

A Probabilistic Analysis of Title IX Reforms

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ABSTRACT

In 2011, the Office for Civil Rights made substantial changes to the regulations governing campus sexual assault investigations. These changes were the subject of significant controversy, and in 2017 the Department of Education issued further guidance, contravening some—but not all—of the 2011 reforms. In light of this action, regulations governing campus sexual assault investigations continue to be the focus of intense debate, and their future is far from certain. Despite this sharp disagreement between supporters and opponents of the reforms, a general consensus has emerged on one key aspect: The 2011 reforms unequivocally benefited sexual assault victims and unequivocally harmed sexual assault perpetrators. In this Article, we challenge that consensus.

Drawing upon insights from Bayesian epistemology, we argue that the true effects of the 2011 reforms were far from uniform. In certain situations, accusers benefitted, but in other situations, those accused of sexual assault benefitted. Although this result may seem evenly balanced, the precise distribution of benefits and harms is concerning. Specifically, our analysis reveals that the benefits were most likely to accrue to guilty defendants and lying accusers and that the harms were most likely to fall upon innocent defendants and truth-telling accusers. This outcome runs counter to the goals of any just or reasonable adjudicatory system and calls into question the efficacy of the campus sexual assault reforms. In addition, these same findings indicate that certain aspects of the 2011 reforms left in place—and in some cases accentuated—by the 2017 guidance may make it even more difficult for victims to obtain justice.

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A. Introduction

In 2011, the policies governing university investigations of sexual assault underwent dramatic changes. These reforms were due to a growing consensus that sexual misconduct is prevalent in American universities and that previous university protocols were inadequate for handling such misconduct. In light of these developments and subsequent guidance from the Office of Civil Rights regarding Title IX compliance, universities changed their policies regarding both the standards of proof for their investigations and the evidentiary procedures in their investigations.

Regarding the standard of proof, universities were previously permitted to employ the clear and convincing evidence standard when determining whether a student committed sexual misconduct. After the 2011 reforms, however, guilt was adjudged based upon the preponderance of the evidence standard. Under this revised rule, the prosecution’s burden of proof became significantly lighter. Regarding the evidentiary procedures, many universities chose to forbid students accused of sexual misconduct from retaining legal counsel, cross-examining witnesses, knowing the details of the charges, and seeing the evidence against them. These policies all limit the ability of students who are accused of sexual assault to mount a defense.

The consensus view is that the 2011 changes to both the standard of proof and the evidentiary procedures are of a type—they each necessarily favor the prosecution over the defense, the accuser over the accused. We have grave reservations about this analysis. Although we agree that the change to the burden of proof ineluctably favors the prosecution over the defense, we judge that the changes to the evidentiary procedures are of more equivocal effect. Sometimes they benefit the prosecution, and sometimes they benefit the defense.

This conclusion is driven by the fact that the reforms reduce the amount of evidence that is made available during the campus investigation. When the flow of evidence is restricted in such a manner, university officials have less information on which to base their decisions. This increases uncertainty and leads officials to adopt middling attitudes regarding a defendant’s guilt. This rational response to limited information has two effects: (1) it harms defendants who, if not for the reforms, could have presented a strong defense and (2) it helps defendants who, if not for the reforms, would have had the

weakness of their defense exposed. Put another way, the reforms are particularly likely to help guilty defendants and lying accusers and particularly likely to hurt innocent defendants and truth-telling victims. This outcome is the exact opposite of what any just adjudicatory system would strive to achieve and is clearly not the result intended by the Office of Civil Rights. Although the 2011 reforms have engendered intense debate, commentators on both sides have failed to appreciate this important consideration.

In fact, in 2017 the Department of Education issued new guidance that has the potential to exacerbate these hidden dangers of the original reforms.¹ Specifically, rather than nullify the 2011 reforms, the 2017 guidance simply mandates uniformity in university investigations.² In other words, universities are free to set their standard of proof and evidentiary procedures in sexual assault investigations so long as they adopt those same rules for all university disciplinary proceedings.

These new guidelines have the potential to cause victims substantial harm. Specifically, under the 2017 reforms, universities are allowed to adopt both a heightened standard of proof and reduced evidentiary protections, a combination that we will show can make it dramatically harder for truth-telling accusers to be believed. In light of the Department of Education's guidance, it is probable that at least some universities will make these changes without realizing the harm they are apt to impose upon victims.

In Part I of this Article, we discuss the factors that precipitated the 2011 reforms and the conventional wisdom regarding how these reforms would affect the parties involved in sexual assault cases. This view—endorsed by both proponents and opponents of the updated protocols—holds that the changes benefit the prosecution at the expense of the defense. In Part II, we draw upon insights from Bayesian epistemology to show that the conventional wisdom regarding the effect of the evidentiary reforms is incorrect. Although lowering the standard of proof ineluctably benefits accusers, the changes to the evidentiary procedures make it harder for victims to obtain justice. Given this outcome, it is clear that the reforms fail to achieve the ends for which they were intended. Accordingly, our finding suggests that the Department of Education erred in adopting both the original 2011 reforms and the revised 2017 guidance.

¹See U.S. Dep't of Educ., *Q & A on Campus Sexual Misconduct* (Sep. 2017), available at <https://www2.ed.gov/about/offices/list/ocr/docs/qa-title-ix-201709.pdf>.

²See *id.* at 5 n.19 ("The standard of evidence for evaluating a claim of sexual misconduct should be consistent with the standard the school applies in other student misconduct cases.").

B. I. The “Dear Colleague” Letter

Over the last decade, a number of researchers have investigated the rate of sexual assault on university campuses. Their findings warn of a growing crisis. For instance, in a 2005–2006 survey, the National Institute of Justice reported that nineteen percent of women currently enrolled in college were sexually assaulted during their time there.³ Similarly, a 2015 survey commissioned by the Association of American Universities (AAU) found that more than twenty-seven percent of female undergraduate seniors had experienced unwanted sexual contact at college.⁴ Even more recently, in 2016, the Bureau of Justice Statistics estimated that twenty-one percent of female undergraduates had been sexually assaulted during college.⁵ In addition to finding an alarming rate of sexual assault, these studies also concluded that campus sexual assault is chronically underreported. According to one analysis, a mere two percent of incapacitated sexual assault victims and thirteen percent of forcible rape victims reported the incident to local law enforcement or campus security.⁶

Due to their striking findings,⁷ these studies garnered substantial media interest and helped raise public awareness of campus sexual

³See Christopher P. Krebs et al., *The Campus Sexual Assault (CSA) Study*, U.S. DEP’T JUST. 5-1 (Oct. 2007), available at <http://www.ncjrs.gov/pdffiles1/nij/grants/221153.pdf>; see also Nick Anderson & Scott Clement, *1 in 5 College Women Say They Were Violated*, WASH. POST, June 12, 2015, <http://www.washingtonpost.com/sf/local/2015/06/12/1-in-5-women-say-they-were-violated> (reporting on a Washington Post-Kaiser Family Foundation poll, according to which twenty percent of college women were sexually assaulted).

⁴See David Cantor et al., *Report on the AAU Campus Climate Survey on Sexual Assault and Sexual Misconduct*, ASS’N AM. U., at 57 (Sep. 21, 2015), available at http://www.aau.edu/uploadedFiles/AAU_Publications/AAU_Reports/Sexual_Assault_Campus_Survey/Report%20on%20the%20AAU%20Campus%20Climate%20Survey%20on%20Sexual%20Assault%20and%20Sexual%20Misconduct.pdf.

⁵See Krebs, *supra* note 3.

⁶See *id.*

⁷We do not take a position on the accuracy of these findings. We mention the studies only because of their importance in promoting awareness of campus sexual assault. For a discussion of potential problems with the studies, see, e.g., Richard Epstein, *The Role of Guidances in Modern Administrative Procedure: The Case for De Novo Review*, 8 J. LEGAL ANALYSIS 47, 77 (2016) (arguing that the results are, “[i]n large measure . . . a function of definitions [which] place[] together wildly different behaviors under the same umbrella.”); Lizzie Crocker, *Why the New ‘One in Four’ Campus Rape Statistic Is Misleading*, THE DAILY CALLER, Sep. 21, 2015, <https://www.thedailybeast.com/why-the-new-one-in-four-campus-rape-statistic-is-misleading> (discussing how “[t]he non-response bias . . . weakens the oft-recited ‘one in five’ figure . . . since [campus sexual assault surveys] are not representative of all college women”); Glenn Kessler, *Obama’s Claim That One in Five American Women Has Been a Victim of Rape or Attempted Rape*, WASH. POST, Feb. 12, 2015, <https://www.washingtonpost.com/news/fact-checker/wp/2015/02/12/obamas-claim-that-one-in-five-american-women-have-been-raped> (discussing how different definitions of sexual assault measure different events and yield different estimates).

assault.⁸ Such awareness has only grown stronger in the wake of several highly publicized university rape cases.⁹ It is safe to say that Americans are more concerned about campus sexual assault than ever before.

In 2011, the Department of Education’s Office for Civil Rights (OCR) set out to address the public’s growing concern.¹⁰ Because of its authority under Title IX of the United States Education Amendments of 1972, OCR took the lead on this issue.¹¹ The relevant Title IX provision states “No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving federal financial assistance”¹² and authorizes OCR to “issu[e] rules, regulations, or orders of general applicability” and “to terminat[e] or refus[e] to grant or to continue assistance under such program or activity to any recipient as to whom there has been an express finding on the record . . . of a failure to comply with” such regulations.¹³ Given the substantial amount of federal aid that universities receive, this enforcement mechanism is extremely powerful. Accordingly, when OCR issued new guidelines for handling campus sexual assaults in its 2011 “Dear Colleague Letter,”¹⁴ universities moved quickly to update their protocols.¹⁵

OCR’s Dear Colleague Letter identified three major categories of change. We will briefly discuss each of these areas before focusing on the specific reforms that are central to our analysis. First, the Letter

⁸See, e.g., Melissa Korn, *Reports of Sexual Assault Rising Sharply on College Campuses*, WALL ST. J., May 4, 2016, <http://www.wsj.com/articles/reports-of-sexual-assault-rising-sharply-on-college-campuses-1462375421>; Richard Pérez-Peña, *1 in 4 Women Experience Sex Assault on Campus*, N.Y. TIMES, Sep. 22, 2015, at A17.

⁹See Melissa Korn & Miriam Jordan, *Stanford University Sexual-Assault Case Prompts Backlash*, June 7, 2016, <http://www.wsj.com/articles/stanford-university-sexual-assault-case-prompts-backlash-1465343570> (describing the public backlash over a rape case involving two Stanford students in which the convicted rapist was sentenced to six months in prison and three years probation); Emily Bazelon, *Have We Learned Anything From the Columbia Rape Case?*, N.Y. TIMES, May 29, 2015, <http://www.nytimes.com/2015/05/29/magazine/have-we-learned-anything-from-the-columbia-rape-case.html> (discussing a sexual assault case at Columbia University).

¹⁰See Russlynn Ali, Assistant Secretary for Civil Rights, *Dear Colleague Letter*, U.S. DEP’T OF EDUC. 2 (2011) [hereinafter *Dear Colleague Letter*] (noting that “[t]he statistics on sexual violence are both deeply troubling and a call to action for the nation”).

¹¹*Id.* at § 1681(a).

¹²*Id.* at § 1681(a).

¹³*Id.* at § 1682.

¹⁴See *Dear Colleague Letter*, at 1.

¹⁵Providing further weight to its enforcement power, OCR has aggressively investigated schools for violating sexual assault guidelines. See Press Release, U.S. DEP’T OF EDUC., *U.S. Department of Education Releases List of Higher Education Institutes with Open Title IX Sexual Violence Investigations* (May 1, 2014), <http://www.ed.gov/news/press-releases/us-department-education-releases-list-higher-education-institutions-open-title-i> (listing more than fifty schools under investigation).

required universities to disseminate a notice of nondiscrimination.¹⁶ This notice needed to state that Title IX prohibits the university from discriminating on the basis of sex, inform students of the kind of conduct that constitutes sexual harassment, and detail the steps to file Title IX complaints with university personnel.¹⁷ Second, each university was required to designate at least one employee to serve as its Title IX coordinator.¹⁸ The individual in this position has the responsibility of supervising all Title IX complaints that arise at the university. The third category of reform laid out in the Dear Colleague Letter is the most extensive. It deals with the process of handling sexual assault complaints. Since the first two mandates have proven largely unobjectionable, our focus is on this third bundle of reforms.

By updating the procedures governing sexual assault cases, OCR hoped to promote the “adequate, reliable, and impartial investigation of complaints.”¹⁹ In an effort to achieve this goal, OCR enacted several controversial reforms. First, it lowered the burden of proof that schools use to resolve complaints. For years, schools were permitted to employ the clear and convincing evidence standard to adjudicate guilt.²⁰ However, following the Dear Colleague Letter, universities were required to adopt the preponderance of the evidence standard.²¹ The other set of changes dealt with the parties’ abilities to present their sides of the case before the school tribunal. Of particular note, universities are not required to allow the complainant or defendant to have an attorney present,²² and they are “strongly discouraged” from permitting the parties to cross-examine each other.²³ OCR justified this regulation by reasoning that “[a]llowing an alleged perpetrator to question an alleged

¹⁶*Dear Colleague Letter*, at 6–7.

¹⁷*Id.*

¹⁸*Id.* at 7–8.

¹⁹*Id.* at 9.

²⁰Although approximately 70% of universities used the preponderance of the evidence standard prior to the 2011 Dear Colleague Letter, many high-profile universities, including Cornell, Harvard, Princeton, Stanford, Yale, and the University of Virginia used the clear and convincing evidence standard. See Jake New, *Burden of Proof in the Balance*, INSIDE HIGHER ED., Dec. 16, 2016, <https://www.insidehighered.com/news/2016/12/16/will-colleges-still-use-preponderance-evidence-standard-if-2011-guidance-reversed>.

²¹*Dear Colleague Letter*, at 10 (“In addressing complaints filed with OCR under Title IX, OCR reviews a school’s procedures to determine whether the school is using a preponderance of the evidence standard to evaluate complaints.”).

²²See *id.* at 12 (“OCR does not require schools to permit parties to have lawyers at any stage of the proceedings . . .”). If, however, the school does allow one party to have an attorney present, the school must provide the other party the same opportunity. *Id.*

²³*Id.*; see also *Not Alone: The First Report of the White House Task Force To Protect Students from Sexual Assault*, WHITE HOUSE 14 (Apr. 2014), <http://www.notalone.gov/assets/report.pdf> (noting that under “The Department of Education’s new guidance . . . the parties should not be allowed to personally cross-examine each other”).

victim directly may be traumatic or intimidating, thereby possibly escalating or perpetuating a hostile environment.”²⁴ When attempting to comply with these required changes, schools generally erred on the side of caution and went farther than necessary in order to preempt the possibility of an OCR investigation. This overcompensation led to even further attenuations of evidentiary procedures.

Specifically, many universities changed their investigatory process from an adversarial system—like the one used in U.S. trials—into an inquisitorial system where the school’s representative serves as the factfinder, judge, and jury.²⁵ Rather than allow the students to guide the prosecution and defense, Title IX officers controlled how cases progressed. OCR defended these reforms by arguing that they would “remove some of the burden from our students to gather and present information themselves.”²⁶ Further, OCR maintained that the revised grievance procedures would provide for “prompt and equitable resolution of student and employee sex discrimination complaints.”²⁷

These reforms engendered substantial debate, and in 2017, the Department of Education responded by releasing additional guidance that modified some of the Dear Colleague Letter’s most controversial requirements.²⁸ This latest set of reforms, however, is even more concerning because it opens the door to far worse outcomes for victims. The precise problem lies in the type of discretion afforded to universities. Rather than mandate a certain standard of proof, the 2017 guidelines leave it up to universities to decide what rules should govern.

In the revised guidelines, the principle requirement is merely that each school set uniform standards that apply to all of its proceedings. This means that schools are allowed to select either preponderance of the evidence or clear and convincing, so long as they apply the chosen standard to all disciplinary investigations.²⁹ Likewise, schools are free to choose the evidentiary procedures they deem appropriate, so long as

²⁴*Dear Colleague Letter*, at 12.

²⁵*See Not Alone*, *supra* note 23, at 14 (noting that the reforms “stand in contrast to the more traditional system, where a college hearing or judicial board hears a case (sometimes tracking the adversarial, evidence-gathering criminal justice model), makes a finding, and decides the sanction”).

²⁶UCLA Newsroom, *Title IX Officer Discusses Changes to Sexual Assault Investigation Policies and Procedures*, Jan. 15, 2016, <http://newsroom.ucla.edu/stories/title-ix-officer-discusses-changes-to-sexual-assault-investigation-policies-and-procedures-2616789>.

²⁷*Dear Colleague Letter*, at 8; *see* 34 C.F.R. § 106.8(b).

²⁸*See* U.S. Dep’t of Educ., *Q & A on Campus Sexual Misconduct* (Sep. 2017), available at <https://www2.ed.gov/about/offices/list/ocr/docs/qa-title-ix-201709.pdf>.

²⁹*See id.* at 4 (“The findings of fact and conclusions should be reached by applying either a preponderance of the evidence standard or a clear and convincing evidence standard.”); *id.* at 5 n.19 (“The standard of evidence for evaluating a claim of sexual misconduct should be consistent with the standard the school applies in other student misconduct cases.”).

they apply these procedures equally to both accusers and defendants.³⁰ If, for example, a school provides one party the opportunity for cross examination, it must provide that same opportunity to the other party.³¹ A school can, however, simply refuse to allow either party to conduct cross examination.

By granting this degree of discretion, the Department of Education has given universities the ability to adopt a combination of reforms that would be especially detrimental to victims of sexual assault. Specifically, schools are permitted to adopt a heightened standard of proof while, at the same time, reducing the available procedural protections.

To be clear, our worry is not that the OCR guidance mandates attenuated evidentiary procedures. It does not. Instead, our worry is that the uniformity required by the OCR leads universities to select attenuated evidentiary procedures. Indeed, many universities have responded to the OCR guidance in precisely this way. For example, when forced to decide whether both parties could have an attorney or neither party could have an attorney, many universities chose the latter option—prohibiting attorney involvement. As we will show, such attenuated evidentiary procedures pose problems which are not generally recognized.

Fortunately, these guidelines will not be the last word on the matter. In September 2017, the Department of Education announced that it plans to review the rules governing sexual assault investigations and will promulgate more detailed regulations following a public notice-and-comment period.³² Anticipating that the subsequent reforms will be

³⁰*Id.* at 5 (“Any rights or opportunities that a school makes available to one party during the investigation should be made available to the other party on equal terms.”).

³¹*Id.* at 5 (“Any process made available to one party in the adjudication procedure should be made equally available to the other party (for example, the right to have an attorney or other advisor present and/or participate in an interview or hearing; the right to cross-examine parties and witnesses or to submit questions to be asked of parties and witnesses).”).

³² Andrew Kreighbaum, *DeVos to Replace Obama-Era Sexual Assault Guidelines*, Sep. 8, 2017, <https://www.insidehighered.com/news/2017/09/08/devos-says-federal-title-ix-guidelines-have-%E2%80%98failed%E2%80%99-will-seek-public-input-new> (noting that Education Secretary Betsy DeVos “announced plans to launch a public comment process that will precede the release of a new federal regulation”).

hostile to victims, many individuals have already begun fighting back.³³ Most notably, Democratic legislators have introduced a bill that would overrule the Department of Education and codify the Dear Colleague Letter's standards.³⁴ Although this bill's goal of helping victims obtain justice is extremely laudable, there is reason to suggest that it may have the opposite effect.

As it stands, the rules governing sexual assault investigations are in flux. Unfortunately, this policy debate is marked by confusion over how the reforms will impact victims and defendants. Accordingly, in order for policymakers to identify the optimal set of reforms, it is necessary that they understand the ways in which existing proposals may benefit and harm the different parties.

Opponents of OCR's Dear Colleague Letter have advanced three main criticisms. First, they argue that the studies on which OCR based its regulations vastly overstate the incidence of campus sexual assault.³⁵ Second, they claim that OCR lacked the authority to mandate the changes in the manner that it did.³⁶ Third, critics maintain that the reforms violate the constitutionally guaranteed due process rights of the defendant.³⁷

³³ See, e.g., Christina Cauterucci, *Finally, a New Policy We Know Trump Truly Believes in: Protections for Sexual Assaulters*, SLATE, Sep. 8, 2017, http://www.slate.com/blogs/xx_factor/2017/09/08/trump_and_devos_side_against_sexual_assault_victims_with_new_title_xi_rollbacks.html (arguing that the 2017 reforms will have a "chilling effect . . . on sexual assault reports"); Lucia Graves, *Does Betsy DeVos Care More about Those Accused of Rape Than Its Victims?*, THE GUARDIAN, Sep. 8, 2017, <https://www.theguardian.com/commentisfree/2017/sep/08/does-betsy-devos-care-more-about-those-accused-of-than-its-victims> (accusing DeVos of "simply defending the people she and her boss have always been most interested in defending . . . white men who'd grown used to having the world at their feet—not real victims.").

³⁴ U.S. House of Representatives, *Congresswoman Speier, Democratic Leadership Unveil Bill to Defend Title IX Protections for Sexual Assault Survivors*, Oct. 12, 2017, <https://speier.house.gov/media-center/press-releases/congresswoman-speier-democratic-leadership-unveil-bill-defend-title-ix>.

³⁵ For a discussion of the criticisms, see *supra* note 7.

³⁶ See, e.g., Jake New, *Guidance or Rule Making?*, INSIDE HIGHER ED., Jan. 7, 2016, <https://www.insidehighered.com/news/2016/01/07/senators-challenge-legality-us-guidance-campus-sexual-assault> (examining whether the Dear Colleague Letter is legally binding); Ari Cohn, *Did the Office for Civil Rights' April 4 'Dear Colleague' Letter Violate the Law?*, FOUND. FOR INDIVIDUAL RIGHTS IN EDUC. (FIRE), Sep. 12, 2011, <https://www.thefire.org/did-the-office-for-civil-rights-april-4-dear-colleague-letter-violate-the-law> (arguing that the Dear Colleague Letter violated the Administrative Procedure Act).

³⁷ See Elizabeth Bartholet, et al., *Rethink Harvard's Sexual Harassment Policy*, BOSTON GLOBE, Oct. 15, 2014, <https://www.bostonglobe.com/opinion/2014/10/14/rethink-harvard-sexual-harassment-policy/HFDDiZN7nU2UwuUuWMnqbM/story.html> (arguing that the Dear Colleague Letter's reforms violate the due process rights of the accused); *Open Letter from Members of the Penn Law School Faculty*, PHILADELPHIA INQUIRER 5 (Feb. 18, 2015), <http://media.philly.com/documents/OpenLetter.pdf> (same).

In this Article, we do not take a stand on the merits of any of these criticism. Instead, we offer an alternative objection that is far more powerful—namely, the reforms are especially likely to harm both sexual assault victims and innocent defendants.

C. II. A Probabilistic Analysis

A. A Primer on Probabilistic Epistemology

Our evaluation employs probabilistic reasoning—a type of reasoning that is commonly used in the law. In our analysis, we make no claim that agents are perfect probabilistic reasoners (or even that agents should be perfect probabilistic reasoners). We only claim that a probabilistic evaluation is natural enough to be apposite. We will thus proceed with a brief exposition of how probabilistic epistemology works and then substantiate our claim that it applies to campus sexual assault hearings. In this article, we adopt the framework of Bayesian epistemology. Although this is a prominent probabilistic epistemology, it is not the only one.³⁸

To begin, suppose that an agent can consider any set of possible worlds—maximally specific ways things can be. Propositions can then be thought of as sets of possible worlds—the proposition that it is raining is, in effect, made up of the maximally specific possible ways for it to be raining. Bayesian epistemology imposes two constraints on the degrees of belief towards these propositions: that the degrees of belief be probabilistically coherent and that the degrees of belief be updated by conditionalization.

To be probabilistically coherent, an agent's degrees of belief must conform to the axioms of the probability calculus:

- (1) $\Pr(p) \geq 0$, for any proposition p .
- (2) $\Pr(t) = 1$, for any tautology t .
- (3) $\Pr(p \vee q) = \Pr(p) + \Pr(q)$, for any inconsistent propositions p and q .

These three axioms require, respectively, that (1) all propositions have probability greater than or equal to 0, (2) all tautologies have probability 1, and (3) the probability of a disjunction of inconsistent propositions

³⁸In particular, our framework will be broadly subjectivist. For alternative probabilistic frameworks, see Nevin Climenhaga, *Inference to the Best Explanation Made Incoherent*, 114 J. PHIL. 251 (2017) (presenting a probabilistic framework in which agents' epistemic attitudes are more coarsely grained); Nevin Climenhaga, *The Structure of Epistemic Probabilities* 117 PHIL. STUD. (forthcoming 2020) (same); Brian Hedden & Mark Colyvan, *Legal Probabilism: A Qualified Defence*, 27 J. POL. PHIL. 448 (2019) (defending an objectivist probabilistic framework).

equals the sum of the probabilities of the disjuncts. Although these axioms may seem obscure, they represent very natural constraints on thinking.

In addition to probabilistic coherence, Bayesian epistemology requires that degrees of belief be updated by conditionalization.³⁹ Conditionalization relies on a notion of conditional probability, which can be defined given the axioms above. The probability of p conditional on q is equal to the probability of p and q divided by the probability of q (assuming that $\Pr(q) > 0$).⁴⁰

$$(4) \quad \Pr(p|q) = \Pr(p \wedge q) / \Pr(q)$$

Conditionalization mandates that when an agent learns a proposition q , the new probability of any proposition p should equal the previous conditional probability of p given q :

$$(5) \quad \Pr_{\text{new}}(p) = \Pr_{\text{old}}(p|q)$$

Consider the following example illustrating conditionalization. Suppose an agent initially had degree of belief .2 that it will rain hard, degree of belief .3 that it will rain not-hard, and degree of belief .5 that it will not rain. If that agent learns that it will rain, he should reduce his degree of belief in the proposition that it will not rain to zero and increase his degrees of belief in the other propositions a corresponding amount. Updating based on this information will yield degrees of belief as follows: .4 that it will rain hard, .6 that it will rain not-hard, and 0 that it will not rain.

All told, the basic story of probabilistic epistemology is as follows: Rational agents assign non-negative credence to various possible worlds in such a way that the sum of those credences is 1.⁴¹ When rational agents gain evidence which is inconsistent with some of those possible worlds, they adjust their credences in those worlds to 0 and proportionally increase their credences in the remaining worlds so that the sum of their credences returns to 1.

³⁹ David Lewis, *Why Conditionalize?*, in PAPERS IN METAPHYSICS AND EPISTEMOLOGY: VOLUME 2 403, 405–6 (1999) (substantiating the requirement to conditionalize by showing that the failure to conditionalize subjects an agent to certain losses).

⁴⁰ See Alan Hájek, *What Conditional Probability Could Not Be*, 137 SYNTHESIS 273, 274–6 (exploring the relationship between the mathematics of conditional probability and the philosophical role of conditional probability).

⁴¹ See generally Jonathan Weisberg, *Varieties of Bayesianism*, in HANDBOOK OF THE HISTORY OF LOGIC: INDUCTIVE LOGIC 477 (providing an overview of formal epistemology).

A. The Formal Explanation

In this section, we provide a formal explanation of the Title IX reforms' effects. We look first at the change to the standard of proof and then turn to the changes to the evidentiary procedures.

By altering the standard of proof, OCR lowered the threshold for proving guilt. Under the old system, schools were permitted to require clear and convincing evidence—a standard that is widely thought to mean rendering guilty verdicts when the probability of guilt is over seventy-five percent.⁴² Under the revised system, however, schools were forced to lower the threshold to a preponderance of the evidence—a standard that is widely thought to mean rendering guilty verdicts when the probability of guilt is over fifty percent.⁴³

This shift reduced the accusers' burden of proof, thereby making it more likely that defendants would be convicted. It is easy to see why the change to the standard of proof necessarily works in this direction. The lowered threshold only affects the outcome in those cases where the decision makers set the probability of guilt between fifty and seventy-five percent. In each of these cases, the old standard would have yielded a not guilty verdict, but the revised standard will yield a guilty verdict. Accordingly, the reduced standard of proof unequivocally favors the accuser and disfavors the accused.⁴⁴ Thus far, the analysis is consistent with the conventional wisdom. This, however, is only half of the story. OCR not only changed the standard of proof but also changed the evidentiary procedures.

Unlike the change to the standard of proof, the evidentiary reform are of non-uniform effect. Sometimes they work to the benefit of accusers, but other times they work to the benefit of defendants. At first glance, this effect may appear to be neutral. That, however, is only the case insofar as one does not place weight on reaching true verdicts. As we will show, the precise distribution of benefits and burdens falls in such a way as to increase the error rate. Specifically, the reforms make it less likely that truth-telling victims will be believed and more likely that lying defendants will be believed.

This conclusion follows from two fundamental theorems of the probability calculus. The first theorem—often referred to as the Risk-Reward Theorem⁴⁵—is as follows:

⁴²See Jason Iuliano, *Jury Voting Paradoxes*, 113 MICH. L. REV. 405, 417 (2014) (noting that, for the clear and convincing evidence standard, the “threshold for belief [is] at 75%”).

⁴³See *id.* (observing that, for the preponderance of the evidence standard, “scholars and judges alike place the threshold for belief between 50 and 51%”).

⁴⁴See LARRY LAUDAN, *TRUTH, ERROR, AND CRIMINAL LAW* 68–69 (2005) (arguing that “a standard of proof is best conceived as a mechanism for distributing errors”)

⁴⁵For additional discussion of the mathematics behind this theorem, see COLIN HOWSON & PETER URBACH, *SCIENTIFIC REASONING: THE BAYESIAN APPROACH* 18–20 (2005).

$$(6) \quad e_n: \Pr(h|e_n) > \Pr(h) \leftrightarrow e_m: \Pr(h|e_m) < \Pr(h)$$

This theorem proves that whenever there exists some possible bit of evidence that would confirm a hypothesis, then there must also exist some other possible bit of evidence that would disconfirm that hypothesis.⁴⁶ When applied to the case of sexual assault investigations, the Risk-Reward Theorem shows that the changes to the evidentiary procedures cannot sometimes yield higher credences in guilt and never yield lower credences in guilt.

To flesh out why this point holds, consider the following example. Suppose I want to determine whether the proposition that my neighbor has an apple in his refrigerator is true. Although I don't have any specific information regarding my neighbor's predilection for apples, I do know that people often keep apples in their refrigerators. Therefore, I initially adopt a middling degree of belief—let's say fifty percent. This uncertainty, however, is too great to satisfy my curiosity. Therefore, to refine my degree of belief, I decide to conduct a test. I will open my neighbor's fridge and look inside. Upon doing so, I see that there is indeed an apple on the shelf. In light of this new evidence, I update my degree of belief from fifty percent to one hundred percent and thereby happily conclude my inquiry.

Although this is a simple example, it illustrates what it takes to alter one's degree of belief. At the most basic level, it is clear that I updated my degree of belief because I saw the apple in the fridge. This reasoning, however, only raises a more fundamental question. Specifically, why was looking in the fridge an appropriate procedure for testing the apple hypothesis? The answer is that the procedure allowed for the possibility either of finding evidence that would confirm the hypothesis (i.e., I see an apple) or of finding evidence that would disconfirm the hypothesis (i.e., I don't see an apple). The procedure itself does not favor either apple-hypothesis. Only by executing the procedure can one reveal evidence to confirm or disconfirm the presence of the apple. There is, in short, no method that would allow me to confirm the presence of the apple without also allowing for the possibility of disconfirming the presence of the apple.

Applied to the present context of campus sexual assault hearings, this insight shows that changes to the evidentiary procedures cannot unequivocally favor one side over the other. Instead, the beneficiary of the reforms varies depending on the exact circumstances. Sometimes the accuser benefits, and sometimes the defendant benefits.

One might concede our point but then posit that the changes to

⁴⁶Assuming that evidence always has a prior probability greater than 0 and forms a partition. Bernhard Salow, *The Externalist's Guide to Fishing for Compliments*, 126 MIND 1, 17–24 (describing the most natural conditions under which evidence fails to form a partition and showing how strange those circumstances are).

the evidentiary procedures generally favor the prosecution over the defense. Perhaps the changes to the evidentiary procedures occasionally make the decision maker's credence in the proposition that the defendant is guilty decrease a little but more often make the decision maker's credence in that proposition increase by a substantial amount. If this were to happen, the evidentiary reforms would, on average, increase the decision maker's degree of belief in the defendant's guilt. This, too, however, is impossible. No change to the evidentiary procedures can affect one's average probabilistic determination.

This fact derives from the Theorem of Total Probability, which entails that the probability of a hypothesis before an experiment is performed equals the expectation of the probability of the hypothesis after the experiment is performed.

$$(7) \quad \Pr(h) = \Pr(h|e_1)\Pr(e_1) + \dots + \Pr(h|e_n)\Pr(e_n)$$

From this theorem, it follows that neither the presence of any procedure nor the absence of any procedure can ever have the general effect of raising or lowering the probability of any hypothesis.⁴⁷ Not only can hypotheses be confirmed only at the risk of being disconfirmed, the propensities for confirmation and disconfirmation must always be perfectly balanced. This means that the campus evidentiary reforms do not produce any effect on expected degrees of belief.

Going further, the theorem indicates that no possible change to evidentiary procedures could produce any effect on expected degrees of belief. Quite simply, evidentiary reforms cannot increase the potential reward for one party without also increasing the potential risk for that party by a precisely equivalent amount. For every procedural change, the risk and reward must balance out completely.

To better understand this theorem, it is worth thinking about a specific case. Suppose that you have found a lump on your throat and are very worried that it is cancerous. You rush out to your doctor who performs a physical examination and tells you that there is a fifty percent chance that the lump is cancerous and a fifty percent chance that the lump is not cancerous. You are certain of the doctor's skill and, therefore, update your degrees of belief regarding the lump to fifty percent cancerous and fifty percent not cancerous. At this point, you are hopeful to prove that the lump is not cancerous but fearful of finding out that the lump is cancerous. Your doctor informs you that she is willing to perform any kind of test that you would like and asks how you would like to proceed.

You tell your doctor that you would prefer a test that will definitively indicate that you don't have cancer if you don't have cancer. The doctor explains that such a test exists but informs you that it will also definitively indicate that you do have cancer if you do have cancer.

⁴⁷See HOWSON & URBACH, *supra* note 44, at 18–20.

For this test, getting a favorable result would, of course, be great—you'd be certain that you don't have cancer. But getting an unfavorable result would be terrible—you'd be certain that you have cancer.

In mathematical terms, if you go with this test there is a fifty percent probability that the test will provide definitive proof that you have cancer and a fifty percent probability that the test will provide definitive proof that you do not have cancer. These two outcomes (100% probability of cancer and 0% probability of cancer) yield a weighted average of fifty percent—a figure that is identical to your degree of belief prior to having taken the test.

Fearful of a definitive diagnosis of cancer, you inquire about a less definitive test. To your delight, the doctor tells you that such a test exists and explains that, if you opt for that alternative, an unfavorable result wouldn't be as bad. Instead of showing that you definitely have cancer, the test would only tell you that you are likely to have cancer. Tempering your optimism, however, the doctor cautions that a favorable result also wouldn't be as good. It would not show that you definitely do not have cancer but rather only that you are likely not to have cancer. To see how the math plays out, let us put numbers to this example.

Suppose this less decisive test is ninety percent reliable. Accordingly, there is a fifty percent chance that you will get an unfavorable result (in this case, a ninety percent probability that you do have cancer). Likewise, there is a fifty percent chance that you will wind up with a favorable result (in this case, a ten percent probability that you do have cancer). Again, these two outcomes have a weighted average of fifty percent.

Ultimately, no matter which test the doctor performs, the weighted average of your future degrees of belief will always equal fifty percent.⁴⁸ Regardless of what you do, you cannot design a test that will have the general effect of pushing your degrees of belief in any particular direction.⁴⁹ This result follows from the Theorem of Total Probability.

We have discussed the theorem at length because it has striking implications for the Title IX evidentiary reforms. Specifically, the theorem proves that the Department of Education's procedural changes

⁴⁸Note that the symmetry of the two tests discussed in the text is inessential. Suppose that a third test will definitely give a favorable result if you don't have cancer but is equally likely to give a favorable and an unfavorable result if you do have cancer. In this case, you're more likely to get the favorable result than the unfavorable result. This sounds great so far.

Unfortunately, a favorable result from this test will be less meaningful than an unfavorable result. Specifically, there's a 75% probability that you'll get a favorable result (such a result would inform you that you have a 66% chance of not having cancer and a 33% chance of having) and a 25% probability that you'll get an unfavorable result (which would provide a 100% probability that you do have cancer). Yet again, this test yields a weighted average of 50%.

⁴⁹See HOWSON & URBACH, *supra* note 44, at 18–20.

can never affect the weighted average of the decision makers' degrees of belief. No matter what set of procedures universities are required to adopt, the decision makers' weighted degrees of belief necessarily remain the same. In other words, contrary to conventional thought, no procedural change can systematically benefit accusers or systematically harm defendants. Core principles of mathematics prove that any benefits to accusers must be offset by equivalent benefits to defendants and that any harms to defendants must be offset by equivalent harms to accusers.

Notably, our argument does not suggest that procedural reforms have no effect on individual case outcomes. To the contrary, we acknowledge that procedural changes do affect the distribution of degrees of belief in different possible scenarios. Just as the different cancer tests would yield different distributions of degrees of belief across multiple patients, so, too, can different university procedures yield different distributions of degrees of belief across multiple defendants.

Although it is true that procedural reforms cannot change the expected probability of guilt after the trial, they can change the probability of conviction in the trial. This result owes to the combination of two features of the adjudicatory system: (1) the continuous nature of the posterior probability of guilt (which may take any real value between 0 and 1), and (2) the binary nature of the conviction itself (either conviction occurs or it doesn't). The crucial question, then, is how procedural reforms affect the probabilities of conviction for various defendants in various circumstances. And that turns out to be a complicated matter.

It is, however, possible to say more about how the distributions will change in light of the Title IX reforms. Given a comparative paucity of evidence, probabilities tend to remain closer to wherever they were initially—namely, at some intermediate value. However, given a comparative abundance of evidence, probabilities tend to be distributed in peaks—very high probabilities in some possible scenarios and very low probabilities in other scenarios.⁵⁰ By restricting evidentiary procedures, OCR is holding constant the average probability of guilt in the cases, collectively, but reducing decision makers' confidence in the guilt or innocence of individual defendants. The overall result is increased uncertainty and a greater number of erroneous findings.⁵¹

A concrete analogy will help illustrate this effect. Think about the way in which changing evidentiary procedures is similar to gerrymandering voting districts.⁵² Redrawing district lines does not

⁵⁰See James M. Joyce, *How Probabilities Reflect Evidence*, 19 PHIL. PERSP. 153, 154–6, (2005) (explaining the way in which evidence affects an agent's estimate of truth-values).

⁵¹Whether false exonerations or false convictions increase at a higher rate will depend on the standard of proof and the decision makers' priors.

⁵²For a discussion of gerrymandering, see Christopher Ingraham, *This Is the Best Explanation of Gerrymandering You Will Ever See*, THE WASH. POST, Mar. 1, 2015,

cause more people to vote for one party or the other. Instead, redrawing district lines only affects the distribution of voters. A limited evidentiary procedure would be like district lines in which the political leanings of each district were close to the political leanings of the country taken as a whole. A robust evidentiary procedure, by contrast, would be like district lines in which each district was overwhelmingly partisan. Unlike the heavily gerrymandered district, however, robust evidentiary procedures are beneficial to society. In such situations, decision makers have increased confidence in the verdict and are more likely to have arrived at the truth.⁵³

As we have shown, limited evidentiary procedures tend to produce intermediate probabilities. Contrary to the conventional wisdom, this outcome does not uniformly favor the prosecution or the defense. Instead, it favors parties with unexpectedly weak cases at the expense of parties with unexpectedly strong cases. Given that there is a positive correlation between having an unexpectedly strong case and being in the right and a positive correlation between having an unexpectedly weak case and being in the wrong, this result is especially troubling. It suggests that guilty defendants are particularly likely to be helped by the reforms and that innocent defendants are particularly likely to be harmed by the reforms. Although we cannot know whether the changes to the evidentiary procedures will affect the result in any specific case, we can confidently say that the new system will be less accurate than the old.

To say more about the general impact of the reforms, it is worth noting that their effects depend on the operant standard of proof. Given a sufficiently low standard of proof, the tendency towards intermediate probabilities will lead to more incorrect guilty verdicts than incorrect not guilty verdicts. By contrast, given a sufficiently high standard of proof, the tendency towards intermediate probabilities will lead to more incorrect not guilty verdicts than incorrect guilty verdicts. It is, therefore, critical that evidentiary procedures be evaluated in light of the standard of proof.

Given the change to the standard of proof from clear and convincing to preponderance of the evidence, it is plausible that the evidentiary reforms will lead to a greater number of convictions. Unfortunately, many—although by no means all—of these additional convictions will be of innocent defendants.

If, however, the standard of proof were raised to clear and convincing, an unexpected problem could emerge. Specifically, the combination of attenuated evidentiary procedures and a clear and

https://www.washingtonpost.com/news/wonk/wp/2015/03/01/this-is-the-best-explanation-of-gerrymandering-you-will-ever-see/?utm_term=.38bbda881453.

⁵³ See Niko Kolodny, *Why Be Rational?*, 114 MIND 509, 557–60 (2005) (discussing why decision makers must expect to have better beliefs if they follow additional evidence).

convincing standard of proof would lead to a greater number of incorrect not guilty verdicts. Such a system would let guilty sexual assailants go free and prevent victims from receiving vindication through the university process. We emphasize that, given the range of options offered to universities by the 2017 guidance, such a system is now a real danger.

Both the conviction of the innocent and the acquittal of the guilty are problematic and should be guarded against. That said, empirical research is necessary to determine which unfortunate outcome occurs more frequently. Accordingly, the only claim we make at this juncture is that more incorrect decisions will be handed down in a system in which schools adopt attenuated evidentiary procedures than in a system in which schools adopt more robust evidentiary procedures. After all, evidence helps decision makers get to the truth, and an absence of evidence hinders this process.⁵⁴

C.1 Examples

Our main thesis—that any attenuation of evidentiary procedures will have equivocal consequences in the contest between the prosecution and the defense—is supported by the mathematics of probability theory. Our main thesis is not, however, merely the result of arcane mathematics. The mathematics is a good way of making our argument precise, but our point can be made more intuitively.⁵⁵

To that end, we present a series of examples that illustrate how the reforms can harm truth-telling victims and truth-telling defendants. The first example presents an extreme case that provides a straightforward illustration of our formal model. The second and third examples demonstrate how the model works in light of the campus sexual assault reforms. Specifically, the second case illustrates how the reforms can harm innocent defendants, and the third case shows how the reforms can harm sexual assault victims. The former is consistent with the conventional understanding of the reforms, but the latter reveals that the conventional understanding is incomplete. Just as the reforms can harm an innocent defendant, the reforms can also harm a sexual assault victim.

⁵⁴See Elliott Sober, *Absence of Evidence and Evidence of Absence: Evidential Transitivity in connection with Fossils, Fishing, Fine-Tuning, and Firing Squads*, 143 PHIL. STUDIES 63, 63–66 (2009) (exploring the limitations on what can be inferred from a lack of evidence). I.J. Good, *On the Principle of Total Evidence*, 17 BRITISH J. PHIL. SCI. 319 (1967) (providing a theorem showing the natural conditions under which it is always better (in expectation) to make a decision on the basis of more information rather than less).

⁵⁵See David Lewis, *Radical Interpretation*, 23 SYNTHESIS 331, 336–39 (showing how to impute mathematical probabilities to ordinary agents).

Case 1: An Extreme Example

John is arrested for spray painting graffiti on the wall of a convenience store. At trial, the prosecution presents its evidence: a witness identified John as the person who vandalized the store. Just as the defense is about to present its case, the judge interrupts. He tells the jurors that defendants are no longer allowed to speak in court or to have arguments presented on their behalf. Accordingly, the jurors must render a verdict after having heard only the prosecution's evidence. The judge further instructs the jurors that they must use the standard of beyond a reasonable doubt.

Assuming they want to render an appropriate verdict, what would rational jurors do in this situation? At this moment, the jury cannot know the strength of John's defense. On the one hand, if given the opportunity to speak, John might have produced a strong defense. Perhaps he would have revealed a solid alibi, undermined the credibility of the witness, or shown that he has a twin brother with a checkered past who committed the crime. On the other hand, John might have produced a weak defense. Perhaps, he has no alibi, no way to undermine the credibility of the witness, and no twin brother with a checkered past.

To account for this range of possibilities, the jurors' only reasonable response is to adopt a middling attitude. They certainly cannot think it more likely that John is innocent than they would if John had mustered the strongest possible defense. After all, it would be crazy to let the ignorance of John's defense be more exculpatory than the most exculpatory defense could be. Similarly, jurors cannot think it more likely that John is guilty than they would if John were to present the weakest possible defense; it would be crazy to let ignorance of John's defense be more incriminating than the weakest defense could be. The only sensible way to think about the verdict is to have a middling attitude—some sort of compromise between the various possible things one might have wound up thinking after John's defense.

Given this, it turns out that John would not be disadvantaged by his inability to mount a defense. To the contrary, John's inability to mount a defense would, itself, provide a powerful defense. Because the evidentiary rules prevent John from presenting his side of the case, jurors cannot know what exculpatory evidence John might have been able to produce. John's inability to mount a defense would virtually guarantee him reasonable doubt, and thus virtually guarantee him acquittal. Accordingly, in situations where John has a weak defense, he greatly prefers not having the opportunity to present his case. After all, being forced to present a weak defense would remove reasonable doubt and only serve to expose his guilt. Having used this extreme example as a launching point, we now turn to two cases involving campus sexual assault and the evidentiary procedures commonly used in such

investigations.

Case 2: Harming an Innocent Defendant

Frank, a sophomore, filed a complaint with the university in which he accused Peter, another sophomore, of sexual assault. According to Frank, the incident occurred after a party that both he and his alleged assailant had attended. At the party, Frank had been drinking heavily and began to feel sick. Wanting to go lie down but unsure that he could make it to his room on his own, Frank asked Peter to help him walk back. Peter agreed and escorted Frank to his dorm. However, Frank claims that, upon entering the room, Peter pushed him down onto the bed and initiated non-consensual sexual contact. Frank maintains that he tried to push Peter off but was too drunk to resist. Frank tells the campus investigators that Joe, another student living on the floor, saw them enter the dorm and can corroborate that Frank was too drunk to consent to sexual contact. The investigators speak with Joe—who, unbeknownst to the investigator, happens to be Peter’s jealous ex-boyfriend—and he states that he saw Peter drag Frank into the dorm and that Frank appeared “extremely intoxicated.”

After speaking to Joe, the investigator meets with Peter. Without telling Peter what the charges are or any of the evidence against him,⁵⁶ the investigator asks Peter to recount what happened on the night in question. Peter states that he and Frank were at a party. While there, Frank approached him and the two began to dance. Things became flirtatious and, after an hour or so, Frank asked him if he wanted to go back to his room. Peter says he agreed and accompanied Frank back to his dorm where the two had consensual sex. Peter claims that Frank was not intoxicated and had only had two drinks the entire night. The investigator asks whether anyone saw the two of them enter the dorm room, and Peter says that he cannot recall. The investigator does not ask specifically about Joe, and because university policy does not guarantee defendants the opportunity to see the evidence against them, Peter does not learn of Joe’s testimony until after the campus hearing has concluded and a verdict has been rendered.

Based in large part on Joe’s eyewitness testimony, the university officials find Peter guilty of sexual assault. This outcome is unfortunate for Peter. If he had been made aware of Joe’s testimony, he would have

⁵⁶For examples of actual cases involving similar procedures, *see, e.g.*, *Doe v. Brandeis University*, 177 F. Supp. 3d 561 (D. Mass. 2016) (noting that, among other procedural limitations, “the accused was not entitled to know the details of the charges; the accused was not entitled to see the evidence; [and] the accused was not entitled to counsel”); *Doe v. Northern Michigan University*, 393 F.Supp.3d 683 (W.D. Mich. 2019) (observing that the defendant was neither given the opportunity to cross examine his accuser nor to testify before the university Sexual Misconduct Review Board); *Doe v. Amherst College*, 238 F.Supp.3d 195 (D. Mass. 2017).

offered evidence sufficient to call Joe's claims into doubt. Specifically, Peter would have informed the investigator that Joe is Peter's ex-boyfriend and that the two recently had a bad breakup. In addition, Peter would have presented texts from Joe in which Joe vowed to get revenge on Peter for dumping him. However, because campus procedures restricted Peter from observing the evidence against him, Peter was unable to mount a competent defense. For this reason, he was wrongly convicted of sexual assault.

This example captures the prevailing critique of the evidentiary reforms—namely, that the changes prevent the production of evidence that would exculpate the defendant. As our formal analysis showed, however, this case accounts for only half of the story. Given how conditionalization works, the reforms necessarily have a symmetrical, negative effect on sexual assault victims that works to prevent them from receiving vindication.

Case 3: Harming a Sexual Assault Victim

Samantha, a junior, filed a complaint with her university in which she accused Barry, a senior, of sexual assault. Although Barry did sexually assault Samantha, the evidence is incomplete (as is often the case in sexual assault investigations). According to Samantha, the incident occurred at a fraternity party that both she and her alleged assailant had attended. Samantha claims that, shortly after she arrived at the party, Barry approached her and began flirting with her. Throughout the night he brought her a number of drinks and, at one point, suggested they do some shots. Samantha states that, from this point on, she has no recollection of the evening.

Her next memory is of waking up the following morning in an upstairs bedroom above the party's location. Samantha was naked and had bruises on her body. Because she was distraught, Samantha did not go to the hospital to have a sexual assault forensics exam. Fortunately for Samantha, another student, Fred, claims to have seen Barry lead her upstairs. On the basis of this information and her memory of the events earlier in the evening, Samantha decided to file a sexual assault complaint against Barry. When Fred is questioned regarding that night, he states that he saw Barry take Samantha upstairs.

For his part, Barry strongly denies this version of events. He acknowledges that he had a few drinks with Samantha and talked with her for a little while. Barry, however, claims that he and Samantha were never together outside the main party room. Barry also maintains that he left the party early in the evening because he had pulled a couple all-nighters earlier in the week studying for exams and was still sleep-deprived.

Decision makers on this case would probably find themselves

torn. Samantha admits uncertainty regarding her assailant, but Barry vehemently denies the assault. Fred provides eyewitness testimony but did not actually see the assault occur. One point, however, does stand out. Barry claims that he did not go upstairs with Samantha, but Fred claims that he did.

While considering the evidence, the decision makers wonder what information might have been revealed if university procedures had permitted Barry to cross-examine Fred. There are an endless number of possibilities: Was Fred so drunk at the party that his testimony should be discounted? Does he normally wear glasses, and if so, did he have his glasses on when he claims to have seen Barry lead Samantha upstairs? Is Fred actually the rapist, and is he taking advantage of Samantha's inability to remember to pin the blame on Barry? Without an opportunity for cross examination, the decision maker cannot know if Barry could have impugned Fred's testimony.⁵⁷

A rational decision maker will consider all of these possibilities and conclude that there is a reasonable chance Barry would have conducted a strong cross examination and a reasonable chance Barry's cross examination would not have revealed anything. However, because the decision maker cannot know which outcome would have obtained, the only reasonable choice is to adopt a middling attitude. Unfortunately for Samantha, her university has adopted the clear and convincing evidence standard, and the decision makers find that their doubts regarding Fred's testimony prevent them from reaching that level of confidence. They, accordingly, vote to find Barry not guilty.

It turns out, however, that Fred was telling the unvarnished truth, and Barry would not have been able to impugn his testimony at all. Had Barry been given the opportunity to conduct a cross-examination, he would have failed to provide any reason to doubt Fred's testimony. In doing so, Barry would have given the decision makers good reason to trust Fred, and the balance of evidence would have shifted in favor of conviction and likely surpassed the clear and convincing threshold. Unfortunately, due to the reforms, the weakness of Barry's case was hidden behind the attenuated evidentiary procedures employed by the university. If only Barry had been permitted to cross examine Fred, the decision makers would have convicted Barry of sexual assault.

This example highlights a side of the evidentiary reforms that has been ignored by commentators. Specifically, it shows how the reforms can work to decrease the decision maker's belief that the defendant is guilty and, in doing so, prevent sexual assault victims from

⁵⁷Many schools do allow defendants to refer questions to the special investigator. However, the special investigator generally has complete discretion over what questions will be asked. Moreover, the investigator may choose to exclude Barry's proposed questions from his report. This means that the decision makers—who base their ruling solely on the report—will not even be aware of the strategy that Barry might have employed during cross examination.

being believed.

As both our formal analysis and these examples illustrate, the evidentiary reforms' principal effect is to increase decision makers' uncertainty. In doing so, the reforms make it more likely that weak alibis will be believed and that strong accusations will be disbelieved. In light of this result, there is reason to question the merit of the campus sexual assault reforms. And there is even greater reason to be worried about schools that set a high standard of proof but reduce the available evidentiary protections. In such a situation, the cloud of uncertainty produced by attenuated evidentiary procedures will be especially hard for a truth-telling accuser to overcome. Unfortunately, this pernicious combination is facilitated by the 2017 guidance. Accordingly, we recommend that the Department of Education reconsider its most recent reforms.

C.2 Applicability

If the people evaluating allegations of sexual misconduct were perfect probabilistic reasoners, then our case would be perfectly straightforward. The lowered standard of proof would ineluctably favor the prosecution over the defense, while the effects of the changes to evidentiary procedures would be more equivocal. People, however, are not perfect probabilistic reasoners.⁵⁸ Nonetheless, we believe that the mathematical results are apposite to campus sexual assault hearings.

Members of campus sexual assault committees need only be rational enough that the results about idealized reasoners provide some insight regarding actual reasoners. We think this is easily the case. In order for someone to be "rational enough," they need only tend to base their judgments on relevant evidence and update their judgments in a manner that is roughly appropriate given their available information.⁵⁹

Ultimately, our argument only uses probabilities to bring into clear focus a thoroughly commonsensical principle: if you have only heard part of a story, you are not yet in the best position to judge it. As anyone who has ever evaluated competing sides of a story can attest, it is natural to think that if one lacks access to a substantial amount of evidence, then one's judgment should be tentative.

Consider the case of an elementary school teacher who witnesses a fight break out between two of her students, Marcus and Greg. The teacher rushes over and demands to know what happened. Marcus launches into an explanation of the altercation according to which he is entirely in the right and Greg is to blame for everything. At the end of

⁵⁸See generally DANIEL KAHNEMAN, THINKING FAST AND SLOW (2013) (exploring the mechanisms that lead individuals to deviate from ideal rationality).

⁵⁹See Thomas Kelly, *Evidence Can Be Permissive*, in CONTEMPORARY DEBATES IN EPISTEMOLOGY 298, 302–08 (eds. Matthias Steup & Ernest Sosa 2005) (arguing that evidence permits a variety of epistemic responses, thus making it easier to respond appropriately to evidence).

Marcus' explanation, any teacher with half a mind would turn to Greg and ask for his version of events. It is, of course, possible that Marcus' representation is the unvarnished truth. But it is clearly possible that Greg will have a different story to tell. Indeed, it is fairly likely that Greg will offer an explanation according to which he is entirely in the right and Marcus is entirely in the wrong. The teacher certainly cannot take Marcus at his word because he was the first to speak up. Even before Greg has spoken, it is clear that what Greg has to say is crucially relevant.

In the same way, the people evaluating allegations of sexual misconduct are liable to be affected by their awareness that the evidentiary procedures used in university investigations substantially limit the amount of available evidence. It is rational to be tentative when one knows that one does not have all the facts. Thus, it is the case—as is widely understood—that the recent changes to the evidentiary procedures work to the disadvantage of those who were wrongly accused when those individuals could have, if not for the procedural reforms, produced exculpatory evidence. But it is also the case—and not widely understood—that the recent changes to the evidentiary procedures work to the disadvantage of those who were victimized when their victimizers would not have been able to produce exculpatory evidence if they had been permitted to mount a full defense. As we argue, the cloud of uncertainty produced by diminished evidentiary procedures is liable to harm both individuals who are wrongfully accused and sexual assault victims.

Indeed, in a recent decision concerning a campus sexual assault investigation, the Sixth Circuit Court of Appeals highlighted this exact point. The case (*Doe v. University of Cincinnati*) presented the court with the question of whether a university violated a defendant's Due Process rights by prohibiting him from confronting his accuser.⁶⁰ In holding that there had been a violation, the court emphasized that cross-examination is central to credibility determinations.⁶¹ This procedural tool is so useful, the court observed, because it has the ability both to discredit and to reinforce the story of the individual undergoing cross-examination.

In contrast to how many supporters of the reforms depict cross-examination, it is not a one-sided tool that the accused wields against the accuser.⁶² Instead, the procedure is neutral. If the defendant highlights inconsistencies in the accuser's story, cross-examination will, of course, work to the defendant's benefit. However, if the defendant is unable to

⁶⁰ See 872 F.3d 393, 396 (6th Cir. 2017).

⁶¹ See *id.* at 401.

⁶² See *id.* (The university “assumes cross-examination is of benefit only to [the accused]. In truth, the opportunity to question a witness and observe her demeanor while being questioned can be just as important to the trier of fact as it is to the accused . . .”).

poke holes in his accuser’s testimony, then cross-examination will benefit the victim by making her account seem more believable. As the court of appeals wrote in identifying these two possible outcomes,

A cross-examiner may delve into the witness’ story to test the witness’ perceptions and memory. He may expose testimonial infirmities such as forgetfulness, confusion, or evasion . . . thereby calling to the attention of the factfinder the reasons for giving scant weight to the witness’ testimony. He may reveal possible biases, prejudices, or ulterior motives that color the witness’s testimony. His strategy may also backfire, provoking the kind of confident response that makes the witness appear more believable to the fact finder than he intended. Whatever the outcome, the greatest legal engine ever invented for the discovery of truth will do what it is meant to: permit the fact finder that is to decide the litigant's fate to observe the demeanor of the witness in making his statement, thus aiding the fact finder in assessing his credibility.⁶³

The Sixth Circuit went on to emphasize that, in cases where the accuser’s testimony is the only available evidence, cross-examination is an especially important tool for ascertaining the truth.⁶⁴

Although the usefulness of cross-examination seems apparent, it is only effective to the extent that decision makers possess certain qualities of openness and rationality. It is worth observing that, if the officials evaluating allegations of sexual misconduct were so unreflective that the possibility that they are missing important information has no effect on them, our mathematical results might well not apply. Similarly, if those evaluating allegations of sexual misconduct were overwhelmingly biased in favor of the prosecution or the defense, our mathematical results might well not apply to them either.

Notably, some opponents of the reforms and even some courts have maintained that committee members could be biased in ways that are sufficiently extreme to vitiate our argument.⁶⁵ They assert that committee members are incentivized to punish defendants regardless of

⁶³ *Id.* at 402; *see also* *Davis v. Alaska*, 415 U.S. 308, 318 (1974) (“On the basis of the limited cross-examination that was permitted, the jury might well have thought that defense counsel was engaged in a speculative and baseless line of attack on the credibility of an apparently blameless witness.”).

⁶⁴ *See* 872 F.3d at 401 (“The ability to cross-examine is most critical when the issue is the credibility of the accuser. Cross-examination takes aim at credibility like no other procedural device.”) (internal quotations omitted).

⁶⁵ *See, e.g.*, Tyler Kingkade, *Students Accused Of Sexual Assault Say Schools Don’t Interview Their Witnesses*, HUFFINGTON POST, July 23, 2015, http://www.huffingtonpost.com/entry/college-sexual-assault-witnesses_us_55afdef5e4b0a9b948535a4e (quoting the legislative and policy director of the Foundation for Individual Rights in Education as accusing university investigators of “bias” or “incompetence”).

the individual's guilt in order to avoid bringing on an investigation by the Department of Education.⁶⁶ Because such an investigation could ultimately cause the school to lose federal funding, it is possible that universities will pressure committee members to adjudicate cases in ways that avoid this outcome, even if those decisions conflict with the committee members' reasoned judgments as to the defendant's guilt.

We emphasize, however, that several countervailing reasons suggest that committee members are unlikely to vote against their actual judgments to a sufficient degree to undermine our assumption. First, in many instances, defendants who are convicted have the ability to challenge university sexual assault determinations in court. Just as a school has a strong incentive to avoid Department of Education investigations, it also has a strong incentive to avoid having its decisions invalidated in court.⁶⁷ Any university that is systematically expelling innocent defendants will receive bad publicity when the court losses begin to pile up. Moreover, any university shown to have pressured their officials to act this way is likely to be the target of civil penalties.

Cutting in the other direction, scholars have also argued that university rape culture leads to victim blaming and biases campus officials to decide cases in favor of defendants.⁶⁸ Although this is a worrisome concern, the argument only undermines our conclusions if it is the case that university officials disregard all evidence and vote entirely based upon their priors. To that extent, if university officials are overtly biased to such a large degree, then no amount of due process will be able to convince them to render guilty verdicts for guilty defendants and not guilty verdicts for not guilty defendants. The right to cross examine witnesses, to access counsel, to know the specific charges, and to see the evidence are only useful insofar as the decision maker has not

⁶⁶See *Doe v. Columbia University*, 831 F.3d 46, 57 (2d. Cir. 2016) (noting that "it is entirely plausible that the University's decision-makers and its investigator were motivated to favor the accusing female over the accused male, so as to protect themselves and the University from accusations that they had failed to protect female students from sexual assault").

⁶⁷For examples of such decisions, see *Doe v. Rector & Visitors of George Mason University*, 149 F.Supp.3d 602, 622 (E.D. Va. 2016) (holding that "the undisputed record facts disclose that plaintiff was deprived of reputational liberty without due process of law"); *Doe v. Brandeis University*, 177 F. Supp. 3d 561, 607 (D. Mass. 2016) (finding that "[b]ecause the procedures employed by Brandeis did not afford the accused 'basic fairness,' the substantive result reached as a result of that process is open to serious doubt" and permitting the defendant's breach of contract claim to proceed); *Doe v. Washington & Lee University*, 2015 WL 4647996 *10 (W.D. Va. 2015) (holding that the defendant has "plausibly established a causal link between his expulsion and gender bias").

⁶⁸See Meagen M. Hildebranda & Cynthia J. Najdowski, *The Potential Impact of Rape Culture on Juror Decision Making: Implications for Wrongful Acquittals in Sexual Assault Trials*, 78 ALB. L. REV. 1059, 1077 (2015) ("propos[ing] that rape culture . . . affects the way jurors assign responsibility to victims and defendants . . . [and concluding that t]his process will increase the likelihood that jurors will . . . render not guilty verdicts in sexual assault trials").

prejudged the defendant's guilt or innocence. If overwhelming bias precludes committee members from making reasoned judgments, then merely adding evidentiary procedures will do nothing to improve the legitimacy of the campus sexual assault hearings. Moreover, if decision makers were thought to be so widely and so deeply irrational, then no possible system would be defensible.

Society allows those who evaluate allegations of sexual misconduct to do so only because they are thought to be fairly capable of performing that evaluation. In line with this, it is reasonable to believe that those individuals who evaluate allegations of sexual misconduct are rational to some degree. This bare minimum is sufficient to make our analysis relevant. Ultimately, because ordinary, flawed reasoners still operate in a way that is intelligibly connected to probabilistic epistemology, our formal model offers useful insight into the decision-making process in campus sexual assault investigations.

D. Conclusion

There is a growing sense that sexual misconduct is rampant in universities. To address this problem, OCR—acting under the authority of Title IX—issued guidance to universities regarding investigations of campus sexual misconduct. In accordance with these regulations, universities changed both the standards of proof and the evidentiary procedures for their investigations of sexual misconduct. Although these reforms have been subject to well-known criticisms, we do not take a stand on the merits of those arguments. Instead, we offer a unique challenge based upon probabilistic epistemology.

Specifically, we argue that the relaxed evidentiary procedures permitted under the Dear Colleague Letter made it harder both for sexual assault victims to prosecute their cases against their assailants and for innocent defendants to clear their names. Moreover, depending on how universities respond to the 2017 guidance, the ill effects of the reforms could become far more wide-ranging. As we demonstrated, attenuations of the standards of evidence produce a cloud of uncertainty that gives victimizers who lack exculpatory evidence the benefit of a doubt to which they are not entitled. Ultimately, in order to help sexual assault victims obtain justice through the university system, the Department of Education must be careful not to endorse procedures that have the tendency to benefit guilty defendants.

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