance abatement measure. The legislature considered adult bookstores to be nuisances. Adult bookstore owners had challenged the North Carolina statute as unconstitutional. They argued that the statute would be restricting expression before they reach the public and before they are deemed obscene or not. In general, prior restraints on speech are unconstitutional under the First Amendment. However, the First Amendment does not protect obscene speech. The Fourth Circuit court said that statute's prior restraints on explicit photographs and films are acceptable, because they applied only to films and photos sold in hardcore pornography stores. The speech was not completely limited since

¹¹Payscale, Salary Snapshot for Data Entry Operator Jobs, http://www.payscale.com/research/IN/Job=Data_Entry-Operator/Salary?, accessed June 17, 2011.

¹²In fact, one worker emailed saying that 10 cents was too high and that the typical payment for this sort of data entry was 3 cents per paragraph.

other stores, such as regular newsstands, could still sell the material.

Treatment 2 (Conservative): Hillsborough County soon will begin enforcing its strict ordinances governing adult businesses now that a federal appeals court has ruled the restrictions are constitutional. County Attorney Renee Lee said the county does not yet have a timeframe for compliance. The ruling from the 11th Circuit U.S. Court of Appeals means that dancers at bikini bars will have to stay 6 feet away from patrons, and the sale or consumption of alcohol will be prohibited at adult businesses. Additionally, adult video stores would be prohibited from having private viewing booths and workers would have to pass a criminal background check before they are hired. Attorney Scott D. Bergthold, who represented Hillsborough, said the court's decision held that the county government "acted reasonably" in adopting the ordinances. This demonstrates that local governments have the ability to effectively regulate such establishments to control their negative effects on the community.

Treatment 3 (Progressive): A company may transport obscene magazines as long as the magazines have enough literary content and social value, according to the Fifth Circuit. Michael Travis and the Peachtree News Company appealed to the Fifth Circuit after prosecutors in a federal trial court convicted them of twelve counts transporting obscene magazines across state lines. The government may constitutionally regulate the interstate transport of materials that are defined as obscene. The First Amendment protects speech generally, making it harder for the government to regulate constitutionally protected speech. However, obscenity is excluded from First Amendment protections. According to the Fifth Circuit ruling, the magazines' pictures alone would be obscene. But six of the magazines also had short stories and discussions of lesbianism, homosexuality, nudity, censorship, photography, marital sexual problems, and fine art. These gave them enough social value to merit constitutional protection.

Treatment 4 (Progressive): The Boys of Cocodorm – Snow Bunni, J Fizzo, et al – are staying put, after a federal judge ruled that the gay porn website has a right to film out of its Edgewater home. Cocodorm.com features black and Hispanic men, known as "dorm dudes," who share a webcam-filled house together and have sex on schedule. For that they are paid at least \$1,200 a month, plus free room and board. Miami has tried to shut the house down, arguing it constitutes an adult business illegally operation in a residential area. The city's Code Enforcement Board in 2007 agreed, but Cocodorm responded to the code enforcement proceedings by suing in federal court. From the outside, the Cocodorm house looks like any other residence. Those who want to see Cocodorm's "hottest and horniest" do so via the Internet, with a credit card.

Treatment 5 (Control): The IAU has so far recognized five dwarf planets differentiated from planets by a parameter of "planetary discriminant." According to NationMaster Encyclopedia, dwarf planets follow orbits which are not free from other minor celestial bodies. Simultaneously, they always circle the Sun and not other celestial objects (they are not satellites). Several dwarf planets have already

been scrutinized effectively. Their physical properties have been calculated through routine Earth-based observations. Dwarf planets, particularly Pluto, are often mistakenly described as “planetoids” or “comets”. This confusion stems mostly from their size and surface texture which, in accordance with varying parameters, can be attributed to various minor celestial bodies. The above names of particular dwarf planets have also been subject to numerous changes. Until today not all solar system bodies have been identified and remain unclassified. The list of dwarf planets as well as other celestial bodies will be constantly altered.

The empirical specification examines the effect of exposure to progressive free speech precedents:

$$Outcome_{it} = \alpha + \beta_1 Treatment_{it} + \beta_2 X_{it} + \varepsilon_{it}$$

$Treatment_{it}$ is defined as 1 (for progressive), 0 (for control), or -1 (for conservative) for individual i in treatment t . X_{it} are demographic controls. We control for whether the data worker is male and, in experiment 1 with 197 workers mostly from India and the U.S., a dummy indicator for being from India. The second experiment is essentially identical (with an additional question on beliefs) but was restricted to the U.S. and had 548 workers. We report the results separately. The pooled results would be stronger.

The third experiment was also restricted to the U.S. and had additional questions. The questions in this third experiment also included incentivized measures of second order norms analyzed separately in Chen and Yeh (2014a). One group was asked to report their own standards while another group was asked to estimate the other workers’ standards, while being offered payment incentives for accuracy. One group was asked to report their own behaviors and another group to estimate the prevalence of the other workers’ behaviors, again with incentive pay for accuracy. This design differs from the two experiments reported here in that it: (i) used monetary incentives to measure belief-updating of others’ moral views (community standards); (ii) separated individual from community standards; and (iii) measured subjective utility. The experimental findings on attitudes, behaviors, and perceived

prevalence of extramarital sex were replicated with 600 U.S. workers. The study also provides suggestive evidence that legitimacy of law can affect utility and self-identification.

In both Tables I and II, we see significant effects on acceptability of homosexual sex as worded in the General Social Survey and echoing the population-based analysis.¹³ The experiments also show that self-reported behaviors did not shift in response to progressive free speech precedents. The short timeframe of the study precludes actual behaviors from changing. The null result suggests that self-reporting norms are unlikely to explain the results in the population-based analyses.

In addition, the short timeframe precludes exposure to materials censored or approved by the law, so the changes in stated values suggest that laws can have independent effects on attitudes and values outside of the deterrence channel. The second experiment with only American workers replicates the findings from the first experiment. Table II reports that exposure to progressive obscenity precedent increased the likelihood that people favor sex education in public schools and the acceptability of homosexual sex by 4 percentage points. These effects are notably larger than the population-level estimates, where the impact on the acceptability of homosexual sex ranged from 0.3 to 1.7 percentage points. But population estimates are the weighted average of the direct effects of exposure and the indirect effects of exposure. The unknown parameter is the probability of direct exposure.

Table II also shows that exposure to conservative obscenity precedents increased perceived prevalence of extramarital sex by 2.5 percentage points. This result verifies the information channel in the law and norms theory: when legal authorities increase sanctions against a particular activity, people infer that more people are engaged in this activity.

¹³ The effects are similar in a probit specification. These effects are robust to dropping the control group. These effects also remain when we exclude Treatment 4, which explicitly referred to homosexual sex.

TABLE I.— The Effect of Progressive Free Speech Precedents on Attitudes and Behavior

Panel A: Attitudes		Premarital Sex is OK	Extramarital Sex is OK	Teen Sex is OK	Homosexual Sex is OK	Favor Sex Ed in Public School
		(1)	(2)	(3)	(4)	(5)
Progressive Free Speech Decision		0.00568 (0.0363)	-0.0403 (0.0280)	-0.0292 (0.0304)	0.0637+ (0.0373)	-0.0537 (0.0392)
India		-0.386** (0.0680)	0.0528 (0.0524)	-0.307** (0.0569)	-0.363** (0.0697)	-0.181* (0.0734)
Male		0.246** (0.0693)	0.0698 (0.0534)	0.135* (0.0580)	0.138+ (0.0711)	0.0631 (0.0748)
Mean Dep. Var.		0.569	0.153	0.222	0.483	0.488
Observations		197	197	197	197	197
R-squared		0.163	0.030	0.142	0.133	0.042
Panel B: Behaviors		Nonmarital Sex in Last Year	Casual Date Sex in Last Year	Paid Sex in Last Year	Saw X-rated Movie	Sex Frequency Monthly or More
		(6)	(7)	(8)	(9)	(10)
Progressive Free Speech Decision		-0.0131 (0.0387)	-0.00403 (0.0286)	0.0187 (0.0235)	0.0419 (0.0380)	0.0335 (0.0388)
India		0.124+ (0.0724)	0.00969 (0.0535)	-0.00506 (0.0440)	-0.110 (0.0712)	-0.213** (0.0726)
Male		0.0478 (0.0738)	0.146** (0.0546)	0.149** (0.0449)	0.328** (0.0725)	-0.0173 (0.0740)
Mean Dep. Var.		0.399	0.158	0.099	0.517	0.438
Observations		197	197	197	197	197
R-squared		0.021	0.040	0.057	0.098	0.050

Notes: Standard errors in parentheses. +p<0.10, *p<0.05, **p<0.01

TABLE II.—The Effect of Progressive Free Speech Jurisprudence on Values and Beliefs

Attitudes	Premarital	Extramarital	Teen Sex	Homosexual	Favor Sex	Percentage of
	Sex is OK (1)	Sex is OK (2)	is OK (3)	Sex is OK (4)	Ed in Public School (5)	People who have Extramarital Sex (6)
Progressive Free Speech	0.00942 (0.0190)	0.0145 (0.0156)	-0.0192 (0.0231)	0.0351+ (0.0209)	0.0425+ (0.0227)	-2.511* (0.979)
Decision	0.0576 (0.0360)	0.0839** (0.0297)	0.150** (0.0439)	0.0213 (0.0398)	-0.000567 (0.0430)	-6.741** (1.861)
Male	0.803 (0.0360)	0.124 (0.0297)	0.392 (0.0439)	0.739 (0.0398)	0.655 (0.0430)	44.532 (1.861)
Mean Dep. Var.	548	548	548	548	548	548
Observations	0.005	0.016	0.022	0.006	0.006	0.035
R-squared						

Notes: Standard errors in parentheses. +p<0.10, *p<0.05, **p<0.01

5 Conclusion

Social scientists and philosophers have long debated whether law shapes values. Judges recognize the possibility that laws can have effects through the moral messages that they convey. We bring causal analysis of the impact of law on norms. Our theoretical framework allows for both backlash and expressive effects to occur, depending on the underlying distribution of law's sanctioned activity.

Through the randomization of rulings from data entry experiment, we find that prioritizing individual self-expression increased the value and exercise of free speech rights. Relative to conservative free speech precedent, progressive precedent was associated with more progressive attitudes and behaviors on non-marital sexual activity. Conservative court precedents increased the perceived prevalence of extramarital sex, a key mechanism for the model of law and norms (Bénabou and Tirole 2012).

The research can be extended in a number of directions. Methodologically, the experimental framework helps distinguish deterrence from information channels for the causal effects of law. We hope it proves fruitful for policy-makers and judges interested in assessing the impact of court-made law, as well as for scholars and theorists interested in evaluating theories of behavioral responses to the law.

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Appendix:

A Background on U.S. Obscenity Law

Major doctrinal developments in obscenity law include:¹⁴

Regina v. Hicklin (1868, Eng) 3 QB 360. - “I think the test of obscenity is this, whether the tendency of the matter charged as obscene is to deprave and corrupt those whose minds are open to such immoral influences, and into whose hands a publication of this sort may fall.” Applied in the U.S. as illustrated in *Commonwealth v. Friede* 271 Mass 318, 171 NE 472 (1930).

United States v. One Book Entitled "Ulysses" 72 F2d 705 (1934, CA2 NY) - “We believe that the proper test of whether a given book is obscene is its dominant effect. In applying this test, relevancy of the objectionable parts to the theme, the established reputation of the work in the estimation of approved critics, if the book is modern, and the verdict of the past if it is ancient, are persuasive pieces of evidence; for works of art are not likely to sustain a high position with no better warrant for their existence than their obscene content.”

Roth v. United States 354 US 476, 1 L ed 2d 1498, 77 S Ct 1304 (1957) - "Obscene material is material which deals with sex in a manner appealing to prurient interest." The opinion also quoted with approval the test from Tentative Draft No 6 of the Model Penal Code, presented to the American Law Institute: A thing is obscene if, considered as a whole, its predominant appeal is to prurient interest, i.e., a shameful or morbid interest in nudity, sex, or excretion, and if it goes substantially beyond customary limits of candor in description or representation of such matters (expressly rejecting the *Hicklin* test).

Memoirs v. Massachusetts, 383 U.S. 413, 86 S.Ct. 975, 16 L.Ed.2d 1 (1966) - For a work to be considered obscene, three elements must coalesce: it must be established that (a) the dominant theme of the material taken as a whole appeals to a prurient interest in sex; (b) the material is patently offensive because it affronts contemporary community standards relating to the description or representation of sexual matters; and (c) the material is utterly without redeeming social value.

Miller v. California, 413 US 15, 93 S Ct 2607, 37 L Ed 2d 419 (1973) - The test to determine whether a work is obscene is (a) whether “the average person, applying contemporary community standards” would find that the work, taken as a whole, appeals to the prurient interest, (b) whether the work depicts or describes, in a patently offensive way, sexual conduct specifically defined by the applicable state law; and (c) whether the work, taken as a whole, lacks serious literary, artistic, political, or scientific value (rejecting “without redeeming social value” element of *Memoirs*).

¹⁴We focus on decisions in federal appellate courts and not state courts, where the judges are not always randomly assigned. Appellate courts would decide on larger doctrinal issues setting new precedent.