Image Versus Information:
Changing Societal Norms and Optimal Privacy

S. Nageeb Ali* and Roland Bénabou**

* Penn State University ** Princeton University and CIFAR

Princeton - October 2016

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- Different from issues of government snooping, or firms using "big data" to exploit consumers

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- Different from issues of government snooping, or firms using "big data" to exploit consumers
  - Would (say) a fully benevolent Principal, with no commitment problem, choose full transparency?

Judge Richard Posner, "The Right of Privacy," 1977

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- Argues there should be essentially zero privacy rights for facts concerning individuals whatever their nature, e.g.
  - Sexual behaviors, religious or political opinions, decades-old offenses or medical conditions; no "right to be forgotten"
  - No attorney or spousal exemptions from testimony, no right not to self-incriminate

Image-based / social incentives

- Public and private Principals already commonly use of public displays conveying honor or shame
  - Prizes, medals, titles, employee of the month, etc.
  - Strong evidence that publicity / social incentives / social comparisons very effective to get people to contribute, vote, save energy...

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  - The new pillory: televised "perp walks", internet posting of drunk drivers, people with unpaid taxes, parents delinquent on child support,... Publishing licence plates of cars photographed in areas of drug trafficking or prostitution
  - Even if just arrested, not convicted, e.g. for drunk driving. Thriving re-posting industry, must pay to un-post

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  - Even if just arrested, not convicted, e.g. for drunk driving. Thriving re-posting industry, must pay to un-post
- Shaming sanctions relatively common in the US, less so in others
  - But gaining traction as people lose faith in effectiveness of justice system against tax cheats, "banksters", powerful people "above the law", etc. Greece, Peru, France,...

Why not publicize everything?

- Know, both theoretically and empirically, that publicity / visibility, amplifying honor and (especially) stigma, is a powerful incentive
- It is also very cheap
  - With advances in technology and "big data," cost rapidly $\searrow 0$

    $\Rightarrow$ trend will accentuate, whether impulsed by budget-constrained gvts., activist groups, individual whistleblowers or "concerned citizens."
- So why not use publicity & social comparisons extensively?
  - R. Posner (1977), Kahan (1996), Kahan-Posner (1999), Brennan-Pettit (2004), Frey (2015), Jacquet 2015

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- Still, much unease at the idea of a society with zero privacy and systematic public dissemination of good and bad behaviors

Costs and benefits of social transparency

- Tractable model of social norms, social learning and optimal privacy
  - Equilibrium for given level of visibility interesting per se
  - Can combine with formal incentives, exogenous or optimal
  - Then: study benefits and costs of transparency / privacy

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1. Unpredictability / variance: the severity of the punishment is hard to control / predict a priori. Image = powerful but blunt tool

  - Real sanction is in the social ostracism of the exposed perpetrator. Involves both the emotional response of many others and their degree of coordination $\Rightarrow$ can vary significantly over place, time, groups, offenses, and individuals (Whitman 1998, E. Posner 1999)

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- Model: variability in (average & individual) strength of image motive, amplified by public visibility, generates inefficient variations / swings in enforcement and compliance. (Risk-aversion: similar)

2. Rigidifies behavior and laws in the face of changing societal values

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- If behavior is too constrained by fear of social shame and associated sanctions, these changes remain hidden ("in the closet," underground) from legislator and other decision-makers.

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  $\Rightarrow$ Public visibility of individual behavior worsens Principal's learning about evolution of societal preferences $\Rightarrow$ loss when sets

  ★ Own/public investment in public good(s)

  ★ Law / regulation: mandated contribution or compliance level

  ★ Incentives: subsidies, fines, etc.

Applications

- Public goods, charitable donations
  - Agents have information about specific public good or charitable cause
  - Principal (church, foundation) motivates them to donate by publicizing who gives what
  - Principal also wants to learn how valuable the project actually is (then: incentivize, match, legislate, etc.). Looks to volume of donation as an indicator

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- Moral hazard in teams
  - Agents exert effort to sell company's product, but also privately observe how well product matches tastes
  - Principal makes investments based on sales (R&D, product line)
  - Publicizing rankings incentivizes but crowds out information

- From social norms to formal institutions
  - Laws and institutions often crystallize from preexisting norms and practices, which inform designers about what behaviors are generally deemed to generate positive or negative externalities.
  - Society's moral values change over time. Principal tries to assess "community standards" by what people do ($\sim$ descriptive norm), but this may be a poor indicator of what people really value and think ($\sim$ prescriptive norm).

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- Corporate social responsibility, green consumer goods, etc.
  - Is increasing trend, popularity, the result of genuine change in values, or rising visibility / publicity concerns?

Related literature

- Altruism, social preferences, intrinsic motivation
  - Huge literature
- Social signaling and public goods; career concerns
  - Bernheim (1994), Glazer and Konrad (1996), Holmström 1999, Bénabou and Tirole (2006, 2011), Ellingsen and Johannesson (2007), Daughety and Reinganum (2010)...
- Information aggregation:
  - Committees and experts: Ottaviani-Sorensen (20011), Prat (2005), Levy (2005, 2007), Visser and Swank (2007), Bar-Isaac (2009), Fehrler and Huges (2014),
  - Leadership in fundraising.: Vesterlund (2003), Andreoni (2006)
  - Surveys, polls: Auriol and Gary-Bobo (2012), Hummel et al. (2011)
- Signaling with multidimensional heterogeneity
  - Fisher and Verrechia (2000), Bénabou and Tirole (2006): build upon, Kartik and Frankel (2015)

I - A Model of Social Norms and Social Learning

- Many small agents $i \in [0,1]$ and single large Principal (P)
  - Agent i chooses contribution $a_i \in \mathbb{R}$ to a public good $\rightsquigarrow$ aggregate $\bar{a}$
  - Principal chooses own contribution a_P (or other policy, e.g., law)
  - Examples: government and its citizens, charitable organization and potential donors, profit-maximizing firm and "motivated" workers
- Agents' direct payoffs:

$$U_i = \underbrace{(v_i + \theta)}_{\text{intrinsic motivation}} a_i + \underbrace{(w + \theta)(\bar{a} + a_P)}_{\text{value from public good}} - \underbrace{a_i^2/2}_{\text{cost}}$$

- Intrinsic motivation v_i and benefits from public good w both enhanced by quality or other societal preference shift θ
  - Baseline preferences $v_i \sim N(\bar{v}, s_v^2)$, private information
- Quality of public good is uncertain / variable: $\theta \sim N(\bar{\theta}, \sigma_\theta^2)$
  - Each agent receives private noisy signal, $\theta_i \sim N(\theta, s_\theta^2)$
  - Variant: private values: $\theta \rightsquigarrow \theta_i$

Reputational / social payoffs

- Strength of social-image concerns:
  1. Varies across goods, communities, time periods: informal vs. formal contracts / markets, group stability; social enforcement relies on mobilizing emotional reactions and achieving group coordination, etc.
  2. Varies across individuals: different social ties, discount factors, vulnerabilities to social sanctions, etc.

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- If i's social image is $R_i \rightsquigarrow$ payoff $\mu_i \cdot x \cdot R_i$, with
  - $\mu_i \sim N(\mu, s_\mu^2)$: cross-sectional variance. Take $\mu_i \perp (v\, i, \theta_u)$
  - $\mu \sim N(\bar{\mu}, \sigma_\mu^2)$: group-level variability in importance of social image
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- Key features of social incentives, vs. monetary / extrinsic incentives:
  - $\oplus$ Much cheaper, yet often powerful
  - $\ominus$ Impact more unpredictable, volatile
  - $\ominus$ Also makes compliance more difficult to interpret, learn from

Reputational / social payoffs

- Average social image or esteem agent i can anticipate if contributes a, given type $t_i = (v_i, \theta_i, \mu_i)$:

$$R(a, \theta_i, \mu_i) \equiv E\left[\int_0^1 \underbrace{E\left[v_i \mid a, \bar{a}, \theta_j, \mu_j\right] dj}_{\text{what } j \text{ will think of } i} \mid \theta_i, \mu_i\right]$$

  - Uses own type to forecast other's and mean contribution $\bar{a}$, hence the standards they will use to assess him, $E\left[v_i \mid a, \bar{a}, \theta_j, \mu_j\right]$

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- Type (v_i, θ_i) chooses a to maximize total utility

$$E[(v_i + \theta)a - a^2/2 \mid \theta_i] + \underbrace{\mu_i x}_{\text{value of image}} \cdot R(a, \theta_i, \mu_i)$$

- $x \geq 0$: "publicness" and memorability of individual actions
  - Can be exogenous or chosen by Principal
  - Alternatively: precision with which actions a_i are observed

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- Private values: $\theta \rightsquigarrow \theta_i$

Principal

- Cares about total provision of public good, net of costs, and adjusted for quality / utility

$$V(\bar{a}, a_P, \theta) \equiv \lambda \left[(w+\theta)(\bar{a}+a_P) - \int_0^1 C(a_i)di \right.$$
$$\left. + \alpha \int_0^1 (v_i+\theta)\, a_i\, di + \tilde{\alpha} \int_0^1 x\mu_i [R(a_i, \theta_i, \mu_i) - \bar{v}] di \right]$$
$$+ (1-\lambda) \left[b(w+\theta)(\bar{a}+a_P) - k_P C(a_P) \right].$$

- b : private benefits, externalities; k_P : cost, relative to agents'
- α, $\tilde{\alpha}$: internalization of agents' intrinsic or reputational utilities

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  - $\omega \equiv (w+\bar{\theta})\varphi - \lambda(1-\alpha)(\bar{v}+\bar{\theta}) =$ wedge between Principal/agents
- Chooses publicity / privacy $x \rightsquigarrow \mu x$ to "leverage" social pressure
  - No extrinsic / price incentive, for now
  - Will allow, but costly $\Rightarrow$remains role for social incentives

Timing

1. Principal chooses the level x of observability of individual behavior that will prevail among agents. Conversely, $1/x$ = degree of privacy.
2. Each agent learns his private type/signals (v_i, θ_i, μ_i), then chooses his contribution a_i.
3. Aggregate contribution or compliance $\bar{a}$ is observed by everyone, and agents assign reputational payoffs to each other.
   - Descriptive norm, benchmarking: public-good contributions, helping; corruption, tax evasion, sexism/racism; size of market for drugs, sex...
4. In addition to $\bar{a}$, the Principal observes own signal $\theta_P \sim \mathcal{N}\left(\theta, s^2_{\theta,P}\right)$.
   - May or may not also observe μ.
5. Principal chooses own contribution a_P (or law a, tax or incentive y)

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   - Extensions: sets mandate $a'_i \equiv a^*_2$, or incentive y_2, in period 2

II - Social Equilibrium: How Agents Respond To Visibility

Proposition (equilbrium contributions)

Fix x. In unique linear equilibrium, agent of type (v_i, θ_i, μ_i) chooses

$$a_i = v_i + \rho\theta_i + (1-\rho)\,\bar{\theta} + \quad x\mu_i\xi(x),$$

$$\textit{where} \quad \rho = \frac{\sigma_\theta^2}{\sigma_\theta^2 + s_\theta^2} \qquad \textit{and} \quad \xi(x) \equiv \frac{s_v^2}{s_v^2 + \rho^2 s_\theta^2 + x^2 s_\mu^2 \xi(x)}.$$

The aggregate contribution is then $\bar{a} = \bar{v} + \rho\theta + (1-\rho)\bar{\theta} + x\mu\xi(x)$.

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- $\rho =$ agent's signal/noise ratio in θ_i. (Private values: $\rho \rightsquigarrow 1$)

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Fix x. In unique linear equilibrium, agent of type (v_i, θ_i, μ_i) chooses

$$a_i = v_i + \rho\theta_i + (1-\rho)\,\bar{\theta} + \quad x\mu_i\xi(x),$$

$$\textit{where} \quad \rho = \frac{\sigma_\theta^2}{\sigma_\theta^2 + s_\theta^2} \quad \textit{and} \quad \xi(x) \equiv \frac{s_v^2}{s_v^2 + \rho^2 s_\theta^2 + x^2 s_\mu^2 \xi(x)}.$$

The aggregate contribution is then $\bar{a} = \bar{v} + \rho\theta + (1-\rho)\bar{\theta} + x\mu\xi(x)$.

- $\rho =$ agent's signal/noise ratio in θ_i. (Private values: $\rho \rightsquigarrow 1$)
- $\xi =$ observers' signal/noise ratio in learning v_i from a_i and $\bar{a}$:

$$a_i - \bar{a} = v_i - \bar{v} + \rho\,(\theta_i - \theta) + x\xi(x)(\mu_i - \mu)\ .$$

- Notable benchmarking / sufficient-statistic result:

$$E\left[v_i \middle|\ a_i, \bar{a}, \theta_j, \mu_j\right] = E\left[v_i \middle|\ a_i, \bar{a}\right]$$

- When $s_\mu^2 = 0$, $\xi(x)$ simplifies to $\frac{\xi}{1-\xi} = s_v^2 \left(\frac{1}{s_\theta} + \frac{s_\theta}{\sigma_\theta^2} \right)$. More generally:

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Proposition (comparative statics)

Reputational incentives and equilibrium contributions are:

1. *Increasing in the dispersion s_v^2 of preferences v_i being signaled.*
2. *Decreasing in the variance σ_θ^2 of the aggregate preference shock (makes everyone more responsive to their private signal θ_i).*
3. *U-shaped in the quality s_θ^2 of agents' private signals.*

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- Reputational effects strongest when agents likely to agree at *interim stage* about quality of public good. Occurs when private signals are:
  - very precise ($s_\theta \to 0$), hence all θ_i close to the true θ
  - very imprecise ($s_\theta \to \infty$) $\Rightarrow$ weight ≈ 1 on common prior $\bar{\theta}$.

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- Turn now to Principal's problem: focus exposition on common μ_i :

$$s_\mu^2 = 0 \Rightarrow \xi(x) = \xi; \quad \text{also,} \int_0^1 x\mu_i[R(a_i, \theta_i, \mu_i) - \bar{v}]di = 0$$

  - Average μ is key source of "noise" in Principal's learning problem

III - Principal's Problem - Symmetric Information

- Benchmark: P observes realization of μ, in addition to compliance

$$\bar{a} = \bar{v} + \rho\theta + (1-\rho)\bar{\theta} + x\mu\xi$$

$\Rightarrow$ learns true θ. Therefore will set a_p (or other policy) without error. Does not use interim signal θ_P, redundant

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- Principal's ex-ante utility from a given $x \Rightarrow FOC$:

$$\frac{dE[V^{SI}]}{dx} = \underbrace{\xi\ \mu\omega}_{\text{incentive effect}} - \lambda x \underbrace{\xi^2\left(\mu^2 + \sigma_\mu^2\right)}_{\text{variance effect}} = 0.$$

- Incentive effect $\propto$ marginal reputational pressure $\times$ [marginal benefit $-$ internalized marginal cost of compliance]
- Variance effect $\propto$ inefficient fluctuations in compliance, due to unpredictability of image concerns / social enforcement

The variance effect

Proposition (Incentive and variance effects)

When Principal faces no ex post uncertainty about μ, sets publicity level

$$x^{SI} = \frac{\omega}{\lambda \bar{\mu} \xi} \cdot \frac{\bar{\mu}^2}{\bar{\mu}^2 + \sigma_\mu^2} \equiv x^{FB} \cdot \frac{\bar{\mu}^2}{\bar{\mu}^2 + \sigma_\mu^2}$$

It is increasing in w, $\bar{\theta}$, and σ_θ^2, decreasing in $\bar{v}$, α, s_v^2 and σ_μ^2, and U-shaped in s_θ and in $1/\bar{\mu}$.

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- If $\sigma_\mu^2 = 0$, Principal can fine-tune x to achieve first-best.
  - In particular, if values public good same as agents but puts no weight on their "warm-glow" utility ($\alpha = 0$ and either $\eta = 1$ or $\lambda = 1$), can perfectly offset free-riding with image-based Pigouvian policy:

$$x^{FB} = \frac{w - \bar{v}}{\alpha \xi \bar{\mu}}$$

- If $\sigma_\mu^2 > 0$, must trade off incentive gains and variability distortions

IV - Principal's Problem - Asymmetric Information

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$$\bar{a} = \bar{v} + \rho\theta + (1-\rho)\bar{\theta} + x\mu\xi$$

now generates a noisy signal

$$\hat{\theta} \equiv \frac{1}{\rho}\left[\bar{a} - \bar{v} - x\xi\bar{\mu} - (1-\rho)\,\bar{\theta}\right] = \theta + \left(\frac{x\xi}{\rho}\right)(\mu - \bar{\mu})$$

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- By magnifying agents' signaling & social compliance motives, publicity increases the noisiness of the behavior(s) that P uses to infer θ :

$$\hat{\theta} \mid \theta \sim \mathcal{N}\left(\theta, \frac{x^2\xi^2\sigma_\mu^2}{\rho^2}\right)$$

Principal's information and matching policy

- Combining her belief $\bar{\theta}_P$ (based on own signal) with signal $\hat{\theta}$ inferred from $\bar{a}$, the Principal's posterior expectation is

$$E\left[\theta|\bar{a},\theta_P\right] = \left[1-\gamma(x)\right]\bar{\theta}_P + \gamma(x)\hat{\theta}$$

- $\gamma\left(x\right)$ = precision of the information embodied in $\bar{a}$,

$$\gamma\left(x\right) = \frac{\rho^2\sigma_\theta^2}{\rho^2\sigma_\theta^2 + x^2\xi^2\sigma_\mu^2}, \quad \searrow \quad \text{in } x$$

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Corollary (optimal matching)

Since Principal will choose $a_P = \left(w + E\left[\theta|\bar{a}\right]\right)\varphi/\left(1-\lambda\right)k_P$, *linear in* $\bar{a}$,

1. *Her policy is equivalent to baseline investment* $\underline{a}_P(x,\theta_P)$, *plus matching private contributions at rate*
$$m(x) \equiv \gamma(x)\cdot\frac{\varphi}{\rho k_P(1-\lambda)}$$
2. *The less informative is* $\bar{a}$, *the more important the fixed component and the lower the matching rate.*

Information distortion

- Conditioning on the true realizations of θ and μ, P's forecast error is

$$E\left[\theta|\bar{a},\theta_P\right]-\theta=\left[1-\gamma(x)\right]\left(\bar{\theta}_P-\theta\right)+\frac{x\gamma(x)\xi}{\rho}\left(\mu-\bar{\mu}\right)$$

- Ex-ante utility given x

$$E[V^{AI}]=E[V^{SI}]-\underbrace{\frac{\sigma^2_{\theta,P}}{2k_P}\frac{\varphi^2}{1-\lambda}\left[1-\gamma(x)\right]}_{\text{information cost}}\Rightarrow$$

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- FOC:

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- Alternative policies: setting law $a_i^{'}\equiv a_2^*$, or incentives $y_2\Rightarrow$ decision loss again proportional to $1-\gamma(x)$

Shifting societal preferences and optimal privacy

Proposition

When the Principal is uncertain about the importance of social image, the optimal degree of publicity $x^* \in (0, \tilde{x})$ *solves the implicit equation*

$$x = \frac{\bar{\mu}\omega / \xi}{\lambda(\bar{\mu}^2 + \sigma_\mu^2) + \frac{1}{(1-\lambda)k_P}\left(\frac{\varphi\sigma_\mu\gamma(x)}{\rho}\right)^2}.$$

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- Value of learning makes greater individual privacy optimal: $x^* < x^{SI}$ $\Rightarrow$ so is global optimum
- How do optimal publicity x^* and matching rate $m(x^*)$ depend on key features of the environment?

V - Comparative Statics

- All apply to general model, with heterogeneous μ_i's $(s_\mu^2 > 0)$
- Basic results:

		publicity x^*	matching rate m^*
principal's contribution cost	k_P	↗	↘
cost of monetary incentives	κ	↗	↘
baseline externality	w	↗	↘
prior on quality	$\bar{\theta}$	↗	↘
weight on agents' warm-glow	α	↗	↘
average intrinsic motivation	$\overline{v}$	↘	↗

Table I: Comparative Static Effects of First-Moment Parameters

- Intuitive.

Comparative statics

		publicity x^*	matching rate m^*
disp. of motivations	s_v^2	$\searrow$	$\longrightarrow$
var. of societal pref.	σ_θ^2	$\searrow$ for s_θ/σ_θ small or priv. vals.	$\nearrow$ for s_θ/σ_θ sma
var. of rep. concern	σ_μ^2	$\searrow$ outside $[\underline{\sigma}, \bar{\sigma}]$, or k_P large	$\nearrow$ iff x^* $\searrow$
quality of P's signal	$s_{\theta,P}^2$	$\searrow$	$\nearrow$
quality of A's signals	s_θ^2	$\nearrow$, for s_θ/σ_θ small	$\longrightarrow$

Table II: Comparative Static Effects of Second-Moment Parameters

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  - Effects of σ_θ, s_θ completely unambigous when θ_i's are private values rather than signals about a public one, θ.
- Key result: in a fast-changing society (greater variability in fundamental or image-motivated component of average preferences), should have greater privacy than in a more static one

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2. Principal uses (costly) monetary incentives
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3. Principal sets law, quantity mandate: $a_i' \equiv a^*$
4. Private vs. Public values. Could mix.

Ex-ante incentives

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  - Same for info content of aggregate $\bar{a}(x,y)$ about θ, namely $\gamma(x)$
- Optimal incentives
  - Focus on social-planner case, $\lambda = 1/2$

$$y(x) = \frac{(w+\theta)\,\varphi - (1+\kappa)[\bar{v} + \bar{\theta} + \bar{\mu}x\xi(x)]}{1+2\kappa} \equiv \tilde{y} - \delta x\gamma(x)$$

  - Principal uses costly material incentives when image alone is insufficient to achieve her first best
  - Conversely, since $x\gamma(x)$ increasing in x, the lower is shadow cost of funds κ, the less publicity will be used
  - Optimal y nets out a "reputation tax," proportional to $\bar{\mu}x\xi(x)$

- Optimal Publicity with ex-ante incentives

$$x^* = \frac{\bar{\mu}}{\xi(x^*)} \left(\frac{\tilde{\omega}}{\lambda(\tilde{\mu}^2 + \sigma_\mu^2 + (1-2\tilde{\alpha})s_\mu^2) + \frac{(\varphi\sigma_\mu\gamma(x^*)/\rho)^2}{(1-\lambda)k_P}} \right)$$

  - Wedge ω reduced to $\tilde{\omega} \equiv \omega - (1+\kappa)\tilde{y}$
  - Coefficient on $-x\gamma(x)$ falls by $(1+\kappa)\bar{\mu}\delta = \bar{\mu}^2(1+\kappa)^2/(1+2\kappa)$
  - $\bar{\mu}$ becomes $\tilde{\mu} \equiv \bar{\mu}\sqrt{1/2 - (1+\kappa)^2/(1+2\kappa)}$

- Unchanged comparative statics with respect to key parameters

Ex-post incentives

- Agents contribute in both periods 1 and 2
- Reputations formed in period 1, have no value beyond period 2
- In period 2, after observing $\bar{a}(x)$ from period 1, Principal sets incentive y' per unit of contribution / compliance
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- Optimal incentives

$$y' = \frac{w(1+b) - (1+\kappa)(\bar{v} + (1-\rho)\bar{\theta})}{1+2\kappa} + \frac{(1+b) - \rho(1+\kappa)}{1+2\kappa} E[\theta|\theta_P, \bar{a}]$$

- Now depends on $E[\theta|\theta_P, \bar{a}]$, hence increasing in observed $\bar{a}$
- The higher κ, the less so

- Optimal publicity in period 1

$$x^* = \frac{2\omega\bar{\mu}}{\xi(x^*)\left[\bar{\mu}^2 + \sigma_\mu^2 + (1-2\tilde{\alpha})s_\mu^2 + \delta\left(\frac{[(1+b)-\rho(1+\kappa)]\sigma_\mu\gamma(x)}{\rho(1+2\kappa)}\right)^2\right]}.$$

- Again, unchanged comparative statics with respect to key parameters

Summary

- Simple, tractable but rich model of
  - Social norms and social learning
  - Costs vs. benefits of privacy / publicity
- Publicity: cheap and often powerful incentive, but
  - Involves unpredictable variations in power of social incentives
  - Low privacy makes evolutions in societal values less transparent to principal $\Rightarrow$ rigidifies both private behavior and public decisions: investments, formal incentives, law,...

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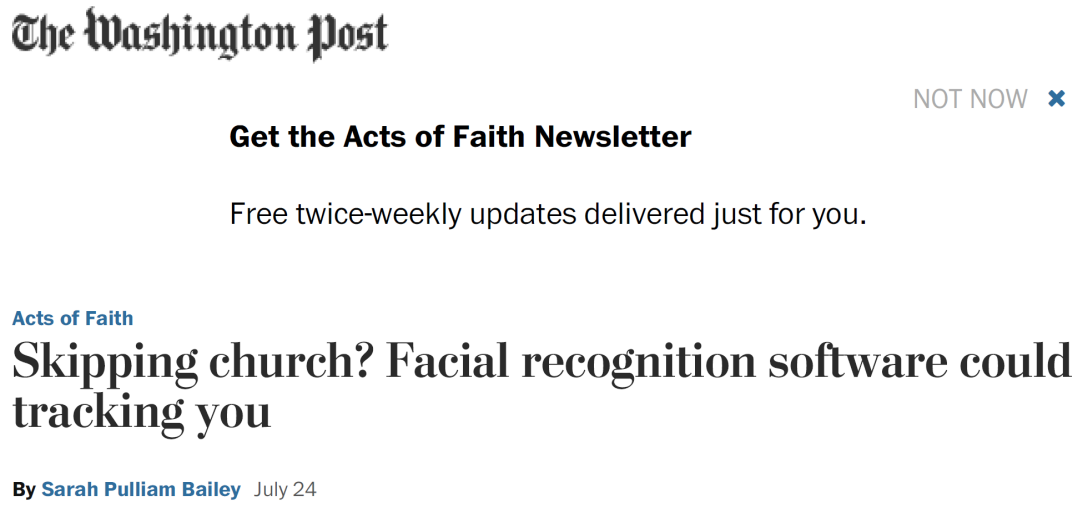
- Going forward:
  - Dynamics: OLG version where θ, μ follow AR(1) $\Rightarrow$ (i) young have more incentive to signal; (ii) old may know more
  - "Pluralistic Ignorance": agents themselves must solve inference problem about societal preferences / image motivations
  - Empirical / experimental tests?


RIGHT TO
ASK
The Disclosure Scheme for Domestic Abuse (Scotland) gives you the right to ask if your partner or someone else's partner has a history of domestic abuse.
Use your #righttoask
www.scotland.police.uk/righttoask
POLICE
SCOTLAND
Keeping people safe
scotland.police.uk
@PoliceScotland
PoliceScotland

An Unprecedented Threat to Privacy

A private company has captured 2.2 billion photos of license plates in cities throughout America. It stores them in a database, tagged with the location where they were taken. And it is selling that data.

- The Atlantic, January 2016.
  - Each month, Vigilant Solutions / Digital Recognition Networks captures and permanently stores 80 million additional geotagged images. 2.2 billion so far.
  - Sells access to police departments, financial institutions, insurance companies... "to drive decisions about loan origination, servicing, and collections. Insurance providers turn DRN's solutions and data into insights to mitigate risk and investigate fraud. And, our vehicle location data transforms automotive recovery processes, substantially increasing portfolio returns."
  - In past five years, Dept. of Homeland Security has distributed more than $50 million in federal grants to law-enforcement agencies for automated license-plate recognition systems



The Washington Post

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Acts of Faith

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By Sarah Pulliam Bailey July 24

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- Now used by Facebook and dating apps and at traffic stoplights, the software is becoming more common in every day interactions.

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- Now used by Facebook and dating apps and at traffic stoplights, the software is becoming more common in every day interactions.
- "It's simple to see if a member isn't attending three or four events. Then they can give the member a call and say something like, 'See you on Sunday"'

How Urban Anonymity Disappears When All Data Is Tracked

NYTimes.com - 4/26/2014

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- A company called LocoMobi announced it had acquired Nautical Technologies, the license plate recognition technology of a Canadian company called Apps Network Appliances. This gear sits at the entrance of a parking lot, identifying the license plates of incoming cars. That data goes to the cloud computing infrastructure of Amazon Web Services. When a car pulls out of the lot, the camera takes another picture.

- "We can have so much fun with this," the co-founder/chairman of LocoMobi, Barney Pell, said. "Imagine knowing that people who park here also park there – you've found the nearby stores, their affinities. You could advertise to them, offer personalized services, provide 'passive loyalty' points that welcome them back to an area."

- Many of the technologists involved in data aggregation see a benefit to civil society. "So many of our urban problems have to do with people breaking rules and cheating systems, then disappearing," Mr. Pell said. He noted behaviors like parking in handicapped spaces with illegitimate tags, or running red lights. "If compliance is information rich, our lives won't have this death of 1,000 little cuts."

US Supreme Court opinion on same-sex marriage (2015)

- "As the role and status of women changed, the institution further evolved. Under the centuries-old doctrine of coverture, a married man and woman were treated by the State as a single, male-dominated legal entity.. As women gained legal, political, and property rights, and as society began to understand that women have their own equal dignity, the law of coverture was abandoned.

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- "The history of marriage is one of both continuity and change. Changes, such as the decline of arranged marriages and the abandonment of the law of coverture, have worked deep transformations in the structure of marriage, affecting aspects of marriage once viewed as essential. These new insights have strengthened, not weakened, the institution. Changed understandings of marriage are characteristic of a Nation where new dimensions of freedom become apparent to new generations."

- "This dynamic can be seen in the Nation's experience with gay and lesbian rights. Well into the 20th century, many States condemned same-sex intimacy as immoral, and homosexuality was treated as an illness. Later in the century, cultural and political developments allowed same-sex couples to lead more open and public lives. Extensive public and private dialogue followed, along with shifts in public attitudes."

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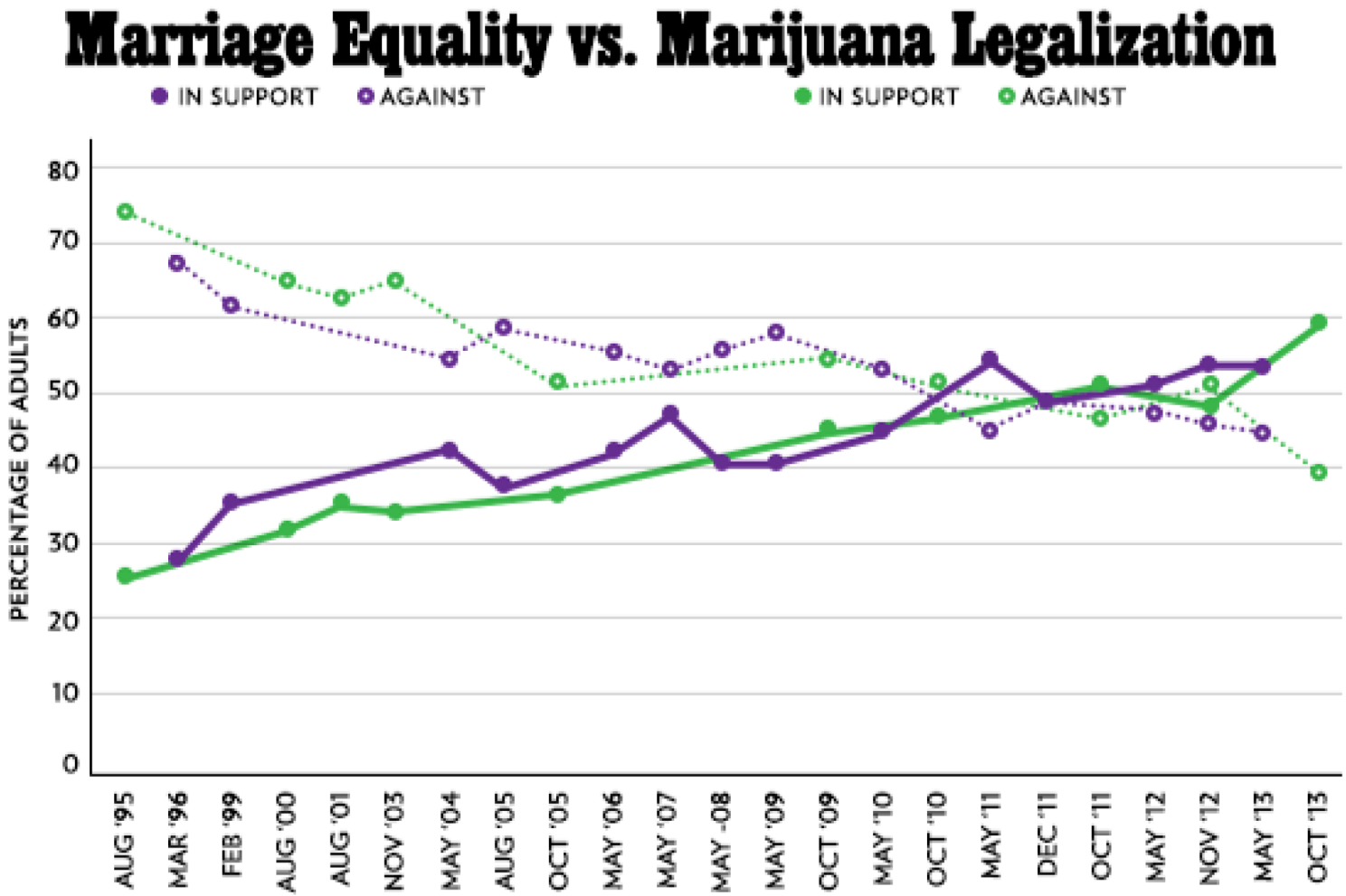
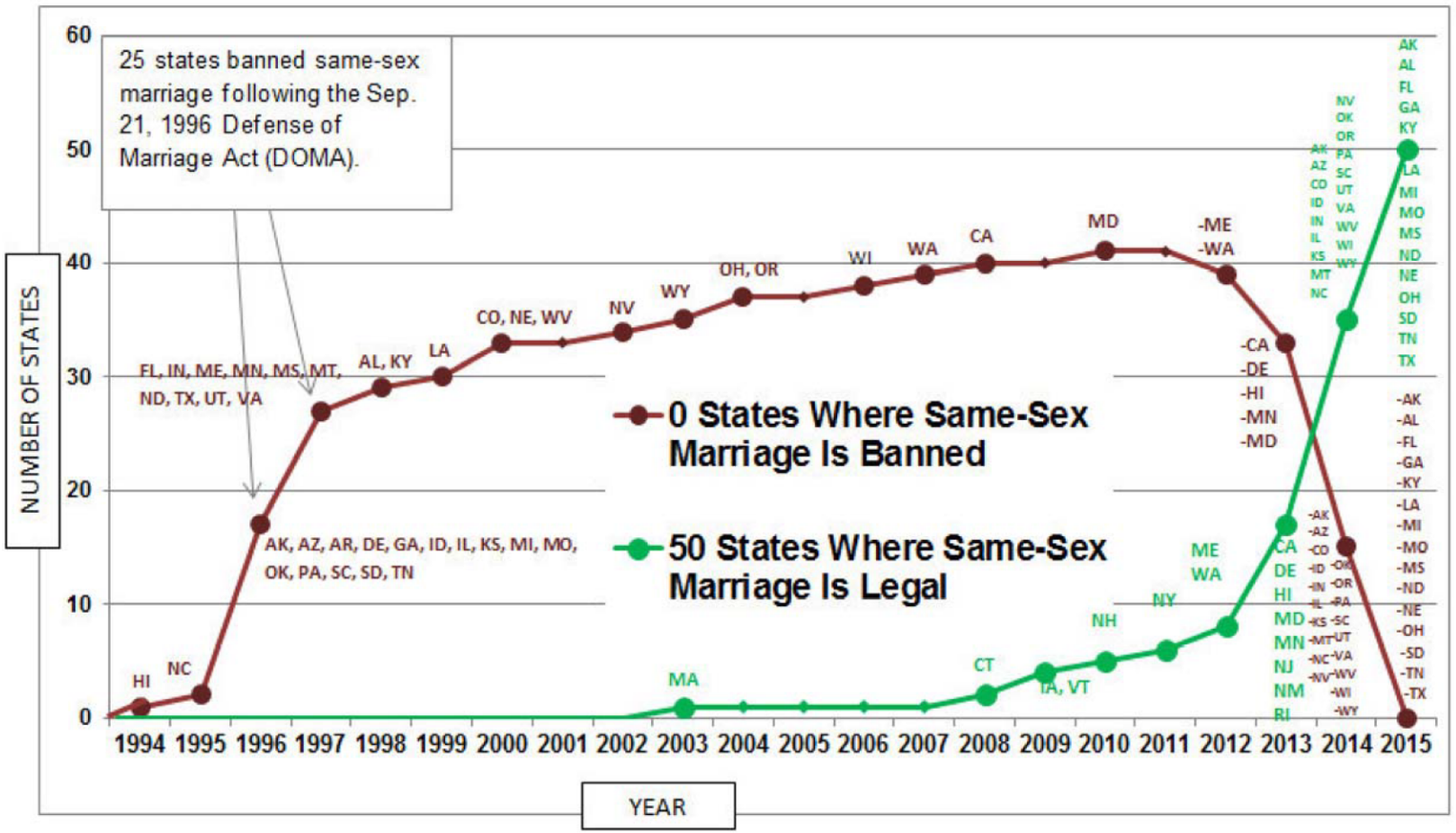
- "The limitation of marriage to opposite-sex couples may long have seemed natural and just, but its inconsistency with the central meaning of the fundamental right to marry is now manifest."


Marriage Equality vs. Marijuana Legalization
IN SUPPORT
AGAINST
IN SUPPORT
AGAINST
PERCENTAGE OF ADULTS
80
70
60
50
40
30
20
10
0
AUG '95
MAR '96
FEB '99
AUG '00
AUG '01
NOV '03
MAY '04
AUG '05
OCT '05
MAY '06
MAY '07
MAY -08
MAY '09
OCT '09
MAY '10
OCT '10
MAY '11
DEC '11
OCT '11
MAY '12
NOV '12
MAY '13
OCT '13


25 states banned same-sex marriage following the Sep. 21, 1996 Defense of Marriage Act (DOMA).
NUMBER OF STATES
YEAR
0 States Where Same-Sex Marriage Is Banned
50 States Where Same-Sex Marriage Is Legal
HI
NC
FL, IN, ME, MN, MS, MT, ND, TX, UT, VA
AK, AZ, AR, DE, GA, ID, IL, KS, MI, MO, OK, PA, SC, SD, TN
AL, KY
LA
CO, NE, WV
NV
WY
OH, OR
WI
WA
CA
MD
-ME
-WA
-CA
-DE
-HI
-MN
-MD
MA
CT
IA, VT
NH
NY
ME
WA
CA
DE
HI
MD
MN
NJ
NM
RI
AK
AZ
CO
ID
IN
IL
KS
MT
NC
NV
OK
OR
PA
SC
UT
VA
WV
WI
WY
-AK
-AL
-FL
-GA
-KY
-LA
-MI
-MO
-MS
-ND
-NE
-OH
-SD
-TN
-TX
0
10
20
30
40
50
60
1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015