"How do rights revolutions occur?
Free speech and the first amendment"

Daniel L. Chen and Susan Yeh

HOW DO RIGHTS REVOLUTIONS OCCUR?
FREE SPEECH AND THE FIRST AMENDMENT

DANIEL L. CHEN AND SUSAN YEH *

Abstract   Does obscenity law corrode moral values and does it matter? Using random judge assignment and all U.S. obscenity precedents since 1958, we present four main results. Progressive laws liberalized sexual attitudes and behaviors, reduced child abuse, but increased asymptomatic STDs. We document that newspapers reported on obscenity cases. We then assign data entry workers to transcribe randomly allocated newsreports and find that exposure to progressive law shifts attitudes. Second-order norm shifts are consistent with a model where laws sanctioning activity increase its perceived prevalence, and laws shape values when sanctioned activities are prevalent. Deterrence does not solely mediate law's impacts.

Keywords: Law and norms, expressive law, cultural change
JEL codes: J12, Z1, N32

1   Introduction

Policymakers in both developed and developing countries have taken steps to regulate norms in many domains (Aldashev et al. 2012). From environmentalism, to women's liberation, to abolition of slavery, law is speculated to play a key role in moral revolutions (Acemoglu 2012). 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 people what is the right thing to do (Tyler 2006). Experiments use exogenous variation in the rules of games to mimic the law (Dal Bó et al. 2010). We use the U.S. common law court system to present causal evidence on four outcomes that have been commonly cited by judges to restrict expressions of obscenity: breakdown of moral standards[1], sexual violence[2], child sexual abuse[3], disease and drugs.[4] Though we emphasize that our legal cases are about obscenity as defined in its historical context (not gay rights per se), 45% of our cases mention "gay" or "lesbian"; including the historical euphemism, "pervert," increases the proportion of cases related to gay or lesbian to 65%.

To identify causal effects, the ideal experiment would randomize court decisions. We leverage random assignment of policymakers, as their biographies predict rulings. Democrats vote differently from Republicans in Circuit Courts (Sunstein et al. 2006).[5] Circuit Court rulings establish precedent for jurisdictions of 4-9 states. These precedents comprise almost all U.S. court-made law, since the Supreme Court hears less than 2% of Circuit cases. Judges are repeatedly randomly assigned to panels of three, and the composition of these panels varies by case. We analyze all free speech precedents pertaining to obscenity since 1958 collected by Sunstein et al. (2006) and Kastellec (2013). Throughout this period, Democrats have prioritized freedom of speech and expression while Republicans have prioritized minimizing

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[1] *Fort Wayne Books v. Indiana*, 489 U.S. 46 (1989)

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

[3] *Ginsberg v. New York*, 390 U.S. 629 (1968)

[4] 50 AM. JUR.2d §§ I, 2 (1995)

[5] We refer to judges appointed by Democratic presidents as Democrats and those by Republican presidents as Republicans for brevity. We sometimes exchange the term "free speech" with "obscenity".

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.[6]

We find that the assignment of policymaker affects outcomes in ways that reflects the preferences of policymakers proxied by their decision-making tendencies. Progressive free speech precedent increased progressive attitudes and behaviors. Conservative free speech precedent reduced sex crimes (with the exception of child abuse) and asymptomatic STDs, in particular, chlamydia.

Several studies have linked major court rulings with shifts in public attitudes (Hoekstra 2000). These studies suggest that media plays a prominent role.[7] Media and other information entrepreneurs, such as community organizations, raise awareness of judgements (Weinrib 2012). After obscenity precedent, 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 evidence of newspapers reporting on Circuit obscenity decisions.

We employ data entry workers to transcribe newsreports as a mechanism experiment (Ludwig et al. 2011). To distinguish deterrence (Becker 1968) from an information channel (Tyler 2006), we randomly assign summaries of liberal or conservative obscenity decisions. We verify that exposure to legal precedent affects values, but does not affect self-reported historical behavior within the short-time frame of the experiment. This suggests that the behavioral changes in the population-based analysis are not simply due to changes in openness to discussing certain behaviors. 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.

We also explore heterogenous effects in line with the theory of law and norms (Bénabou and Tirole 2012). Laws sanctioning an activity issue a signal to individuals that the activity is more prevalent than previously thought. If the sanctioned activity is rare, then laws normalize

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[6]"How Conservatives Weaponized the First Amendment", New York Times, 06/30/2018.

[7]See, 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.

the sanctioned activity. Our data entry experiment verifies the information channel that sanctioning an activity increases its perceived prevalence. Moreover, normalization can lead to law having unintended consequences, which we document in the early time period of our data. Our final empirical exercise examines the deterrence channel as directly as possible. We collected data on state-level sales of pornographic magazines that were often parties in obscenity litigation. We do not find that magazine circulation is affected by free speech decisions.

To put our findings in perspective, First Amendment jurisprudence affects many aspects of society. Policies affected by these 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).

Our results are robust to a number of perturbations of the empirical specification. The remainder of the paper is organized as follows. Section 2 briefly summarizes the theory, a full version of which is in Appendix A, and describes the data. Section 3 details the empirical strategy. Section 4 presents the impacts of judge identity on obscenity rulings. Section 5

estimates the effects of obscenity precedents. Section 6 examines newspaper reports and the data entry experiment. Section 7 interprets the results through the lens of theory. Section 8 concludes.

2 Background

2.1 Conceptual Framework We begin with a brief recapitulation of the law and norms model (Bénabou and Tirole 2012). Let us assume 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. Two different views of free speech emerge: (1) law shifts social motivations towards what the law values, that is, 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 policymaker sees a problem. The judge has information about some underlying activity and issues a penalty when 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 what is 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.

2.2 Legal Data We collected four legal datasets. Our first two datasets comprise the universe of Circuit and District rulings on obscenity. Sunstein et al. (2006) and Kastellec (2011) data from 1958 to 2004, which we extended to 2008, a total of 175 rulings, which are listed in Appendix Table 1. The authors selected major Supreme Court precedent.[8] Then, they select Circuit Court cases citing these cases and restricted to three-judge cases that deliberated on the topic substantively. The authors coded a vote as progressive if the judge found that individual interest in free expression outweighed the state's interest in protecting individuals from the effects of speech. We follow their method to collect all District Court cases, a total of 2,960 rulings. Additional background is provided in Appendix B.

We also collected data from the Administrative Office of the U.S. Courts (AOC) and PACER filings on District Court cases to merge judge identities.[9] The administrative data facilitates additional randomization checks. Our data on judge biographical characteristics come from the Appeals Court Attribute Data, District Court Attribute Data,[10] Federal Judicial Center, and our own data collection. Variables include: geographic history, education, occupational history, governmental positions, military service, religion, race, gender, and political affiliations. Raw data on religion come from Goldman (1999).[11] Judges whose religions remained missing or unknown were coded as having no publicly known religious affiliation. We filled in missing data by searching transcripts of Congressional confirmation hearings and other official or news publications on Lexis. Table 1 displays summary statistics. Roughly two-thirds of these are conservative decisions. The share of progressive decisions declines after 1973.[12] A dramatic spike is observed, which Songer and Haire (1992) attribute to the

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[8]*Miller v. California*, 413 U.S. 15 (1973), *Roth v. United States*, 354 U.S. 476 (1957), and *A Book Named "John Cleland's Memoirs of a Woman of Pleasure" v. Attorney General of Massachusetts*, 383 U.S. 413 (1966)

[9]Sixteen years of Public Access to Court Electronic Records are available on open source sites for 33 Districts. We used PACER data to obtain judge identities that are missing in the AOC data.

[10]http://www.cas.sc.edu/poli/juri/attributes.html

[11]Additional religion data are available at http://courseweb.stthomas.edu/gcsisk/religion.study.data/cover.htm.

[12] Appendix Figure 4 plots the quantity of free speech cases that were decided progressively or conservatively over time.

causal impact of a 1973 Supreme Court decision.[13]

2.3 Outcomes Data We collect eight datasets to measure the impacts of legal decisions. We use the GSS with state identifiers. We use data on 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). For attitudes, we constructed binary indicator for the response "not wrong at all".[14] This binary indicator corresponds to $\Delta(v)$ in the law and norms theory. We also constructed a measure for community standards using the survey response to whether sexual materials lead to breakdown of morals. We construct this since the Supreme Court has instructed the courts to define obscenity according to community standards. We construct demographic controls like age, gender, educational attainment, and race. As standard in the literature, we also use survey weights provided by GSS in our regressions.

We also collated mentions of Courts of Appeals decisions in articles from the major newspaper for the city in which each Circuit Court resides.[15] These are: *The Boston Globe, New York Times, Philadelphia Inquirer, Richmond Times Dispatch, Times-Picayune, Cincinnati Post, Chicago Tribune, St. Louis Post-Dispatch, San Francisco Chronicle, Denver Post, Atlanta Journal and Constitution,* and *The Washington Post.* We collected data from 1979 to 2008 from NewsBank using the search term: (obscen*) w/100 (judgment OR "court ruling") AND Circuit AND NOT "Supreme Court".

We employ data entry workers whose final transcription is a newspaper summary of a free speech decision, 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

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[13]Our results are robust to removing this spike.

[14]The other three response choices are "always wrong", "almost always wrong", "wrong only sometimes".

[15]Appendix Figure 2 is a map of the 12 Circuits.

TABLE I.— Summary Statistics

	Mean [Standard Deviation]
Free Speech Cases (1958-2008)	
Number of Judges	16.79 [8.42]
Number of Free Speech Panels	0.30 [0.73]
Proportion of Circuit-Years with No Free Speech Panels	80%
Proportion of Progressive Free Speech Decisions for Circuit-Years with Free Speech Panels	35%
Expected # of Democratic Appointees per Seat for Circuit-Years with Free Speech Panels	0.46 [0.16]
N (circuit-years)	612

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.

To more directly assess the deterrence channel, we obtain state-level data on sales of the pornographic magazines, *Playboy* and *Penthouse,* from the Audit Bureau of Circulations. Their circulation data was collected annually for a single month's issue, 1955-2010 for *Playboy* and 1970-2010 for *Penthouse.* To assess the societal outcomes that motivate policymakers, we collected annual data on crime incidents from the FBI's Uniform Crime Reports (UCR), which begins in 1960. County-level arrest data are available for prostitution, rape, and drug-related incidents and are constructed to be arrests per 100,000 people. One UCR measure mirrors the General Social Survey (GSS): prostitution arrests and paid sex, which is self-reported.

Along with the UCR, we collect the standard controls for studying crime: unemployment rate, per capita real income, police employment, the proportion of the population that is nonwhite, percent urban, infant mortality, and the age profile of the population in each state and year. These variables are obtained from official U.S. government publications. County population is used as weights.

Finally, we collected data on diseases from the Centers for Disease Control and Prevention[16] for 1984 to 2008 and extend it back to 1960 using Klick and Stratmann (2003). We collected incidence (i.e., new cases) of sexually transmitted diseases–chlamydia, syphilis, and gonorrhea–for each state. Annual state population is used as weights.[17]

3   Specification

We use regressions of the form:

$$(1) \qquad Y_{ict} = \theta_c + \theta_t + \sum_{n=0}^{L} \beta_{1t-n} Law_{ct-n} + \sum_{n=0}^{L} \beta_{2t-n} 1\left[M_{ct-n} > 0\right] + \eta X_{ict} + \varepsilon_{ct}$$

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[16]U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for HIV, STD and TB Prevention (NCHSTP), Division of STD/HIV Prevention, Sexually Transmitted Disease Morbidity 1984 - 2008, CDC WONDER On-line Database, November 2009. http://wonder.cdc.gov/std-v2008.html on October 30, 2010.

[17]http://www.census.gov/popest/states/.

where β_1 captures the effect of progressive vs. conservative precedent, $\beta_1 + \beta_2$ captures the effect of progressive precedent vs. no decision, and β_2 captures the effect of conservative precedent vs. no decision. Y_{ict} is the outcome (attitudes, behaviors, crime, and disease) of individual (or state) i in Circuit c and year t. Law_{ct} is the share of progressive precedents. It is typically 0 or 1, a single verdict. We specify a distributed lag since we are interested in effects over time. Our baseline specification has four years of lags and one lead ($n = -1$ to 4). We extend our specification to include the presence of a decision, $1\,[M_{ct-n} > 0]$, where M is the number of cases, which is typically 0 or 1. Since random assignment is at the Circuit-year level, clustering standard errors yields roughly identical results when clustering at the Circuit or Circuit-year level.[18]

Appendix C presents random assignment checks. Our 2SLS can be described more formally as follows. We seek an instrumental variable for Law_{ct} using judges' biographical characteristics. Let N_{ct} be a biographical characteristic, e.g., the number of Democrats assigned to free speech panels. Let $p_{ct} = \frac{N_{ct}}{M_{ct}} * \mathbf{1}\,[M_{ct-n} > 0]$, i.e., defined to be 0 when $\mathbf{1}\,[M_{ct-n} > 0] = 0$. Then: $\mathbf{E}[(p_{ct} - \mathbf{E}(p_{ct}))\varepsilon_{ict}] = \mathbf{Pr}[M_{ct} > 0]\mathbf{E}[(p_{ct} - \mathbf{E}(p_{ct}))\varepsilon_{ict}|M_{ct} > 0] + \mathbf{Pr}[M_{ct} = 0]\mathbf{E}[(p_{ct} - \mathbf{E}(p_{ct}))\varepsilon_{ict}|M_{ct} = 0] = 0$. Next, $\mathbf{E}[(p_{ct} - \mathbf{E}(p_{ct}))\varepsilon_{ict}] = \mathbf{E}(p_{ct}\varepsilon_{ict}) - \mathbf{E}[\mathbf{E}(p_{ct})\varepsilon_{ict}] = \mathbf{E}(p_{ct}\varepsilon_{ict}) - \mathbf{E}(p_{ct})\mathbf{E}(\varepsilon_{ict}) = \mathbf{E}[p_{ct}\varepsilon_{ict}]$. Thus, p_{ct} and $p_{ct} - \mathbf{E}(p_{ct})$ both serve as valid instruments. Our moment condition for causal inference is: $\mathbf{E}[\frac{N_{ct}}{M_{ct}}\varepsilon_{ict}|\mathbf{E}(\frac{N_{ct}}{M_{ct}}), 1\,[M_{ct} > 0]] = 0$. All 2SLS estimates use the limited information maximum likelihood (LIML) estimator because of its better small sample properties.

In robustness checks, we also include controls, such as the crime or GSS controls described earlier. We average the five- to six-year lag of community standards because our main specification includes four lags of the law. We also construct characteristics of the pool of judges available to be assigned.[19] Finally, we constructed Circuit-specific time trends to allow dif-

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[18]Barrios et al. (2012) show that random assignment of treatment addresses serial and spatial correlation across treatment units, since "if the covariate of interest is randomly assigned at the cluster level, only accounting for non-zero covariances at the cluster level, and ignoring correlations between clusters, leads to valid standard errors and confidence intervals." We check results using randomization inference that assigns the legal variation to another Circuit and the robustness of our results to using wild bootstrap. The coefficients on the leads serve as an omnibus falsification check for spurious significance.

[19]We calculate the expectations based on the composition of the Circuit pool of judges available to be assigned in any Circuit-year.

ferent Circuits to be on different trajectories with respect to outcomes. Any omitted variable is likely to be small in practice.

It is also worth noting that newspaper headlines of Circuit Court opinions typically refer to the court and not the identity of the judges on the panel.[20] Violations of the exclusion restriction are also likely to be minimal.

To address the possibility that $1\left[M_{ct-n} > 0\right]$ responds to previous years' legal decisions, we instrument for $\mathbf{1}[M_{ct} > 0]$ using the random assignment of District Court judges. Appendix D presents additional details. The demographic characteristics of District judge predict with whether the judge is reversed by Circuit Courts (Haire, Songer, and Lindquist 2003; Sen 2015; Barondes 2010; Steinbuch 2009), so expected reversal rates could encourage litigants to pursue an appeal. We find that in practice, the potential endogeneity of $1\left[M_{ct-n} > 0\right]$ does not appear to be significantly affecting the estimates of β_1.[21]

4   The Effect of Judge Identity on Court Outcomes

Table II shows that Republicans were less likely to vote for a progressive verdict.[22] Panel A shows, at the judge-level, Democrats were 10 percentage points more likely to vote for a progressive verdict in Column 1. The point estimate is unaffected with Circuit and year fixed effects in Column 2, share of Democrats, $\mathbf{E}(p_{ct})$, in Column 3, and all controls in Column 4.

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[20]Badawi and Chen (2014) also show there is no stock market response to the identity of the judges when their identities are revealed in Delaware Court of Chancery, which handles corporate disputes and are followed closely by the markets.

[21] The results of our mechanism experiment where data entry workers are randomly exposed to obscenity precedent can be interpreted in relation to the population analysis. The population TOT of the Circuit = (Experimental: TOT_{direct}) * P(exposure$_{\text{direct}}$) + (TOT_{indirect} of individuals) * P(exposure$_{\text{indirect}}$). The experiments estimate TOT_{direct} for individuals. The known parameters are TOT_{Circuit} and TOT_{direct}. The unknown parameters are TOT_{indirect} and the probabilities.

[22]Table II notes presented here due to space constraints: Heteroskedasticity-robust standard errors are in parentheses and clustered at the Circuit level. Controls include fixed effects (dummy indicators for Circuit and year), expectations (expected proportions of Democratic appointees on a given panel), and trends (Circuit-specific). Proportions during Circuit-years with no cases are defined to be 0. Panel D: GSS (1973-2004) weights are sampling weights. Individual-level controls are age, gender, race, and college education. Panel E weights are population of state or reporting agency. State-level controls are percent urban, infant mortality, percent age 15-19, percent age 20-24, percent nonwhite, police employment, unemployment rate, and real per capita income.

Panel B shows, at the panel-level, moving from an all-Republican panel to an all-Democrat panel increases the likelihood of a progressive verdict by 26 percentage points in Column 4. Panel C shows, at the Circuit-year level, moving from an all-Republican panel to an all-Democrat panel increases the proportion of progressive decisions by 36 percentage points in Columns 3-6. Columns 1 and 2 verify that increasing the sample size by including $1\,[M_{ct} > 0]$ does not affect the first stage F-statistic strength for the Democrat instrument. Anderson-Rubin weak instruments-robust test statistics are quite strong. Weighting the regressions by the number of cases in a Circuit-year, where weights are the geometric mean of $M_{c(t-n)} + 1$ over the distributed lag, greatly strengthens the instrument and the 2SLS results. Likewise, were we to use the predicted estimate from the first stage as the instrument, we greatly increase the F-statistics. The first-stage becomes a lot stronger with predicted first stage as opposed to judge identity dummies (Kling 2006), while the identifying variation is the same (Evdokimov and Kolesár 2017).

Panel D shows that, after merging with the GSS and clustering standard errors (Bertrand et al. 2004), moving from an all-Republican panel to an all-Democrat panel increases the proportion of progressive decisions by roughly 60 percentage points in Column 6. We would expect similar point estimates with Panel C if the number of individuals per Circuit is constant. Panel E shows similar patterns with the CDC data and UCR data. Appendix Figure 7 shows the first stage relationship is not driven by outliers.[23]

U.S. Circuit Courts only hear cases with new legal issues that present an opportunity to provide a new definition or distinction on precedent and therefore shape policy. Therefore, we should not expect the assignment of judges in a previous year to predict the decisions in a subsequent year. Table III shows that the proportion of progressive precedents is not related to the assignment of Democrat judges to free speech panels in the one or two years

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[23]Appendix Figure 7A presents nonparametric local polynomial estimates of the first stage. Estimation proceeds in two steps. In the first step, we regress the proportion of decisions that were progressive on Circuit and year fixed effects and we regress the instrument, p_{ct}, on the same. Next, we take the residuals from these two regressions and use a nonparametric local polynomial estimator to characterize the relationship between the instrument and progressive decisions. As placebo, Appendix Figure 7B shows that there is no relationship between the proportion of Democrat judges $\mathbf{E}(p_{ct})$ in the Circuit-year and the proportion of progressive decisions.

TABLE II

FIRST STAGE: RELATIONSHIP BETWEEN PROGRESSIVE FREE SPEECH JURISPRUDENCE AND
DEMOCRATIC APPOINTEES ON APPELLATE FREE SPEECH PANELS, 1958-2008

Panel A: Judge Level	Outcome: Progressive Free Speech Vote					
	(1)	(2)	(3)	(4)		
Democratic Appointee	0.0983+	0.113**	0.0947+	0.102**		
	(0.0474)	(0.0348)	(0.0446)	(0.0316)		
N	525	525	525	525		
R-sq	0.010	0.288	0.011	0.292		
F-statistic of instrument	4.310	10.564	4.511	10.470		
Circuit-year controls	N	Fixed Effects	Expectations	Both		

Panel B: Case Level	Outcome: Progressive Free Speech Decision					
	(1)	(2)	(3)	(4)		
Democratic Appointees per Seat	0.162	0.296*	0.177	0.257*		
	(0.0979)	(0.114)	(0.104)	(0.113)		
N	175	175	175	175		
R-sq	0.009	0.315	0.010	0.317		
F-statistic of instrument	2.732	6.738	2.875	5.188		
Circuit-year controls	N	Fixed Effects	Expectations	Both		

Panel C: Circuit-Year Level	Outcome: % Progressive Free Speech Decisions					
	(1)	(2)	(3)	(4)	(5)	(6)
Democratic Appointees per Seat	0.336*	0.336*	0.355**	0.357**	0.362**	0.357**
	(0.130)	(0.129)	(0.113)	(0.110)	(0.115)	(0.111)
N	124	612	612	612	612	612
R-sq	0.043	0.365	0.427	0.427	0.436	0.437
F-statistic of instrument	6.726	6.759	9.893	10.480	9.963	10.411
Circuit-years with no cases	Dropped	Dummied	Dummied	Dummied	Dummied	Dummied
Circuit-year controls	N	N	Fixed Effects	FE, Expect	FE, Trends	All

Panel D: Circuit-Year Level (Merged with Individual-Level GSS Data)	Outcome: % Progressive Free Speech Decisions					
	(1)	(2)	(3)	(4)	(5)	(6)
Democratic Appointees per Seat	0.529*	0.529*	0.530**	0.589**	0.590**	0.588**
	(0.231)	(0.230)	(0.168)	(0.163)	(0.163)	(0.164)
N	11777	44897	44897	44897	44613	44613
R-sq	0.107	0.366	0.494	0.521	0.521	0.520
F-statistic of instruments	5.244	5.288	9.992	13.072	13.137	12.912
Circuit-years with no cases	Dropped	Dummied	Dummied	Dummied	Dummied	Dummied
Circuit-year controls	N	N	Fixed Effects	All	All	All
Individual controls	N	N	N	N	Y	Y, weighted

Panel E: Circuit-Year Level (Merged with State-Level CDC/UCR Data)	Outcome: % Progressive Free Speech Decisions					
	(1)	(2)	(3)	(4)	(5)	(6)
Democratic Appointees per Seat	0.344*	0.336*	0.359*	0.393**	0.332*	0.589**
	(0.149)	(0.130)	(0.131)	(0.110)	(0.125)	(0.168)
N	2193	2193	2193	2192	94137	71979
R-sq	0.386	0.444	0.454	0.483	0.464	0.527
F-statistic of instruments	5.347	6.635	7.516	12.797	7.042	12.335
Circuit-years with no cases	Dummied	Dummied	Dummied	Dummied	Dummied	Dummied
Circuit-year controls	N	Fixed Effects	All	All	All	All
State-year controls	N	N	N	weighted	weighted	Y, weighted
Time Frame	CDC 1963-1980; 1984-2008				UCR 1977-2007	

Notes: Significant at +10%; *5%; **1%. Additional table notes in text.

TABLE III

PLACEBO INSTRUMENT: RELATIONSHIP BETWEEN PROGRESSIVE FREE SPEECH JURISPRUDENCE AND
COMPOSITION OF FREE SPEECH PANELS IN OTHER YEARS, 1979-2004

Circuit-Year Level	Outcome: Proportion of Progressive Free Speech Decisions$_t$			
	(1)	(2)	(3)	(4)
Democratic Appointees per Seat$_t$	0.335*	0.326*	0.362**	0.361**
	(0.125)	(0.129)	(0.110)	(0.108)
Democratic Appointees per Seat$_{t-1}$	-0.129	-0.137		
	(0.0977)	(0.100)		
Democratic Appointees per Seat$_{t-2}$		-0.0526		
		(0.0886)		
Democratic Appointees per Seat$_{t+1}$			-0.0917	-0.0753
			(0.0865)	(0.0944)
Democratic Appointees per Seat$_{t+2}$				0.160
				(0.101)
N	600	588	600	588
R-sq	0.436	0.438	0.444	0.452
Circuit-years with no cases	Dummied	Dummied	Dummied	Dummied
Circuit-year controls	All	All	All	All

Notes: Significant at +10%; *5%; **1%. Heteroskedasticity-robust standard errors are in parentheses.
Observations are clustered at the Circuit level. Proportions of progressive free speech jurisprudence and
judicial type per seat during Circuit-years with no cases are defind to be 0 and dummied out. Circuit-year
controls also include Circuit fixed effects, year fixed effects, Circuit-specific time trends, and expected
Democratic Appointees per seat.

before and after the true instrument.[24] Since each instrument is affecting the corresponding
contemporaneous endogenous variable, we will be isolating the causal effects of Law_{ct} in a
distributed lag specification where we instrument for all lags and leads of Law_{ct}. Appendix
Figure 5 illustrates the identification strategy. The jagged line displays N_{ct}/M_{ct} and the
smooth line displays $\mathbf{E}(N_{ct}/M_{ct})$ in each of the 12 Circuits.

We also employed LASSO to select biographical features as instruments for Law_{ct} (Belloni
et al. 2012) and the results are similar. The F statistics increase up to 104 for the GSS.[25] We

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[24]These specifications are analogous to the ones in Table II Panel C Column 6. There is a small loss in data
due to lags and leads of judicial assignments being outside the data range.

[25]The thirty biographical characteristics we collected are: Democrat, male, male Democrat, female Republi-
can, non-White, Black, Jewish, Catholic, No religion, Mainline Protestant, Evangelical, BA received from
same state of appointment, BA from a public institution, JD from a public institution, having an LLM or
SJD, elevated from District Court, born in the 1910s, 1920s, 1930s, 1940s, 1950s, appointed when president
and congress majority were from the same party, ABA score, above median wealth, appointed by president
from an opposing party, prior federal judiciary experience, prior law professor, prior government experience,
previous assistant U.S. attorney, and previous U.S. attorney. Adding panel-level interactions (e.g., fraction
of judge seats assigned to Democrats multiplied by fraction of judge seats assigned to Blacks) yielded a
total of 450 possible instruments. At the Circuit-year level, the LASSO procedure selected the following
three instruments: the interaction between the number of male Democrats per seat and the number of
judges born in the 1920s per seat, the interaction between the number of female Republican per seat and
the number of judges having an LLM or SJD per seat, and the interaction between the number of female
Republican per seat and the number of judges with above median wealth per seat.

TABLE IV
THE EFFECT OF FREE SPEECH JURISPRUDENCE ON ATTITUDES

Average Lag effect	OLS (1)	Appellate IV (2)	Appellate and District IV (3)	LASSO IV (4)	Obs (5)	Mean Dependent Variable (6)
Extramarital Sex is OK	0.005	0.001	-0.027	0.008	18874	0.097
Joint P-value of lags	0.002	0.001	0.639	0.001		
Joint P-value of leads	0.936	0.968	0.576	0.315		
Premarital Sex is OK	0.000	-0.057	0.047	0.014	18801	0.633
Joint P-value of lags	0.126	0.666	0.815	0.000		
Joint P-value of leads	0.041	0.174	0.949	0.307		
Homosexual Sex is OK	0.001	0.017	-0.043	0.003	18073	0.267
Joint P-value of lags	0.805	0.000	0.574	0.000		
Joint P-value of leads	0.810	0.228	0.732	0.510		

Notes: Data consist of individual GSS responses. Heteroskedasticity-robust standard errors are in parentheses and clustered by Circuit. Regressions include Circuit fixed effects, year fixed effects, Circuit-specific time trends, a dummy for whether there were any cases in that Circuit-year, 6-year lagged community standards (Circuit average response to whether sexual materials lead to a breakdown of morals), and individual level controls: age, gender, race, and college education. Instrument for proportion of progressive free speech jurisprudence is Democratic appointees per seat assigned to appellate free speech cases in a Circuit-year. Survey weights are provided by GSS.

find that non-religious judges, Democrats, and attendance of elite schools were important predictors of progressive free speech precedents. In our results, we report estimates using just the Democrat instrument or the instruments selected by LASSO, which is the preferred specification.

5 Estimating the Impact of Obscenity Law

5.1 Attitudes and Behavior Table IV shows that progressive obscenity precedent increases acceptability of extramarital sex, premarital sex, and homosexual sex. Table IV shows that progressive obscenity precedent increases likelihood of paid sex, the number of sexual partners reported by men, the number of female partners reported by men, the likelihood of extramarital sex reported by men, and the likelihood of being divorced or separated if older than 40. The last outcome offers a contrast, since individuals younger than 40 are less likely to be divorced or separated, which could be due to lower likelihood to enter early marriage. Some of these outcomes are also stock variables and may reflect the willingness to report or exaggerate, but this is also a relevant social norm.

TABLE V.— The Effect of Free Speech Jurisprudence on Behavior

Average Lag effect	OLS (1)	Appellate IV (2)	Appellate and District IV (3)	LASSO IV (4)	Obs (5)	Mean Dependent Variable (6)
Paid Sex	0.003	0.006	0.006	0.004	16659	0.003
Joint P-value of lags	0.022	0.075	0.100	0.001		
Joint P-value of leads	0.434	0.789	0.247	0.263		
# Partners per Year	0.066	0.517	0.193	0.132	15346	1.129
Joint P-value of lags	0.348	0.001	0.000	0.181		
Joint P-value of leads	0.306	0.598	0.014	0.477		
# Female Partners	2.450	1.252	5.292	5.028	13833	6.296
Joint P-value of lags	0.095	0.961	0.000	0.000		
Joint P-value of leads	0.881	0.791	0.725	0.347		
# Partners per Year (reported by Men)	0.134	1.453	0.193	0.278	6626	1.421
Joint P-value of lags	0.095	0.581	0.000	0.017		
Joint P-value of leads	0.662	0.153	0.042	0.894		
# Female Partners (reported by Men)	5.730	7.366	12.756	11.342	6077	14.041
Joint P-value of lags	0.001	0.049	0.000	0.000		
Joint P-value of leads	0.709	0.341	0.514	0.514		
Extramarital Sex (reported by Men)	0.056	0.113	0.048	0.069	7170	0.161
Joint P-value of lags	0.014	0.968	0.000	0.003		
Joint P-value of leads	0.635	0.801	0.966	0.437		
Divorced or Separated (older than 40)	0.009	0.043	0.028	0.011	10778	0.237
Joint P-value of lags	0.460	0.674	0.000	0.008		
Joint P-value of leads	0.157	0.370	0.301	0.496		
Divorced or Separated (40 or younger)	-0.020	0.027	-0.084	-0.039	6368	0.174
Joint P-value of lags	0.060	0.123	0.000	0.003		
Joint P-value of leads	0.053	0.534	0.425	0.216		

Notes: Data consist of individual GSS responses. Heteroskedasticity-robust standard errors are in parentheses and clustered by Circuit. Regressions include Circuit fixed effects, year fixed effects, Circuit-specific time trends, a dummy for whether there were any cases in that Circuit-year, 6-year lagged community standards (Circuit average response to whether sexual materials lead to a breakdown of morals), and individual level controls: age, gender, race, and college education. Instrument for proportion of progressive free speech jurisprudence is Democratic appointees per seat assigned to appellate free speech cases in a Circuit-year. Survey weights are provided by GSS.

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5.2   Crime Turning to crime, we study a concrete outcome that has motivated policymakers. We begin with the UCR. Arrest data may reflect people's willingness to come forward to report a crime, law enforcement's openness to investigate crimes, or local community leads making people aware of what constitutes a crime. They are susceptible to underreporting, particularly by victims in sex-related crimes. However, the UCR and GSS record prostitution and paid sex (self-reported), which mirror each other. The UCR can be viewed as audits of self-reported behavior.

Table VI shows that progressive obscenity precedent increased prostitution and drug violations, but decreased child abuse. While prostitution and child abuse may substitute (Ciacci and Sviatschi 2019), property crime likely does not. In fact, no discernible effect is found on property crime. The lead effects are always insignificant.

Table VII presents a series of robustness checks on the child abuse results to show that the research design addresses omitted variables and reverse causality. The results are robust to the removal of Circuit-specific time trends, clustering standard errors at the state level, removing state-level controls, removing population weights, removing community standards, dropping 1 Circuit at a time, and varying the distributed lag structure. Effects arise one year after a precedent, but are the largest two years later. Notably, the lead effects are individually and jointly insignificant in the final row.

To illustrate the magnitudes of our estimates, we emulate Bhuller et al. (2013)'s study in showing the actual time trends for various crime outcomes, as well as the predicted counterfactual time trends in the absence of internet broadband. Figure 1 presents a graphical analysis of the counterfactual in the absence of obscenity law. The solid line is the actual crime rate and the dashed line is the counterfactual crime rate, which is the actual crime rate minus the predicted effect of obscenity law on crime. Going clockwise from the upper-left, the graphs report counterfactuals for prostitution, drug violations, forcible rapes, and property crime. The impact on property crimes (a placebo) is imperceptible. Other counterfactual calculations are presented in Appendix E.

TABLE VI

The Effect of Free Speech Jurisprudence on Crime

Average Lag effect	OLS (1)	Appellate IV (2)	Appellate and District IV (3)	LASSO IV (4)	Obs (5)	Mean Dependent Variable (6)
Offenses Against Family and Children	-11.002	-44.588	-47.575	-56.475	43992	46.063
Joint P-value of lags	0.422	0.000	0.000	0.001		
Joint P-value of leads	0.170	0.201	0.418	0.985		
Community Vices	1.309	9.641	8.620	2.998	43992	5.104
Joint P-value of lags	0.094	0.000	0.000	0.081		
Joint P-value of leads	0.229	0.096	0.737	0.381		
Drug Violations	30.956	69.391	90.613	35.542	43992	286.987
Joint P-value of lags	0.038	0.002	0.000	0.002		
Joint P-value of leads	0.594	0.148	0.633	0.750		
Forcible Rapes	-0.413	4.614	2.609	2.190	67017	10.044
Joint P-value of lags	0.367	0.268	0.103	0.268		
Joint P-value of leads	0.097	0.154	0.833	0.885		
Property Crimes	-17.811	-59.631	-98.440	-96.232	67017	559.876
Joint P-value of lags	0.205	0.438	0.241	0.769		
Joint P-value of leads	0.118	0.481	0.648	0.598		

Notes: Data consist of UCR arrests reported by ORI agencies (at the state-county level). All crime numbers are per 100,000 population. Heteroskedasticity-robust standard errors are in parentheses and clustered by Circuit. Regressions include Circuit fixed effects, year fixed effects, Circuit-specific time trends, a dummy for whether there were any cases in that Circuit-year, 6-year lagged community standards (Circuit average response to whether sexual materials lead to a breakdown of morals), and state controls: percent urban, infant mortality, percent age 15-19, percent age 20-24, percent nonwhite, police employment, unemployment rate, and real per capita income. Instrument for proportion of progressive free speech jurisprudence is Democratic appointees per seat assigned to appellate free speech cases in a Circuit-year. Population weights are population reporting to ORI agency.

TABLE VII

IMPACT OF PROGRESSIVE FREE SPEECH PRECEDENT ON CHILD ABUSE

ROBUSTNESS OF 2SLS DISTRIBUTED LAG ESTIMATES

The Effect of Appellate Free Speech Precedent on Offenses Against Family and Children per 100,000

	(t0)		(t1)		(t2)		(t3)		(t4)		(t5)
No Trends	-91.353		-81.141	+	-94.558	*	-75.751		-65.686		
	(64.462)		(45.029)		(38.112)		(44.801)		(54.096)		
No FE	-82.056		-78.434		-75.302		-46.958		-33.439		
	(60.700)		(62.034)		(48.448)		(36.288)		(27.757)		
State Cluster	-56.888		-51.841		-69.982	+	-55.258		-33.322		
	(36.520)		(38.504)		(37.600)		(37.435)		(41.573)		
No Ind Control	-101.894		-80.435		-117.014		-90.922		-65.367		
	(121.993)		(83.931)		(117.420)		(123.947)		(122.816)		
No Weights	-13.422		-16.093		-36.758	**	-38.544		-15.718		
	(13.066)		(12.059)		(6.881)		(10.626)		(11.695)		
No Community Standards	-58.394	+	-51.890	**	-70.319	**	-55.459	+	-33.165	+	
	(32.994)		(15.079)		(7.617)		(10.225)		(18.893)		
No Controls except $1[M_{ct}>0]$	-226.714		-191.154		-201.168		-109.214		-97.769		
	(259.576)		(243.387)		(224.136)		(155.064)		(126.684)		
Drop Circuit 1	-79.711		-63.593	+	-83.160	**	-64.068		-39.174	+	
	(56.486)		(32.739)		(17.712)		(20.529)		(21.009)		
Drop Circuit 2	-59.057	+	-53.648	**	-69.657	**	-57.449	+	-30.632		
	(32.773)		(15.847)		(8.054)		(15.537)		(18.628)		
Drop Circuit 3	-51.053	*	-42.069	**	-68.778	**	-48.348	*	-51.910	**	
	(23.966)		(9.930)		(5.019)		(7.475)		(10.390)		
Drop Circuit 4	-53.679		-50.913	**	-68.941	**	-52.930		-39.347	*	
	(35.170)		(18.408)		(7.055)		(10.221)		(16.099)		
Drop Circuit 5	-62.407		-52.638	**	-66.414	**	-56.349		-25.557		
	(38.628)		(18.477)		(8.788)		(16.076)		(20.075)		
Drop Circuit 6	-4.340		-3.666		-31.343		-46.655		-24.286		
	(18.612)		(15.229)		(24.071)		(33.380)		(36.556)		
Drop Circuit 7	-60.410		-60.801	*	-77.127	**	-58.833		-37.586		
	(44.221)		(24.821)		(10.951)		(20.536)		(36.401)		
Drop Circuit 8	-8.701		-6.972		-16.677		-21.846		7.046		
	(35.268)		(20.811)		(17.162)		(13.570)		(15.235)		
Drop Circuit 9	-87.683		-102.192		-96.512	**	-75.410		-48.865		
	(64.317)		(115.462)		(16.615)		(68.031)		(56.414)		
Drop Circuit 10	-56.827		-52.147	**	-70.156	**	-56.426		-35.038	*	
	(35.172)		(17.691)		(7.426)		(12.664)		(17.195)		
Drop Circuit 11	-49.149	+	-52.186	**	-70.039	**	-50.317	+	-31.980	+	
	(26.377)		(15.151)		(8.674)		(9.769)		(17.630)		
Drop Circuit 12	-56.888	+	-51.841	**	-69.982	**	-55.258	+	-33.322	+	
	(32.379)		(15.681)		(6.784)		(10.742)		(18.044)		
1 current 1 lag	3.662		-21.926	+							
	(9.083)		(13.151)								
1 current 2 lag	-3.711		-28.316	**	-32.645	+					
	(13.626)		(10.936)		(17.248)						
2 leads 4 lags	-56.447		-63.901	*	-84.808		-69.766		-52.605		
	(43.201)		(27.651)		(58.359)		(44.716)		(72.366)		
1 lead 5 lags	-51.692	+	-53.219	**	-70.399	**	-53.089	+	-27.914		-18.82
	(30.496)		(14.185)		(4.493)		(12.023)		(18.456)		(22.167)
4 leads 1 lag	20.923		-6.330		-13.216		-24.437		30.848		3.625
(t0, t1, f4, f3, f2, f1)	(20.030)		(21.678)		(25.401)		(53.931)		(27.848)		(32.504)

Notes: Significant at +10%, *5%, **1%. Data consist of UCR arrests reported by ORI agencies (at the state-county level). Heteroskedasticity-robust standard errors are in parentheses and clustered by Circuit. Regressions include Circuit fixed effects, year fixed effects, and a dummy for whether there were any cases in that Circuit-year. The baseline regression is an instrumental variables specification with one lead and four lags of free speech precedent. Instruments are selected by LASSO. Population weights are population reporting to ORI agency.

FIGURE 1.— What if these legal precedents did not exist?
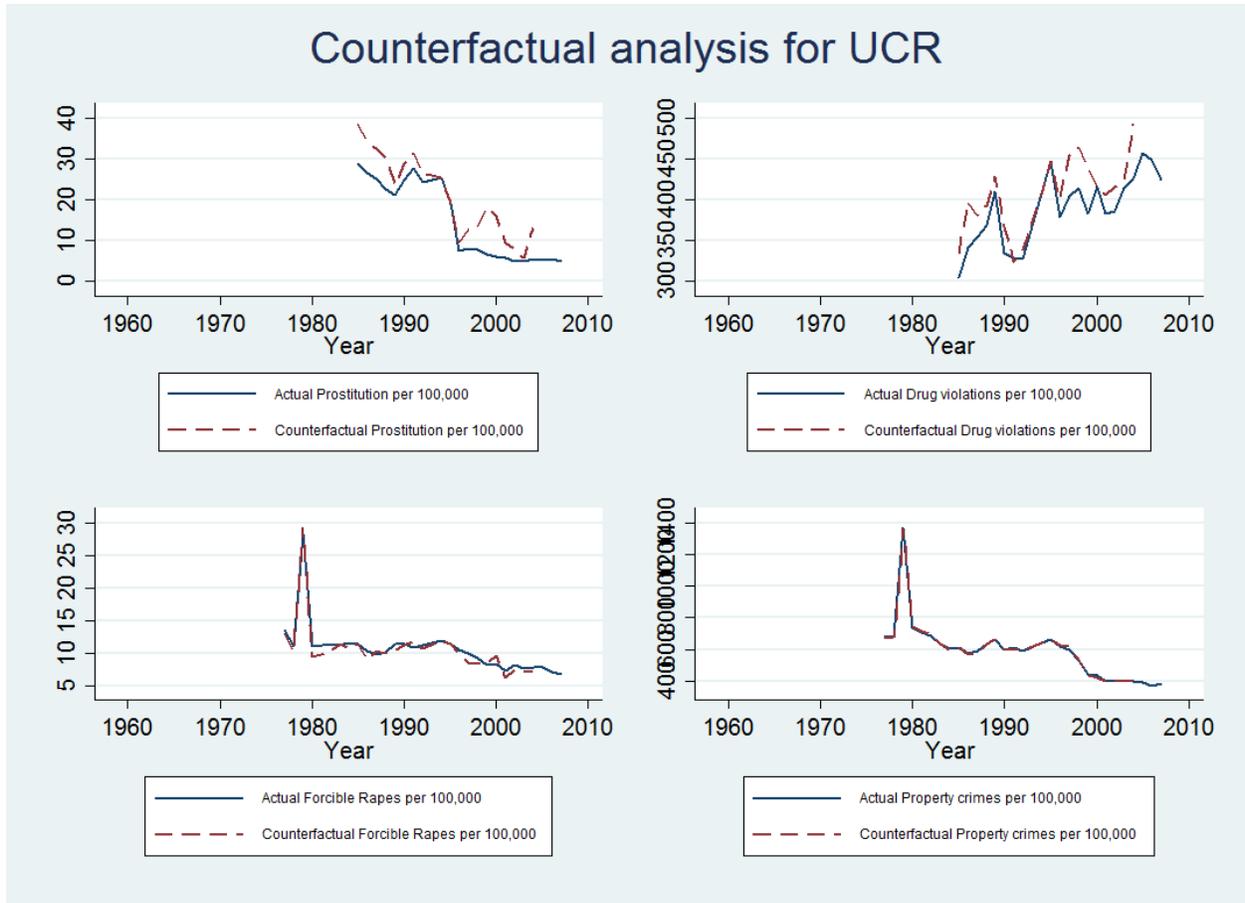
The majority of laboratory experiments find support for secondary effects (Donnerstein and Linz 1986; Allen et al. 1995; Zillman and Bryant 1984) concerning endangerment of women (Radin 1996; MacKinnon 1987).[26] Bhuller et al. (2013) and Baron and Straus (1984) report a link to sex crimes.[27] These findings suggest that the increased consumption of obscene content increased sex-related crimes.

5.3 Disease The spread of venereal diseases, which have been mentioned as a secondary effect justifying obscenity regulation, may indicate riskier sexual practices (Nelson and Williams 2007). Table VIII shows that progressive obscenity precedent increased incidence

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[26]Most studies find that pornography, especially violent pornography, increases sexual aggression (Donnerstein and Linz 1986; Allen et al. 1995), though some experiments find no effect or a reduction in sexual aggression after exposure to pornography (see, e.g., Zillman and Bryant (1984)).

[27]Baron and Straus (1984) find a strong positive association between the circulation of eight pornographic magazines across U.S. states and crime, after controlling for a number of possible confounders.

TABLE VIII
The Effect of Free Speech Jurisprudence on Disease

Average Lag effect	OLS (1)	Appellate IV (2)	Appellate and District IV (3)	LASSO IV (4)	Obs (5)	Mean Dependent Variable (6)
Chlamydia	13.029	87.392	74.130	49.636	1117	207.509
Joint P-value of lags	0.014	0.000	0.979	0.000		
Joint P-value of leads	0.435	0.299	0.755	0.501		
Gonorrhea	13.367	40.036	221.957	186.113	2141	243.911
Joint P-value of lags	0.404	0.263	0.987	0.980		
Joint P-value of leads	0.842	0.368	0.900	0.888		
Syphilis	-3.601	-0.243	1.853	0.681	2141	6.748
Joint P-value of lags	0.172	0.946	0.598	0.756		
Joint P-value of leads	0.906	0.609	0.599	0.562		

Notes: Data on STD incidence reported by CDC (at the state level). Heteroskedasticity-robust standard errors are in parentheses and clustered by Circuit. Regressions include Circuit fixed effects, year fixed effects, Circuit-specific time trends, and a dummy for whether there were any cases in that Circuit-year. Instrument for proportion of progressive free speech jurisprudence is Democratic appointees per seat assigned to appellate free speech cases in a Circuit-year. Population weights are state population.

of chlamydia, but did not significantly increase gonorrhea or syphilis. Chlamydia, known as the "silent" disease, typically produces no symptoms for several years, and is the fastest increasing in recent years among these STDs. In one study, 86% of the infected partners of infected women were also found to be asymptomatic (Fish et al. 1989).[28] The differential results are not due to differences in screening by public health officials since screening for different STDs typically occurs simultaneously. The differential results are more likely to be related to sorting or screening sexual partners based on their disease status, a mechanism suggested by Kremer (1996).[29]

5.4 Deterrence Pornography media providers were often parties in free speech litigation. *Playboy* and *Penthouse* were competitors at the boundaries of community standards through the 1970s. In recent times, *Penthouse* pushed towards near obscene depictions. We found

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[28]In contrast, about 90% of men infected with gonorrhea display symptoms within days of infection, and 40-70% of infected women have symptoms within 10 days (Kretzschmar et al. 1996). Syphilis symptoms include sores within 10 to 90 days and rashes within 1 to 6 months of the primary infection.

[29] Condom use does not differentially affect transmission rates across the three STD types (Holmes et al. 2004).

weak to no evidence of any impact of free speech decisions on magazine circulation. We emphasize that we evaluate the effects of obscenity law rather than pornography itself. Since Bhuller et al. (2013) found that internet broadband increased child abuse, whereas we find the opposite result, this difference is consistent with deterrence not being the sole mediator for our effects. Deterrence would mean a progressive precedent makes obscene content more accessible, which would increase child abuse according to Bhuller et al. (2013). If progressive precedent issues a signal that increases paid or extramarital sex, this can substitute for child abuse (Ciacci and Sviatschi 2019). We now turn to the experiment, where the short time frame more strongly precludes deterrence as sole explanation for norm change.

6   Newsreports and Data Entry Experiment

To support the causal channel from court rulings to preferences, previous studies have linked Supreme Court precedents with subsequent changes in public opinions about abortion (Franklin and Kosaki 1989). Hoekstra (2000) suggests that local media are more likely to report on cases in their community and that local residents are more likely to be aware of those cases than cases in other jurisdictions. The salience of obscenity law, in particular, was potentially even greater during the 1960s, which is suggested by the large number of law review articles written in response to obscenity decisions during that time period (Kalven 1960; Magrath 1966; Lockhart 1960). This salience is echoed even since 1979 in our simple search of newspaper data detailed previously. Appendix Figure 3 displays a plot correlating the number of obscenity decisions and the number of newspaper articles about obscenity decisions from 1979 to 2008.[30] The correlation is statisticall significant and remains so with Circuit and year fixed effects. The newspaper database does not exist before 1979, but we have no reason to believe these Circuit rulings would have gone unreported given their

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[30] Not every newspaper is available for every year, so we divide the number of newspaper articles by the proportion of newspapers available (e.g., if only half of the typical newspaper coverage is available because of data limitations, we multiply by a factor of two to make a consistent series in the figure). This allows us to compare graphically the number of Circuit decisions and newspaper articles about obscenity over time.

emotional salience.

We then 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. Additional details are in Appendix F.

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 from around the world (mostly from India and the U.S.), a dummy indicator for being from India. The second experiment is restricted to the U.S. and had 548 workers and is essentially identical (with an additional question on beliefs). The third experiment was also restricted to the U.S. and had additional questions.[31] We report the results separately. The pooled results would be stronger.

In both Tables IX and X, we see very strong effects on acceptability of homosexual sex,

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[31] The questions in this third experiment also included incentivized measures of second order norms and are analyzed separately in Chen and Yeh (2014). One group was asked to report their own standards while another group was asked to estimate the other workers' standards and was 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.

as worded, in the General Social Survey, and echoing the population-based analysis.[32] 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 X reports that exposure to progressive obscenity precedent increased the likelihood that people favor sex education in public schools by 4 percentage points and increased 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 X 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 doing this activity.

7 Backlash then Expressive

The theory of law and norms (Bénabou and Tirole 2012) suggests that backlash should occur when relatively few individuals engage in law's sanctioned activities, whereas expressive law should occur when it is the norm. Put differently, liberal laws (further) liberalize attitudes

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[32] 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 IX.— The Effect of Progressive Free Speech Precedents on Attitudes and Behavior

Panel A: Attitudes	Premarital Sex is OK (1)	Extramarital Sex is OK (2)	Teen Sex is OK (3)	Homosexual Sex is OK (4)	Favor Sex Ed in Public School (5)
Progressive Free Speech Decision	0.00568	-0.0403	-0.0292	0.0637+	-0.0537
	(0.0363)	(0.0280)	(0.0304)	(0.0373)	(0.0392)
India	-0.386**	0.0528	-0.307**	-0.363**	-0.181*
	(0.0680)	(0.0524)	(0.0569)	(0.0697)	(0.0734)
Male	0.246**	0.0698	0.135*	0.138+	0.0631
	(0.0693)	(0.0534)	(0.0580)	(0.0711)	(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 (6)	Casual Date Sex in Last Year (7)	Paid Sex in Last Year (8)	Saw X-rated Movie (9)	Sex Frequency Monthly or More (10)
Progressive Free Speech Decision	-0.0131	-0.00403	0.0187	0.0419	0.0335
	(0.0387)	(0.0286)	(0.0235)	(0.0380)	(0.0388)
India	0.124+	0.00969	-0.00506	-0.110	-0.213**
	(0.0724)	(0.0535)	(0.0440)	(0.0712)	(0.0726)
Male	0.0478	0.146**	0.149**	0.328**	-0.0173
	(0.0738)	(0.0546)	(0.0449)	(0.0725)	(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 X.— The Effect of Progressive Free Speech Jurisprudence on Values and Beliefs

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

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

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when the underlying activity is already the norm.

Sexual norms have changed dramatically since 1958. Fernandez-Villaverde et al. (2014) note that in 1958, 35% of U.S. women engaged in premarital sex by the age of 19 compared to 75% today. In 1968, only 15% of women viewed premarital sex to be acceptable, but by 1983 this increased to 45%. In 1957, 57% of Americans believed that adults who preferred to be single were "immoral", but today, it is no longer considered a moral issue and more than 50% of adults are single. Bearing children out-of-wedlock was once extremely rare, but today more than half of births to women under 30 occur outside of marriage (Klinenberg 2012). This is true especially in the U.S. South.[33]

Interpreting those facts through the lens of the theory yields predictions for heterogeneous effects over time. Early conservative precedents cause people to update their beliefs that the sanctioned activities are more common than previously thought. Normalizing the sanctioned activity undermines the initial purpose of the conservative precedent, which the theory calls "backlash". In the aftermath of the sexual revolution, progressive free speech decisions have expressive effects, where the informational effects and the material penalties reinforce each other.

Table XI presents analyses of GSS and UCR for 1973-1993 vs. 1980-2000.[34] We confirm that first stage F-statistics remain high for the two time periods. Column 2 suggests backlash effects in the earlier time period. Paid sex, prostitution, partners per year, and acceptability of homosexual sex all increase following conservative free speech precedent. The opposite is true in later years. Note that self reports of paid sex and arrests for prostitution move in tandem.

8   Conclusion

Social scientists and philosophers have long debated whether law shapes values. Policy-makers 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

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[33]https://www.cdc.gov/nchs/pressroom/sosmap/unmarried/unmarried.htm
[34]The results are robust to variation in these cutoffs.

TABLE XI

THE EFFECTS OF FREE SPEECH PRECEDENTS OVER TIME

| | 1973-1993 | | 1980-2000 | |
	OLS	Appellate IV	OLS	Appellate IV
Average Lag effect	(1)	(2)	(3)	(4)
Paid Sex	0.004	-0.002	0.003	0.005
Joint P-value of lags	0.083	0.000	0.036	0.123
Joint P-value of leads	0.643	0.217	0.514	0.824
Community Vices	7.463	-2.050	1.364	9.181
Joint P-value of lags	0.108	0.000	0.056	0.050
Joint P-value of leads	0.074	0.724	0.240	0.089
Partners Per Year	-0.724	-0.169	0.043	0.468
Joint P-value of lags	0.101	0.047	0.348	0.031
Joint P-value of leads	0.057	0.242	0.535	0.601
Homosexual Sex is OK	-0.003	-0.050	0.001	0.017
Joint P-value of lags	0.394	0.008	0.771	0.000
Joint P-value of leads	0.018	0.680	0.783	0.227

Notes: Significant at +10%, *5%, **1%. Attitudinal and behavioral data consist of individual GSS responses. Heteroskedasticity-robust standard errors are in parentheses and clustered by Circuit. Regressions include Circuit fixed year fixed effects, Circuit-specific time trends, a dummy for whether there were any cases in that Circuit-year, 6-year lagged community standards (Circuit average response to whether sexual materials lead to a breakdown of morals), and level controls: age, gender, race, and college education. Instruments for proportion of progressive free speech decisions are Democratic appointees per seat assigned to appellate obscenity cases in a Circuit-year. Survey weights are provided by GSS. Crime data consist of UCR arrests reported by ORI agencies (at the state-county level) and population weights are population reporting to ORI agency.

distribution of law's sanctioned activity.

Using data on all U.S. obscenity precedent in Courts of Appeals, we show that Democrats decide free speech cases in a manner more closely linked to prioritizing individual self-expression, and they vote to protect free speech. Republicans decide cases in a manner more closely linked to a focus on secondary effects, and they vote to constrain free speech. Through the quasi-randomization of rulings from judge assignment, 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, prostitution, and drug violations. Likewise, decisions that focus on secondary effects reduced crime with the exception of child abuse. They also reduced disease, in particular, chlamydia, which is asymptomatic.

Corroborating the expressive effects of law, 1,345 workers randomly assigned to transcribing newspaper summaries of progressive free speech precedent reported more progressive sexual attitudes. Notably, there was no impact on sexual behaviors, which would be expected within the short time frame of the experiment. 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. Finally, 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 twinned experimental and empirical framework developed here 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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For Online Publication

Web Appendix:

Figure 1
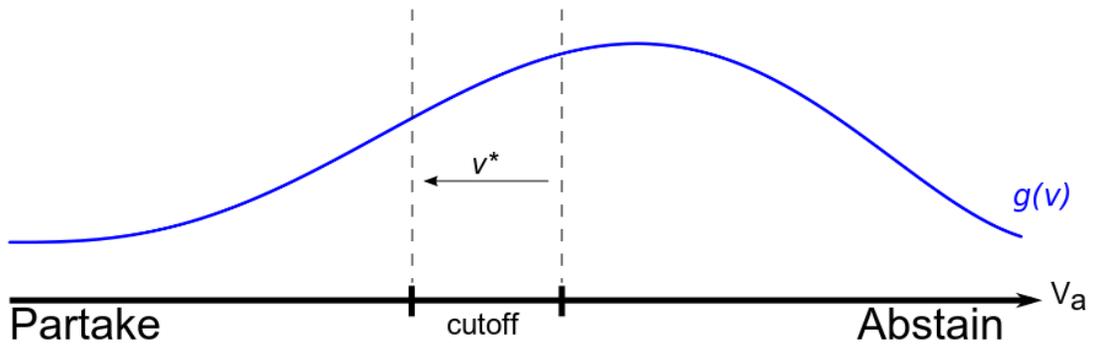
Figure 2

Geographic Boundaries
of United States Courts of Appeals and United States District Courts

Figure 3

News Reports and Obscenity Cases Across All Circuits

Figure 4: Appellate Obscenity Decisions, 1958-2008

Figure 5A

Random Variation: Democrat

Figure 5B

Random Variation by Circuit: Democrat
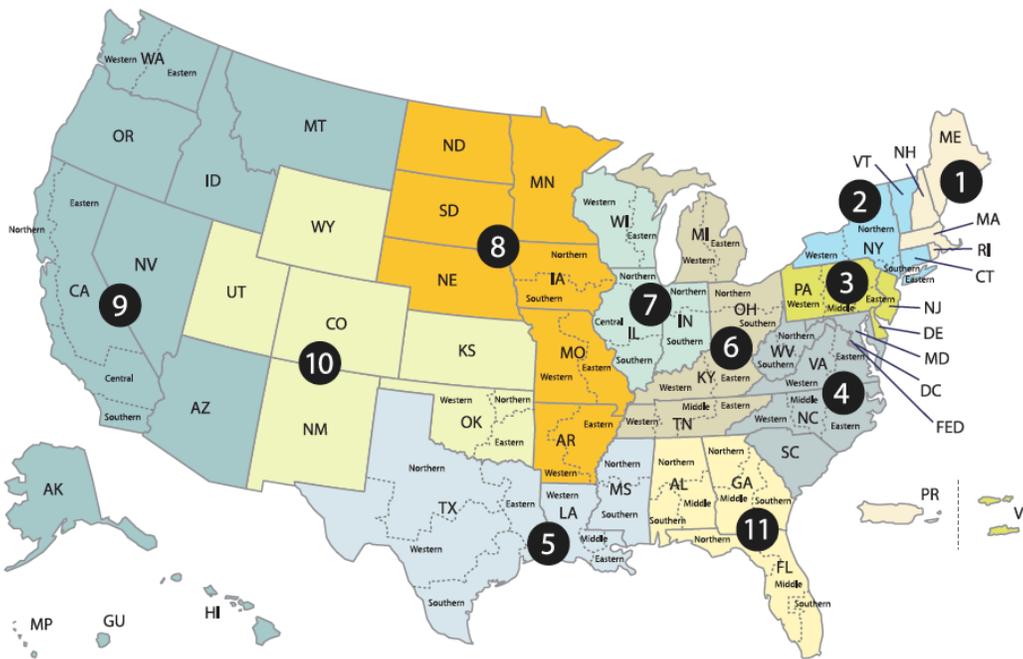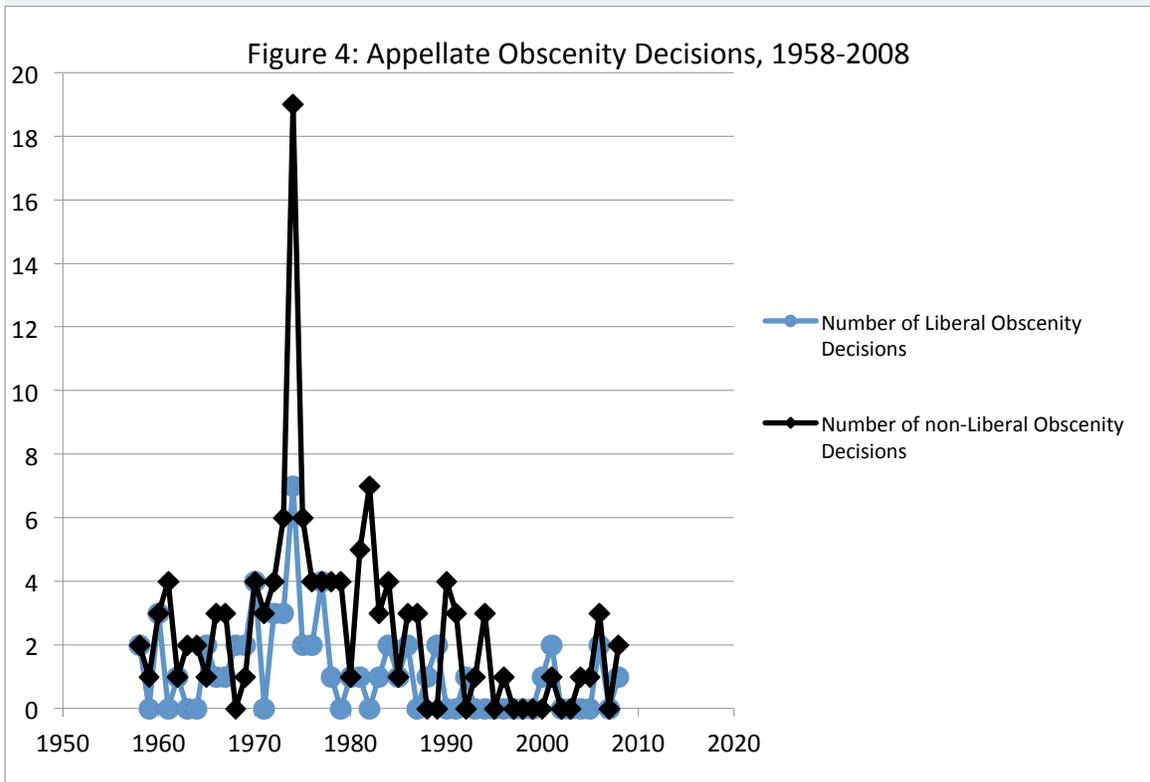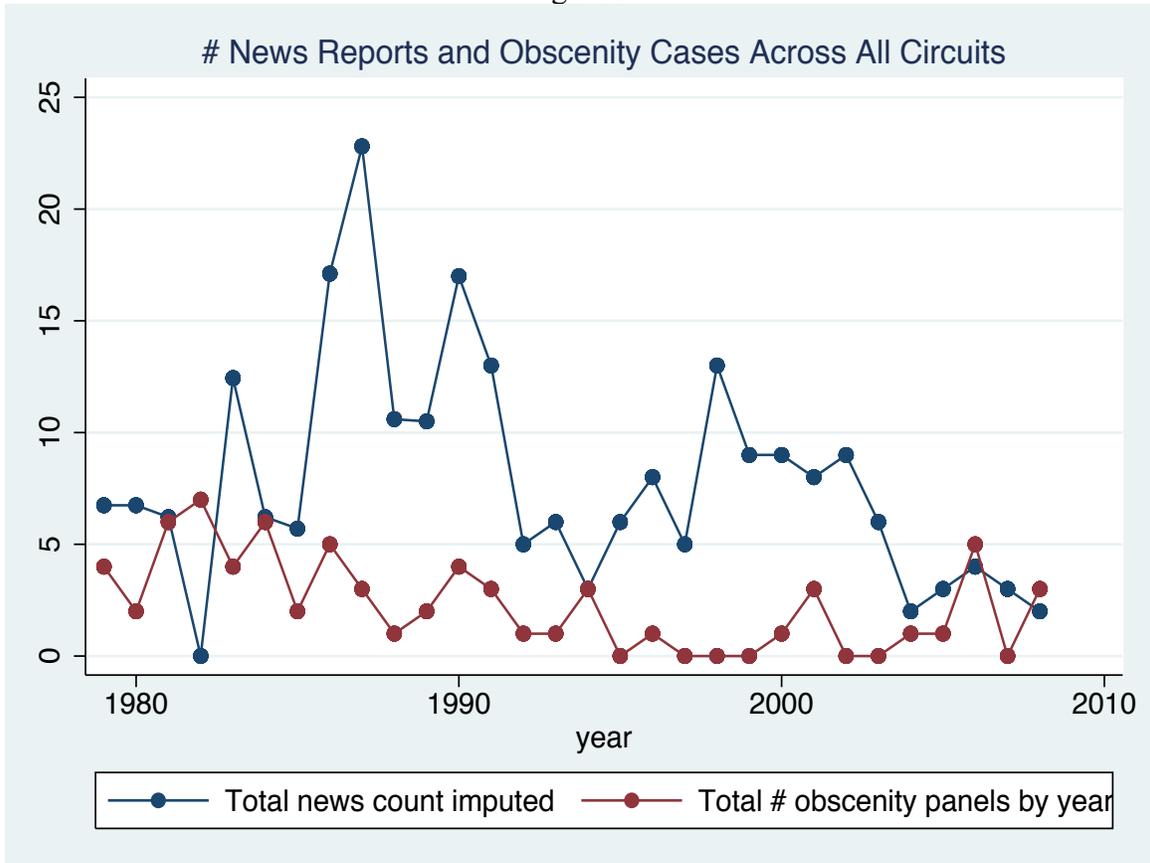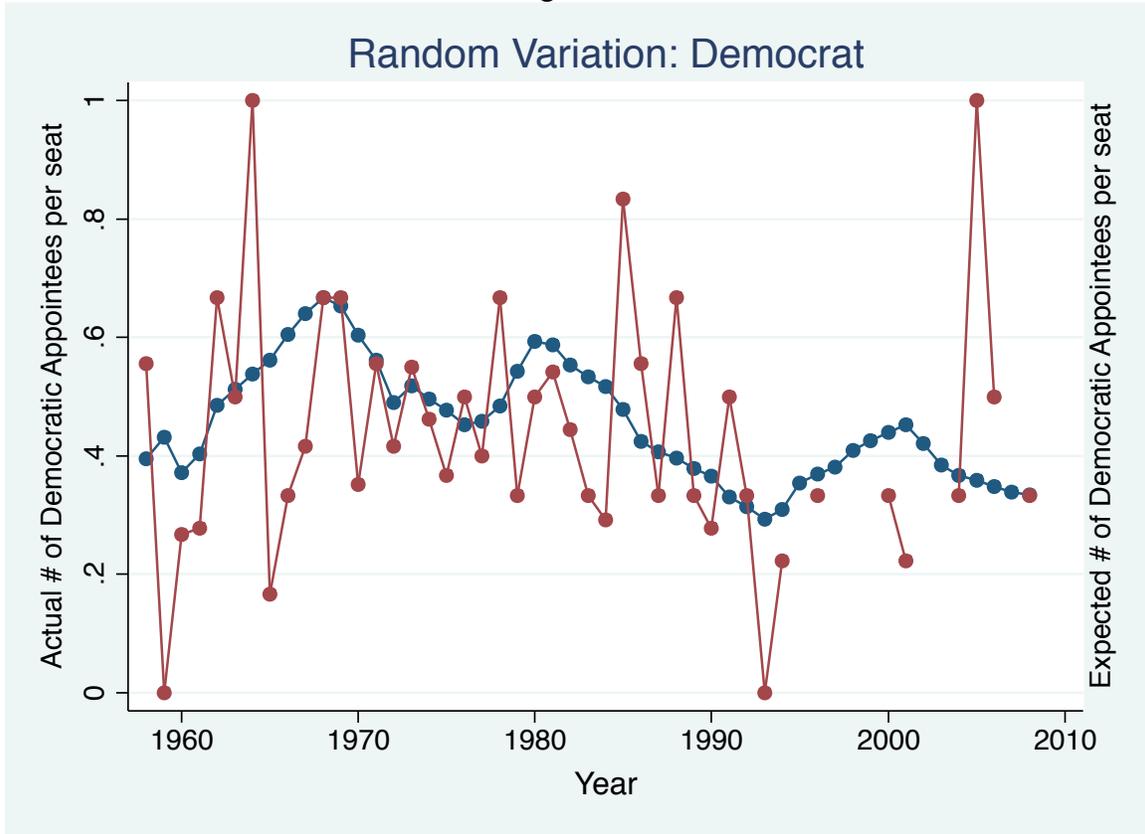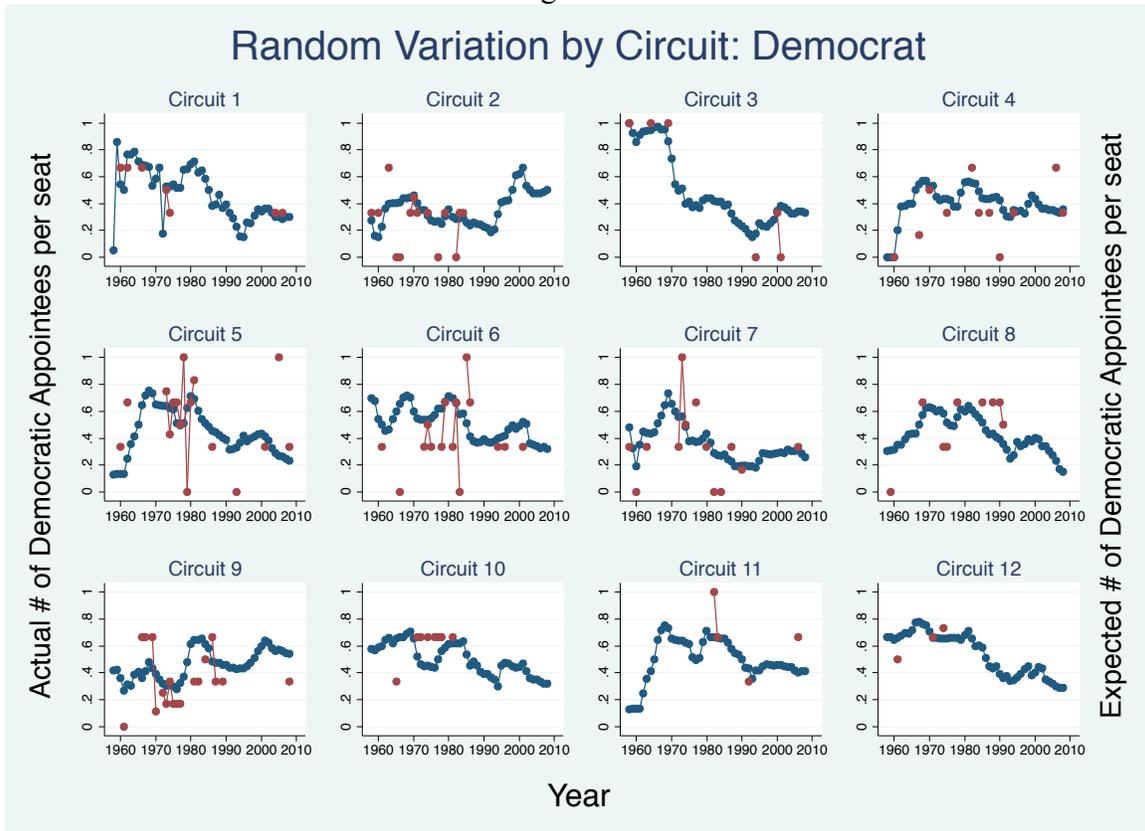
Figure 6: Randomization Check
P-Values of Democrat Appointee strings

Figure 7A

Liberal Obscenity Decisions
and Composition of Judicial Panels

Figure 7B

Liberal Obscenity Decisions
and Composition of Judicial Panels
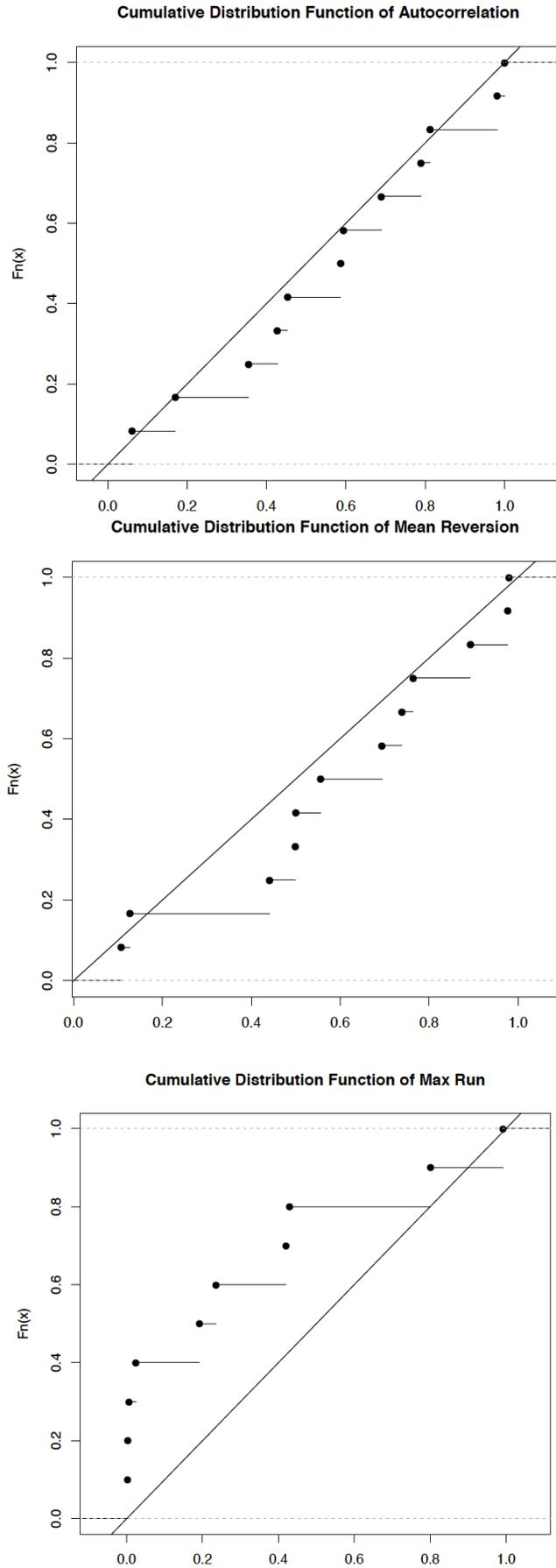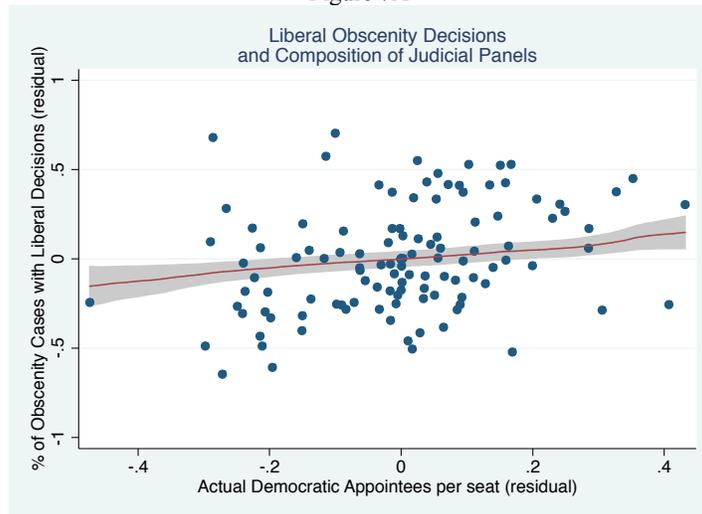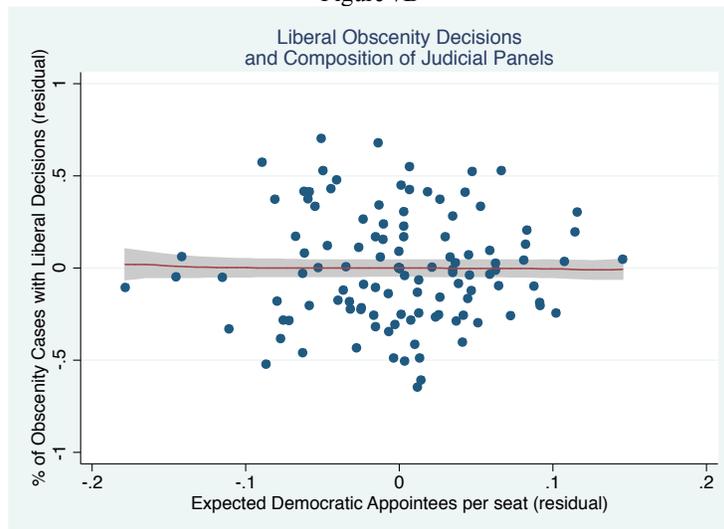
Nonparametric local polynomial estimates are computed using an Epanechnikov kernel. Rule-of-thumb bandwidth is used. Shaded area indicates 90 percent confidence bands. The residuals are calculated removing circuit and year fixed effects.

A Theory

A.1 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 or if very few people donate millions, then donors receive honor–and 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, that is, it reinforces the deterrent effects provided by the sanction, or (2) law shifts social motivations away from what the law values, that is 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:

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

where v_a is intrinsic motivation (over the range of $[\underline{v}, \overline{v}]$), 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, $E(x \mid a)_s$, 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 her action a. In rational expectations equilibrium, society's expectations will be correct and the last term will be $\mu E(v_a \mid a)$.

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

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

The judge set the costs and $\sigma_j \bar{a}$ represents the systematic component of judge j's decision-making that leads her 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:

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

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:

$$
(3) \quad
\begin{cases}
\text{if } a = 1: & U(1) = v_a - c + \mu E(x \mid 1)_s \\[2mm]
\text{if } a = 0: & U(0) = \mu E(x \mid 0)_s
\end{cases}
$$

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:

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

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

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

where we define:

$$
(6) \qquad \Delta(v) = E(v_a \mid v_a > v) - E(v_a \mid v_a < v)
$$

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

$$
(7) \qquad \Delta(v) = E(v_a \mid 1) - E(v_a \mid 0)
$$

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 cut-off 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 Appendix Figure 1 for a distribution of intrinsic motivations. Under Jewitt's (2004) 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 cut-off will shift one truncated mean more than the other. When v^* is small (most people choose $a = 1$), raising v^* increases $E(v_a \mid 0)$ more than $E(v_a \mid 1)$, as $E(v_a \mid 0)$ 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, $E(v_a \mid 1)$ is less affected.

In words, the more people who exercise free speech, the more normalized it becomes, so 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 policymaker 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 she believes 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).

B   Background on U.S. Obscenity Law

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 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[35] that 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. Yet, the 1970 Commission's findings 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 conclusion that "legislation prohibiting the sale, exhibition, or distribution of sexual materials to consenting adults should be repealed" 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 Thurmond organized the "Fortas Obscene Film Festival," (it featured transvestites) which not only led to the resignation of Justice Fortas but also the nomination of Justice Burger instead, who by 1973 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).

Since 1973, the legal standard defining obscenity in the U.S. has been the three-part *Miller* test set out in the Supreme Court decision *Miller v. California*, 413 U.S. 15 (1973). The *Miller* test defines material as obscene if "the average person, applying contemporary community standards" would find that the material (1) "appeals to the prurient interest"; (2) has "patently offensive" depictions of sexual conduct; and (3) "lacks serious literary, educational, artistic, political, or scientific value." Before the *Miller* test, the *Roth* test allowed banning obscenity when the average person, applying contemporary community standards, would consider the dominant theme of the material, taken as a whole, appeals to prurient interests. Moral harms and their "secondary effects" (i.e., sexual violence, disease and drugs) were discussed in the Supreme Court

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[35] *Stanley v. Georgia* (394 U.S. 557)

decisions *Young v. Adult Mini Theatres, Inc.* 427 U.S. 50 (1976) and *Renton v. Playtime Theatres, Inc.* 475 U.S. 41 (1986) regarding obscene speech.

Major doctrinal developments are shown below:

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*).

The full list of precedents in our data frame are below:

Appendix Table I: List of Free Speech Appellate Precedent

Citation	Case Name	Circuit	Year	Progressive	Type of Free Speech Regulation	Type of Free Speech Expression
252 F.2d 333	Glanzman v. Schaffer	2	1958	0	prohibition on sending payment for obscene material through the mails	"obscene material"
262 F.2d 357	United States v. Padell	3	1958	0	prohibition on mailing obscene material	"dreary pornography"
259 F.2d 54	United States v. Keller	3	1958	1	prohibition on mailing obscene material	books containing references to adultery
260 F.2d 670	Capitol Enterprises, Inc. v. Chicago	7	1958	1	Chicago, IL obscenity ordinance	sexually explicit film
271 F.2d 140	Alexander v. United States	8	1959	0	shipment of obscene materials via common carrier	sexually explicit books
273 F.2d 799	Flying Eagle Publications, Inc. v. United States	1	1960	0	prohibition on mailing obscene material	"lewd, lascivious, vile, indecent..." -"partially clothed illustration of a woman accompanying
283 F.2d 780	Collier v. United States	4	1960	0	prohibition on mailing obscene material	circulars telling where obscene material might be found; pornographic photographs
276 F.2d 433	Grove Press, Inc. v. Christenberry	2	1960	0	prohibition on mailing obscene material	Lady Chatterley's Lover--book containing explicit sex
274 F.2d 598	Cain v. United States	2	1960	0	prohibition on mailing obscene material	letter containing sexually explicit language
273 F.2d 529	Empire Pictures Distributing Co. v. Ft. Worth	5	1960	1	Fort Worth, TX city ordinances banning a movie theater from showing explicitly sexually explicit films	sexually explicit films
277 F.2d 631	United States v. Hochman	7	1960	0	transportation of obscene materials in interstate commerce using a common carrier	sexually explicit books
294 F.2d 204	Womack v. United States	12	1961	0	mailing obscene matter	book explicitly describing character's sexual adventures
289 F.2d 455	Manual Enterprises, Inc. v. Day	12	1961	0	mailing obscene matter	pornographic ads
290 F.2d 517	United States v. Oakley	6	1961	0	prohibition on mailing obscene materials	pornographic photographs
293 F.2d 449	Ackerman v. United States	9	1961	0	mailing obscene material	sexually explicit letters
309 F.2d 362	Excellent Publications, Inc. v. United States	1	1962	1	prohibition on mailing obscene materials	photos of nude/partially nude women
300 F.2d 78	Kahm v. United States	5	1962	0	prohibition on mailing obscene material	pornographic written materials, advertisements for those materials
316 F.2d 813	United States v. Darnell	2	1963	0	prohibition on mailing obscene material	private letter using swear words
316 F.2d 873	United States v. Zuideveld	7	1963	0	prohibition on mailing obscene material	sexually suggestive magazines, membership in a sexual pen pal club
338 F.2d 12	United States v. Ginzburg	3	1964	0	prohibition on mailing obscene material	pornographic magazine
333 F.2d 963	Outdoor American Corp. v. Philadelphia	3	1964	0	PA obscenity statute	pornographic magazines
338 F.2d 694	Armijo v. United States	9	1965	0	prohibition on mailing obscene material	pornographic illustrations
350 F.2d 155	United States v. Klaw	2	1965	0	prohibition on mailing obscene material	records and record labels which depicted sex in some way
353 F.2d 614	United States v. Davis	2	1965	0	prohibition on mailing obscene material	sexually explicit pamphlets and advertising
340 F.2d 59	Haldeman v. United States	10	1965	0	prohibition on mailing obscene materials	book explicitly describing character's sexual adventures
358 F.2d 935	Books, Inc. v. United States	1	1966	0	mailing obscene material	pornographic videos
359 F.2d 402	Wenzler v. Pitchess	9	1966	1	CA obscenity law	sexually explicit book
357 F.2d 855	United States v. West Coast News Co.	6	1966	1	prohibition on mailing obscene material, transportation of obscene material	sexually explicit film which also depicts self-mutilation
367 F.2d 889	United States v. One Carton Positive Motion Picture Film	2	1966	1	prohibition on importation of obscene material	photographs of "scantily clad women"
385 F.2d 209	Culbertson v. California	9	1967	1	CA statute prohibiting sale of obscene material	pornographic magazines
373 F.2d 635	United States v. 56 Cartons	4	1967	0	importation of obscene material	pornographic magazines
373 F.2d 633	United States v. 392 Copies of Magazine	4	1967	0	importation of obscene material	pornographic magazines
385 F.2d 228	Overstock Book Co. v. Barry	2	1970	0	distribution of pornography	sexually explicit letters
431 F.2d 655	Miller v. United States	9	1970	0	mailing obscene material	pornographic film
436 F.2d 1289	United States v. Dellapia	2	1970	0	prohibition on mailing obscene material	nudist magazines and sexually explicit novels
431 F.2d 282	United States v. Jacobs	9	1970	0	mailing obscene material	booklets containing pornographic photos
431 F.2d 272	Childs v. Oregon	9	1970	0	disseminating obscene matter in violation of OR state law	pornographic film
389 F.2d 200	Luros v. United States	8	1968	0	importation of obscene material	sexually explicit paintings
404 F.2d 196	United States v. A Motion Picture Entitled "I am Curious-Yellow"	2	1968	1	importation of obscene material	sexually explicit film
418 F.2d 1051	United States v. Baranov	9	1968	1	importation of obscene material	any movie not rated G
418 F.2d 82	Grove Press, Inc. v. Philadelphia	3	1969	1	PA obscenity statute and common law nuisance	slides of pornographic images
422 F.2d 34	United States v. Wild	2	1969	0	prohibition on importation of obscene material	pornographic film
435 F.2d 228	Drive In Theatres, Inc. v. Huskey	4	1970	1	NC state obscenity law as interpreted by the Rutherford County sheriff	pornographic film
422 F.2d 705	United States v. 35 MM. Motion Picture Film etc.	2	1970	0	importation of obscene material	obscene advertisements
470 F.2d 386	United States v. Ten Erotic Paintings	4	1971	1	importation of obscene material	the musical "Hair"
467 F.2d 1126	Huffman v. United States	12	1971	0	DC obscenity ordinance	unclear
454 F.2d 280	United States v. Manarite	7	1972	0	prohibition on mailing obscene material	used profane language on a radio broadcast
459 F.2d 282	United States v. Ewing	10	1972	1	Oklahoma City's refusal to lease its auditorium	the musical "Hair"
455 F.2d 899	United States v. Pellegrino	9	1972	1	transporting in interstate commerce obscene material	a letter which included sexually explicit language
465 F.2d 1096	Tallman v. United States	9	1972	0	uttering obscene language on the radio	pornographic magazines
465 F.2d 282	United States v. Young	9	1972	0	mailing obscene material	pornographic magazines
467 F.2d 41	United States v. Miller	2	1972	0	mailing obscene material	a performance of the play "Hair"
467 F.2d 945	Southeastern Promotions, Ltd. v. Oklahoma City	10	1972	1	transporting obscene material	pornographic magazines, films, and playing cards
445 F.2d 583	United States v. Fesenmeyer	7	1972	0	uttering obscene language on the radio	pornographic material and advertisements
448 F.2d 894	United States v. Smith	7	1972	0	transporting in interstate commerce obscene material	books, magazines, etc. which included "hard-core pornography"
470 F.2d 605	United States v. Gates	4	1972	0	prohibition on mailing obscene material	language is not described
481 F.2d 1126	Southeastern Promotions, Ltd. v. Conrad	6	1973	1	prohibition on mailing obscene material	advertisements for two sexually explicit books
475 F.2d 65	United States v. Palladino	1	1973	1	TN obscenity common law and statutes	obscene books, magazines, and ads
486 F.2d 894	Cinecom Theaters Midwest States, Inc. v. Ft. Wayne	7	1973	1	prohibition on mailing obscene material	books and brochures depicting and describing porn and sex
473 F.2d 1297	United States v. Hamling	9	1973	0	Fort Wayne, IN city ordinance prohibiting nudity in drive-in movies	films involving nudity
481 F.2d 307	United States v. One Reel of Film	1	1973	0	prohibition on mailing obscene material	films involving nudity
481 F.2d 206	United States v. Millican	5	1973	0	mailing obscene material	pornographic film
487 F.2d 331	United States v. Cote	5	1973	0	importation of obscene material	pornographic film and magazine advertising the film
481 F.2d 574	United States v. Thevis	5	1973	0	prohibition on mailing obscene material	pornographic films, magazines, and advertisements for those films and magazines
485 F.2d 574	United States v. Groner	5	1973	0	prohibition on mailing obscene materials	pornographic film
484 F.2d 1149	Brubaker v. Board of Education	5	1974	1	transporting obscene material on a common carrier in interstate commerce	pornographic films, magazines, and advertisements for those films and magazines
494 F.2d 499	Patterson v. United States	5	1974	0	dismissal of teachers for distributing obscene material to minors	advertisements for pornographic magazines
502 F.2d 973	United States v. Ratner	5	1974	0	prohibition on mailing obscene material	a letter containing pornographic photographs
487 F.2d 1300	United States v. Palladino	1	1974	0	federal obscenity statute	a brochure describing Woodstock and its sexual excess
502 F.2d 1300	United States v. Harding	5	1974	0	prohibition on mailing obscene material	a letter containing pornographic photographs
490 F.2d 299	United States v. Palladino	1	1974	0	prohibition on mailing obscene material	a brochure describing Woodstock and its sexual excess
490 F.2d 294	United States v. Harding	10	1974	0	prohibition on mailing obscene material	advertisements for pornographic materials
507 F.2d 78	United States v. Sulaiman	5	1974	0	receipt of obscene matter transported through interstate commerce	book and brochure which depicted/described pornographic photos
490 F.2d 78	United States v. Sulaiman	5	1974	0	federal obscenity statute	obscene books and films
505 F.2d 1247	United States v. Miller	9	1974	0	mailing obscene material	pornographic ads and films
507 F.2d 1100	Miller v. United States	9	1974	0	mailing obscene material	pornographic books and magazines
491 F.2d 956	United States v. Miller	2	1974	0	importation of obscene material	pornographic books and magazines
, Sharpie, Inc.	, Sharpie, Inc.	9	1974	0	importation of obscene materials	pornographic film
502 F.2d 391	United States v. Pryba	12	1974	0	interstate transportation of obscene materials	pornographic film

Citation	Case Name	Circuit	Year	Progressive	Type of Free Speech Regulation	Type of Free Speech Expression
500 F.2d 733	United States v. Hill	5	1974	0	prohibition on mailing obscene materials; transportation of obscene mat	pornographic films
506 F.2d 1251	United States v. Carter	6	1974	0	prohibition on mailing obscene materials, use of common carrier to trans	pornographic films
505 F.2d 824	Smith v. United States	6	1974	0	interstate transportation of obscene materials	pornographic films
505 F.2d 76	United States v. Thevis	5	1974	0	transporting obscene material on a common carrier in interstate	pornographic magazines
490 F.2d 76	United States v. Friedman	8	1974	0	prohibition on mailing obscene materials	pornographic magazines
506 F.2d 511	United States v. Thevis	5	1974	0	transporting obscene material on a common carrier in interstate commer	pornographic magazines
509 F.2d 368	United States v. Womack	12	1974	0	prohibition on mailing obscene matter, mailing obscene matter	pornographic magazines
502 F.2d 419	Huffman v. United States	12	1974	1	DC obscenity ordinance	obscene advertisements
502 F.2d 189	United States v. Gower	12	1974	0	mailing obscene matter	obscene advertisements
498 F.2d 934	United States v. Alexander	2	1974	0	prohibition on interstate transportation of obscene materials	pornographic films
490 F.2d 73	United States v. New Orleans Book Mart, Inc.	5	1974	0	transporting obscene material on a common carrier in interstate commer	pornographic photographs and film
515 F.2d 397	Illinois Citizens Committee for Broadcasting v. FCC	12	1974	0	broadcasting obscene material	radio call-in show
496 F.2d 441	Amato v. Divine	7	1974	1	WI state obscenity law	sexually explicit magazines
491 F.2d 714	United States v. Ewing	10	1974	1	mailing obscene matter	unclear
491 F.2d 697	United States v. Harding	10	1974	0	mailing obscene matter	unclear
504 F.2d 1012	United States v. Wasserman	5	1974	0	receipt of obscene matter transported through interstate commerce	unclear--somehow pornographic
514 F.2d 1244	United States v. Slepicoff	5	1975	0	prohibition on mailing obscene materials	pornographic films
514 F.2d 923	Cicque v. United States	5	1975	0	prohibition on mailing obscene materials	letter containing sexually explicit language
523 F.2d 3	Walker v. Dillard	4	1975	1	VA state law criminalizing cursing at someone over the phone	Mrs. Walker swore at her neighbor over the phone
518 F.2d 20	United States v. Dachsteiner	12	1975	1	mailing obscene matter	obscene advertisements
523 F.2d 325	United States v. Marks	9	1975	0	interstate transportation of obscene materials	pornographic magazines, books, and advertisements
520 F.2d 913	United States v. American Theater Corp	5	1975	0	DC obscenity ordinance	sexually explicit book
526 F.2d 48	McKinney v. Parsons	8	1975	0	Birmingham, AL obscenity ordinance	"obscene materials"
513 F.2d 264	United States v. Danley	5	1975	0	transporting in interstate commerce obscene material	obscene books
541 F.2d 810	United States v. Obscene Magazines, Films & Cards	9	1976	0	forfeiture of obscene materials but unclear what underlying offense is	"exhibits"
543 F.2d 723	Wasserman v. Municipal Court of Alhambra Judicial Dist.	9	1976	1	CA state law criminalizing distribution of obscene material	pornographic film
533 F.2d 192	United States v. Linetsky	5	1976	0	prohibition on mailing obscene materials	pornographic film
526 F.2d 989	United States v. Thevis	5	1976	0	prohibition on mailing obscene materials	pornographic films
526 F.2d 784	United States v. Friedman	10	1976	0	interstate transportation of obscene materials to transport obscene material	pornographic films
528 F.2d 784	United States v. Baranov	4	1976	0	mailing and use of common carriers to transport obscene material	pornographic films and other materials
538 F.2d 325	Robinson v. Parsons	9	1977	1	Birmingham, AL obscenity ordinance	unclear--somehow pornographic
560 F.2d 720	United States v. 2200 Paper Back Books	10	1977	1	importation of obscene material	pornographic photos
566 F.2d 566	United States v. Christian	10	1977	1	interstate transportation of obscene materials with common carrier	unclear
549 F.2d 1369	United States v. Tupler	2	1977	1	importation of obscene material	pornographic films
564 F.2d 1294	United States v. Various Articles of Obscene Merchandise, Schedule 1303	2	1977	0	importation of obscene material	pornographic photos
562 F.2d 185	Pacifica Foundation v. Federal Communications Commission	12	1977	1	FCC ruling	seven "patently offensive" words
556 F.2d 9	United States v. Glassman	5	1977	0	interstate transportation of obscene materials	sexually explicit films
562 F.2d 954	Amato v. Divine	7	1977	0	WI obscenity law	unclear
558 F.2d 364	United States v. Grassi	5	1977	0	mailing obscene matter	pornographic films
562 F.2d 428	Sovereign News Co. v. Corrigan	2	1979	0	OH obscenity statute	unclear--somehow pornographic
610 F.2d 428	United States v. Various Articles of Obscene Merchandise, Schedule 1769	2	1979	0	importation of obscene material	pornographic films and other materials
602 F.2d 1192	Entertainment Concepts III v. Maciejewski	8	1979	1	transporting obscene material on a common carrier in interstate commerce; mailing obscene material, etc.	adult movie theaters
631 F.2d 497	Penthouse International Ltd. v. McAuliffe	5	1980	1	Westmont, IL city ordinances	adult entertainment providers raise a facial challenge to constitutionality of TX statute
610 F.2d 1353	Red Bluff Drive-In Inc. v. Vance	5	1980	1	TX obscenity statute	adult movie theaters
648 F.2d 1020	United States v. Obscene Magazines, Book & Advertising Materials, et al.	5	1981	0	importation of obscene material	pornographic magazines
653 F.2d 381	United States v. McConn	5	1981	1	Houston noise amplification ordinance prohibiting the amplification of ob	obscene advertising
638 F.2d 762	Pepenburg v. Cutler	10	1981	0	UT statute prohibiting exhibition of pornographic films	pornographic film
646 F.2d 237	United States v. Battista	6	1981	0	interstate transportation of obscene materials	pornographic film
649 F.2d 783	Reeves v. McConn	5	1981	1	NC state obscenity nuisance law	pornographic films and a catalog
613 F.2d 1365	Fehlhaber v. North Carolina	4	1982	0	sending child pornography through the mails	photographs and negatives depicting child pornography
675 F.2d 787	United States v. Langford	7	1982	0	interstate transportation of obscene material with common carrier; inter	pornographic films/magazines
688 F.2d 1088	United States v. Bagnell	11	1982	0	importation of obscene material	pornographic films
679 F.2d 826	United States v. Various Articles of Obscene Merchandise, Schedule 2102	2	1982	0	mailing obscene material	sexually explicit magazines and brochures
678 F.2d 433	United States v. Gilman	9	1982	0	importation of obscene material	unclear--somehow pornographic
684 F.2d 616	United States v. Various Articles of Obscene Merchandise, Schedule 2102	9	1982	0	OH obscenity statute	pornographic films
678 F.2d 484	Sovereign News Co. v. Falke	6	1982	0	OH obscenity statute	plaintiffs are clerks at an adult bookstore
674 F.2d 486	Turoso v. Cleveland Municipal Court	6	1982	0	Toledo, OH obscenity ordinances	unclear--consolidated appeals
722 F.2d 1274	Janick v. Pizza	6	1983	0	importation of obscene material	pornographic magazines
705 F.2d 41	United States v. Various Articles of Obscene Merchandise, Schedule 2127	2	1983	0	GA obscenity law	the movie Caligula
702 F.2d 925	Penthouse International, Ltd. v. McAuliffe	11	1983	0	importation of obscene material	child pornography film
709 F.2d 132	United States v. Various Articles of Obscene Merchandise, Schedule 2102	1	1983	0	prohibition on mailing obscene material	pornographic photos
726 F.2d 1191	United States v. Thoma	7	1984	0	mailing obscene materials	pornographic playing cards
747 F.2d 824	United States v. Petrov	9	1984	0	prohibition on mailing obscene material	pornographic printed material
746 F.2d 458	United States v. Merrill	9	1984	0	mailing obscene materials	sexually explicit magazines
744 F.2d 1061	Olson v. Leeke	4	1984	0	SC state obscenity law	unclear--consolidated appeal
750 F.2d 596	United States v. Various Articles of Merchandise, Seizure No. 170 & 182	9	1984	1	importation of obscene material	pornographic magazines
725 F.2d 482	J-R Distribs. v. Eikenberry	1	1984	1	WA obscenity law	pornographic magazines
780 F.2d 1389	Upper Midwest Booksellers Assoc. v. Minneapolis	8	1985	1	Minneapolis city ordinance	pornographic pamphlets and magazines
779 F.2d 1177	Brooks v. Seiter	6	1985	1	OH state law preventing prisoners from receiving "obscene" or "inflamma	pornographic magazines
801 F.2d 740	Hoover v. Byrd	5	1985	0	TX obscenity statute	"commercial obscenity"
804 F.2d 1104	BSA, Inc. v. King County	9	1986	1	WA county ordinances	barroom nude dancing
795 F.2d 765	United States v. Hurt	9	1986	0	mailing obscene materials	pornographic films

Citation	Case Name	Circuit	Year	Progressive	Type of Free Speech Regulation	Type of Free Speech Expression
803 F.2d 174	United States v. Marchant	5	1986	0	knowingly receiving child pornography	pornographic magazines featuring children
791 F.2d 463	Paducah v. Investment Entertainment, Inc.	6	1986	1	Paducah, KY obscenity ordinance	pornographic movie theaters, adult bookstores, etc.
826 F.2d 708	Moses v. County of Kenosha	7	1987	0	Kenosha County, WI obscenity ordinance	adult bookstores
819 F.2d 451	United States v. Guglielmi	4	1987	0	prohibition on mailing obscene material; use of common carrier to transp	films depicting bestiality
816 F.2d 1326	Polykoff v. Collins	9	1987	0	AZ obscenity statute	materials sold at adult bookstores
848 F.2d 923	United States v. Zangger	8	1988	1	mailing obscene material	a pornographic videotape
868 F.2d 1043	Ripplinger v. Collins	9	1989	0	AZ obscenity statute	"mainstream" pornographic materials
867 F.2d 1188	Dworkin v. Hustler Magazine, Inc. v. King County	9	1989	1	none-Andrea Dworkin sued Hustler for libel, invasion of privacy, among o	sexually explicit illustrations and photographs
911 F.2d 80	Walker v. Kansas City	8	1990	0	Kansas City zoning ordinance	exotic dancing at a bar
900 F.2d 748	United States v. Pryba	4	1990	0	RICO and state obscenity law	pornographic books and videos
902 F.2d 513	Kucharek v. Hanaway	7	1990	0	WI obscenity law	pornographic films, magazines, photographs, etc.
901 F.2d 630	Sequoia Books, Inc. v. Ingemunson	7	1990	0	IL obscenity statute	sexually explicit magazines, books, etc., sold by adult bookstore (plaintiff)
943 F.2d 825	Alexander v. Thornburgh	8	1991	0	RICO with obscenity violations as predicate offenses	pornographic videos and magazines
927 F.2d 1442	United States v. Easley	8	1991	0	mailing obscene material	sexually explicit videotapes and magazines
952 F.2d 155	United States v. ABC, Inc.	8	1991	0	transportation of obscene materials in interstate commerce using a commu	unclear
960 F.2d 134	Luke Records v. Navarro	11	1992	1	Florida county sheriff claiming the song is obscene	rap song by 2 Live Crew
10 F.3d 263	United States v. Various Articles of Merchandise, Schedule 287	5	1993	1	interstate transportation of obscene materials	sexually explicit box covers and video tapes
25 F.3d 1314	United States v. Skinner	6	1994	0	engaged in business of selling or transferring obscene matter	adult bookstores
18 F.3d 1181	Eckstein v. Melson	4	1994	0	federal obscenity statute	pornographic books/magazines
31 F.3d 135	United States v. Schein	3	1994	0	prohibition on mailing obscene material	sexually explicit film
74 F.3d 701	United States v. Thomas	6	1996	0	federal obscenity laws	an electronic bulletin board on which Thomas sold sexually explicit photos
230 F.3d 649	United States v. Various Articles of Merchandise, Schedule 287	3	2000	1	importation of obscene material	nudist magazines from France and Germany
237 F.3d 251	United States v. Loy	3	2001	1	receiving and possessing child pornography; after conviction, Loy was pre	images depicting child pornography
248 F.3d 394	United States v. Fox	5	2001	0	receipt of child pornography through the internet	convicted for sexually explicit films of children; prevented from viewing any pornographic i
251 F.3d 1072	United States v. Landham	6	2001	1	making obscene interstate phone calls	Landham made obscene phone calls to his wife solely to harrass her
377 F.3d 49	United States v. Gravenhorst	1	2004	0	use of the internet to solicit minors	explicit photographs and language used in emails to minors
426 F.3d 765	United States v. Ragsdale	5	2005	0	mailing obscene materials	violent porn
459 F.3d 80	United States v. Fabrizio	1	2006	0	child porn statute	depictions of "lascivious conduct"
466 F.3d 938	United States v. Eckhardt	11	2006	0	prohibition on making harrassing phone calls	obscene phone calls
444 F.3d 1286	United States v. Williams	11	2006	1	statute banning promotion of child porn	promoting (obscene) child porn
470 F.3d 1074	Giovani Carandola, Ltd. v. Fox	4	2006	0	NC statute regulating erotic dancing	simulated sexual acts–something defined by *Miller as obscene and therefore regulable*
469 F.3d 641	Entm't Software Ass'n v. Blagojevich	7	2006	1	statute regulating video games	violent/sexually explicit video games
550 F.3d 326	United States v. Whorley	4	2008	0	child porn statute	child porn which also qualified as "obscene" under *Miller*
546 F.3d 965	United States v. Schales	9	2008	0	child porn statute	child porn which also qualified as "obscene" under *Miller*
517 F.3d 738	Reliable Consultants, Inc. v. Earle	5	2008	1	TX ban on sale of sexual devices	private intimate conduct

C   Randomization

According to interviews, each court implements randomization differently. In some Circuits, two to three weeks before the oral argument, a computer program randomly assigns available judges to panels who will hear cases. In other Circuits, judges are randomly assigned to panels up to a year in advance; cases that arise are randomly assigned to panels. Some judges take a reduced caseload if retired or visiting, but all are randomly assigned by a computer algorithm. Senior judges can opt out of death penalty cases in some Circuits, but they would do so before random assignment. Chen and Sethi (2011) formally tests for randomization by showing that case characteristics as determined by District Courts are not correlated with the characteristics of the Courts of Appeals judges assigned to the case.

Even if judges are randomly assigned, because our data comprise published opinions, several additional issues need to be considered: settlement, publication, and strategic use of keywords or citation. In Courts of Appeals, judges are revealed very late, after litigants file their briefs, sometimes only a few days before the hearing, if there is a hearing, which gives little opportunity and incentive for settlement upon learning the identity of the panel. Most of the litigation costs are sunk by that point, and when the D.C. Circuit began announcing judges earlier, it did not affect settlement rates (Jordan 2007). Unpublished cases are not supposed to have precedential value. Unpublished cases are deemed as routine and easy: studies find that judicial ideology predicts neither the decision in unpublished cases (Keele et al. 2009) nor the decision to publish (Merritt and Brudney 2001). To rule out strategic use of keywords or citation of Supreme Court precedent, we propose an omnibus test to collectively address deviations from strict exogeneity: we examine how similar the string of actual panel assignments is to a random string. To see random strings as an omnibus test: Suppose Democrats publish cases and Republican judges do not. In order for this to explain any effects, we should expect Democrat judges to violate the random strings test.

We assess deviations from random assignment by examining whether the sequence of proportions of judges is similar to a random process. Appendix Figure 5 suggests visually that panel composition is not serially correlated. Formally, we:

1. Proposing a statistic that can be computed from the sequence of numbers of Democrats per seat within a Circuit.

2. Computing the statistic for the actual sequence, s^*.

3. Computing the statistic for each of 1,000 bootstrap samples from the actual sequence, i.e., s_1, s_2, s_3 . . .s_n. Since there were changes in the expected number of Democrats per seat over time, we treat our bootstrap samples as a vector of realized random variables, with the probability based on the expectation during the Circuit-year.

4. Computing the empirical p-value, p_i by determining where s^* fits into s_1, s_2, s_3 . . .s_n.

5. Repeating steps 1-4 and calculate p_i for each unit.

TABLE XII

Democratic Appointees assigned to Free Speech Cases					
	distance	size	90%	95%	99%
Autocorrelation	0.188	12	0.338	0.375	0.450
Mean Reversion	0.274	12	0.338	0.375	0.450
Longest Run	0.376	10	0.368	0.410	0.490

We use the following statistics:

Autocorrelation: We see if the value in the j$^{\text{th}}$ case depends on the outcome in the j-1$^{\text{th}}$case. This statistic can detect whether judicial assignments are "clustered," meaning a higher than expected number of back-to-back seat assignments to a particular type of judge. This test tells us whether certain judges sought out free speech cases, perhaps in sequence.

Mean-Reversion: We test whether there is any form of mean reversion in the sequence, meaning that the assignment in the n$^{\text{th}}$ case is correlated with the assignment in previous $n - 1$ cases. This test tells us whether judges or their assignors were attempting to equilibrate their presence, considering whether a judge was "due" for a free speech case.

Longest-Run: We test whether there are abnormally long "runs" of certain types of judges per seat. This test tells us whether certain Circuits may have assigned certain judges with free speech cases during certain time periods (e.g., to achieve specialization).

Number of Runs: Instead of simulating 1000 random strings, we compute the exact statistic for number of runs. This test captures violations of randomization at the case level rather than Circuit-year. In power calculations, this test has less Type II error compared to the other tests.

With a truly random process, the collection of all unit p-values should be uniformly distributed. The 1001$^{\text{th}}$ random string should have a summary statistic that is equally likely to be anywhere from 1 to 1000. A visual examination suggests that the empirical distributions for our p-values approach the CDF of a uniform distribution. Appendix Figure 6 presents each Circuit as one dot. Table XII shows that the Kolmogorov-Smirnov test statistic cannot reject the distribution of p-values is different from the uniform.

Random strings test complements standard randomization checks (e.g., examinations of (1) leads and (2) correlations between judicial composition and pre-determined case characteristics). If pre-determined covariates occur randomly over time, checks of (2) miss non-random serial correlation in judicial composition while the random strings test would miss correlations between judicial composition and pre-determined covariates.

We also stack the strings across Circuits and across biographical characteristics and run an autocorrelation test and compare the F statistic with F statistics generated from randomly assigning available judges to cases.

The results are consistent with randomization.

Other variations from random assignment include: remanded cases from the Supreme Court are returned to the original panel; en banc cases that are heard by the entire pool of judges (or a significant fraction in the Ninth Circuit); judges with conflict of interests opt out after random assignment, which is extremely rare. We do not use remanded or en banc cases, which are also relatively infrequent. Judges can also take sick leave or go on vacation, but this is determined far in advance.

Our identification strategy assumes that idiosyncratic deviations from random assignment are ignorable. Even a gold-standard random process — the roll of a die — has a deterministic element. If known with precision, the force and torque applied to the die, the subtle air currents, the hardness of the surface, etc., might allow us (or a physicist) to determine with certainty the outcome of these "random" rolls. Despite this obvious non-randomness, we would still have faith in the outcome of a trial with treatment assignments based on die rolls because we are certain that the factors affecting the assignment have no impact on the outcome of interest and hence are ignorable.

D District Courts

Litigants' decision to appeal may respond to previous years' legal decisions, however, so controlling for $\mathbf{1}[M_{ct} > 0]$ may bias the coefficient for Law_{ct}; the bias is more severe for more distant lags and non-existent for the most advanced lead. We assess whether this potential endogeneity is a significant concern by comparing $\beta_{1(t-n)}$ when we instrument for $\mathbf{1}[M_{ct} > 0]$ using the random assignment of District Court judges. District judge demographic characteristics are correlated with reversal rates in the Courts of Appeals (Haire, Songer, and Lindquist 2003; Sen 2015; Barondes 2010; Steinbuch 2009); and expected reversal rates could encourage litigants to pursue an appeal. If $\mathbf{1}[M_{ct} > 0]$ and Law_{ct} are both identified, estimates should be roughly invariant to the inclusion or exclusion of additional lags and leads (including lags that are important predictors of the outcome improves statistical precision, but losing data at the beginning and end period reduces precision) and lead coefficients being 0 provide an omnibus check of our instrumental variable being endogenous to pre-existing trends.

District Courts assign one judge to a case randomly or rotationally (Taha 2009; Bird 1975). Cases being returned on remand from the Courts of Appeals are not randomly assigned. We do not use remanded cases in our dataset. For example, one District told us that random assignment occurs within 24 hours of a case filing, which is handled in the order of its arrival. Waldfogel (1995) reports that one District Court uses three separate randomization wheels and each wheel corresponds to the anticipated case length. Related cases (meaning that one decision will substantially resolve all cases), if filed within a few weeks, may be consolidated. Waldfogel (1995) reports that plaintiffs can argue the case is related to another pending case and, if the judge agrees, the cases will be consolidated. A clerk reported 8% of filed cases were accepted as related in 1991 in SDNY. In another District Court, if a clerk identifies and two judges agree that a new civil case is related to another open civil case, they will be consolidated in the interests of justice or judicial economy. The clerk brings the possible connection to the attention of the judge of the new case, who then confers with the judge of the earlier case to determine whether they are in fact related cases. Consolidation would only occur for relatively high-frequency case types. For the handful of District cases that do overlap such that they are consolidated, we assume the decisions about case relatedness occur in a manner exogenous to judge assignment.

To instrument for $\mathbf{1}[M_{ct} > 0]$, we define our District IV as follows. $w_{ct} = \frac{\sum_{d=1}^{J} K_{cdt} * \left(\frac{L_{cdt}}{K_{cdt}} \right)}{\sum_{d=1}^{J} K_{cdt}}$, where K_{cdt} denotes the number of cases filed in District *court d* within Circuit c at time t (J goes from 5 to 13 depending on the District). L_{cdt} denotes the number of judges with a particular characteristic assigned to cases. The intuition is that assigning District judges who are disproportionately appealed leads to an appeal in the Circuit, $\mathbf{1}[M_{ct} > 0]$. Note that this assumes $K_{cdt} > 0$. An approximation is to define $K_{cdt} * \left(\frac{L_{cdt}}{K_{cdt}} \right)$ as 0 if $K_{cdt} = 0$. Then, the instrument can be constructed if $\sum_{d=1}^{J} K_{cdt} > 0$, which holds as we have a large number of district cases.

Unlike for Courts of Appeals cases, we cannot use the random strings test as an omnibus assessment for violations of random assignment, because some Districts use rotational assignment or random drawing of judges from card decks without replacement. So we discuss the concerns qualitatively and suggest another empirical test. First, District Courts judges are revealed much earlier than Courts of Appeals judges. Ideally, we would use docket filings in the Administrative Office of the U.S. Courts, but judges are omitted for most cases prior to 2000, so we must use published District opinions to construct our District IV. So, we buttress the assumption that settlement, publication, and strategic use of keywords or citations are exogenous: 1) in District Courts, judges are much more constrained and ideology has been found to play hardly any role. Judicial ideology does not predict settlement rates (Ashenfelter et al. 1995; Nielsen et al. 2010), settlement fees (Fitzpatrick 2010), publication choice (Taha 2004), or decisions in published or unpublished cases (Keele et al. 2009)—this last fact is consistent with the District judge identity only affecting outcomes through the presence of an appeal but not through the District Court decision, but this exclusion restriction is not necessary for the primary counterfactual; 2) we examine these issues directly as follows.

Since the random strings test is ineffective for District Courts, we test whether District Court judicial biographical characteristics in *filed* cases jointly predict publication. We link PACER filing data, which has judge identity, to AOC data, which has information on publication. We obtained all freely available PACER (Public Access to Court Electronic Records) data on District cases from 32 districts for 1980 to 2008 for a total of 359,595 non-duplicated cases. This data contains the name of the District where the case was filed, the filing and termination date (missing for 10% of cases), the assigned docket number, and the name of the District or magistrate judge presiding on the case. We merge the names of the judges into the Administrative Office of the U.S. Courts (AOC) database. We use LASSO to select biographical characteristics and no characteristic was chosen. We assume that remaining deviations from random assignment, like vacation days, are ignorable.

E   Additional Counterfactual Calculations

E.1   Summary and Counterfactuals Even though the differences in free speech activity seem to be aligned with the differences in judges' preferences revealed in their votes, the results we have discussed so far focus on the difference in outcomes after progressive as opposed to conservative precedent. We next examine progressive precedent vs. no decision and conservative precedent vs. no decision. Table XIII summarizes the following parameters for each outcome: β_1, $\beta_1 + \beta_2$, and β_2, scaled by the number of cases per year to report the typical effect per year of free speech precedent.[36] This results in a smaller magnitude than the unscaled coefficients.[37] The first column summarizes the findings reported thus far.

The second column reports that progressive decisions–as opposed to no decision–still yields progressive impacts on attitudes and behaviors, but some of the effects on crime are reversed–the progressive precedent reduces sex crimes in three of the four categories. One reason for this is a form of displacement. The absence of a case serves as a super-control. Crépon et al. (2013) introduce this idea in the context of a national experiment that randomizes (a) the presence of an employment training program across cities and (b) the training of individuals when there was a program. In the federal courts, we seek (a) random presence of an appellate case and (b) random decision when there was a case.

Differences between trained and non-trained individuals reflect our first counterfactual, β_1. Differences between trained individuals in treated cities and non-trained individuals in control cities reflect our second counterfactual, $\beta_1 + \beta_2$. Differences between the first and second counterfactuals are what Crépon et al. (2013) refer to as displacement. Trained individuals displace non-trained individuals from employment when there is a limited supply of positions. In our application, if there is a pre-defined set of free speech regulations, government actors may issue the regulation only in a favorable legal regime; alternatively, the supply (or arrests) of crime may be limited.

The lack of displacement effects for attitudes and behavior is consistent with law providing norm-shifting information. There is no reason to expect individuals to delay their norm changes until a favorable legal regime. This interpretation is further supported by the mechanism experiment, which we describe below. On the other hand, some of the effects on crime in Column 1 may be due to displacement. Notably, the effects on child abuse do not change, which suggests some of its channel may be more attitudinal or less displaced. The third column shows the impacts of β_2. Conservative free speech jurisprudence reduced crime (except for child abuse) and disease.

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[36]To compute the effect of progressive precedent in a typical Circuit-year, we multiply the coefficient on Law_{ct} by $\mathbf{E}[Law_{ct}|\mathbf{1}[M_{ct} > 0]]$, the typical proportion of decisions that are progressive when there are Circuit cases, and by $\mathbf{E}[\mathbf{1}[M_{ct} > 0]]$, the proportion of Circuit-years with a Circuit case. A similar calculation can be made for the typical effect of progressive precedent taking into account the presence of an appeal: $\mathbf{1}[M_{ct} > 0]*\mathbf{E}[\mathbf{1}[Progressive_{ct} > 0]]+Law_{ct}*\mathbf{E}[\mathbf{1}[Progressive_{ct} > 0]]$. These estimates can be used to simulate counterfactuals.

[37]The statistical significance of the effects are the same as the coefficients so are not repeated here.

TABLE XIII

SUMMARY OF RESULTS

Typical Effects	Progressive vs. Conservative Decision	Progressive vs. No Case	Decision vs. No Case
Sexual Attitudes			
Extramarital Sex is OK	0.0005	0.0005	-0.0000
Premarital Sex is OK	0.0002	0.0004	0.0010
Homosexual Sex is OK	0.0001	0.0004	0.0013
Sexual Behaviors			
Paid Sex	0.0001	0.0000	-0.0002
Partners Per Year	0.003	0.005	0.013
Number of Female Partners	0.120	0.080	-0.103
Partners Per Year (reported by Men)	0.007	0.012	0.033
Number of Female Partners (reported by Men)	0.276	0.199	-0.157
Extramarital Sex (reported by Men)	0.002	0.001	-0.002
Crimes			
Prostitution	0.140	-0.116	-0.705
Drug Violations	1.665	-0.446	-5.402
Rape	0.143	0.086	-0.092
Offenses Against Family and Children	-2.646	-1.904	0.289
Sexually Transmitted Diseases			
Chlamydia Incidence	1.977	1.223	-0.991

Notes: This table summarizes β_1, $\beta_1 + \beta_2$, and β_2 for each outcome, scaled by the number of cases per year to report the typical effect per year of free speech jurisprudence.

F Experiment

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 it is sufficiently simple that all market participants can do the task. 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.[38] An example paragraph was displayed on the first page of the external hosting site so workers were aware of the high payment before entering the study.[39]

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

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

[39]In 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.

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 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.