**Welfare v. Consent: On the Optimal Penalty for Harassment**

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**ABSTRACT**

The economic approach to determine optimal legal policies involves maximizing a social welfare function. We propose an alternative: a consent-approach that seeks to promote consensual interactions and deter non-consensual interactions. The consent-approach does not rest upon inter-personal utility comparisons or value judgments about preferences. It does not require any additional information relative to the welfare-approach. We highlight the contrast between the welfare-approach and the consent-approach using a stylized model inspired by seminal cases of harassment and the #MeToo movement. The social welfare maximizing penalty for harassment in our model can be zero under the welfare-approach but not under the consent-approach.

**JEL Classification**: D63, K00, J47

**Keywords**: Consent, social welfare, harassment, law

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1. Introduction

Becker (1968) pioneered the modern economic analysis of crime. Following Bentham (1879), he proposed that the optimal mix of law enforcement policies should maximize social welfare. Becker defined social welfare as the social value of the gains to the criminal net of the social value of the harm to others. He advocated neither for nor against equating the social value of a criminal act with the “private utility" obtained by the criminal, and in fact acknowledged that “[R]easonable men will often differ on the amount of damages or benefits caused by different activities . . . I assume consensus on damages and benefits and simply try to work out rules for an optimal implementation of this consensus" (Becker 1968, pp. 209). Stigler (1970, pp. 527) questioned this presumed consensus and noted that

*The determination of this social value [of gains to criminals] is not explained, and one is entitled to doubt its usefulness as an explanatory concept: what evidence is there that society sets a positive value upon the utility derived from a murder, rape, or arson?*

Stigler’s concern has largely remained a footnote. Accounting for every agent’s utility without making value judgments about agents’ preferences remains the standard (Klevorick, 1985; Lewin and Trumbull, 1990; Polinsky and Shavell, 2000). Ignoring the utility of any agent seems contrary to the very premise of “social welfare” maximization. Further, most rationales for ignoring the utility of particular agents based on value judgments about their preferences or the type of acts under consideration do not seem to survive close scrutiny (see Kaplow and Shavell, 2001; Section VIII.B.3).

There exist many alternatives to the welfare-approach (Kaplow and Shavell, 2001). This paper advances a consent-approach for two reasons. First, the consent-approach does not impose any additional informational requirements relative to the welfare-approach. Second, even the proponents of the welfare-approach hold that a fundamental goal of law, and its expressive function, lies in building “a community of individuals who are less likely to engage in harmful behavior toward others and who are more likely to find opportunities for mutually beneficial interactions” (Kaplow and Shavell, 2001, pp. 1350). The consent-approach presented here attempts to formalize precisely this goal.
We highlight the contrast between the welfare-approach and the consent-approach in the context of determining the optimal penalty for harassment. We develop a stylized model inspired by key features of some seminal legal cases of *quid pro quo* sexual harassment and the #MeToo movement. The stronger agent (henceforth, the man) first chooses whether to make a proposal, which the weaker agent (henceforth, the woman) can either accept or reject. The payoffs of both agents in case the man does not make the proposal are normalized to zero. The man has power to reward the woman if she accepts his proposal, and punish her if she rejects. Our central assumption is that while accepting the proposal may provide some benefits to the woman, it also imposes a psychic cost on her because she finds it inherently unwelcome.

We categorize interactions as Pareto-improving or Pareto-conflicting depending upon the final utility payoffs of the agents relative to their baseline utility payoffs of zero when the man does not make the proposal. This categorization neither involves interpersonal comparisons nor value judgments about agents’ preferences. An interaction is Pareto-improving if both the man and the woman earn a strictly positive payoff. An interaction is Pareto-conflicting if the woman is finally worse off than her baseline. In equilibrium, the woman may accept the proposal and the interaction can be Pareto-conflicting. This possibility arises when accepting the proposal is better than rejecting due to the punishment that the rejection entails.

We first determine the optimal penalty for harassment under the standard welfare-approach that treats the *individual* as the primitive unit of account. The welfare-approach pays no attention to whether an interaction is Pareto-improving or Pareto-conflicting. It simply maximizes a social welfare function that gives some weight to the utilities of all individuals.

The welfare-optimal penalty for harassment is zero if the gratification derived by the harasser upon acceptance of his proposal is beyond a critical value $G_c$. This result does not require the critical gratification derived by the harasser to be “extremely” large in the sense that $G_c$ can be lower than the psychic cost suffered by the harasssee upon accepting the proposal. We believe this is a disconcerting conclusion that goes against the expressive function of law (Dau-Schmidt, 1990; Sunstein, 1996).

We propose a consent-approach which differs from the welfare-approach in three main ways. First, the primitive unit of account is the *interaction*, and not the individ-
ual. Second, the consent-approach does not rely on inter-personal comparisons of utility differences that are unavoidable under the welfare-approach (Sen, 1970; d’Aspremont and Gevers, 1977; Maskin, 1978). Third, the objective of the planner under the consent-approach is to promote consensual interactions and deter non-consensual interactions. It is worth stressing that our consent-approach does not impose any additional informational requirements relative to the welfare-approach.

The precise formulation of the planner’s objective function under the consent-approach draws upon existing legal scholarship. We argue that, in the context of harassment, Pareto-conflicting interactions can unambiguously be regarded non-consensual. However, it is doubtful whether Pareto-improving interactions can unambiguously be regarded consensual (Young, 1996; Gallop, 1997; Sanger, 2003). The consent-based objective function we propose formalizes these two aspects. In sharp contrast with the welfare-approach, we show that if the gratification derived by the harasser is strictly positive, then the consent-optimal penalty for harassment is strictly positive.

Our work complements the existing literature in economics on questions relating to harassment. Empirical studies have documented the labor market impacts of sexual harassment and pro-plaintiff legal precedents against sexual harassment (Hersch, 2011; Chen and Sethi, 2018). There is a growing interest in understanding important strategic questions such as why allegations of sexual harassment are often delayed and what factors make false allegations more likely (Lee and Suen, 2020; Pei and Strulovici, 2019; Cheng and Hsiaw, 2020).

Basu (2003) makes a thoughtful case for using value judgments about agents’ preferences to justify banning firms from offering contracts that ex-ante specify the possibility of harassment. Our work differs from Basu (2003) in two main ways. The interaction we model may occur, and actually does occur, despite the legal prohibition on harassment contracts. We establish the difference between the welfare-approach and the consent-approach without making any value judgments about agents’ preferences. However, as in Basu (2003), some types of the weaker agent impose negative externalities on other types of the weaker agent. The difference between the welfare-approach and the consent-approach may be viewed as reflecting the difference in how they deal with these negative externalities.

\[\text{We abstract away from the potential negative externalities suffered by uninvolved third parties as is common in the existing literature.}\]
Section 2 presents a stylized model of quid pro quo harassment. The model is intended to help minimize any ambiguities in interpreting how we deal with the complex issue of consent. Section 3 shows the welfare-optimal penalty for harassment can be zero under plausible assumptions. Section 4 lays out our consent based objective function and demonstrates the consent-optimal penalty is strictly positive if the gratification derived by the harasser is strictly positive. Section 5 confirms the contrasting implications of the two approaches under different informational assumptions. Section 6 discusses the limitations of our work and directions for future research. Section 7 concludes.

2. Motivation and model

The understanding of sexual harassment and legal protections against it have evolved dramatically over time (Farley, 1978; MacKinnon, 1979; MacKinnon and Siegel, 2003). In general, the two features common to most instances of sexual harassment are the presence of a power disparity between the agents and an unwelcome advance by the contextually stronger party. The importance of the notion of unwelcomeness was underscored in Meritor v. Vinson (477 U.S. 57; 1986), the first sexual harassment case to reach the Supreme Court in USA, where the court explicitly stated that

The fact that sex-related conduct was “voluntary” in the sense that the complainant was not forced to participate against her will, is not a defense . . . the gravamen of any sexual harassment claim is that the alleged sexual advances were “unwelcome.”

The Supreme Court was pointing out that power disparity makes it doubtful whether “yes means yes”.

2.1. A model of unwelcome advances

The pros and cons of relying on the notion of unwelcomeness, and the factors that should guide its determination, remain contested. However, since Ellison v. Brady (924 F.2d

\[2\] Juliano (1992) provides an excellent overview of the debates surrounding this issue and clarifies
872; 9th Cir. 1991) courts have focused on assessing unwelcomeness from the perspective of the complainant and not the defendant. We therefore model unwelcomeness from the point of view of the weaker agent. While the gender of the interacting agents is in principle irrelevant, for expositional purposes we shall refer to the stronger agent using the male pronoun and the weaker agent with the female pronoun.

What we wish to capture in the model is a mental representation of the interaction that the man and the woman may plausibly hold (Figure 1). We assume the man first chooses whether to make a proposal (P) or not (NP). The woman may then either accept (A) or reject (R) the proposal. If the man does not make the proposal, then both agents earn some baseline utility payoffs that are normalized to zero.

The payoff following the man’s choice to propose are specified in a way to ensure (a) the proposal involves a quid pro quo, and (b) the proposal is unwelcome from the perspective of the woman. Given that every proposal is an unwelcome advance, following Meritor v. Vinson we assume the act of making the proposal is in principal a punishable act regardless of whether or not the woman accepts and her resulting payoffs. The model does not explicitly allow for a “welcome advance” to maintain consistency with the standard formulation of economic models of public law enforcement (Polinsky and Shavell, 2000). The standard methodology is to focus on a class of acts that are in principle punishable, and determine the optimal penalty for such acts.

We assume the net utility payoff of the woman when she accepts the proposal by the man is

\[ U^{PA}_w(\theta_m, \theta_w) = k\theta_m - \theta_w \]

We interpret \( k > 0 \) as the reward the man can provide to the woman for accepting his proposal (e.g., career advance, pay raise, etc). \( \theta_m \in [0, M] \) is the type of the man, with \( 0 < M \leq 1 \). It indicates the likelihood of the man providing the reward \( k \) to that the assessment of unwelcomeness boils down to whether the victim “asked for it” and explains that such assessments are largely based on stereotypical and sexist norms. The set up of our model rules out the possibility that the woman “asked for it” by assumption.

[3]See Oncale v. Sundowner Offshore Services (523 U.S. 75, 1998).

[4]As an analogy, the fact that most dates do not end in rapes has no bearing on the optimal penalty for rape.
the woman if she accepts his proposal. Consequently, $k\theta_m$ can be interpreted as the expected benefit to the woman from accepting the man’s proposal.

At the same time, the woman suffers a disutility from accepting the man’s proposal because she finds the proposal inherently unwelcome. The magnitude of this disutility is her type, $\theta_w \in [0, 1]$. Existing studies have documented that while women largely agree on what constitutes an unwelcome advance, they differ in the extent to which they perceive a given unwelcome advance to be offensive and harmful (Fisher et al., 2000). The assumption that $\theta_w$ is non-negative is necessary for interpreting the proposal by the man as an unwelcome advance. Overall, this specification of the benefits and costs to the woman from accepting the proposal captures the views expressed by many victims of sexual harassment.⁵

The payoff obtained by the man when the woman accepts his proposal is assumed to be

$$U^{PA}_m(\theta_w, \lambda) = G - \lambda \theta_w$$

Here, $G > 0$ is the gratification benefit the man obtains if the woman accepts his proposal. The parameter $\lambda \geq 0$ denotes the size of the penalty for making an unwelcome advance. We abstract away from what constitutes this penalty and how it is enforced (e.g., censure, dismissal, fines, imprisonment, etc.). The model simply assumes that

⁵See https://www.nytimes.com/2017/10/05/us/harvey-weinstein-harassment-allegations.html
the man is aware a penalty exists and takes it into account while choosing whether to propose. Variations in $\lambda$ may also be interpreted as differences in legal regimes. For example, the presence of statute of limitations on harassment claims would represent a relatively lower $\lambda$ than its absence.

The cost $\lambda \theta_w$ to the man following a proposal that is accepted may be interpreted as follows. The higher the type of the woman, the larger the disutility $\theta$ that she suffers from accepting the proposal. We assume the likelihood that the woman complains to the relevant authorities is an increasing function of $\theta_w$. This assumption is supported by existing studies that find a positive correlation between the likelihood of reporting an unwelcome advance and how harmful women perceive it to be (Fisher et al., 2000).

In the context of our model, a simple way to account for this positive correlation is to assume that the likelihood of a complaint by the woman is $\theta_w$. One can enrich this specification by assuming societies differ in stigmatizing the victims of harassment which create differences in the likelihood of reporting conditional on the psychic cost. We abstract away from this issue as it does not alter the basic message of our work.

The utility payoff of the man when the woman rejects his proposal is assumed to be

$$U_{m}^{PR}(\theta_w, \lambda) = -\lambda \theta_w$$

where $\lambda$ is the size of the penalty and $\theta_w \in [0, 1]$ is the likelihood the woman seeks legal redress. We are effectively assuming the “cost” to the man from making a proposal is the same regardless of whether his proposal is accepted or rejected. While there are good arguments to believe these costs may differ, introducing such a difference makes no qualitative difference to our analysis.

Rejecting the man’s proposal is costly for the woman because the man can punish her for doing so (recall, Williams v. Saxbe). This is a defining feature of quid pro quo sexual harassment. We assume the payoff of the woman upon rejecting the man’s proposal is

$$U_{w}^{PR}(\theta_m) = -\theta_m$$

One interpretation would be that the magnitude of this punishment is normalized to unity. Given that $\theta_m$ indicates the likelihood that the man rewards the woman for
accepting his proposal, there is no qualitative loss in assuming \( \theta_m \) also indicates the likelihood of the man punishing the woman for rejecting his proposal. Introducing an additional parameter to distinguish the likelihoods of rewarding an acceptance versus punishing a rejection provides little conceptual gain for the purposes of the present paper, and hence we ignore it. In summary, \( \theta_m \) indicates the expected disutility suffered by the woman from rejecting the proposal made by the man of type \( \theta_m \).

2.2. Core assumptions and discussion

We maintain the following two assumptions throughout the analysis.

[A1] \( G > 0 \) and \( k > 0 \). These parameter restrictions help capture the key features of quid pro quo harassment. \( G > 0 \) implies the man derives strictly positive gratification if the woman accepts his proposal. \( k > 0 \) implies the man has the power and the willingness to reward the woman for accepting his proposal, which constitutes a key difference between quid pro quo sexual harassment and rape.

[A2] \( (1 + k)M < 1 \). This assumption implies some types of the woman will reject the proposal from every type of the man. The marginal gain to the woman of type \( \theta_w \) from accepting rather than rejecting the proposal from the man of type \( \theta_m \) is

\[
U_{wA} - U_{wR} = (k\theta_m - \theta_w) - (-\theta_m) = (1 + k)\theta_m - \theta_w
\]

This marginal gain to the woman is increasing in the type of the man and decreasing in her own type. For \( \theta_m = M \), this marginal gain will be strictly negative if and only if \( \theta_w \in ((1 + k)M, 1] \). A woman with type \( \theta_w \in ((1 + k)M, 1] \) will reject the proposal from every type of the man. This assumption captures Rosanna Arquette’s description of an interaction with Harvey Weinstein.

\[A\] A detailed account of the encounter is available at: https://www.npr.org/2018/05/31/615911004

she jerked her hand away and said “no”, and that he told her she was “making a very big mistake.” Weinstein then named two other women, she says – an actress and a model – with whom he claimed to have had sexual relationships and whose careers he
had advanced as a result. “I’ll never be that girl,” she said, and left.

Formally, since $k > 0$, A2 implies $M$ must be strictly less than one. This implies no type of the man rewards (punishes) an acceptance (rejection) with certainty. Henceforth, we therefore assume $\theta_m \in [0, M]$, with $M \in (0, 1)$.

2.3. Equilibrium under complete information

Suppose agents’ types are common knowledge and consider the interaction between the man of type $\theta_m \in [0, M]$ and the woman of type $\theta_w \in [0, 1]$. The woman will accept rather than reject the proposal by the man if and only if

$$\theta_m \geq \frac{\theta_w}{1 + k}$$

Without loss of generality, assume the woman accepts the proposal when she is indifferent between accepting and rejecting the proposal. Hence, the man will offer the proposal if and only if the woman will accept, and the man’s resulting payoff is no less than his baseline payoff of zero. The man of type $\theta_m$ will thus offer the proposal to the woman of type $\theta_w$ if and only if both the following conditions hold.

$$U_{PA}^w \geq U_{PR}^w \; \text{and} \; U_{PA}^m \geq 0.$$

$$\Rightarrow \; k\theta_m - \theta_w \geq -\theta_m \; \text{and} \; G - \lambda \theta_w \geq 0$$

The above two conditions imply that the man of type $\theta_m$ will propose if and only if the type of the woman is

$$\theta_w \leq \min\{(1 + k)\theta_m, \frac{G}{\lambda}\}$$

The set of types of the woman that will receive the proposal is weakly increasing in the type of the man. The highest type of the woman who will receive a proposal when $\lambda = 0$ is $(1 + k)M$. The minimum value of the penalty when the highest type of the

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7 Section 5 considers the setting with private information about types.
man, type-$M$, will be indifferent between proposing and not proposing to the woman of type $(1 + k)M$ solves $G \lambda = (1 + k)M$. This gives the threshold penalty of

$$\lambda_{PC} = \frac{G}{(1 + k)M} \quad (1)$$

The following proposition gathers the above discussion.

**Proposition 1.** Suppose agents’ types are common knowledge and assumptions A1 and A2 hold. There exists a value of the penalty $\lambda_{PC} > 0$ such that

(a) if $\lambda \in [0, \lambda_{PC}]$, then the man of type $\theta_m$ offers the proposal to the woman if and only if she is of type $\theta_w \leq (1 + k)\theta_m$; and, the woman accepts the proposal.

(b) if $\lambda > \lambda_{PC}$, then the man of type $\theta_m$ offers the proposal to the woman if and only if she is of type $\theta_w \leq \min\{(1 + k)\theta_m, \frac{G}{\lambda}\}$; and, the woman accepts the proposal.

Intuitively, Part (a) of Proposition 1 highlights that any penalty lower than $\lambda_{PC}$ has no deterrent power. Any type of the man who makes a proposal to a certain type of the woman when there is no penalty, continues to do so for any strictly positive level of penalty up to $\lambda_{PC}$. Part (b) highlights that once the penalty exceeds $\lambda_{PC}$, then some types of the man are deterred from making proposals to a subset of types of the woman who would accept the proposal if the man were to make the proposal.

**2.4. Pareto categorization of interactions**

The first mover advantage of the man implies that in equilibrium no type of the man can be strictly worse off than his baseline payoff of zero, regardless of the type of the woman. In contrast, the equilibrium payoff of the woman can be strictly positive, zero, or strictly negative depending on her type. The following definition presents our Pareto categorization of different types of interactions.
Definition 1. The \((\theta_m, \theta_w)\)-interaction is

(a) Pareto neutral if the equilibrium payoffs of both agents are equal to their baseline payoffs of zero.
(b) Pareto dominated if the equilibrium payoff of both agents is strictly negative.
(c) Pareto conflicting if the equilibrium payoff of one agent is strictly positive while that of the other agent is strictly negative.
(d) Pareto improving if the equilibrium payoffs of both agents are strictly positive.

This categorization does not involve any value judgments about agents’ preferences or inter-personal utility comparisons as the categorization of interactions is done by comparing the equilibrium payoff of each agent to his or her own baseline payoff. Also, the categorization is done from an ex-ante perspective, but will hold from an ex-post perspective as well when agents’ types are common knowledge prior to the interaction. Most importantly, which of these four different types of interactions are regarded non-consensual is irrelevant for the welfare-approach but will be central to the consent-approach in Section 4.

The canonical models of law enforcement are typically set up in a way such that all the underlying interactions are Pareto conflicting. This is exemplified by Polinsky and Shavell (2000) that starts with the assumption that the “perpetrator” gains from committing the criminal act, the “victim” loses from the commission of the act, and the goal of the planner is to find the optimal mix of enforcement policies (eg., fine and prison term). Our model suppresses the distinction between different penal instruments but does not a priori rule out Pareto improving interactions.

Definition 1 and Proposition 1 help categorize the interactions based on the equilibrium. The proof is straightforward and hence omitted.

Corollary 1. Fix a tuple of \((G, k, M, \lambda)\). In equilibrium, the \((\theta_m, \theta_w)\)-interaction is

(a) Pareto neutral if \(\theta_w \in [\min\{(1 + k)\theta_m, \frac{G}{X}\}, 1]\).
(b) never Pareto dominated.
(c) Pareto conflicting if \(\theta_w \in (k\theta_m, \min\{(1 + k)\theta_m, \frac{G}{X}\})\).
(d) Pareto improving if $\theta_w \in [0, \min\{k\theta_m, \frac{G}{\lambda}\}]$.

Pareto neutral interactions are those where the man does not propose. No interaction is Pareto dominated since the man can never be strictly worse off relative to the baseline. Pareto conflicting and Pareto improving interactions involve a proposal by the man, which is accepted by the woman. It is always the woman, and never the man, who is strictly worse off than the baseline in a Pareto conflicting interaction.

Figure 2 illustrates the equilibrium in the interaction between the man of type $\theta_m$ (horizontal axis) and the woman of type $\theta_w$ (vertical axis). As mentioned before, an increase in the penalty up to $\lambda_{PC}$ has no impact on the structure of the equilibrium relative to no penalty (Figure 2A). Once the penalty exceeds $\lambda_{PC}$, it deters some sufficiently high types of the man from making Pareto conflicting proposals to some sufficiently high types of the woman (Figure 2B). When the penalty exceeds yet another threshold, $\lambda_{PI}$, then it additionally deters some sufficiently high types of the man from making Pareto improving proposals to some sufficiently high types of the woman (Figure 2C). This threshold $\lambda_{PI}$ is the minimum penalty that ensures no interaction involving the type $M$ man is Pareto conflicting. It solves $\frac{G}{\lambda} = kM$, and is thus given by

$$\lambda_{PI} = \frac{G}{kM}$$  \hspace{1cm} (2)

In summary, a sufficiently low penalty up to $\lambda_{PC}$ provides no deterrence; a medium penalty in the range $(\lambda_{PC}, \lambda_{PI})$ deters some Pareto conflicting interactions; and, a penalty in excess of $\lambda_{PI}$ deters not only some Pareto conflicting interactions but some Pareto improving interactions as well. The following section analyzes the welfare-optimal penalty where the Pareto categorization of the interactions plays no role.

3. Optimal penalty under the welfare-approach

In this section we study a complete information setting such that the exact types of the man and the woman are assumed to be common knowledge prior to the interaction. We assume the types of the woman and the man are independently and uniformly distributed over $[0, 1]$ and $[0, M]$, respectively. These distributional assumptions are in
Figure 2: Categorization of interactions at different levels of penalty. Each point refers to some $(\theta_m, \theta_w)$-interaction. The figure shows whether an interaction is Pareto Neutral (PN), Pareto Conflicting (PC), or Pareto Improving (PI).

The welfare calculations need to account for the change in the structure of the equilibrium depending on the size of the penalty $\lambda$. We derive the ex-ante welfare of the woman and the ex-ante welfare of the man separately, and then aggregate them to obtain the social welfare. For any given penalty level $\lambda$, the welfare of the woman is obtained by integrating the equilibrium utility payoffs of all the feasible types of the woman. The welfare of the woman as a function of the penalty $\lambda$ is

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8We drop the qualifier “ex-ante” and simply note that all welfare calculations in the paper are conducted from the ex-ante perspective, which is the standard in economic analysis of law (Kaplow and Shavell, 2001). Also, we abstract away from costs involved in identifying harassers and enforcing the penalty so as to highlight what the two approaches recommend in the absence of resource constraints.

9The detailed calculations are provided in Appendix A.
\[ \Pi_w(\lambda) = \begin{cases} \frac{M^2}{6} \left[ k^2 - 1 \right] & \text{if } \lambda \in [0, \lambda_{PC}] \\ \frac{M^2}{6} \left[ \frac{3kG}{M^2} \cdot \frac{1}{x} - \frac{3G^2}{M^2} \cdot \frac{1}{x^2} + \frac{(2+k)G^3}{(1+k)^2 M^3} \cdot \frac{1}{x^3} \right] & \text{if } \lambda > \lambda_{PC} \end{cases} \] (3)

The solid non-monotonic curve in Figure 3 illustrates the welfare of the woman as a function of the penalty \( \lambda \). It is constant up to \( \lambda_{PC} \) due to the combination of two factors. First, the equilibrium of each \((\theta_m, \theta_w)\)-interaction remains the same for every \( \lambda \in [0, \lambda_{PC}] \). Second, the payoff of the woman in any interaction is independent of \( \lambda \).

As the penalty increases beyond \( \lambda_{PC} \), the welfare of the woman at first increases because some Pareto conflicting interactions are deterred. However, when the penalty increases beyond \( \lambda_{PI} \), then some Pareto improving interactions also get deterred. Consequently, the welfare of the woman increases up to some \( \tilde{\lambda}_w > \lambda_{PI} \). We refer to the penalty \( \tilde{\lambda}_w \) that maximizes exclusively the welfare of the woman as the woman-optimal penalty. The marginal gain to some types of the woman from the deterrence of Pareto conflicting interactions is nullified by the marginal loss to other types of the woman due to the deterrence of Pareto improving interactions at the woman-optimal penalty. The woman-optimal penalty and the welfare of the woman at this level of penalty are

\[ \tilde{\lambda}_w = \frac{2 + k}{1 + k} \cdot \frac{G}{kM} > \lambda_{PI} \] (4)

\[ \Pi_w(\tilde{\lambda}_w) = \frac{M^2}{6} \left[ \frac{k^2(3 + 4k + 2k^2)}{(2 + k)^2} \right] \] (5)

The woman-optimal penalty is increasing in the gratification \( G \) derived by the man, but the welfare of the woman at the woman-optimal penalty is independent of \( G \) and only depends on \( k \) and \( M \).

The welfare of the man as a function of the penalty \( \lambda \) is

\[ \Pi_m(\lambda) = \begin{cases} \frac{M^2}{6} \left[ \frac{3(1+k)G}{M} - \lambda(1+k)^2 \right] & \text{if } \lambda \in [0, \lambda_{PC}] \\ \frac{M^2}{6} \left[ \frac{3G^2}{M^2} \cdot \frac{1}{x} - \frac{G^3}{(1+k)^2 M^3} \cdot \frac{1}{x^3} \right] & \text{if } \lambda > \lambda_{PC} \end{cases} \] (6)
The welfare of the man strictly decreases with an increase in the penalty $\lambda$ (the dashed monotonically declining curve in Figure 3). In particular, even though the equilibrium of every interaction remains unchanged when the penalty increases from zero up to $\lambda_{PC}$, any increase in $\lambda$ adversely affects the payoff of all types of the man who make proposal.

Following the existing literature, we define the social welfare at any penalty $\lambda$ to be

$$\Pi(\lambda) = \mu \cdot \Pi_m(\lambda) + (1 - \mu) \cdot \Pi_w(\lambda)$$

and assume that $\mu \in (0, 1)$ in order to ensure that both the man and the woman receive some strictly positive weight in the social welfare function. The welfare of the woman is constant up to $\lambda_{PC}$ and strictly increases over $[\lambda_{PC}, \hat{\lambda}_w]$. In contrast, the welfare of the man strictly decreases with an increase in $\lambda$. Hence, the social welfare maximizing penalty will either be zero or some $\hat{\lambda} \in [\lambda_{PC}, \hat{\lambda}_w]$.

By definition, $\hat{\lambda}$ must maximize the social welfare $\Pi(\lambda)$ if we restrict attention to values of the $\lambda$ in the interval $[\lambda_{PC}, \hat{\lambda}_w]$. Since the welfare of the woman at any $\lambda \geq 0$ cannot exceed $\Pi_w(\hat{\lambda}_w)$, it follows that

$$\mu \cdot \Pi_m(\lambda_{PC}) + (1 - \mu) \cdot \Pi_w(\hat{\lambda}_w) > \mu \cdot \Pi_m(\hat{\lambda}) + (1 - \mu) \cdot \Pi_w(\hat{\lambda})$$
Consequently, the unique social welfare maximizing penalty will be zero if

$$\Pi(0) = \mu \cdot \Pi_m(0) + (1 - \mu) \cdot \Pi(0) > \mu \cdot \Pi_m(\lambda_{PC}) + (1 - \mu) \cdot \Pi_w(\tilde{\lambda}_w)$$

Substitution and rearrangement implies the above inequality will hold if

$$G > M \left(1 - \frac{\mu}{\mu_c}\right) \left(\frac{k^4 + 4k + 4}{(1 + k)(2 + k)^2}\right) \equiv G_c$$

The critical gratification $G_c$ identified above is sufficient but not necessary for the social welfare maximizing penalty to be zero. The following proposition summarizes the preceding analysis and highlights that $G_c$ need not be “extremely” large for the welfare-optimal penalty to be zero.

**Proposition 2(a).** For any weight $\mu \in (0, 1)$ on the utility of the harasser, the unique welfare-optimal penalty is zero if the gratification from harassment is greater than $G_c$.

**Proposition 2(b).** For any $k > 0$ and $G_c < (1 + k)M$, the unique welfare-optimal penalty is zero if $\mu > \mu_c(k)$, where $\mu_c(k) < \frac{1}{2}$.

The detailed proof is provided in the Appendix. Part (a) highlights that if a planner attaches a strictly positive weight to the welfare of both agents then the social welfare maximizing penalty for making unwelcome advances will be zero if the gratification derived by the man is sufficiently high.

The highest type of the woman who accepts the proposal when the penalty is zero is $(1 + k)M$, which is also the psychic cost she suffers. The critical gratification $G_c$ for the man can be strictly lower than $(1 + k)M$. Further, when $G_c < (1 + k)M$, the welfare-optimal penalty can be zero for values of $\mu$ that are strictly less than $\frac{1}{2}$. Hence, the welfare-optimal penalty being zero is neither an artifact of extremely large gratification, nor an artefact of the planner attaching relatively more weight on the utility of the man.

Proposition 2 can be viewed as a formal statement of Stigler’s concerns mentioned in the Introduction as they relate to the context under study. The result that the welfare-optimal penalty for harassment is zero under some but not all parameter values may
seem to weaken the import of this result. However, we believe the pertinent message lies in how the welfare-approach responds to an increase in gratification derived by the harasser. We next present the consent-approach which addresses Stigler’s concern without making value judgments about agents’ preferences or inter-personal utility comparisons.

4. A consent-approach

Suppose the planner’s objective function is

\[ C = C(\Phi) = C(\phi_{PI}, \phi_{PC}, \phi_{PD}) \]  \hspace{1cm} (8)

where the tuple \( \Phi = (\phi_{PI}, \phi_{PC}, \phi_{PD}) \) denotes the probabilities of the interaction being Pareto improving, Pareto conflicting, and Pareto dominated. We refer to \( C \) as a consent-based objective function. It differs from a social welfare function in two main ways. First, \( C \) treats the interaction as the primitive unit of account; any social welfare function treats the individuals as the primitive unit of account. Second, information about agents’ utilities is pertinent to \( C \) only for the Pareto categorization of the interaction, where the categorization itself is done by taking agents’ preferences at face value.

No additional information is required to formulate \( C \) beyond what it takes to formulate a social welfare function. By construction, no inter-personal utility comparisons (in levels or differences) are involved in identifying the consent-optimal penalty that maximizes \( C \). The relevant question relates to the properties of \( C \), i.e., how \( C \) behaves in response to changes in the probabilities of the interaction being Pareto improving, Pareto conflicting, and Pareto dominated.

We restrict attention to smooth functions and assume \( C \) satisfies two properties throughout its domain. First, any increase in the probability the interaction is Pareto conflicting or Pareto dominated reduces \( C \). We make no such assumption about the sign of the marginal impact of changes in the probability the interaction is Pareto improving.

[MON] Monotonicity. The function \( C \) is strictly decreasing in \( \phi_{PC} \) and \( \phi_{PD} \).
The next property captures the idea that, on the margin, the planner cares relatively more about reducing the probability of the interaction being Pareto conflicting or Pareto dominated than about increasing the probability of the interaction being Pareto improving.

\textbf{[RME] Relative Marginal Effects.} For \( t \in \{PC, PD\} \), the increase in \( C \) in response to a marginal increase in \( \phi_{PI} \) is no more than the increase in \( C \) in response to a marginal decrease in \( \phi_t \). Formally, at any feasible \( \Phi \)

\[
\frac{\partial C}{\partial \phi_{PI}} \leq \left| \frac{\partial C}{\partial \phi_t} \right|
\]

If \( C \) declines with an increase in \( \phi_{PI} \), then RME will clearly hold if \( C \) satisfies monotonicity. Thus, the main import of RME arises when \( C \) is increasing in \( \phi_{PI} \). In such a case, RME may be viewed as simultaneously reflecting the planner is (a) confident that Pareto conflicting and Pareto dominated interactions are non-consensual, but (b) not as confident that Pareto improving interactions are indeed consensual. For example, consider any \( \Phi = (\phi_{PI}, \phi_{PC}, \phi_{PD}) \). RME implies the marginal effects of an increase in \( \phi_{PI} \) versus a decline in \( \phi_{PC} \) by the same amount \( \epsilon > 0 \) will satisfy

\[
\left( C(\phi_{PI} + \epsilon, \phi_{PC}, \phi_{PD}) - C(\Phi) \right) \leq \left( C(\phi_{PI}, \phi_{PC} - \epsilon, \phi_{PD}) - C(\Phi) \right)
\]

A simple example of a function that satisfies both MON and RME is

\[
C(\phi_{PI}, \phi_{PC}, \phi_{PD}) = \alpha \cdot \phi_{PI} - (\phi_{PC} + \phi_{PD})
\]

This function satisfies MON for any real number \( \alpha \), and RME for any \( \alpha \leq 1 \). Thus, it satisfies both MON and RME for every \( \alpha \leq 1 \). A relatively lower value of \( \alpha \) may be interpreted as reflecting relatively lower confidence the planner has in assuming “yes means yes” in the presence of power disparity. When \( \alpha < 0 \), the planner ends up assuming there is no qualitative difference between Pareto improving and Pareto conflicting/dominated interactions, thereby implying the interaction is non-consensual regardless of its Pareto categorization. There is nothing intrinsic in our analysis to settle what would be the optimal value of \( \alpha \). However, as we shall soon demonstrate, the
implications of the consent-approach differ from that of the welfare approach for every \( \alpha \) that ensures MON and RME hold (i.e., \( \alpha \leq 1 \)).

**Remark 1.** The standard utilitarian social welfare function (Equation 7) assumes that utility differences across different individuals are comparable (Sen, 1970; d’Aspremont and Gevers, 1977; Maskin, 1978). The consent-approach involves a different type of comparability assumption. RME assumes probability differences across the three different types of interactions are comparable. In specifying a restriction on the marginal effects of its arguments, RME is structurally analogous to the transfer axiom used in axiomatizations of poverty measures that assumes the marginal effect of transfers in reducing poverty is relatively greater if the transfer goes to the relatively poorer individual (Foster et al., 1984).

### 4.1. Discussion of the properties of \( C \)

Our assumption that \( C \) is monotonically decreasing in the probability that the interaction is Pareto conflicting or Pareto dominated reflects the underlying presumption that these two types of interactions are non-consensual. In our game, the interaction is never Pareto dominated in equilibrium. Thus, the main implication of this assumption is that a Pareto conflicting interaction, where the woman accepts the man’s proposal but ends up worse off than her baseline payoff, is non-consensual. Put simply, the woman’s choice to accept the proposal in a Pareto conflicting interaction reflects coercion rather than consent.

The tricky question is how to view a Pareto improving interaction where both agents gain according to their preferences relative to their baseline payoffs. Existing legal scholarship on the issue of consent in sexual harassment suggests two perspectives. The non-paternalistic perspective holds that, despite the presence of a power disparity, if both agents ultimately gain according to their personal preferences, then the planner should avoid paternalistic value judgments and treat the interaction as if it is consensual. However, it does not stop the planner from doubting whether the interaction is

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Footnote:

\[10\] We thus do not equate "choice" with "consent". The interested reader may refer to Marciano and Ramello (2014) for a detailed discussion.
truly consensual. It essentially recommends serious thought before assuming that a “yes means no” simply because a power disparity exists (Young, 1996).

The paternalistic perspective raises the doubt that genuine consent in the presence of a power disparity may be illusory as “no one in the weaker position ever really consents freely” (Sanger, 2003; pp. 79). It does not insist that a “yes means no”. But, it insists the planner must entertain some doubt as to whether a “yes means yes” when a power disparity exists (Young, 1996).

Despite some important differences, there is a consensus between the paternalistic and the non-paternalistic perspectives that “no means no” but power disparity creates some doubt as to whether “yes means yes”. RME aims to capture precisely this consensus. We do not claim that RME and MON capture the full richness and nuances of the complex issue of consent. What we want to emphasize is that despite their potential shortcomings, they provide recommendations that comport well with the expressive function of law.

4.2 Consent-optimal penalty

The value of $C$ remains constant as $\lambda$ increases from zero up to $\lambda_{PC}$ since the equilibrium of each interaction remains unchanged (see Figure 4). An increase in the penalty beyond $\lambda_{PC}$ deters some Pareto conflicting interactions, and thus monotonicity implies $C$ will increase at least till the penalty reaches $\lambda_{PI} > 0$. The consent-optimal penalty will be at least $\lambda_{PI}$, and thus strictly positive. Formally, we have the following proposition.

**Proposition 3.** For any monotonic $C$, if gratification from harassment is strictly positive, then the consent-optimal penalty for harassment is strictly positive.

Proposition 3 follows from the monotonicity of the consent-based objective function. The mathematical simplicity of the proof should not distract from the conceptual difference it highlights between the consent-approach and the welfare-approach.

An increase in the penalty beyond $\lambda_{PI}$ deters not only some Pareto conflicting in-

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11RME is not required to establish Proposition 3, but will be crucial when we analyze the model with private information about types in the following section.
teractions but also some Pareto improving interactions. Hence, the level of the consent-optimal penalty will depend on the particular specification of $C$. For example, the optimal penalty under the linear objective function in Equation (9) that satisfies both MON and RME turns out to be

$$\lambda_c^* = \left( \frac{1 + \alpha(1 + k)}{\alpha(1 + k)} \right) \frac{G}{kM}.$$  

This optimal penalty is strictly positive for every $\alpha \in (0, 1]$ and strictly increasing in the gratification $G$ derived by the harasser. Recall, the optimal penalty under the welfare-approach becomes zero when the gratification is sufficiently large. In the following section we show the contrast between the welfare-approach and the consent-approach becomes even stronger, in a suitable sense, when information about agents’ types is private.

5. Private information about types

Consider the same interaction as per the game described in Section 2 and illustrated in Figure 1. Suppose the types of the woman and the man are independently and uniformly distributed over the intervals $[0, 1]$ and $[0, M]$, respectively. Suppose these distributions are common knowledge. Further, each agent knows their own type but not the type of the other agent prior to the interaction.

A strategy for the man is a mapping from his type to an action, i.e., propose or not propose. Similarly, the strategy for the woman is a mapping from her type to an action, i.e., accept or reject, conditional on receiving the proposal. The expected payoff of the woman from accepting the proposal decreases as her type increases, whereas her expected payoff from rejecting the proposal is independent of her type. Hence, for any strategy of the man, if type $\theta_w$ woman accepts the proposal, then the woman of type $\hat{\theta}_w < \theta_w$ will also accept the proposal. Consequently, the equilibrium strategy of the woman will be a threshold strategy: all types of the woman below a threshold type will accept the proposal, and the types above the threshold will reject the proposal.

Given any threshold strategy of the woman, the expected payoff of every type of the man from proposing is independent of the type of the man. The expected payoff of

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12 The detailed calculations are provided in Appendix B.
every type of man from not proposing is also identical, and equal to the baseline payoff of zero. In equilibrium, either all types of the man will propose, or no type of the man will propose. Consequently, only two types of equilibria can arise: (1) all types of the man propose and all types of the woman up to a threshold type accept, or (2) no type of the man proposes.

Suppose the parameters are such that the equilibrium where all types of the man propose exists. Let $\theta^a_w \in [0, 1]$ denote the threshold type of the woman such that the woman accepts the proposal if and only if $\theta \in [0, \theta^a_w]$. If so, the woman will be indifferent between accepting and rejecting the proposal if she is of type $\theta^a_w$. Formally, $\theta^a_w$ solves

$$E(U^{PA}_w) = E(U^{PR}_w)$$

$$\Rightarrow \frac{1}{M} \int_{\theta_m=0}^{\theta_m=M} [k\theta_m - \theta_w] d\theta_m = \frac{1}{M} \int_{\theta_m=0}^{\theta_m=M} [-\theta_m] d\theta_m$$

$$\Rightarrow \theta^a_w = \frac{1}{2}(1 + k)M$$

The expected payoff of the man of any type from making the proposal will thus be

$$E(U^P_m) = \int_{\theta_w=0}^{\theta_w=\theta^a_w} [G - \lambda\theta_w] d\theta_w + \int_{\theta^a_w}^{1} ( -\lambda\theta_w ) d\theta_w = \frac{1}{2}G(1 + k)M - \frac{\lambda}{2}$$

As the expected payoff of every type of the man from not proposing is zero, the equilibrium where all types of the man propose will exist if and only if $E(U^P_m) > 0$, i.e., if

$$\lambda < \bar{\lambda} = (1 + k)GM$$

Both agents earn their baseline payoffs of zero when $\lambda \geq \bar{\lambda}$ since no type of the man proposes in equilibrium. The following proposition summarizes the above arguments.

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13Without loss of generality, we assume that the man does not propose when he is indifferent between proposing and not proposing, and the woman accepts when she is indifferent between accepting and rejecting the proposal.
Proposition 4. The equilibrium is as follows.

(a) If \( \lambda \in [0, \lambda) \), then every type of the man proposes; and, the woman accepts if and only if her type is \( \theta_w < \theta^*_w \).
(b) If \( \lambda \geq \lambda \), then no type of the man proposes.

At any \( \lambda \in [0, \lambda) \), the expected payoff of the man from proposing is strictly positive and independent of his type. The equilibrium expected payoff of any type of the woman who rejects the proposal is strictly negative. In equilibrium, the woman accepts the proposal if and only if she is of type \( \theta_w \leq \theta^*_w \). However, a subset of the types that accept expect to be strictly worse off upon accepting the proposal relative to the baseline payoff of zero.

Let \( \theta^+_w \) denote the highest type of the woman who expects to be weakly better off than her baseline payoff of zero upon accepting the proposal. This threshold \( \theta^+_w \) is obtained by solving

\[
\mathbb{E}(U^A_{w}) = \int_{\theta_m=0}^{\theta_m=M} \left[ k \theta_m - \theta_w \right] \frac{d\theta_m}{M} = 0
\]

\[
\Rightarrow \quad \theta^+_w = \frac{kM}{2}
\]

Under the above equilibrium, the expected payoff of type \( \theta_w \) woman upon accepting the proposal will be strictly negative if \( \theta_w > \theta^+_w \), zero if \( \theta_w = \theta^+_w \), and strictly positive if \( \theta_w < \theta^+_w \).

5.1. The welfare-approach

Aggregating the expected payoff over all types of the woman, the ex-ante welfare of the woman as a function of the penalty \( \lambda \) is\(^{14}\)

\[
\mathbb{E}\Pi_w(\lambda) = \begin{cases} 
\frac{M}{2} \left( (1 + k)^2 M - 4 \right) & \text{if } \lambda \in [0, \lambda) \\
0 & \text{if } \lambda \geq \lambda
\end{cases}
\]

\(^{14}\)Henceforth, we drop the qualifier “ex-ante”. The welfare calculations are provided in Appendix C.
The welfare of the woman remains constant for every \( \lambda \in [0, \bar{\lambda}) \) since the structure of the equilibrium remains unchanged over this range. The expected welfare of the woman is zero for every \( \lambda \geq \bar{\lambda} \) since no type of the man makes a proposal. Following Stigler (1970), if we focus exclusively on maximizing the expected welfare of the woman, then the minimum woman-optimal penalty will be
\[
\tilde{\lambda}_w = \begin{cases} 
\bar{\lambda} & \text{if } (1 + k)^2M < 4 \\
0 & \text{if } (1 + k)^2M \geq 4
\end{cases}
\] (12)

It is worth noting that the woman-optimal penalty can sometimes be zero given the trade-off between gains to some types of the woman from Pareto-improving interactions and the loss to other types in Pareto-conflicting interactions.

Aggregating the expected payoff of all types of the man we find the welfare of the man as a function of the penalty is
\[
\mathbb{E}\Pi_m(\lambda) = \begin{cases} 
\frac{M}{2} \left( (1 + k)GM - \lambda \right) & \text{if } \lambda \in [0, \bar{\lambda}) \\
0 & \text{if } \lambda \geq \bar{\lambda}
\end{cases}
\] (13)

Even though the equilibrium remains unchanged when the level of penalty increases from zero to \( \bar{\lambda} \), any increase in \( \lambda \) adversely affects the expected payoff of each type of the man from making the proposal. Consequently, the ex-ante welfare of the man strictly decreases with an increase in the penalty upto \( \bar{\lambda} \), and remains zero thereafter as no type of man makes the proposal. Once again, we assume \( \mu \in (0, 1) \) and define the standard utilitarian social welfare to be
\[
\mathbb{E}\Pi(\lambda) = \mu \cdot \mathbb{E}\Pi_m(\lambda) + (1 - \mu) \cdot \mathbb{E}\Pi_w(\lambda)
\]

The expected welfare of the woman is independent of \( \lambda \). The expected welfare of the man decreases with an increase in \( \lambda \) till \( \bar{\lambda} \), and is zero thereafter. Thus, the welfare-optimal penalty will be zero or any \( \lambda \geq \bar{\lambda} \). Since the social welfare at \( \bar{\lambda} \) is zero, the unique welfare-optimal penalty will be zero if
\[
\mu \cdot \mathbb{E}\Pi_m(0) + (1 - \mu) \cdot \mathbb{E}\Pi_w(0) > 0
\]
Straightforward algebraic calculations imply the above inequality holds if

$$G > \left( \frac{1}{4(1+k)} \right) \left( \frac{1 - \mu}{\mu} \right) \left( 4 - (1+k)^2 M \right) \equiv \tilde{G}_c$$

Consequently, for any \( G > \tilde{G}_c \), the unique welfare-optimal penalty is zero. In fact, the critical gratification \( \tilde{G}_c \) beyond which welfare-optimal penalty is zero (Equation 14) and the woman-optimal penalty specified in Equation (12) suggest \( \tilde{G}_c \) is zero if \((1+k)^2 M \leq 4\). The following proposition gathers the above analysis.

**Proposition 5(a).** For any weight \( \mu \in (0,1) \) on the utility of the harasser, the unique welfare-optimal penalty is zero if the gratification from harassment is greater than \( \tilde{G}_c \).

**Proposition 5(b).** If \((1+k)^2 M \geq 4\), then the minimum welfare-optimal penalty and the unique harasssee-optimal penalty are zero for every strictly positive \( G \).

Proposition 5 provides even starker conclusions than Proposition 2 for the welfare-approach. If the planner attaches strictly positive weights to the utilities of all agents, the consent-optimal penalty will be zero in case the gratification derived by the man is sufficiently high; and, over some parameter range any gratification derived by the man suffices to ensure that both the welfare-optimal penalty and the woman-optimal penalty are zero. In the following, we show that the consent-approach leads to dramatically different results.

### 5.2. The consent-approach

Consider again the consent-based objective function specified in Equation (8) in Section 4.2. As described before, the expected payoff of type \( \theta_w \) woman will be strictly negative if \( \theta_w > \theta_w^+ \) and non-negative otherwise. The expected payoff of the man will never be strictly negative.

For any \( \lambda < \bar{\lambda} \), from the ex-ante perspective, the interaction is Pareto improving with the constant probability \( \theta_w^+ = \frac{kM}{2} \), and Pareto conflicting with the remaining probability
\( (1 - \theta_w^+) = \frac{2-kM}{2} \). For any \( \lambda \geq \overline{\lambda} \) the interaction is Pareto neutral with probability one as no type of the man proposes in equilibrium.

Let \( C(\overline{\lambda}) = C(0, 0, 0) = C_0 \). At any \( \lambda \in [0, \overline{\lambda}) \), the value of the consent-based objective function will be \( C(\lambda) = C\left(\frac{kM}{2}, \frac{2-kM}{2}, 0\right) \). As \( kM < (1+k)M < 1 \) by assumption A2 in Section 2.2, it must hold that \( \frac{kM}{2} < \frac{2-kM}{2} \). RME will thus imply \( C(\lambda) < C_0 \) at every \( \lambda \in [0, \overline{\lambda}) \). Consequently, \( C \) is maximized at every \( \lambda \geq \overline{\lambda} \). Therefore, the minimum consent-optimal penalty is \( \lambda^*_c = \overline{\lambda} = (1+k)GM \), which is strictly positive and increasing in \( G \). Formally, we have the following proposition.

**Proposition 6.** For any function \( C \) that satisfies MON and RME, if gratification from harassment is strictly positive, then the consent-optimal penalty for harassment is strictly positive.

The contrast between the consent-approach (Proposition 6) and the welfare-approach (Proposition 5) is quite stark. The consent-optimal penalty is strictly positive no matter what is the level of gratification derived by the man. In contrast, Proposition 5(b) shows that not only the welfare-optimal penalty but also the woman-optimal penalty under the welfare-approach is zero over some range of parameters for any strictly positive level of gratification derived by the man.

6. Discussion

There exist several excellent sources for understanding the evolution of anti-harassment laws and potential directions for change (e.g., MacKinnon and Siegel, 2003). In the economics literature, Basu (2003) is to the best of our knowledge the only study that provides a thoughtful critique of existing anti-harassment laws. Basu (2003) utilizes a simple model to construct an economic rationale for prohibiting firms from offering contracts that ex-ante specify the possibility of harassment. In this model, employers derive some gratification from harassment, and can offer two types of contract: one where the employer has the right to harass the worker, and the other where the employer commits to no harassment. Workers can freely choose either type of contract depending upon their personal level of aversion to harassment. As no worker is coerced into accepting
the harassment contract, one might suspect that banning harassment contracts may be Pareto dominated relative to a regime where employers and workers can freely enter either type of contract.

Basu (2003) shows this intuition is incorrect. In a competitive market, the workers with a relatively lower aversion to harassment impose negative externalities on workers with relatively higher aversion to harassment (despite the fact that no single contract generates negative externalities). At the same time, banning harassment contracts is not Pareto improving as some agents lose and some gain when we move from the regime of free contracting to one where harassment contracts are banned. Therefore, in order to make a positive argument for banning harassment contracts, Basu (2003) invokes value judgments about agents' preferences, and takes the view that no agent should have to bear a cost for having an aversion towards harassment.

The consent-approach shares with Basu (2003) the feature that some types impose negative externalities on others. For example, in the setting with complete information about types, the interaction between the man of a given type $\theta_m > 0$ is Pareto conflicting if the type of the woman is sufficiently high and Pareto improving otherwise (see Figure 2). However, there are two key differences. We model an interaction that may occur even when firms are legally prohibited from offering harassment contracts in the first place, and focus on the optimal penalty for harassment. Second, the consent-approach does not involve value judgments about agents’ preferences.

Reasonable policy changes invariably create winners and losers, which often implies that a Pareto dominant policy rarely exists. It is the lack of a Pareto dominant policy that leads economists to ask which policy would maximize a plausible social welfare function. But, there is a conceptual leap involved in utilizing the welfare-approach. The analyst has to invoke inter-personal utility comparisons, which play no role in assessing Pareto dominance. This conceptual leap is not required under the consent-approach because the interaction is the primitive unit of account.

Given our focus on distinguishing the consent-approach from the welfare-approach, we have reduced the richness of law in our model to one choice variable, viz., the penalty $\lambda$. While this glosses over the complexity of the underlying issues, it helps convey that the laws regulating a host of other related issues (e.g., enforceability of non-disclosure agreements) must be viewed in unison with the direct penalty for proven harassment to
create effective deterrence against harassment.

The emergence of the #MeToo movement has raised numerous questions about the so-called “contracts of silence.” A non-disclosure agreement, perhaps the most well-known of all, is a legally enforceable confidentiality agreement which prohibits the victim from disclosing to third parties the details of the harassment or a settlement following the harassment. As such, a non-disclosure agreement may impose a negative externality on the other past or future victims of harassment in a variety of ways by suppressing relevant information.

Some states in the US are in the process of legislating restrictions of the perverse use of contracts of silence. The impact of these legislative changes will, however, ultimately depend on their reach and details. At the very least, these changes aim to make it easier for the victims to publicly report harassment. However, unless the legislation targets a whole range of instruments, its effectiveness may remain limited.

Consider “non-disparagement” provisions that prohibit an employee from making statements that harm the employer’s reputation. Such provisions are often included within non-disclosure agreements. Suppose the law renders non-disclosure agreements void in harassment cases, but remains silent about non-disparagement provisions. The presence of a non-disparagement provision may then create scope for the employer to prevent disclosure of harassment. Similarly, “non-cooperation” provisions that prohibit an employee from cooperating with other victims in case some harassment case against the alleged harasser goes to trial may limit the penalty even if harassment in a case is established.

The inter-linkages between different types of confidentiality instruments may thus need to be carefully considered in designing anti-harassment laws. In addition to these inter-linkages, a related concern is the procedural details of a particular law. For example, one reason behind the differential success of #MeToo movement across countries is the difference in who bears the burden of proof in defamation suits (Bhaskar, 2019). The accused (i.e., the potential harasser) must prove the falsity of the allegation in some countries, whereas the accuser (i.e., the potential victim) is presumed to have defamed unless they can prove the alleged harassment. When the burden of proof is borne by the

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15Some states in the US have initiated legislative reforms following the #MeToo movement with a particular focus on prohibiting confidentiality agreements (e.g., California Assembly Bill 3080, California Senate Bill 820, and New York Senate Bill 7507-C).
victims, there is a disincentive to report harassment in actual cases of harassment even though it may limit false allegations. In general, narrowly focused legislation seems unlikely to deliver the desired social change (see Tippett (2018) for a comprehensive discussion). There is tremendous scope for economic analysis to better understand the obvious and hidden trade-offs of different policy combinations to curb harassment.

7. Conclusion

Laws do not only specify punishments for certain acts. They also serve an expressive function by highlighting standards of reasonable conduct. This paper highlights that the welfare-approach – the dominant approach in economic analysis of crime – may lead to recommendations that go against the expressive function of law in some contexts. We contrast the welfare-approach with a consent-approach that treats interactions rather than individuals as the primitive unit of account, and seeks to promote consensual interactions and deter non-consensual interactions.

We use a simple model to highlight this contrast. We do not doubt that the two main properties of our consent-based objective function – monotonicity and relative marginal effects – fall short of capturing the richness and nuances of the complex issue of consent. Despite their potential shortcomings the consent-approach provides answers that comport well with the expressive function of law in the context under study.

The same motivations that have guided existing literature to adopt the welfare-approach have led us to propose the consent-approach. While the consent-approach may be particularly relevant in contexts such as harassment where the notion of consent is central to the inquiry, it is a viable alternative in other contexts as well because it requires no more information than the welfare-approach. A distinct strength of the consent-approach lies in that it does not involve inter-personal comparisons. As the consent-approach not make any value judgments about agents’ preferences, it also allows the analyst to hold on to a maxim – *de gustibus non est disputandum*– that both Becker and Stigler might agree upon (Becker and Stigler, 1977).
References

Basu, K. (2003). The economics and law of sexual harassment in the workplace. *Journal of Economic Perspectives* 17(3), 141–157.

Becker, G. (1968). Crime and punishment: An economic approach. *Journal of Political Economy* 76, 169–217.

Becker, G. and G. J. Stigler (1977). De gustibus non est disputandum. *The American Economic Review* 67(2), 76–90.

Bentham, J. (1879). *An introduction to the principles of morals and legislation*. Oxford, The Clarendon Press.

Chen, D. L. and J. K. Sethi (2018). Insiders, outsiders, and involuntary unemployment: Sexual harassment exacerbates gender inequality. *TSE Working Paper No. 16-687*.

d’Aspremont, C. and L. Gevers (1977). Equity and the informational basis of collective choice. *Review of Economic Studies* 44(2), 199–209.

Dau-Schmidt, K. (1990). An economic analysis of the criminal law as a preference-shaping policy. *Duke Law Journal* 1, 1–38.

Farley, L. (1978). *Sexual Shakedown: The Sexual Harassment of Women on the Job*. New York: McGraw-Hill.

Fisher, B. S., F. T. Cullen, and M. G. Turner (2000). The sexual victimization of college women. *National Institute of Justice and Bureau of Justice Statistics Research Report*.

Foster, J., J. Greer, and E. Thorbecke (1984). A class of decomposable poverty measures. *Econometrica* 52(3), 761–766.

Gallop, J. (1997). *Feminist Accused of Sexual Harassment*. Durham, North Carolina: Duke University Press.

Hersch, J. (2011). Compensating differentials for sexual harassment. *American Economic Review* 101(3), 630–634.

Hsiaw, A. and I.-H. Cheng (2020). Reporting sexual misconduct in the #metoo era. *Tuck School of Business Working Paper No. 3506936*.
Juliano, A. (1992). Did she ask for it?: The ‘unwelcome’ requirement in sexual harassment cases. *Cornell Law Review* 77, 1558–1592.

Kaplow, L. and S. Shavell (2001). Fairness versus welfare. *Harvard Law Review* 114, 961–1388.

Klevorick, A. K. (1985). On the economic theory of crime. *Criminal Justice* 27, 289–309.

Lee, F. X. and W. Suen (2020). Credibility of crime allegations. *American Economic Journal: Microeconomics* 12(1), 220–259.

Lewin, J. L. and W. N. Trumbull (1990). The social value of crime? *International Review of Law and Economics* 10, 271–284.

MacKinnon, C. (1979). *Sexual Harassment of Working Women: A Case of Sex Discrimination*. New Haven: Yale University Press.

MacKinnon, C. A. and R. B. Siegel (Eds.) (2003). *Directions in Sexual Harassment Law*. New Haven: Yale University Press.

Marciano, A. and G. B. Ramello (2014). Consent, choice, and Guido Calabresi’s heterodox economic analysis of law. *Law and Contemporary Problems* 77, 97–116.

Maskin, E. (1978). A theorem on utilitarianism. *Review of Economic Studies* 45(1), 93–96.

Pei, H. and B. Strulovici (2019). Crime entanglement, deterrence, and witness credibility. *Working Paper Unpublished*.

Polinsky, A. M. and S. Shavell (2000). The economic theory of public enforcement of law. *Journal of Economic Literature* 38(1), 45–76.

Sanger, C. (2003). Consensual sex and the limits of harassment law. In C. A. MacKinnon and R. B. Siegel (Eds.), *Directions in Sexual Harassment Law*. New Haven: Yale University Press.

Sen, A. (1970). Interpersonal aggregation and partial comparability. *Econometrica* 38(3), 393–409.

Stigler, G. J. (1970). The optimum enforcement of laws. *Journal of Political Economy* 78, 526–536.
Sunstein, C. (1996). On the expressive function of law. *University of Pennsylvania Law Review* 144, 2021–2053.

Young, S. (1996). Getting to yes: The case against banning consensual relationships in higher education. *The American University Journal of Gender, Social Policy & the Law* 4(2), 269–302.
Appendix

A. Calculations underlying Proposition 2

The welfare of the woman for any $\lambda \in [0, \lambda_{PC}]$ is

$$
\Pi_w(\lambda|\lambda \in [0, \lambda_{PC}]) = \frac{1}{M} \cdot \int_{\theta_w=0}^{\theta_w=(1+k)M} \int_{\theta_m=\theta_w/(1+k)}^{\theta_m=M} \left[ k\theta_m - \theta_w \right] \cdot d\theta_m d\theta_w
$$

$$
= \frac{M^2}{6} \left[ k^2 - 1 \right]
$$

If $\lambda > \lambda_{PC}$, then

$$
\Pi_w(\lambda|\lambda > \lambda_{PC}) = \frac{1}{M} \int_{\theta_w=0}^{\theta_w=G/\lambda} \int_{\theta_m=\theta_w/(1+k)}^{\theta_m=M} \left[ k\theta_m - \theta_w \right] \cdot d\theta_m d\theta_w
$$

$$
= \frac{M^2}{6} \left[ \frac{3kG}{M} \cdot \frac{1}{\lambda} - \frac{3G^2}{M^2} \cdot \frac{1}{\lambda^2} + \frac{(2 + k)G^3}{(1 + k)^2 M^3} \cdot \frac{1}{\lambda^3} \right]
$$

The welfare of the man for $\lambda \in [0, \lambda_{PC}]$ is

$$
\Pi_m(\lambda|\lambda \in [0, \lambda_{PC}]) = \frac{1}{M} \int_{\theta_m=0}^{\theta_m=M} \int_{\theta_w=0}^{\theta_w=(1+k)\theta_m} \left[ G - \lambda\theta_w \right] \cdot d\theta_w d\theta_m
$$

$$
= \frac{M^2}{6} \left[ \frac{3(1 + k)G}{M} - \lambda(1 + k)^2 \right]
$$
If $\lambda > \lambda_{PC}$, then

$$
\Pi_m(\lambda | \lambda > \lambda_{PC}) = \frac{1}{M} \left[ \int_{\theta_m=0}^{\theta_m=\theta_m} \int_{\theta_w=0}^{\theta_w=(1+k)\theta_m} \left[ G - \lambda \theta_w \right] \cdot d\theta_w d\theta_m \right] 
+ \int_{\theta_m=\theta_m}^{\theta_m=\theta_m} \int_{\theta_w=0}^{\theta_w=G} \left[ G - \lambda \theta_w \right] \cdot d\theta_w d\theta_m
$$

$$
= \frac{M^2}{6} \left[ 3G^2 \cdot \frac{1}{\lambda} - \frac{G^3}{(1+k)M^3} \cdot \frac{1}{\lambda^2} \right]
$$

where $\theta_m^{np} = \frac{G}{\lambda(1+k)}$ is the lowest type of the man who does not propose to the woman if her type is greater than $\frac{G}{\lambda}$.

The proof of Proposition 2a has been provided in the text. It states that there exists a critical level of gratification benefit $G_c$ beyond which the unique welfare-optimal penalty is zero. To prove Proposition 2b, note that $G_c$ will be strictly lower than $(1 + k)M$ if

$$
G_c \equiv M \left( \frac{1 - \mu}{\mu} \right) \left( \frac{k^4 + 4k + 4}{(1 + k)(2 + k)^2} \right) < (1 + k)M
$$

$$
\Rightarrow \left( \frac{1 - \mu}{\mu} \right) \left( \frac{k^4 + 4k + 4}{(1 + k)(2 + k)^2} \right) < (1 + k)
$$

$$
\Rightarrow \mu > \frac{4 + (k^4 + 4k)}{8 + 2(k^4 + 4k) + (6k^3 + 13k^2 + 8k)} \equiv \mu_c
$$

It follows from the above that $\mu_c \in (0, \frac{1}{2})$ for every $k > 0$.

B. Calculations underlying the example in Section 4.2

Consider the consent-based objective function that satisfies both MON and RME (Equation 9 in the text).

$$
C(\phi_{PI}, \phi_{PC}, \phi_{PD}) = \alpha \cdot \phi_{PI} - (\phi_{PC} + \phi_{PD})
$$
In equilibrium, the probability of the interaction being Pareto dominated in zero. The equilibrium probability of the interaction being Pareto conflicting is as follows.

\[
\phi_{PC}(\lambda|\lambda \in [0, \lambda_{PC}]) = \frac{1}{M} \left[ \int_{\theta_m=0}^{\theta_m=M} \int_{\theta_w=0}^{\theta_w=(1+k)\theta_m} d\theta_w d\theta_m - \int_{\theta_m=0}^{\theta_m=M} \int_{\theta_w=0}^{\theta_w=k\theta_m} d\theta_w d\theta_m \right] = \frac{M}{2}
\]

\[
\phi_{PC}(\lambda|\lambda \in (\lambda_{PC}, \lambda_{PI}]) = \frac{1}{M} \left[ \int_{\theta_m=0}^{\theta_m=M} \int_{\theta_w=0}^{\theta_w=(1+k)\theta_m} d\theta_w d\theta_m + \int_{\theta_m=0}^{\theta_m=G(1+k)\lambda} \int_{\theta_w=0}^{\theta_w=k\theta_m} d\theta_w d\theta_m - \int_{\theta_m=0}^{\theta_m=M} \int_{\theta_w=0}^{\theta_w=G\lambda} d\theta_w d\theta_m \right] = \frac{G^2}{2(1+k)\lambda^2}
\]

\[
\phi_{PC}(\lambda|\lambda > \lambda_{PI}) = \frac{1}{M} \left[ \int_{\theta_m=0}^{\theta_m=M} \int_{\theta_w=0}^{\theta_w=G\lambda} d\theta_w d\theta_m - \int_{\theta_m=0}^{\theta_m=M} \int_{\theta_w=0}^{\theta_w=k\theta_m} d\theta_w d\theta_m \right] = \frac{G^2}{2k(1+k)\lambda^2}
\]

The equilibrium probability of the interaction being Pareto improving is as follows.

\[
\phi_{PI}(\lambda|\lambda \in [0, \lambda_{PI}]) = \frac{1}{M} \int_{\theta_m=0}^{\theta_m=M} \int_{\theta_w=0}^{\theta_w=k\theta_m} d\theta_w d\theta_m = \frac{kM}{2}
\]
\[ \phi_{PI}(\lambda | \lambda > \lambda_{PI}) = \frac{1}{M} \left[ \int_{\theta_m=0}^{\theta_m=GM} \int_{\theta_w=0}^{\theta_w=k\theta_m} d\theta_w d\theta_m + \int_{\theta_m=GM}^{\theta_w=0} \int_{\theta_w=0}^{\theta_w=k\theta_m} d\theta_w d\theta_m \right] \]

\[ = \frac{1}{M} \left[ \frac{GM}{\lambda} - \frac{G^2}{2\lambda^2k} \right] \]

Thus, the value of the objective function \( C \) as a function of the penalty \( \lambda \) is given by

\[
C(\lambda) = \begin{cases} 
\frac{\alpha M k}{2} - \frac{M}{2} & \text{if } \lambda \in [0, \lambda_{PC}] \\
\frac{\alpha M k}{2} - \left( \frac{G}{\lambda} - \frac{kM}{2} - \frac{G^2}{2(1+k)kM^2} \right) & \text{if } \lambda \in (\lambda_{PC}, \lambda_{PI}] \\
\alpha \left( \frac{G}{\lambda} - \frac{G^2}{2kM^2} \right) - \left( \frac{G^2}{2k(1+k)M^2} \right) & \text{if } \lambda > \lambda_{PI} 
\end{cases}
\]

The value of \( C \) remains constant as \( \lambda \) increases from zero up to \( \lambda_{PC} \) since the equilibrium of each interaction remains unchanged (see Figure 4). An increase in the penalty beyond \( \lambda_{PC} \) deters some Pareto conflicting interactions, and thus monotonicity implies \( C \) will increase at least till the penalty reaches \( \lambda_{PI} > 0 \). The consent-optimal penalty will be at least \( \lambda_{PI} \), and thus strictly positive. Maximizing \( C \) over \( \lambda > \lambda_{PI} \), the value of the consent-optimal penalty turns out to be

\[ \lambda^*_c = \left( \frac{1 + \alpha(1+k)}{\alpha(1+k)} \right) \frac{G}{kM}, \]

which is strictly positive for every \( \alpha \in (0,1] \) and strictly increasing in \( G \).

**C. Calculations underlying Proposition 5**

The ex-ante expected welfare of both the woman and the man for any penalty \( \lambda \geq \bar{\lambda} \) is zero since no man proposes in equilibrium. For any penalty \( \lambda \in [0, \bar{\lambda}) \), the ex-ante expected welfare of the woman is
$$E\Pi_w(\lambda|\lambda \in [0, \bar{\lambda})) = \frac{1}{M} \left[ \int_{\theta_w=0}^{\theta_w=\theta_w^a} \int_{\theta_m=0}^{\theta_m=M} \left[ k\theta_m - \theta_w \right] d\theta_m \, d\theta_w \\ + \int_{\theta_w=\theta_w^a}^{\theta_w=1} \int_{\theta_m=0}^{\theta_m=M} \left[ - \theta_m \right] d\theta_m \, d\theta_w \right]$$

$$= \frac{M}{8} \left[ (1 + k)^2M - 4 \right]$$

For any penalty $\lambda \in [0, \bar{\lambda})$, the ex-ante expected welfare of the man is

$$E\Pi_m(\lambda|\lambda \in [0, \bar{\lambda}) = \frac{1}{M} \left[ \int_{\theta_m=0}^{\theta_m=M} \int_{\theta_w=0}^{\theta_w=\theta_w^a} \left[ G - \lambda\theta_w \right] d\theta_w \, d\theta_m \\ + \int_{\theta_m=0}^{\theta_m=M} \int_{\theta_w=\theta_w^a}^{\theta_w=1} \left[ - \lambda\theta_w \right] d\theta_w \, d\theta_m \right]$$

$$= \frac{M}{2} \left[ (1 + k)GM - \lambda \right]$$